Programs of Study as a State Policy Mandate:

A LONGITUDINAL STUDY OF THE SOUTH CAROLINA PERSONAL PATHWAYS TO SUCCESS INITIATIVE

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Programs of Study as a State Policy Mandate:
A Longitudinal Study of the South Carolina Personal Pathways to Success Initiative
Full Unabridged Final Technical Report (Years 1-5)

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I. Executive Summary

This final report presents findings from data collection and analysis conducted during a five-year study by the National Dropout Prevention Center (NDPC) at Clemson University, in conjunction with colleagues from the National Research Center for Career and Technical Education (NRCCTE) at the University of Louisville. This project was one of three NRCCTE studies intended to increase knowledge about Perkins IV-defined Programs of Study (POS) and their development; how best to organize a POS to meet the needs of students, parents, schools, and the community; and the impact of POS on student outcomes. This study examined a statewide K-16 school reform act, the *Personal Pathways to Success Initiative*, which was designed to focus on college and career readiness through a combination of high academic standards with career-focused education. The study's goals were to measure specific impact related to the state policy and the development of POS. This study examined the policy in its early implementation years and in the context of high school.

Policy Framework

South Carolina's *Personal Pathways to Success Initiative*, authorized under the state's Education and Economic Development Act (EEDA) in 2005, is a state-mandated school reform model designed to improve student achievement and better prepare students for postsecondary education and high-skill, high-wage, high-demand jobs. EEDA was designed to achieve these results through a focus on career awareness and exploration at all school levels and through the creation of locally relevant career pathways and programs of study for all students.

The Carl D. Perkins Act of 2006 (Perkins IV) is the fourth iteration of earlier federal Perkins laws focused on improving the quality of technical education within the United States. Perkins IV includes, among other elements, new requirements for POS that link academic and technical content across secondary and postsecondary education.

EEDA preceded Perkins IV, but it required South Carolina schools to implement reforms that incorporate nearly all of the core and supporting components considered necessary for the successful development of Perkins IV-funded POS, as well as additional elements that could support and sustain the implementation of POS. For example, EEDA components include the organization of high school curricula around career clusters, an enhanced role for school counselors, and extra assistance for high-risk students. Further, the law mandates evidence-based high school reform, regional education centers charged with facilitating business-education partnerships, and greater articulation between secondary and postsecondary education.

Study Design

This five-year study investigated the extent to which a statewide reform mandate like the EEDA facilitates the creation of career pathways and POS (as defined in Perkins IV) in various high school contexts and whether these POS lead to improved student high school and postgraduation preparation and planning. This study also explored the influence of the availability of school and community resources and future employment opportunities—whether

substantial or limited—on the development of POS and the outcomes of students enrolled in them.

The study employed a quasi-experimental design with a mixed-methods, triangulated approach (Tashakkori & Teddlie, 2002), following two student cohorts from a sample of eight high schools from economically and culturally diverse regions of South Carolina.

The school sample was carefully drawn through a four-stage sampling process and selected to vary on critical study factors: (1) employment opportunities and industrial mix, (2) local school and community economic conditions, and (3) initial levels of EEDA implementation. Data were collected from two cohorts of students selected because of their varying levels of exposure to the reforms mandated by EEDA: those who graduated in 2009 (who had little to no exposure to EEDA) and those who graduated in 2011 (with exposure to EEDA from the 8th to 12th grades).

Research Questions

The study was structured around the following four research questions:

1. To what extent does South Carolina's Education and Economic Development Act facilitate the development of Programs of Study (POS)?
2. What impact does the level of local economic resources have on the implementation of EEDA and the development and implementation of POS?
3. What impact does the implementation of EEDA have on:
   a. student high school outcomes, and
   b. student postgraduation preparation and plans?
4. What impact do POS as defined in Perkins IV have on:
   a. student high school outcomes, and
   b. student postgraduation preparation and plans?

Data Collection

To create a broader understanding of EEDA's influence on schools, teachers, students, and the creation of POS, a variety of quantitative and qualitative data were collected and analyzed.

Quantitative data included student outcome and survey data from the classes of 2009 and 2011 and survey data from guidance personnel. From the South Carolina Department of Education (SDE) statewide longitudinal data system (SLDS), we collected student and school-level longitudinal demographic, attendance and discipline data; 8th grade standardized test scores; course histories; and Individual Graduation Plan (IGP) data (including declaration of majors, intentions to complete majors, and postsecondary plans). From the SDE Office of Career and Technical Education (SDE CATE), we collected school-level data on state-recognized CTE programs and enrollment in these programs over the study period.

The student survey was developed in collaboration with researchers from NRCCTE's two other longitudinal POS studies. This *Student Engagement/POS Experiences Survey* covered a range of topics, including questions regarding career clusters, career planning and development, the development of IGPs, majors, coursework, school engagement, and demographic characteristics. The Class of 2009 was surveyed once, just prior to high school graduation and the Class of 2011 was surveyed twice, once following their 10th grade year and again just prior to graduation.

Guidance personnel were surveyed about their involvement in career-focused education and the development of student IGPs and about changes in their assigned duties since the implementation of the main elements of EEDA related to high school guidance responsibilities. The duties included those related to curriculum development and counseling and classroom guidance for students in the areas of career, academic, and social development; consulting with other school staff or parents; coordination activities related to special events and professional development; and "inappropriate" duties (based on EEDA guidelines), such as administering standardized tests and developing the master class schedule. Surveys were administered to guidance personnel in the fall of 2009 and the spring of 2012.

Qualitative data included perspectives gleaned from interviews and focus groups conducted with school principals, counselors, teachers, and students, as well as community college administrators. Content from course catalogs and other career-related materials was also analyzed. Three site visits to each school were conducted during the study period. The first was an initial visit to potential sample schools, in spring 2009, focused on the primary goal of understanding the level of ongoing EEDA activities at the school, and included interviews with school principals and guidance directors and focus groups with assistant principals, guidance personnel, and diverse groups of ninth and tenth grade teachers. The second on-site visits, in fall 2009, were geared toward collecting data on the development and implementation of POS and associations between POS and the state policy. During these visits, individual and focus group interviews were conducted with guidance personnel, curriculum coordinators, CTE coordinators and faculty, partner career center staff (where relevant), and partner college administrators and faculty. In-depth, follow-up phone interviews were conducted with school counselors in the spring of 2010, to further explore policy and POS implementation and the impact of these on their duties. A third site visit was conducted at each school in spring 2011 to conduct focus group interviews with the Class of 2011 as seniors. Additional phone interviews were conducted with school counselors in spring 2012.

In order to analyze these varied data sources and address our research questions, we constructed a number of contextual and analysis variables. We developed a scheme to score the level of policy implementation at each school that included the collection and analysis of relevant quantitative and qualitative data on the six most salient facets of EEDA related to high schools. A community poverty four-factor index for school-level analysis was developed to be able to score each school on level of community resources. Varied measures of programs of study were also constructed, based on quantitative (POS1, POS2, and POS3) data or a mixture of quantitative and qualitative data (POS4, POS5, and POS6).

In the process of developing the POS variables, we encountered a major challenge. At the time of our site visit interviews, many schools and districts were in the early stages of development of clusters and career majors, producing little consistency in majors and programs of study that would allow us to make comparisons across schools. As a result, data from various sources could not be linked on common program names and definitions. Also, the state policy we were studying encompasses more than just CTE courses and programs and requires the development of programs of study across the curriculum in all subject areas. We therefore needed to devise a method to select only those majors/programs that were strictly CTE since that was a study focus. In addition, once we identified majors/programs to review, we found that the elements of Perkins IV POS, as outlined in the Perkins law and supporting implementation materials provided by OVAE, were not sufficiently defined to allow for easy translation into direct measures for each element. This required the operationalization of the four core elements of Perkins IV-funded POS by the study team for our analysis.

Observations Across Sample Schools

Overall, we found that EEDA was having some positive impact on schools, school administrators, guidance personnel, teachers, and students. Career-focused activities had increased at all schools and guidance personnel were playing major roles in policy implementation. But the evidence on associations between the policy and program of study development was mixed and/or contradictory. However, there was evidence that the policy was helping to facilitate some of the foundational elements for POS development.

One surprising finding was that at schools with more challenging economic situations, POS were more likely to be embraced and to be more fully developed than at other schools in more prosperous communities. This appeared to be related to a perception at these schools, that given the poor economic circumstances in their communities, their students could really benefit from clearer avenues toward careers and employment.

Similar mixed and/or contradictory results were found on associations between policy implementation and POS development and student outcomes. Students were found to be benefitting from these policies and POS but the types of benefits and the degree of benefit varied across schools and subgroups of students.

From our observations over the five-year period and analyses of these varied data sources, a number of overarching themes emerged that summarize the major trends found across schools during the study period. These themes are briefly described below and at length later in the full report.

Emergent Themes

<u>Career-focused activities at all sample schools increased over the period of EEDA policy implementation</u>. Observations and data collected from schools indicate that the policy increased the amount and variety of career-focused activities and guidance at sample high schools, with school counselors playing key roles in providing these activities. The nature of the events and the types of career experiences they provided for students varied across schools.

Initial increased funding and the addition of staff for the enhanced guidance model at schools helped launch implementation of the EEDA reform policy. Subsequent cuts in funding were reported to have slowed the program's progress and caused schools to make difficult choices relative to setting priorities for allocating scarce resources. Initial site visits to schools provided data on myriad new activities being implemented and information being disseminated relative to the EEDA policy and its potential to benefit students, industry, the community, and beyond. But the recession brought challenges to schools in keeping up with implementation of policy initiatives. In spite of these challenges, however, some sample schools remained committed enough to career-focused education to sustain policy implementation at their schools.

A broad range of resources is required for successful implementation of such a comprehensive reform policy. Full implementation of such an ambitious and high-cost reform as the EEDA model requires a commitment to the provision of sufficient financial support for schools and consideration of economic realities. Not surprisingly, schools that had access to a wide variety of resources, such as having staff with prior knowledge of and experience with various policy areas or being located in a community with diverse local businesses willing to provide resources and educational opportunities for students, facilitated policy implementation. Most schools, however, were struggling to meet all the new mandates.

Exposure to the EEDA policy benefitted students across our sample schools, even at schools with lower levels of policy implementation. Students in all schools were benefitting in a variety of ways from implementation of the EEDA policy, particularly through the IGP process. The IGP process helped students get started with career planning, think about and develop future career goals, and then connect their coursework to these goals. For a majority of the students surveyed and interviewed across sample schools, this type of planning helped them to feel more engaged in school, less likely to want to drop out, and more motivated to make better grades.

The EEDA policy increased awareness and knowledge of CTE at sample schools. In large part due to the IGP process, the state policy increased school personnel and student awareness and knowledge of CTE courses and programs and their importance to programs of study. This increase in CTE awareness and the IGP process were also facilitating more appropriate placement of students in courses based on interest and ability levels and reducing stigma attached to taking CTE courses at a number of sample schools.

Components of the EEDA policy were helping to build some of the foundational elements and framework for the development and successful implementation of Perkins IV-defined programs of study. Although we did not find many POS at sample schools that met all of the study-defined criteria for the Perkins IV core elements, our qualitative data revealed that components of EEDA were helping to build some of the foundational elements and framework considered necessary for the development and successful implementation of Perkins IV type programs of study. Various foundational elements were being put into place across our sample schools leading to the potential for the development of more programs of study in schools over time.

The expanded Perkins IV model of programs of study is relevant across the curriculum, not just for CTE programs. CTE program elements and the expanded Perkins IV model can direct career-focused education for all students, regardless of subject area. Linking secondary and postsecondary programs, providing contextual learning, building business and community partnerships to build programs of study and provide students work-based learning experiences, and emphasizing integration of rigorous academic and technical content are critical to all subject areas. In addition, CTE and non-CTE students and students at all performance levels need the benefits of career guidance and goal setting and being able to connect what happens in school to what comes after high school graduation.

Building on existing programs and whole-school reform efforts helped to facilitate development and implementation of programs of study. Having the ability to build on existing programs seemed to be particularly important to successful early policy implementation in sample schools and in the development of programs of study. This included building on existing CTE programs or other initiatives that shared complementary goals and/or established the structure and culture for success, such as the High Schools That Work and Smaller Learning Communities school reform models.

Structured guidance for career planning and academic advisement was a critical underlying element for policy implementation and student participation in career planning and programs of study. The strong emphasis on combining both career-focused guidance and academic advisement in EEDA and the requirements of the IGP process was fundamental to policy implementation. This career-focused guidance approach increased the depth and breadth of information that students received about their educational and career opportunities in career and technical fields and was an essential channel for dissemination of information to students on available programs of study. It also helped to promote CTE programs to students and engage parents in the course and career planning of their children.

The Individual Graduation Plan and development process emerged as an essential component of policy implementation and the promotion of programs of study. The development and maintenance of students' four-year IGPs emerged as an essential component of EEDA policy implementation and the promotion of programs of study in general. Guidance personnel, teachers, and students all pointed to IGP development as a valuable tool for career counseling and planning and that it had facilitated increased counselor interactions with students on career and course-related issues, taught students ways of thinking about career planning, and helped to make it more likely that courses were related to students' interests and courses of study.

School administration and staff buy-in was a key factor related to successful policy and programs of study implementation. There was substantial variance in reports of initial school response to the EEDA career pathways model. Some schools immediately embraced the career pathways model while others seemed overwhelmed by the policy demands. While not the single most important factor, having buy-in by administrators and staff helped to facilitate policy implementation as well as POS development. At the two schools found to have POS meeting study-defined criteria for the Perkins IV core elements there was strong buy-in to the state policy from school administrators and staff.

Quality, long-term partnerships and collaboration were keys to policy and programs of study implementation. Partnerships appeared to be necessary to the development of POS but the key was the nature and strength of the partnership. The level of policy implementation at sample schools that were located in communities with diverse local businesses that were willing to partner with the school and provide a variety of resources, such as guest speakers, internships, and other work-based learning experiences for students, was often higher than at schools without access to these partners. Strong relationships between high school career centers and local community colleges were also critical to program of study development and instrumental in creating strong course alignment and smooth pathways into postsecondary training and education.

About This Report

       To provide context for the study, this report begins with a summary of some of the relevant research on career-focused education, CTE reform, and counseling and guidance in CTE and programs of study. Then, we offer a brief overview of the South Carolina policy framework. The design of the study and the study sites are then described, followed by a discussion of statewide policy implementation and outcomes. The bulk of the report describes in detail our observations across sample schools and contains five sections that focus on: (1) policy implementation and student outcomes, (2) evidence found at sample schools on programs of study and their influence on student outcomes, (3) possible relationships between the policy and development of programs of study, (4) the influence of local economic resources on both policy and programs of study implementation, and (5) school-level graduation rates and their relationships to policy or programs of study implementation. Next, there is a brief description of challenges the team faced in trying to "count" Perkins IV-type programs of study at sample schools. The final two sections summarize our major findings and the key themes that emerged from these, as well as implications of study findings for further research, for practitioners, and for policymakers.

II. Introduction

This report presents the final results of a five-year study of South Carolina's *Personal Pathways to Success Initiative* funded by the National Research Center for Career and Technical Education (NRCCTE)[1] at the University of Louisville. Data were gathered and reports produced by researchers from the National Dropout Prevention Center (NDPC) at Clemson University and faculty from the University of Louisville. The *Personal Pathways* initiative, authorized under South Carolina's Education and Economic Development Act (EEDA) in 2005, is a career-focused school reform model intended to improve student achievement and preparedness for postsecondary education and high-skill, high-wage, and high demand jobs. EEDA was designed to achieve these results through a focus on career awareness and exploration at all school levels and through the creation of locally relevant career pathways and programs of study.

This NRCCTE five-year study was designed to assess the extent to which a statewide reform mandate like the EEDA facilitates the creation of quality Programs of Study (POS) (as defined in Perkins IV) in various high school contexts and whether this reform and POS influence students' engagement, achievement, and preparation and plans for postgraduation education and/or employment in eight sample high schools. This study also explored the influence of the availability of school and community resources and local/regional employment opportunities —whether substantial or limited—on the development of POS and the outcomes of students enrolled in them. This project was one of three NRCCTE studies that were intended to increase knowledge about POS and their development; how best to organize a POS to meet the needs of students, parents, schools, and the community; and the impact of POS on student outcomes (National Research Center for Career and Technical Education, n.d.). This study's objectives and research design were developed to complement analyses of the other two studies.

This study provided a unique opportunity to explore the impact of a statewide, mandated reform policy that is similar to the national Perkins IV legislation. EEDA preceded Perkins IV, but it required South Carolina schools to implement reforms that incorporate nearly all of the basic and supporting components considered necessary for the successful development of a Perkins IV-funded POS as well as additional elements that could support and sustain the implementation of POS. For example, EEDA components include the organization of high school curricula around at least three career clusters per school, an enhanced role for school counselors, and extra assistance for high-risk students. Further, the law mandates evidence-based high school reform, regional education centers charged with facilitating business-education partnerships, and greater articulation between secondary and postsecondary education.

Project researchers studied how eight South Carolina high schools implemented EEDA and how the policy's provisions impacted both students and the development of POS. The sample schools were selected to include diversity in local economic conditions and industries, the degree of initial levels of policy implementation, and levels of school and community

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[1] A list of acronyms used throughout this report can be found in Appendix A.

resources. Diversity in school size, location, and demographic characteristics of students were also taken into consideration in site selection (see Sharp et al., 2012). We collected data from two cohorts of students with different levels of exposure to the reforms mandated by EEDA: the Class of 2009 (who had little exposure to EEDA) and the Class of 2011 (with moderate exposure to EEDA).

We collected both quantitative and qualitative data from all eight sample schools for the Class of 2009 and the Class of 2011. The Class of 2009 was surveyed once, just prior to graduation, about their experiences with career-focused activities, career planning, and school engagement. The same survey was administered twice to the Class of 2011, once following their 10th grade year and again just prior to graduation. In this report, students in the Class of 2011 surveyed following their 10th grade year will be referred to as "sophomores" while students surveyed in this class prior to graduation will be referred to as "seniors." We also surveyed guidance personnel about their involvement in career-focused education and the development of student Individual Graduation Plans (IGPs) and about changes in their assigned duties since the implementation of the main elements of EEDA related to high school guidance responsibilities. Two site visits were conducted at sample schools and partner postsecondary institutions to interview school personnel about implementation of the reform policy and the progress made in career-focused education, the development of POS at their schools, and the characteristics of these POS. An additional site visit was made to each school in spring 2011 to conduct focus group interviews with the Class of 2011 as seniors. From the South Carolina Department of Education (SDE) statewide longitudinal data system (SLDS), we collected student and school-level longitudinal demographic, attendance and discipline data; 8th grade standardized test scores; course histories; and Individual Graduation Plan (IGP) data (including declaration of majors, intentions to complete majors, and postsecondary plans). From the SDE Office of Career and Technical Education (SDE CATE), we collected school-level data on state-recognized CTE programs and enrollment in these programs over the study period.

The findings we present in this final study report relate not only to how the EEDA reform policy is playing out in certain high schools but also specifically the effect the reform policy may be having on the development of POS.

This study tests the hypothesis that not only does a statewide mandate like the EEDA increase the number of POS in schools, but also that the number of POS, in combination with various political, economic, and social characteristics, influences selected outcomes for South Carolina's secondary students and the schools they attend. This hypothesis was tested through the following research questions:

1. To what extent does South Carolina's Education and Economic Development Act facilitate the development of Programs of Study (POS)?
2. What impact does the level of local economic resources have on the implementation of EEDA and the development and implementation of POS?

3. What impact does the implementation of EEDA have on:
   a. student high school outcomes, and
   b. student postgraduation preparation and plans?
4. What impact do POS as defined in Perkins IV have on:

       a.   student high school outcomes, and

       b.   student postgraduation preparation and plans?

III. Study Background

The U.S. job market and economy are now more than ever part of a global economy. One benefit of this is the potential to increase efficiencies of production and therefore the standard of living of people around the world. Another benefit is the speed and frequency in the exchange of ideas and capital among those who work and those who employ workers. The benefits of this global economy, however, are often overshadowed by local difficulties experienced due to a changing industrial base. For example, the textiles, textile products, and apparel manufacturing industry sector was once dominant in South Carolina, providing individuals with opportunities for lifelong employment in jobs with good wages. Since 1996, 44% of all U.S. textile jobs have been lost to overseas competition (DuPlessis, 2006) and the U.S. Department of Labor's Bureau of Labor Statistics predicts that employment in this industry sector is expected to decline by another 35% through 2016 (U.S. Department of Labor, Bureau of Labor Statistics, 2008). This contrasts with a projected increase of 11% between 2006 and 2016 for all industries combined (U.S. Department of Labor, Bureau of Labor Statistics, 2008). Clearly, there have been and will be individuals and communities that benefit more or less in a changing economy. The changes have been particularly difficult for the many South Carolinians who have depended on employment in the textile or agriculture industries.

Key to thriving in a changing economy is having the skills necessary to compete in that economy. Comprehensive school reform, particularly high school reform through career and technical education (CTE) that leads to meaningful postsecondary options, is critical to the successful education and training for those who will compete in this changing, and global, economy. Most of today's workforce must undertake some kind of postsecondary training or education to be prepared to fill an array of emerging high- skill-level jobs of the future workforce. Students, communities, and society at large benefit when students make the transition from high school to two- and four-year postsecondary programs or to work as smoothly and as quickly as possible and without the need for remediation. Early, individualized exposure to career and training information, opportunities for dual enrollment and dual credit, and statewide or regional articulation agreements can help serve this purpose.

A. Previous Research

Career-Focused Education and Career Planning and Development. Research indicates that students can benefit from career-focused education offered through programs of study, career clusters, and CTE. Such programs provide opportunities for students to engage in career exploration and development, establish short-term and long-term goals, learn about a variety of career options, increase academic knowledge and skills, establish a career identity, test career preferences in applied settings, and make links between coursework and postsecondary careers and education (Gray, 2004; Gysbers, 2008; Kalchick & Oertle, 2010; Lewis & Kosine, 2008; Rojewksi & Kim, 2003). There is strong evidence that engaging in POS facilitates students' participation in career planning and development and ultimately results in greater

career awareness, a stronger career identity, and more explicit career goals (Lewis & Kosine, 2008; Perry, Liu, & Pabian, 2010).

A recent report released by the Harvard Graduate School of Education recommends broader, improved school reform with high-quality CTE as a key element (Symonds, Schwartz, & Ferguson, 2011). The authors outline three current challenges for achieving this goal: (a) the existence of the "forgotten half" (referring back to a 1988 William T. Grant Foundation report that millions of non-college-bound youth are in danger of being denied full participation in society); (b) a more demanding labor market, where it is estimated that nearly two-thirds of new jobs that will be created in the next seven years will require some postsecondary education (e.g., associates degrees, certifications, etc.); and (c) widening skills and opportunity gaps, because a "focus on college readiness alone does not equip young people with all of the skills and abilities they will need in the workplace, or to successfully complete the transition from adolescence to adulthood" (Symonds et al., 2011, p. 4).

A three-point solution (Symonds et al., 2011) to these challenges is similar in many ways to what may be part of a high quality CTE POS policy. These include the development of: (a) a broader vision of school reform that incorporates multiple pathways from high school to adulthood, (b) a much expanded role for employers in supporting these new pathways, and (c) a new social compact between society and its young people. The authors point to some cutting-edge CTE pathways-type programs existing in many American states and communities that are having positive effects on dropout and graduation rates, school engagement, and workforce salaries. According to the authors, the following elements are essential to the successful implementation of career pathways: improved career counseling in both secondary and postsecondary schools, improved consistency in quality of CTE programs so that programs are available to all students and can be aligned across school levels, and a reduction of cultural barriers and stigma associated with CTE.

Integrating career counseling in the context of career pathways encourages students to initiate career planning at the beginning of high school and facilitates smoother transitions to postsecondary work and education options (Hull, 2005). As a result, students are better prepared to reach their career goals and aspirations (p. 225). In a similar respect, POS connect coursework to work-based learning and allow students to access support structures (e.g., CTE student organizations, skill-based competitions, real-world classroom projects, and work-based learning) that can facilitate their career planning (McCharen & High, 2010).

By making career exploration and planning central to CTE and school-based reform, career development efforts can become intentional, in contrast to previous programs where career development seemed to be a "byproduct" of curriculum efforts (Lewis & Kosine, 2008, p. 48). As a result, guidance counselors can serve as a "catalyst" for facilitating career pathway partnerships (Hull, 2005, p. 193). For career development to be successful, however, competing demands for guidance counselors' time need to be addressed, so that counselors have time to assist students with career planning (Association for Career and Technical Education, 2008; Hughes & Karp, 2006).

Additional research suggests that CTE influences participation in career planning and development. High school students who take CTE courses feel more certain about their career direction and goals (Lekes et al., 2007; Offenstein, Moore, & Shulock, 2009) and feel more prepared for their occupational futures than do non-CTE students (Bennett, 2007). Also, in comparison to non-CTE students, CTE students feel more prepared to transition to college, to believe that their high school POS had provided them with relevant information about college programs and courses, and feel more confident about and satisfied with their college and career choices (Lekes et al., 2007). These students were also more likely than non-CTE participants to report that they had developed a number of personal and professional skills important to workplace success, such as problem-solving, project completion, communication, time management, and critical thinking (Lekes et al., 2007). Such soft skills are often the target of school-based reform efforts such as EEDA.

Plank's (2001) research indicates that students who take CTE classes in a certain proportion to academic classes are less likely to drop out of school. Plank found that a balanced combination of CTE and academic courses may reduce the probability of dropout. For lower-ability youth, he concluded that a little more than half of the total high school coursework should be invested in CTE to maximize the likelihood of staying in school. A later article (Plank, DeLuca, & Estacion, 2005) concluded that one CTE credit for every two core academic credits was the ratio most associated with decreased likelihood of dropping out; however, both a higher and a lower ratio than 1:2 could have a negative effect on dropout. Castellano et al. (2007) also found a link between CTE and decreased dropout, concluding that the odds of a student dropping out of high school decreases as the proportion of CTE courses to core courses increases. The potential for students to strike a balance between CTE and academic courses is being tested, however, in the context of the No Child Left Behind (NCLB) legislation. Fletcher (2006) argued that so much (for both individuals and schools) is riding on performance in core curriculum areas for NCLB, that other areas, such as CTE, may be falling by the wayside, to the detriment of NCLB's long-term goals.

In the context of CTE and career pathways models, individual career plans (ICPs) and work-based learning opportunities are particularly important elements of career planning and development. Perkins IV encourages schools to develop ICPs as a part of a comprehensive approach to CTE; the American School Counselors Association has endorsed these plans as well. As a student-centered career plan, an ICP is more than a checklist; it teaches students "how to use their [plans] to guide their actions and actualize their education and career aspirations" (Kalchick & Oertle, 2011, p. 6). Individual learning plans (such as ICPs) contribute to increased student self-sufficiency, self-efficacy, and self-determination in career development and planning (Kalchick & Oertle, 2011), and increased academic achievement and school engagement (Gysbers, 2008). This comprehensive approach makes career pathways more apparent to students, involves them proactively in the career planning process, and supports student planning for both academic curriculum choices and careers (Grubb, 1996; Stern, Raby, & Dayton, 1992).

Many programs of study include explicit opportunities for students to obtain real-world work experiences through job shadowing, internships, school-based enterprises, and cooperative (co-op) educational experiences. These opportunities expose students to a variety of career options, help students to clarify career goals, increase their confidence in their occupational

identities and choices, and improve their capacity to engage in career planning that best suits their goals and aspirations (Bailey, Hughes, & Moore, 2004; Zeldin & Charner, 1996). Students also have the opportunity to develop positive relationships with adults other than their parents and teachers (Bailey et al., 2004).

Ryken (2004) identified additional benefits of work-based learning, including higher levels of student engagement in school, increased school retention and graduation rates and greater success in the labor market. Bennett's (2007) research on work-based learning revealed that CTE students benefitted more than non-CTE students from the social support offered through work-based learning. Lynch (2000) asserted that such programs should be included for students in all high school majors (e.g., performing arts or math and science) and not just CTE students.

Influence of CTE Reform on Perceptions of CTE. Traditionally, vocational education has been viewed and structured as alternative education, separate from the "regular" educational programs, for students uninterested in or unable to attend college, who are not able to sit through regular classroom lectures, and who need a curriculum that is more hands on and in some opinions "less demanding." Wonacott (2000) found that educators in general have seen CTE as a place for the non-college bound, potential dropouts, and special needs students. Similarly, research reviewed by Castellano, Stringfield, and Stone (2003) found that traditionally, vocational education has been considered as more appropriate for students at risk of not finishing high school or for those not going on to any postsecondary education (p. 242). At the beginning of the 21st century, the term "vocational education" still carries a negative connotation, where "parents, students and employers hold stereotypes about career and technical education" (Brown, 2003, p. 1).

The language and mandates of the latest iterations of Perkins legislation were designed to redefine vocational education. Included in Perkins IV is the name change to "Career and Technical Education" (CTE). CTE now emphasizes the integration of rigorous and traditional academic content into traditional CTE programs and focuses on preparation for viable and rewarding postsecondary options including advanced degrees. Effective CTE programs prepare students for further postsecondary education and careers, include more academic content in their curricula, and demonstrate more clearly how academic concepts are applied to technical or occupational settings (American Youth Policy Forum, 2009). That is, as vocational education is no longer segregated from academic education and as CTE students are now being prepared for both careers and postsecondary education (DeLuca, Plank, & Estacion, 2006; Gordon, 2008), CTE is becoming a significant part of all students' educational pathways. A study of Class of 2005 graduates found that nearly 97% of high school graduates took a CTE course during high school (Levesque et al., 2008, p. 27).

Counseling and Guidance in CTE and Programs of Study. Finding stable and profitable employment in today's global economy requires not only education and proficient work skills, but also career know-how. In a highly competitive market with few jobs available, students need an edge in finding the right career fit, one that meets both their personal needs and a demand within their community. In order for students to make effective educational and career choices, they need guidance from knowledgeable and experienced adults who can provide them

with information regarding careers, help them to engage in self-exploration, and provide opportunities for work-based experiences.

Although career and vocational guidance in K-12 is rooted in school counseling services (Pope, 2009), major limitations have been identified in the delivery of comprehensive career counseling services provided by school counselors. For example, Public Agenda surveyed 600 young adults about their experiences with school counselors. These participants rated school counselors poorly on their efforts to help them think about careers, to advise them on ways to pay for college, and to aid them with the college application process (Johnson, Rochkind, Ott, & DuPont, 2010). Focus groups conducted as part of the study found that students who weren't considered "college material" characterized their meetings with counselors as "dispiriting and unhelpful" (Johnson et al., 2010, p. 7). In addition, poor career and educational guidance has been linked with at-risk students' reluctance to pursue postsecondary education and training (Plank & Jordan, 2001).

Other studies have found that school counselors do not spend sufficient time providing career and postsecondary guidance services to students (Osborn & Baggerly, 2004; Plank & Jordan, 2001). Although school counselors report that they would like to spend more time engaging in career counseling activities (Osborn & Baggerly, 2004), unmanageable caseloads and high demands on their time have been identified as the major reasons for their inability to do so, affecting not only career counseling but other counseling services as well (McCarthy et al., 2010). A large number of school counselors report engaging in noncounseling or inappropriate duties and that these duties interfere with their ability to provide appropriate counseling services (Pérusse et al., 2004). These issues have greatly contributed to the inadequate career and educational planning now evident in many schools (Trusty, Niles, & Carney, 2005).

In response to students' need for reliable career information about post-high school opportunities, including postsecondary education (both two- and four-year), training and certificate programs, and employment options, there has been a growing call to increase the amount and specialization of career counseling and guidance services to students through school counseling programs (e.g., Association for Career and Technical Education, 2008; Carnevale & Desrochers, 2003; Feller, 2003; Huss & Banks, 2001; Rosenbaum & Person, 2003). The inclusion of guidance counseling and advisement in the Office of Vocational and Adult Education's (OVAE's) Career and Technical Programs of Study Design Framework (Office of Vocational and Adult Education, 2010) as a major component of high quality POS reflects this increased emphasis on career counseling and guidance.

In order to provide students with comprehensive counseling services, efforts have been made to develop school counseling programs that directly affect student outcomes (Dahir, Burnham, & Stone, 2009). For example, the American School Counselor Association (ASCA) National Model (American School Counselor Association, 2005) has placed a greater emphasis on the role of school counselors in providing comprehensive career guidance. The ASCA National Model endorses the delivery of career development services through multiple avenues including the school guidance curriculum, individual student planning, responsive services, and system support. In addition, the model encourages school counselors to assist students in several areas, including developing career awareness, identifying career goals, developing employment

readiness skills, acquiring career information, acquiring knowledge to achieve career goals, and applying skills to achieve career goals.

The OVAE's *Career and Technical Programs of Study Design Framework* (Office of Vocational and Adult Education, 2010) is another means by which school counselors provide comprehensive career guidance to students. Based on the National Career Development (NCD) Guidelines (National Career Development Association, n.d.), the framework promotes the role of counseling professionals in such areas as aiding students in career decision-making, providing students with tools and information about postsecondary and career options, and providing students with career assessment data. These goals align strongly with those of the ASCA National Model, which is also based on NCD Guidelines. Further, in schools with a POS framework, there is a strong alignment between school goals and counseling program goals, such as offering career majors that provide a framework for organizing courses, faculty, and work-based learning activities around specific career clusters and that provide a pathway to postsecondary education and training (Stone & Aliaga, 2005). Counselors in these settings provide students with focused comprehensive career counseling services so that students are better able to make career-based decisions that lead to a seamless transition from high school to postsecondary education, training, or work.

Finally, evidence shows that providing students with comprehensive career guidance services helps them in career planning and leads to better career outcomes (e.g., Lapan, Gysbers, & Sun, 1997; Utah State Office of Education, 2000). For example, Lapan, Aoyagi, and Kayson (2007) found that students who received career development services reported greater career awareness and higher levels of career exploration and planning than those who did not receive such services. The study also described several long-term effects of career counseling, including higher levels of success in transitioning into life roles, a better sense of direction in careers, and higher levels of overall life satisfaction. In addition, Nelson, Gardner, and Fox (1998), using a measurement scale based on the state of Utah's Comprehensive Guidance Program, found that students in highly implemented guidance programs felt better prepared for employment and in furthering their education.

Relevance of the Study to the Field of CTE. CTE reform and implementation of career-pathways models are taking place across the nation, particularly with the passage of Perkins IV. The few studies conducted on the effectiveness of Perkins-related programs and reforms, however, have presented mostly mixed results on their impact on student dropout (Bergeson, 2006; Plank et al., 2005; Stone, 2004), academic performance (Bergeson, 2006; Castellano et al., 2007), and postsecondary transition. Some still find evidence that POS and career-focused education show promise in improving student outcomes (Kemple & Snipes, 2000; Lewis & Kosine, 2008; Stone, Alfeld, & Pearson, 2008).

Attempts to implement education reform similar to some pieces of EEDA have varied widely. Castellano, Harrison, and Schneider (2008) found that across states, CTE standards were often being implemented in a patchwork fashion. This piecemeal approach to reform may help explain the mixed results described in studies on CTE reform and implementation. Castellano et al. (2008) investigated state secondary technical standards for CTE and found a wide and varied distribution of legislation across secondary schools in the United States. This "steady stream"

(Castellano et al., 2008, p. 1) of standards-based legislation has apparently developed into a river since the 2006 enactment of Perkins IV, which required CTE POS to "include coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated, non-duplicative progression of courses that align secondary education with postsecondary education to adequately prepare students to succeed in postsecondary education" (Perkins IV Act of 2006, § 122(c)(A)(ii)). However, in their research on state policies, Castellano et al. (2008) found that, although educational administrators continue defining these CTE content standards, most states' CTE reform plans were more a patchwork of bits and pieces of programs, in contrast to South Carolina's comprehensive legislation, which attempts to address all of the basic requirements found in Perkins IV in addition to many of the support structures.

EEDA is a very ambitious piece of legislation and is unique among otherwise similar state legislation for its comprehensiveness. A study of this legislation is significant in that it can provide an in-depth look at whether a clear statewide mandate to provide coherent POS-based educational opportunities is more effective in producing desired student outcomes than the patchwork POS approaches adopted by other states. The policies mandated by the EEDA legislation are so significantly different from the patchwork approach described by Castellano et al. (2008) that, should it prove successful for increasing the number of career-focused POS and substantially increasing students' successes in high school and beyond, this legislation may serve as a model for states as they grapple with the vital issues of how to improve secondary students' success rates. Analysis of how the policy was implemented in a variety of situations and the whether POS developed in those situations could prove valuable to educators nationwide when they consider development of this type of policy and what best supports the development of POS in various local economic and school organizational settings.

B. South Carolina Policy Framework

South Carolina has a history of low student achievement, high dropout rates, and a modest number of adults holding university, community college, and technical degrees and certifications. In 2005, with the strong backing of the state's business community, the state's legislature passed a school reform package, the Education and Economic Development Act (EEDA), that is intended to increase student achievement and graduation rates and improve college and career readiness. The EEDA was designed to achieve these results through a focus on high academic standards, career awareness and exploration at all school levels, and the creation of locally relevant career pathways and programs of study in high schools.

The South Carolina EEDA legislation was created in response to the need to address the changing demands of the workplace. The legislation was designed to "set high standards for all students and include courses that prepare all for postsecondary education at some level, as well as provide preparation for satisfying professions" (South Carolina Technical College System, 2006a, p. 3). A primary goal was to lay a broad foundation in career planning across school levels through a variety of supporting initiatives at all school levels, from kindergarten through postsecondary education. EEDA legislation was designed to be implemented in stages across several years starting in 2006-2007 and ending with full implementation in 2010-2011 (South Carolina Technical College System, 2006a).

Based on guidelines provided to school personnel,[2] the study team identified the most salient initiatives for high schools (our focus in this study) and grouped them into six key facets to construct our conceptualization of how EEDA would be operationalized in high schools. The six identified facets are:

(1) Identification of and assistance for high-risk students;
(2) Integration of rigorous academic and career-focused curricula, organized into career clusters and majors;
(3) Increased counselor role in education and career planning;
(4) Implementation of evidence-based high school reform;
(5) Facilitation of local business-education partnerships and resource dissemination; and
(6) Articulation between K-12 and higher education and industry/employment.

The six facets and what is included in each facet are described in more detail in the report section describing the school contextual variables PSLOI, SLOI, and LOI.

C. Comparisons of EEDA and Perkins IV

The six facets, along with additional elements of EEDA, help support and sustain the implementation of programs of study and closely match many of the basic requirements of the Perkins IV legislation. Table III.C contains a listing of the four core requirements of Perkins IV POS in the left-hand column. To the right of each of the Perkins IV core requirements is a listing of correspondingly similar requirements from the EEDA law.

Predating Perkins IV by one year, EEDA also focuses on the integration of academic and career and technical content and emphasizes academic rigor across all coursework. Both EEDA and Perkins emphasize the development of coherent programs of study for students to help them plan for their future careers and to assist with seamless transitions between secondary and postsecondary education. To assist with this transition, both require an alignment between secondary and postsecondary elements.

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[2]South Carolina Technical College System series, *How EEDA Works for South Carolina*, including: *An Educator's Guide to Develop and Implement the EEDA Curriculum Framework and Individual Graduation Plan* (2006a) and *An Educator's Orientation Guide to the Education and Economic Development Act* (2006b); and South Carolina Department of Education, *South Carolina Education and Economic Development Act Guidelines* (2006a).

Table III.C

Perkins IV Program of Study Core Elements and EEDA Career Major Components

Perkins IV - CTE Programs of Study[a]	EEDA - SC Personal Pathways Career Major[b]
• Incorporates secondary education and postsecondary elements	• Incorporates career education in grades K-12 with emphasis on seamless transition after graduation to career-related entry-level employment, further training, or postsecondary study

• Includes coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated non-duplicative progression of courses that align secondary education to adequately prepare students to succeed in postsecondary education	• Includes curricula that meets state content standards in a coordinated, non-duplicative progression of courses that align with postsecondary education and work
	• Offers curricula that not only provide academic rigor but real-world problem-solving to adequately support successful completion of IGPs (Rigor and Relevance)
	• Requires that each student's Individual Graduation Plan (IGP) include academic, career and postgraduation transition planning
	• Emphasizes career plans that:
	  o are realistic and achievable
	  o reflect a student's skills, abilities, and interests
	• Provides opportunities to students to participate in out-of-classroom experiences

• May include the opportunity for secondary education students to participate in dual or concurrent enrollment programs or other ways to acquire postsecondary education credits	• Offers opportunities for participation in dual or concurrent enrollment for postsecondary education credits - Extended Learning Opportunities
• Leads to an industry-recognized credential or certificate at the postsecondary level, or an associate's degree or baccalaureate degree	• Results in a seamless transition after graduation to career-related entry-level employment, further training, or postsecondary study

[a]Adapted from *Draft Guidelines for Expert Panel Review of POS* (AED working document), Academy for Educational Development, 2009. Washington, DC: Author. [b]Adapted from the South Carolina Technical College System series, *How EEDA Works for South Carolina*, including: *An Educator's Guide to Develop and Implement the EEDA Curriculum Framework and Individual Graduation Plan* (2006a) and *An Educator's Orientation Guide to the Education and Economic Development Act* (2006b).

Programs of study under EEDA are referred to as "career majors." While career majors and the Perkins IV-defined POS share several characteristics, they also differ in several ways. In the South Carolina policy, career majors are considered areas of academic focus and include "a sequence of four elective courses leading to a specified career goal" (South Carolina Department of Education, 2006, p.3). Elective courses for career majors can include both CTE and academic courses. In contrast, POS, as defined in the Perkins IV legislation, include a sequence of three related CTE courses. Perkins IV places greater emphasis on a structured sequence of courses and requires a direct link to a postsecondary level credential. EEDA does not emphasize the direct link to a credential, only that the career major courses must help prepare students for success in postsecondary education or a particular field.

As implied above, EEDA is a much broader, more all-encompassing reform of high school curricula than Perkins IV, because it goes beyond traditional CTE courses and programs. The policy differs from Perkins IV in that it (1) attempts to implement a system spanning all schooling, from kindergarten through college, postsecondary career preparation and entry into and advancement in the labor force; (2) includes CTE for all students, not just those taking traditional CTE courses; (3) focuses on dropout prevention; (4) attempts whole school reform, where career pathways can potentially shape the entire high school curriculum, not just CTE, by enhancing contextualized learning; (5) increases the role of school guidance counselors in career planning; (6) increases business community involvement in development and implementation; and (7) emphasizes the role of parents in educational planning.

D. Special Emphasis on Career and Counseling Services

The third study identified facet of EEDA, described above, is a key component and centers on the role of guidance in policy implementation. EEDA includes a comprehensive and sequential school guidance and counseling program designed to support career-focused education, including career awareness at the elementary school level, career exploration at the middle school level, and career preparation at the high school level (South Carolina Technical College System, 2006a). Guidance personnel are required to limit their school duties to guidance and counseling and should no longer perform many administrative tasks, such as administering standardized tests or developing the master class schedule.

Guidance staff must help all middle and high school students to select majors, develop and revise their IGPs, and arrange out-of-classroom learning experiences. Each high school is required to implement a career guidance program model that includes annual career guidance counseling for each student to help further define career goals; review and update an individualized IGP; and, during tenth grade, declare a major (i.e., an academic focus) within a cluster of study. Both middle and high schools are required to reduce their student-to-guidance personnel ratio to 300-to-1 or lower (South Carolina Technical College System, 2006b).

To help foster a connection between what students are learning in school and their future career plans, all middle and high schools are required to have either a counselor with a special career development certification or to gain access to services of a career specialist with that certification (South Carolina Technical College System, 2006b). These specialists are to deliver career awareness, development, and exploration activities to students and teachers, and to assist

students in setting up work-based learning (WBL) experiences (South Carolina Department of Education, 2006).

The development of IGPs is a key component of the EEDA. IGPs are designed to be organizing tools that show links between a student's high school coursework and plans for the future and "list courses required for graduation, electives that focus on students' individual interests, their postgraduation plans, and their professional goals" (South Carolina Technical College System, 2006b, p. 3). Every eighth grader is required to develop an IGP during a conference with a counselor and parents or guardians (South Carolina Technical College System, 2006a). As part of IGP development, each student selects a cluster of study to explore, and course schedules are then built around the choice of cluster.

E. OVAE's Career and Technical Programs of Study Design Framework and EEDA

To help states and local recipients meet the requirements of Perkins IV, the Office of Vocational and Adult Education (OVAE) worked with a number of national associations, organizations, and states to develop a framework of supporting components and subcomponents that form a "career and technical programs of study design framework" (Office of Vocational and Adult Education, 2010, see Appendix B). This framework includes "a system of 10 components that, taken together, support the development and implementation of effective programs of study. Although all 10 components are important, they are neither independent nor of equal priority: State and local program developers must identify the most pressing components for state or local adoption, taking into consideration their relative need within their educational context" (Office of Vocational and Adult Education, 2010, p.1).

The ten components that comprise the framework include: Legislation and Policies; Partnerships; Professional Development; Accountability and Evaluation Systems; College and Career Readiness Standards; Course Sequences; Credit Transfer Agreements; Guidance Counseling and Academic Advisement; Teaching and Learning Strategies; and Technical Skills Assessments. The elements of the EEDA include nearly all of these supporting components, and are particularly strong in the areas of legislation and policies, credit transfer agreements, and guidance counseling and academic advisement.

F. Study Research Questions

This study tests the hypothesis that not only does a statewide mandate like the EEDA increase the number of POS in schools, but also that the number of POS, in combination with various political, economic, and social characteristics, influences selected outcomes for South Carolina's secondary students and the schools they attend. This hypothesis was tested through the following research questions:

1. To what extent does South Carolina's Education and Economic Development Act facilitate the development of Programs of Study (POS)?
2. What impact does the level of local economic resources have on the implementation of EEDA and the development and implementation of POS?

3. What impact does the implementation of EEDA have on:
   a. student high school outcomes, and
   b. student postgraduation preparation and plans?
4. What impact do POS as defined in Perkins IV have on:
   a. student high school outcomes, and
   b. student postgraduation preparation and plans?

IV. Study Design

Because all public high schools in South Carolina are operating under the same law, it was not feasible to randomly assign schools to experimental and control groups. Instead, this study used a quasi-experimental design (Shadish, Cook, & Campbell, 2002), with a mixed-methods, triangulated approach (Tashakkori & Teddlie, 2002) to follow two student cohorts (one with little to no exposure to the policy and one with more exposure to the policy) from a sample of eight public high schools. Codes, and later alias school names, were created for any references to sample school names, to ensure anonymity for our schools and confidentiality for interviewees and survey respondents.

A. School and Student Samples

Selection of Sample Schools. To best address our research questions, a four-stage purposive, mixed-methods sampling strategy was used (Teddlie & Yu, 2007) to carefully draw a sample from several regions of the state, with controls introduced for the following three factors critical to our research questions: (1) economic conditions and industries; (2) levels of school and community resources; and (3) initial levels of EEDA policy implementation. As outlined in Table IV.A, schools were chosen to vary not only on these factors but also on the size of the student population, school performance outcomes, ethnic diversity, and locale (urban, suburban, or rural). For further details on the sampling process used, see Sharp et al. (2012).

Selection of Student Samples at Each Study Site. Two student cohorts from the eight selected high schools were followed because of their varying levels of exposure to the state policy. The Class of 2009 received very little to no exposure to the policy. The Class of 2011 was exposed to the policy from eighth grade.

Table IV.A

Selected Demographics of Sample Schools

School	School Size[a,b]	Urbanicity[c]	Percent Minority Enrollment[a]	School Poverty Index[a,d]	On-Time Graduation Rate[a,e]	Percent Passing Two Subtests of HSAP[a,f]	2008 Report Card NCLB Rating[g]
Azalea	Small	Town	10	45	85	80	Good
Laurel	Large	Rural	55	45	75	85	Excellent
Redwood	Medium	Suburb	25	55	80	85	Good
Poplar	Large	Suburb	60	40	80	80	Excellent
Lower Poverty Schools			35	45	80	80	
Apple	Small	Rural	85	85	85	75	Average
Elm	Large	Town	60	70	75	70	Good
Iris	Medium	Rural	95	90	70	60	At-Risk
Orchid	Large	Rural	90	70	65	55	Below Average
Higher Poverty Schools			80	80	75	65	

Note. All figures are rounded to the nearest five.

[a]Data from the South Carolina Department of Education, Office of Data Management & Analysis (personal communication, April 4, 2008) was averaged over the years 2005, 2006, and 2007 (unless the school was new and didn't have three years of data, in which case the most recent one or two years of data were used). [b]School size is student count, averaged over three years (2005, 2006, 2007). ≤ 600 = Small; 601-999 = Medium; ≥ 1000 = Large. [c]NCES school locale codes from Institute of Educational Sciences: National Center for Educational Statistics (NCES), *Common Core of Data (CCD) – Public Elementary/Secondary School Universe Survey, 2006-07, v.1c.* Only the broadest locale codes are used here. Available at http://nces.ed.gov/ccd. [d]School poverty index is a school specific variable indicating the percent of students who qualify for Medicaid or who are eligible for free or reduced price lunches. It is found on the yearly school report cards. [e]The graduation rate in South Carolina (reported in state school report cards) is a four-year cohort graduation rate using locally collected data. It divides four-year graduates earning regular diplomas by first-time ninth graders four years earlier, adjusted for transfers. The cohort is based on only those students high schools are able to track. The definition is evolving over time to allow for better reporting. Definition found at http://www.afqe.org/schoolsystem (Alliance for Quality Education, 2008). [f]The South Carolina High School Assessment Program (HSAP) is a state set of tests administered to South Carolina high school students to meet the requirements of state and federal laws. HSAP assesses South Carolina academic standards in English language arts (ELA) and mathematics that students have had the opportunity to learn by the end of the tenth grade. The ELA and mathematics tests each have four achievement-level scores: Levels 1, 2, 3, and 4. A student must score Level 2 or higher on each test in order to meet the graduation requirement. The data presented is the HSAP passage rate for second year students (passing both the ELA and math subtests in their first try). Students first take the test as second-year high school students and have multiple opportunities to pass both tests. Definition found at http://www.afqe.org/schoolsystem, Alliance for Quality Education, 2008. [g]These are No Child Left Behind (NCLB) absolute ratings, reported for each school on school report cards. Each school and district in South Carolina receives an Absolute rating based on student test scores from one of five categories – Excellent, Good, Average, Below Average or Unsatisfactory. The ratings are based on mathematical formulas set by the South Carolina Education Oversight Committee (EOC), which was created by the General Assembly to guide the implementation of the Education Accountability Act (EAA). Definition found at the state Department of Education website (South Carolina Department of Education, 2002).

B. Data Collection and Analysis

Given the complexity of the implementation of the school reform and its intended impact at both the school and student levels, it was imperative to collect data from a variety of sources using a mixed-methods approach, integrating qualitative and quantitative data sources (Luo & Dappen, 2005; Miles & Huberman, 1994; Tashakkori & Teddlie, 2002). This allowed the research team to better uncover the nuances of policy implementation and helped to create a broader understanding of EEDA's impact on schools, teachers, and students, and on the creation of POS.

Quantitative and qualitative data were collected at the school and individual student levels and were analyzed through a variety of methods. Quantitative data included student outcome data, such as grades and attendance, from two student cohorts and responses from in-school surveys of students. Qualitative data included course catalogs and career-related materials and perspectives gleaned from interviews and focus groups conducted with school principals, counselors, teachers, and students, as well as community college administrators.

For further information on all aspects of study design, measures, data collection methods, and variables, please refer to the study's Year 2 technical report, *Programs of Study as a State Policy Mandate: A Longitudinal Study of the South Carolina Personal Pathways to Success Initiative. Year 2 Technical Report (2008-09)* (Smink et al., 2010). A list of major papers and presentations on study findings is provided in Appendix C. A timeline of study data collection as it coincides with EEDA implementation stages is included in Appendix D.

Initial On-Site Visits and Interviews with School Personnel. In the second year of the study, site visits were made to potential sample high schools to aid in sample selection. The primary goal of these initial visits, conducted in midyear 2008-2009, was to understand the level of ongoing EEDA activities at the school during the 2008-09 school year and to determine if each school would be suitable for inclusion in the study sample. During these visits, information was collected on 2008-2009 EEDA policy activities to add to the information collected through archival data about the current level of state policy implementation at schools. Interviews and focus groups were conducted with a variety of school personnel to verify and supplement data already collected. Interview protocols were developed to address each of the six policy facets identified as being most relevant to high schools and this study, and to assess qualities of the school that would make it appropriate for inclusion in the final sample. The resulting interview protocols are included in Appendix E.

Interviews were conducted with all school principals and guidance directors, and focus groups were conducted with at least two assistant principals at each of the targeted schools. These personnel were asked to describe how their schools were implementing EEDA and its components, the level of progress of implementation, including the stage of development of the high school's majors and career pathways, and the operational details of the IGP development process. Guidance directors were also asked to describe their specific roles in implementing the policy, the ways in which they work with students, teachers, and parents on career development, and the amount of time they are able to devote to these activities.

Two focus groups with diverse groups of ninth and tenth grade teachers were conducted at seven of the schools, and one focus group at the eighth school, with three to six teachers in each group. Groups included teachers in different subject and area levels, including math, English, social studies, science, and career and technical education, and honors/AP-, college prep-, basic- and special education-level courses. Teachers were selected from course schedule lists in consultation with our contact person at each school, based on teacher planning periods and availability. Teachers were asked to discuss how their school was implementing the various components of the EEDA, including career-focused activities and curricula, the progress made in implementation, and how any changes had affected them and their teaching.

In addition to interviewing guidance directors, focus groups were conducted with other guidance personnel at schools, including school guidance counselors and career specialists. Similar to guidance directors, these personnel were asked to describe their specific roles in implementing the policy, the ways in which they have been working with students, teachers, and parents on career development, and the amount of time they are able to devote to these activities.

Interviews were conducted using a structured format from a protocol developed for each personnel group. Notes were taken by several members of the interview team, typed up, and combined for analysis purposes into a single set of notes for each group of personnel at each school. Interview questions were grouped into the six policy facets outlined earlier and relevant responses pulled from the notes for each group of personnel and put into a single matrix for each school, to facilitate within-site analysis across personnel groups. A search for key words in the text and an open coding process were used to note the appearance of concepts or topics relevant to the study in each facet as they appeared in responses for each school. Cross-site matrices on each facet and key topics were developed to facilitate analysis across school sites to identify major variables and themes across schools (Miles & Huberman, 1994).

Data Collection to Count Perkins IV Programs of Study (POS). Since our research interests included measuring the impact of EEDA on the development of Perkins IV-defined POS (Perkins IV POS), a count of programs of study at the sample schools meeting the Perkins criteria was essential. Our primary indicator of the presence of Perkins IV POS was originally intended to be based on the four core elements outlined in the Perkins IV legislation and supplemented by descriptions of supporting implementation materials provided by OVAE (Perkins IV law described earlier). However, once we began to explore the law and guidance materials for Perkins IV POS, it became clear that the four core elements were not defined in enough detail to be easily translated into direct measures of each element. In addition, in a later Design Framework, OVAE added ten supporting components to their conception of Perkins IV POS. We realized that operationalizing the Perkins IV core elements and identifying majors and/or programs that met these was going to be more problematic than expected.

We also found that, due to the differing contexts and goals of the studies, each of the two other NRCCTE POS studies had defined Perkins IV POS in different ways to best suit their research contexts and goals. Given that by design, our study was to take yet another approach to analyzing programs of study and their development, neither of the other two studies' approaches exactly met our needs, although we found that some of the criteria used for the Rigorous Tests of POS Study were useful (M. Castellano, personal communication, 10/4/2010). One challenge

was that the state policy we were studying encompasses more than just CTE courses and programs, unlike the scope of programs studied in the other two studies. Thus we needed to develop measures that could be applied across the entire high school curriculum or at least a wider range of career pathways. Due to these issues, our study team developed our own measures for these elements that would apply to the situations in our sample schools.

We faced challenges in developing measurements using the data collected from these varied sources. Some of the challenges are described in further detail in Section VII, Challenges of Defining and Counting Perkins IV-defined Programs of Study, of this report.

Initial data collection and analysis of potential POS. We began the count of Perkins IV POS at each sample school by developing and sending to each school a simple measurement tool to allow them to report a status based on each of the four Perkins IV core elements for each of their career majors/programs. The tool would also guide our fall 2009 follow-up site visits to gather further detail from school personnel on their initial responses. We collected course catalogs and registration materials as well from schools during visits to review for further information. After examining these data sources, we then assessed next steps based on our initial findings.

Development of the Clusters & Majors Checklist Tool. The Clusters & Majors Checklist tool was developed in the fall of 2009 to begin to assess the number of POS at each sample school that met a list of minimal criteria developed for each of the Perkins IV POS core elements:

1. Incorporate and align secondary and postsecondary education elements,
2. Include academic and CTE content in a coordinated, non-duplicative progression of courses,
3. Offer the opportunity, where appropriate, for secondary students to acquire postsecondary credits, and
4. Lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree (U.S. Department of Education, 2010).

The criteria used on the Clusters & Majors Checklist were developed in collaboration with the other two POS studies and other NRCCTE and OVAE staff to address the four Perkins IV core elements. However, the tool was customized for each school based on programs offered at the school. Structured questions were developed around these criteria to help guide school and career center personnel through completion of the checklist for each of their career majors (see questions in Appendix F). Response categories for questions were "Yes," "No," or "N/A." Several questions asked school personnel to give the names of organizations and contact people for any articulation agreements. An example of this Clusters & Majors Checklist tool is shown in Table F, also in Appendix F.

First administration of the Clusters and Majors Checklist. Each school received an individualized Clusters & Majors Checklist in October 2009, based on the career majors and clusters appearing in their school registration materials from the prior school year, 2008-2009. Schools were asked to complete the checklist with the personnel at their school or district most

familiar with each of the school's and/or career center's career majors or programs, using the structured questions as a guide, and then to email or fax the checklist back to the study team.

Fall 2009 POS site visits. One-and-a-half-day site visits were conducted at all eight sample schools in November and December of 2009 to follow up on information schools provided on the Clusters & Majors Checklist and to collect more in-depth information on potential POS from each school site, career center partner (where relevant), and a primary technical or community college partner. Topic areas and questions used during these site visits are included in Appendix F. Questions addressed the level of alignment of the school's career majors with industry standards and/or with postsecondary programs, whether there were articulation agreements in place and with what institutions, and the types of credentials and/or degrees to which each of the majors could lead. The team then identified the career majors or programs with the strongest potential to be Perkins IV POS and met with faculty in those majors/programs to collect more information about postsecondary alignment, how closely the high school faculty worked with postsecondary staff at local institutions, articulation agreements in place, availability of dual credit courses, how prepared students were for their courses, the degree of academic and technical information in their courses, and whether their program or courses had changed since the beginning of implementation of EEDA.

To collect this information, individual and focus group interviews were conducted by study team members using a semi-structured format with guidance personnel, curriculum coordinators, CTE coordinators and faculty, career center staff (where relevant), and college administrators and faculty. Interviews and focus groups were audiotaped and tapes were used to augment notes taken by study team members. Study team members' notes were typed up and merged into single documents for each school and augmented or revised based on review of the interview audiotapes. Based on interview response data, updates and corrections were made to each school's Clusters & Majors Checklist.

Initial analysis of trends in majors and programs. For initial within-site analysis of trends in implementation of majors/programs in sample schools, relevant responses were pulled from the interview and focus group notes and Clusters & Majors Checklists and put into a single matrix for each school. A search for key words in the text and an open coding process were used to note the appearance of concepts or topics relevant to each of the four Perkins IV POS core elements and the ten supporting components for each school. Cross-site matrices on elements and supporting components were developed to facilitate analysis across school sites to identify major variables and themes across schools (Miles & Huberman, 1994).

Second administration of the Clusters & Majors Checklist. In order to assess any changes over time in the majors/programs offered at each school by the end of the study period, each school received a revised individualized Clusters & Majors Checklist in Spring 2012, based on the career majors/programs and clusters appearing in their school registration materials from the prior school year, 2010-2011. One change was made to the initial checklist, based on responses to the first administration of the checklist. The revision was in the first section about the alignment between the high school major/program and two- and four-year postsecondary education programs. In the fourth major data column in that section, instead of asking for a contact person's name for follow-up, we asked schools whether the major/program included any

dual credit/enrollment or AP/TAP courses. Schools were again asked to complete the checklist with the personnel at their school or district most familiar with each of the school's career majors, using the structured questions as a guide. Schools were then to email or fax the checklist back to the study team.

After the initial attempt to measure elements and count Perkins IV POS described above, it became apparent that few, if any, schools would have programs of study meeting the four core Perkins IV elements as we operationalized them, even using the minimal criteria developed for that initial count. We decided to more fully operationalize the four core elements and apply these measures to career majors/programs at sample schools but also to develop other means of exploring and defining Perkins IV-like programs of study in the context of our study. We looked for alternate means to discern patterns in pathway development that may have been occurring through the implementation of the state policy during the three-year period when we were primarily involved with the schools and our primary "treatment" cohort, the Class of 2011, was being exposed to the policy. A more detailed discussion of the challenges we faced in operationalizing the Perkins IV core elements and the reasons we tried alternative approaches to programs of study is included in Section VII. Challenges of Defining and Counting Perkins IV-defined Programs of Study.

We developed several alternative program of study variables based on different types of available data sources and using differing approaches to allow us to explore potential Perkins IV-like programs of study from different angles. Some of these variables were better suited for use in quantitative and qualitative analysis than others. The variables developed, and how they were used in analysis, are described in the Constructed Contextual and Analysis Variables section of the report.

Surveys and Follow-up Interviews with School Guidance Personnel. During the site visits in the fall of 2009, we also explored in more depth the influence of EEDA on guidance counseling, the roles of counselors in students' career planning and IGP development, the development of POS at their schools, and whether and how their duties may have changed since the beginning of implementation of EEDA at their school. To explore these areas with guidance personnel at sample schools, we used two approaches: (1) surveys of school guidance counselors and career specialists, and (2) follow-up interviews with counselors at sample schools. In the spring of 2012, follow-up surveys with guidance personnel were conducted to explore whether guidance personnel responses changed since fall of 2009.

School guidance personnel surveys in 2009. Two surveys were developed, one for school guidance counselors and one for career specialists. Their purpose was to identify changes in the duties of guidance personnel since the implementation of EEDA. Each survey included a list of possible school counseling duties, adapted from the School Counselor Activity Rating Scale (Scarborough, 2005). The duties included those related to curriculum development and counseling and classroom guidance for students in the areas of career, academic, and social development; consulting with other school staff or parents; coordination activities related to special events and professional development; and "inappropriate" duties (based on EEDA guidelines), such as administering standardized tests and developing the master class schedule. The two surveys are included in Appendix G.

The surveys were distributed to guidance personnel during the POS site visits to sample schools in November and December 2009. Responses were either collected during the visit or returned by mail to the research team. Twenty-five of the 29 counselors from our eight sample high schools responded to the survey, for an 86% response rate. Five of the eight sample schools reported employing one or more career specialists. Seven of the eight career specialists employed at four of these schools responded to the survey. The career specialist from the fifth school did not respond.

Responses to the surveys were then analyzed. The list of duties included on the surveys for school counselors and for career specialists were almost identical, but response categories differed. School counselors were asked to select the response that best represented how their participation in the listed duties had or had not changed since the beginning of implementation of the EEDA at their school. The scale ranged from "5" (duties have increased greatly) to "1" (duties have decreased greatly). If a duty did not apply to their position, counselors had the option of selecting "0," "not applicable, this has never been a part of my duties." Since career specialist positions were created for EEDA, it didn't make sense to ask career specialists for changes since EEDA implementation. Instead, the survey asked them to report "Yes" or "No" as to whether a duty listed was assigned as part of their duties. Means were calculated on school counselor responses and compared across duties across and between schools. Frequencies were computed for the career specialist responses and comparisons made across duties across and between schools.

School counselor follow-up phone interviews. An interview protocol was developed for follow-up guidance interviews in spring 2010 using data from interviews and surveys previously collected from guidance personnel during both the initial visits (spring 2009 and fall 2009) to the eight school sites. The protocol we developed is included in Appendix H. These data were analyzed for themes using a matrix display method. The data were coded and categorized into a matrix and then cross-case analyzed for major themes (Miles & Huberman, 1994). The cross-case analysis and results from survey data revealed four major content areas for interview questions: (a) changes in their job duties and roles since EEDA implementation; (b) changes in their school's counseling program services for students since EEDA implementation; (c) degree of alignment between services provided for EEDA and the American School Counselor Association (ASCA) National Model; and (d) the type of training needed by school counselors for advising students about career pathways, majors, and postsecondary options.

A semi-structured interview format was developed in these areas and phone interviews conducted with counselors at seven of the eight sample schools during the spring of 2010. We were unable to arrange an interview with any counselors at the eighth sample school during the interview timeframe. One to three counselors at each of the seven schools agreed to be interviewed, for a total of 12 completed interviews. All were certified school guidance counselors who had worked at their schools for 2 to 17 years, and all but one carried student caseloads.

Each interview was tape-recorded, transcribed, coded, and analyzed using NVivo QSR 8 qualitative research software. A constant comparative approach was employed to code the resulting data into emergent themes (Morgan, 1993). Data were reviewed after initial coding to

ensure that all relevant themes were identified. A secondary coder was used to assess inter-rater reliability. Raters identified similar themes with minor differences. These differences were discussed and resolved through a reevaluation of the data and a process of consensus building.

In-depth phone interviews were again conducted with school counselors in spring 2012. The spring 2012 protocol is also included in Appendix H. Questions and methodology were similar to those used for the spring 2010 phone interviews. Interviews were conducted with counselors at six of the eight sample schools in 2012. One to three counselors at each school agreed to be interviewed, for a total of 11 counselors interviewed across the six schools and one career development facilitator (CDF). A semi-structured interview format was again used to ask counselors about their perceptions of the effects of EEDA on (a) guidance services provided to students, (b) on counselor duties and roles, (c) on the school guidance program, and (d) interaction with students and parents.

School guidance personnel surveys in 2012. Two surveys, one for school guidance counselors and one for career specialists, that were developed and administered in 2009 were used again in the spring of 2012. The spring 2012 surveys were administered online through Survey Monkey, rather than on-site or through paper copies as had been done in 2009. A few questions were reordered from the original version; however, the language in the questions was not altered. Refer to Appendix G for copies of the original paper versions of the school counselor and career specialist surveys.

The school contacts received an email and web link for the surveys and were asked to invite the school counselors and career specialists to complete the online surveys over a two-week period. If a school counselor served a dual role as a career specialist, that counselor was asked to only complete the school counselor survey. The school contacts received follow-up emails after one week and were reminded to have the related school staff complete the surveys. Follow up continued until a 100% response rate was achieved.

Twenty-nine counselors from our eight sample high schools responded to the survey, for a 100% response rate. Five schools reported employing school counselors who served a dual role as a career specialist for a total of 11 counselors. Three schools employed career specialists who did not serve a dual role as a school counselor for a total of five career specialists. All of the career specialists who did not serve a dual role completed the survey (100% response rate).

The responses to the 2009 and 2012 surveys were analyzed. The mean changes between the school counselors' responses in 2009 and 2012 were compared across duties that were designated as required or inappropriate according to EEDA guidelines. The scale that the school counselors used remained the same for the surveys in 2009 and 2012 with a "5" representing duties have increased greatly and a "1" representing duties have decreased greatly. The "0" responses (not applicable, this has never been part of my duties) were removed from the mean calculations and reported separately. Frequencies were computed for the career specialist responses in 2012 and compared to frequency responses from 2009 across the required and inappropriate duties.

Student Engagement/POS Experiences Survey. To obtain a student perspective on career development and planning activities and policy and POS implementation while in high

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school, a student survey was developed in collaboration with the other two NRCCTE longitudinal POS studies. Questions for the *Student Engagement/POS Experiences Survey* were developed from an extensive literature review on CTE, career development and planning, and school engagement and also from previous nationally administered surveys. The survey was first piloted with a sample of students from two local high schools; the results were used to edit questions for clarity, to remove redundant questions, and to shorten the survey. The final survey consisted of approximately 70 questions on a range of topics, including questions regarding career clusters, career planning and development, the development of IGPs, majors, coursework, school engagement, and demographic characteristics. The survey and relative frequencies of responses for each question are included in Appendix I.

The *Student Engagement/POS Experiences Survey* was administered to two cohorts throughout the study. One of the cohorts, the Class of 2009, had virtually no exposure to EEDA and thus were used as a comparison group. It was administered to this class in late spring of their senior year. The second cohort, the Class of 2011 had exposure to the EEDA policy since the eighth grade. The survey was administered twice to this class, first after the end of their sophomore year and in the spring of their senior year. Procedures for administration of surveys to each of the cohorts were similar and are described below.

The *Student Engagement/POS Experiences Survey* was administered in late spring 2009 to the Class of 2009 seniors. Survey packets were provided to identified teachers and staff and included: a cover letter that described the goals of the study and thanked teachers and staff members for participating; parent and student information letters; a survey script; and the actual surveys. Teachers and staff members were asked to pass out the information letters to students in identified courses, along with the letter students were to take home for their parents, at least a few days prior to survey administration. School personnel were allowed some flexibility in timing the administration of the survey in order to receive as many responses from members of the targeted student cohort as possible. However, this did result in some variation in the way the surveys were administered. Some were administered during core classes (e.g., an English course taken by most seniors); some were administered during guidance/advisory meetings with small groups of seniors over a couple of weeks; one school administered its surveys prior to an assembly of all seniors who were assembled to go over graduation procedures. Since we had not finalized selection of sample schools until late spring 2009, and still needed to survey the Class of 2009 before they graduated, time was a factor in the decision to allow schools to administer the surveys in the most efficient way to allow as many seniors as possible to complete the survey. The completed surveys were either mailed back to the project team or picked up by a team member from the school.

Across the eight sample schools, a total of 1,039 surveys were returned from the May 2009 administration of the survey to the Class of 2009. Thirteen surveys were removed from subsequent analyses due to patterns observed in the responses, reducing the total number of analyzed surveys to 1,026 for the Class of 2009 seniors. These responses represent 56% of the Class of 2009 senior population from these eight sample schools. The response rates for the individual schools for the Class of 2009 as seniors ranged between 24% and 107% (see note d below Table IV.B.1).

Members of the Class of 2011. A total of 1,458 sophomores of this cohort attending our eight sample schools early in the fall of 2009, just after 10th grade, completed and returned the survey. Three surveys were removed from subsequent analyses due to patterns observed in responses, reducing the total number of analyzed surveys to 1,455. Schools were asked to administer the survey to as many of the members of this cohort as possible, and these responses represent 67% of the cohort's population across the eight sample schools. Percentages of the cohort taking the survey at individual schools ranged from 45% to 95%.

The students of the Class of 2011 were also given the survey near the end of their senior year in the spring of 2011. The same procedures used to survey the Class of 2009 as seniors were used for the Class of 2011, although we recommended that the survey not be given during an assembly since we had a number of unusable surveys from the school that administered its survey that way in 2009. The survey was given to 1,077 seniors in the Class of 2011 and 139 surveys were removed from subsequent analyses due to patterns observed in responses, reducing the total number of surveys analyzed for the Class of 2011 to 938. These responses represent 44% of the senior Class of 2011 across the eight sample schools and the response rate of individual schools ranged from 25% to 117% (see note d below Table IV.B.1).

Table IV.B.1

Response Rates From the Student Engagement/POS Experiences Survey of the Classes of 2009 and 2011 as Seniors

School	Senior Class of 2009 Response Rate[a,b,c]	Senior Class of 2011 Response Rate[a,b,c]
Redwood	0.38	0.65
Azalea	0.76	0.63
Apple	1.07[d]	1.17[d]
Elm	0.72	0.72
Iris	0.62	0.79
Laurel	0.24	0.25
Orchid	0.99	0.72
Poplar	0.42	0.25
TOTAL	0.57	0.51

[a] The response rate was determined by a ratio of the number of surveys returned where respondents reported they were in the grade level appropriate for their class compared to the student headcount of enrollment in that class for the time period closest to survey administration (e.g., 135-day headcount for the spring survey administrations and 45-day headcount for the fall administration). [b] Sources of headcount data: 135-day headcount of 12th graders, March 2009, SC Department of Education; 45-day headcount of 11th graders, November 2009, SC Department of Education; 135 day headcount of 12th graders, March 2011, SC Department of Education. [c] Student surveys that appeared patterned were not included. [d] The response rates for Apple High senior classes was greater than one for both years because in 2009, 11 of those graduating were registered that year as 11th graders and were included in survey administration. Although these students were instructed to report their grade as 11th and not 12th, a number of them reported 12th as their grade level. And in 2011, 10% of respondents were 11th, 10th, and 9th graders. Only those students whose surveys indicated 12th grade were included in the analysis.

For all three administrations, the timing of administration *Student Engagement/POS Experiences Survey* could have influenced the groups of students available to take surveys. While core course periods (usually required English classes) were chosen in most cases for the

survey times, certain students may have been missed or undersampled. For the senior class administrations, although waiting to survey seniors was considered the best solution to give students enough time to have taken more CTE classes or completed POS, often seniors are not on campus as much during their final year of school. CTE students and students taking dual credit, in particular, may have not been on campus for the senior class survey administrations.

To analyze survey responses, we generated descriptive statistics (i.e., frequencies and relative frequencies) for each survey question from every cohort. Chi-square analyses were conducted to determine if the distribution of responses was similar between the Class of 2009 and the Class of 2011 on all survey questions. Additionally, Chi-square analyses were conducted to consider the distribution of responses for the Class of 2011 as seniors for three levels of EEDA implementation (High, Medium, and Low), three levels of POS2 implementation (High, Medium, and Low), three levels of poverty (High, Moderate, and Low), three levels of being at-risk for dropout (0 risk factors, 1 risk factor, and 2 or more risk factors), and two levels of participation in CTE courses (fewer than three courses and three or more courses). A significance level of 0.05 was used for all tests of significance. Chi-square analyses for comparing survey responses between sophomores and seniors of the Class of 2011 were not conducted due to unknown correlations among unmatched responses among individual survey respondents. A description of how the EEDA implementation score, POS2 implementation score, poverty index, at-risk indicator score, and CTE participation variables were created is provided in the *Constructed Contextual and Analysis Variables* section.

Demographic characteristics of Class of 2009 senior cohort respondents. Approximately 46.8% of the respondents were male while 53.2% of the respondents were female (Table IV.B.2). The gender of student respondents did not significantly differ from students in the same cohort from all eight sample schools ($p = 0.078$). The respondents ranged in age from 13 to 19, with the majority of respondents (65.8%) reporting being age 18. More than half (59.4%) of respondents indicated they were Black or African American, 29.6% indicated they were White, 5.9% indicated multiple races, 2.3% indicated they were Hispanic or Latino, 1.2% indicated they were Asian, 1.5% indicated they were American Indian or Alaskan Native, and less than 1% (0.2%) indicated they were Native Hawaiian or Other Pacific Islander (see notes related to distributions of respondents below Table IV.B.2).

Demographic characteristics of Class of 2011 sophomore cohort respondents. Approximately 44.6% of the respondents from the Class of 2011 as sophomores (just after 10th grade) were male while 55.4% of the respondents were female (Table IV.B.2.). The gender of student respondents significantly differed from students in the same cohort from all eight sample schools ($p < 0.001$). The respondents ranged in age from 13 to 19, with the majority of respondents (76.9%) reporting being age 16. Approximately half (50.4%) of respondents indicated they were Black or African American, 34.8% indicated they were White, 8.2% indicated multiple races, 3.1% indicated they were Hispanic or Latino, 1.7% indicated they were Asian, 1.0% indicated they were American Indian or Alaskan Native, and less than 1% (0.8%) indicated they were Native Hawaiian or Other Pacific Islander (see notes related to distributions of respondents below Table IV.B.2).

Demographic characteristics of Class of 2011 senior cohort respondents. Approximately 43.8% of the respondents were male while 56.2% of the respondents were female (Table

IV.B.2.). The gender of student respondents significantly differed from students in the same cohort from all eight sample schools ($p = 0.003$). The respondents ranged in age from 13 to 19, with the majority of respondents (62.4%) reporting being age 18. Approximately half (55.5%) of respondents indicated they were Black or African American, 32.7% indicated they were White, 7.8% indicated multiple races, 1.8% indicated they were Hispanic or Latino, 1.1% indicated they were Asian, 0.8% indicated they were American Indian or Alaskan Native, and less than 1% (0.3%) indicated they were Native Hawaiian or Other Pacific Islander (see notes related to distributions of respondents below Table IV.B.2).

Table IV.B.2

Selected Demographics Characteristics of Students Responding to Student Engagement/POS Experiences Survey

Percentage of Respondents from 8 Schools (All 8 SC Schools Cohort Percent)	Senior Class of 2009	Sophomore Class of 2011	Senior Class of 2011
Gender			
Male	46.82 (49.57)	44.61 (49.61)	43.76 (48.67)
Female	53.18 (50.43)	55.39 (50.39)	56.24 (51.33)
Race/Ethnicity[a]			
American Indian or Alaskan Native	1.47 (0.27)	1.04 (0.23)	0.75 (0.15)
Asian	1.18 (1.73)	1.66 (2.08)	1.07 (1.53)
Black or African American	59.39 (58.21)	50.42 (57.56)	55.53 (57.14)
Hispanic or Latino	2.26 (2.05)	3.12 (2.64)	1.83 (2.86)
Native Hawaiian or Other Pacific Islander	0.20 (0.11)	0.76 (0.05)	0.32 (0.05)
White	29.60 (37.53)	34.81 (37.36)	32.65 (37.29)
Multirace	5.90 (NA)	8.18 (NA)	7.84 (NA)
Other	NA (0.11)	NA (0.09)	NA (0.00)
Age[b]			
13	0.29 (0.00)	0.07 (0.00)	0.32 (0.00)
14	--- (0.00)	0.07 (0.00)	--- (0.00)
15	--- (0.05)	3.74 (1.57)	--- (0.00)
16	0.29 (0.27)	76.87 (64.36)	0.11 (0.34)
17	23.80 (38.55)	17.17 (26.63)	30.45 (37.59)
18	65.76 (52.32)	1.73 (6.01)	62.39 (52.91)
19 or older	9.85 (8.80)	0.35 (1.43)	6.73 (9.16)
Average age	17.84 (17.72)	16.18 (16.42)	17.74 (17.73)

[a]Distributions of respondents in race/ethnicity categories were not statistically compared with the distribution of students in all eight SC schools from the same cohort due to differing categories. [b]Distributions of respondents in age categories were not statistically compared with the distribution of students in all eight schools from the same cohort due to small observed frequencies for some ages. [c]The estimated average age of respondents is not an exact calculation and may be smaller than the actual average age of respondents because the estimated average was computed using an age of 19 for the "19 and above" category.

Class of 2011 Student Focus Groups. The study team and a contracted interviewer conducted two to three student focus groups at each sample high school in spring 2011, with a total of 83 participating students. All students interviewed were seniors from the Class of 2011, the first cohort that had exposure to EEDA from eighth grade through high school. Research

teams used a stratified random sampling scheme to select students from specific courses such that approximately two-thirds were CTE concentrators and one third were from mixed groups of CTE concentrators and non-CTE concentrators. Topics for discussion included the development of IGPs, career planning, majors, and POS; the students' IGPs and how they have related to school experiences and future plans; the differences between CTE and non-CTE students' experiences; the students' future plans; and their high school majors and POS and how those influenced their plans. Interviews were recorded and transcribed. Refer to Appendix J for a copy of the student focus group interview protocol.

Student focus group transcripts from nineteen tape-recorded sessions (including several interviewer summary sessions) across seven of the sample schools were reviewed. While the transcriber was able to complete nineteen transcriptions, for one of the seven schools, she was only able to complete transcription for one out of the three student interviews and one interviewer summary session. Written notes were used to review the three sessions not transcribed. At the eighth sample school, a tape recorder operator malfunction required the study team to depend on detailed interview notes for the review of student focus groups and the interviewer summary session at that school.

While the study team reviewed all of the transcripts, four topics were investigated more thoroughly: (1) students' descriptions of and development of the IGP, (2) information on career clusters/majors, (3) students' work-based learning experiences, and (4) students' reports of integration of career information into academic courses and application of core skills in various careers. Using the transcripts and detailed notes from the interviews, key quotations from the students were extracted by school and reviewed in the context of whether the students were selected from advanced-level CTE concentrator courses (thus likely to be CTE concentrators) or from non-CTE core academic classes (more likely not to be CTE concentrators). For this student focus group data, and for all the tables prepared for presentation or publication, identifying information about both the sample schools and individual students was removed or coded to maintain anonymity.

Career Specialists/Guidance Personnel Accountability Report. Data were also acquired from the South Carolina Department of Education (SDE) from their semi-annual online survey, Career Specialists/Guidance Personnel Accountability Report (GP Accountability Reports). The SDE mandates that schools respond to these surveys after each semester to report on the types of career development and planning activities provided to students, parents, and educators by guidance personnel. For example, the survey for the fall and spring semesters of the 2008-2009 school year included questions on the number of career development activities offered for educators and the number who participate in these activities, and the number of students completing career skills assessments during that time period. It also included questions on the number of students and parents attending IGP meetings. For subsequent years, questions were reworded or removed; new questions were added; and definitions for data collection were refined. This presented a challenge in trying to use this report to look at change over time. Therefore, the Career Specialists/Guidance Personnel Accountability Report data was primarily used as an early snapshot of implementation of EEDA and was incorporated into our measurements of level of policy implementation (LOI).

Data reviewed for the present analysis are from the fall and spring semester reports for the 2008-2009 school year and from the spring semester report for the 2009-2010 school year. Survey responses for each school were entered into tables on each question for each semester and then cross-tabulated for comparisons across the eight schools. For the 2008-2009 reports, data were then summed across semesters obtaining a total served in each activity during the entire school year. It was not clear, however, if data reported were solely for a single semester or if the spring semester report from some schools represented a cumulative, duplicated count across both semesters. This became an issue when researchers tried to estimate the percentage of students served at each grade level in specific activities by adding the count of students given for each semester for that grade level and then dividing the total by the reported enrollment for that grade level for that year. Thus, for a number of schools, the percentages on several questions totaled over 100%.

Statewide Longitudinal Data System (SLDS) Data. The SDE is in the process of enhancing its statewide longitudinal data system (SLDS) through the creation of the South Carolina Longitudinal Information Center for Education (SLICE). Eventually, SLDS/SLICE will connect various state data systems and will be able to generate P-20 student data; however, the system was not complete as of the final year of research for this project. The SDE was able, however, to provide a great deal of longitudinal data on the cohorts of students in our sample schools. To protect the identities of minors, in all cases, student identifications were de-identified in these data so researchers could in no way identify individual students. Alias school names were also created for any references to sample school names, to ensure anonymity for our schools and confidentiality for interviewees and survey respondents.

Because the SLDS/SLICE data warehouse project was not complete in time for our final analyses, we faced some data challenges. The state longitudinal data sent to us did not follow students to schools outside the sample school districts and thus the actual dropout data (as opposed to transfers out or other issues where students left the schools) were difficult to verify. To address this, the outcomes for the SLDS data analyses focused on attendance and behavior, and at the school level, the cohort graduation rate. Toward the end of the fifth year, some postsecondary placement data for a cohort prior to 2009 did become available, but postsecondary placement data for the 2009 and 2011 cohorts was not obtainable for analysis by the end of the study; therefore, all postsecondary analyses are based on students' plans for postsecondary education, employment, or other options. The SLDS/SLICE data also did not identify CTE completers or concentrators. This is another phase in the SLDS/SLICE project not yet complete. However, through analysis of course data provided in the SLDS data, POS1 (see description of POS1 in next section) students were identified as students who completed four or more course credits in a logical sequence of CTE courses within a single career cluster.

The SLDS longitudinal data included demographic, attendance and discipline data, 8th grade standardized test scores, course histories including types of courses and end-of-course grades, and IGP data (including declaration of majors, intentions to complete majors, and postsecondary plans). Since students were required to update their IGP at least annually, the team had to decide which IGPs to use for major declaration, cluster selection, intentions to complete majors and postsecondary plans. The IGP plan used for first major declaration and intention to complete was the IGP from a student's 10th grade year, since we were selecting

students who had been in the high school at least since 10th grade. Comparisons were then made to the IGP in the 12th grade year to assess switching of clusters. The latest IGP including postsecondary plan data for each student was used. Many students had multiple IGPs with different postsecondary plans within this single year—350 of the 2011 cohort had two IGPs and 32 had 3 IGPs for their 12th grade year. To address multiple reports, the following rule was used: if a student's IGP ever said four-year college was their postsecondary plan, then four-year college was used. If a student's IGP ever said two-year college but not four-year college, then two-year college was used. If a student's IGP only ever listed military or workforce/ apprenticeship, then no college was used. Attendance rate was determined by number of days attended divided by number of days enrolled. Discipline rate was determined by number of total disciplinary actions per 100 days enrolled.

Limitations in the data prevented us from tracking students who left (mostly dropouts and transfers) the districts of the eight sample schools. Also, a student would not typically complete four units in a sequence until the 11th or 12th grade. For these two reasons, we focused our analyses of the SLDS longitudinal data to students who were enrolled in the eight schools in 10th, 11th, and 12th grades. Limiting the cohorts to only students who were at the schools three consecutive years (in 10th, 11th, and 12th grades) did reduce the size of the sample compared to if only one or two years of enrollment between 10th and 12th grades were required. This method resulted in a sample size of 1,491 students in the 2009 cohort and 1,616 students in the 2011 cohort. Dropouts and transfers (unless they occurred late in the 12th grade) were excluded as well in the SLDS analyses and thus, caution should be taken in the interpretations of the results. For example, it is possible that one effect of strong policy implementation may be a decrease in dropout rates among non-POS students. While these non-POS or non-CTE students may not have taken a full four-course sequence in a single cluster, the career planning and increased opportunities to take CTE and career-focused courses could have increased school engagement. So it is possible that while strong EEDA implementation may have increased the number of POS students, it may have decreased the number of dropouts even more, leading to a decrease in the *percentage* of students who completed POS1 sequences (and POS2 programs as well). Thus, descriptive results should be interpreted with caution.

C. Constructed Contextual and Analysis Variables

To facilitate analysis of student and school-level outcomes, several contextual and analysis variables were identified or constructed.

At-Risk Indicators for Student-level Analyses. Two at-risk indicator indices were developed for our study: one for use with analyses of the state longitudinal warehouse data and one for use with the *Student Engagement/POS Experiences Survey* data. In both cases, factors for dropout at the high school level were identified through a systematic review of current research provided by the NDPC. (See Hammond et al. 2007 for a comprehensive review of the risk factors for school dropout.) Risk factors that were identified by at least two of the studies in Hammond et al. (2007) were considered for inclusion in the indices.

At-risk indicator for use with SLDS data analyses. We selected three risk factors that could be measured through data provided in the state longitudinal SLDS dataset to construct the at-risk indicator for use with analysis of that data set. The three factors were

- a socioeconomic indicator flag (SEI) (constructed by the state and set if the student qualifies for free or reduced lunch, Medicaid, TANFF or food stamps),
- an overage indicator (set to indicate 2 years or more over age for grade level), and
- scoring below basic in the eighth grade on a state standardized test (the Palmetto Achievement Challenge Test (PACT) administered each year to grades 3-8).

The first two were as of "ever in high school" analysis. These three risk factors by no means represent an all-inclusive list of possible risk factors for high school dropout, but were based on items available in the SLDS dataset we had.

For the 2011 cohort, approximately 26.67% scored below basic in the seventh or eighth grade on the math or ELA state standardized test. Each student from the 2009 and 2011 cohorts was categorized into one of three groups. For the Class of 2011, 44% were low-risk (none of the three risk factors); 37% were moderate risk (one risk factor); and 18% of students were high risk (two or more risk factors).

At-risk indicator for use with Student Engagement/POS Experiences Survey analyses.
Five risk factors that could be measured through student responses on the *Student Engagement/POS Experiences Survey* were chosen to construct this at-risk indicator:

- low grades,
- low student educational expectations,
- poor school attendance,
- low parent education levels, and
- behavior problems at school.

These five risk factors by no means represent an all-inclusive list of possible risk factors for high school dropout, but were based on items available in the student survey.

A question (or set of questions) on the *Student Engagement/POS Experiences Survey* was identified to relate to each of the five risk factors. For each of the risk factor questions (or sets of questions), a binary indicator of at risk (1) or not at risk (0) was given for an individual student's response.

The first risk factor was low grades. Question 16 of the student survey asks, "What have most of your grades in high school been up to now?" Of the eight answer choices, if a student responded "Mostly D's" or "Mostly D's and F's," they were assigned a "1" for this risk variable; otherwise they were assigned a "0." Students who provided multiple responses or did not answer this question were not assigned a risk outcome for this question.

Studies have shown that low student educational expectations are associated with dropout; therefore, this was identified as another of the risk factors. For this second risk factor,

question 17 of the student survey inquires, "As things stand now, what is the highest level of education you expect to complete?" If the student responded "Not finish high school," they were assigned a "1" for the risk variable. If a student responded "graduate from high school or earn my GED" or a higher level of education, they were assigned a "0." Students that provided multiple responses or did not answer this question were not assigned a risk outcome for this question.

Poor school attendance was also highlighted as a risk factor for high school dropout. Question 22 of the student survey prompts the student to consider how many times he or she was absent from school during the first half of the previous school year. If a student replied "5 or more times," they were assigned a "1" for this risk variable. A score of "0" was assigned to the responses "Never," "1-2 times," and "3-4 times." Students who provided multiple responses or did not answer this question were not assigned a risk outcome for this question.

To assign a score for the fourth risk factor, "low level of parent education," the highest level of education completed by the student's mother or female guardian and father or male guardian was considered. The rule used was to use the "valid" response and/or the highest educational level reported. If neither parent/guardian finished high school, the student was assigned a "1." Additionally, if the student responded, "Don't know" or "Does not apply" for both mother/female guardian and father/male guardian, they also received a "1." If a student only answered for one parent/guardian, then they were scored based on the reported educational level for that parent. Likewise, if a student gave multiple responses (or were missing a response) for one parent and a valid response for the other parent, then the item was scored based on the one parent's valid educational level. If the student gave multiple responses for both parents or did not respond to this question, no risk outcome was recorded for this factor.

Finally, three *Student Engagement/POS Experiences Survey* questions provided information regarding students' behavior at school and were considered collectively to assign a score for the fifth behavior risk variable. In Question 22, the survey asks how many times the student has been put on in-school suspension, suspended from school, and expelled from school in the first half of the previous school year. If a student reported at least one of the following, then the student received a "1," regardless of their response or lack of response to the other two questions:

- I was put on in-school suspension "3-4 times" or "5 or more times"
- I was suspended out of school "3-4 times" or "5 or more times"
- I was expelled from school "1-2 times" or more.

If the student gave multiple responses for all three of these questions or failed to respond to all three of these questions, no risk outcome was recorded for this factor. If the student gave multiple responses to one or more questions and left one or more questions blank, then again no risk outcome was recorded for this factor. All other responses received a "0."

A student's total at-risk indicator score was a summation of the five binary risk factors, ranging from 0 to 5 risk factors. If a student gave multiple responses without marking any valid response or did not respond to any of the questions or group of questions used to form the at-risk

indicator score, then the student's other responses were not included in the at-risk indicator score.

For the purposes of analyses, the at-risk indicator was further categorized into 0 risk factors indicating low risk for dropout, 1 risk factor indicating moderate risk for dropout, and 2 or more risk factors indicating high risk for dropout. A summary of the percentage of students in each of these three at-risk indicator categories is provided in Table IV.C.1.

Table IV.C.1

Percentage of Seniors in the Class of 2009, Sophomores in the Class of 2011, and Seniors in the Class of 2011 in Each Risk Factor Category, for Use With Student Survey Analyses

At-Risk Indicator Category	Class of 2009 Seniors	Class of 2011 Sophomores	Class of 2011 Seniors
0 Risk Factors	54.8	57.6	58.5
1 Risk Factor	33.6	32.0	30.7
2 or More Risk Factors	11.7	10.3	10.8

School Contextual Variable for School-level Analyses. Variables considered in the construction of a single school contextual variable for possible subsequent statistical analysis were average percentage of female students (NCES CCD 2008-2009 and 2009-2010), average percentage of minority students including American Indian/Alaska Native, Asian or Asian/Pacific, Hispanic, and Black (NCES CCD 2008-2009 and 2009-2010), and an average across three years of school report card data for percentage of students with disabilities other than speech, school poverty index (percentage of students eligible for free or reduced lunch or Medicaid), school enrollment, an average absolute school rating (NCLB school rating), the average High School Assessment Program (HSAP) exam passage rate within two years after taking the exam for the first time, the average on-time graduation rate, and the percentage of students passing end of course tests.

The following variables were considered for inclusion in the school contextual index:

- Female - %female – National Center for Education Statistics (NCES) Common Core Data (CCD) from 2008-2009 and 2009-2010
- Minority - %minority – NCES CCD data from 2008-2009 and 2009-2010 (minority will include American Indian/Alaska Native, Asian or Asian/Pacific, Hispanic, Black)

The remainder of the data considered came from the SDE School Report Card files as reported for each of the following school years: 2008-2009, 2009-2010, and 2010-2011:

- Disab - % of students with disabilities other than speech
- Poverty - school poverty index (% students eligible for free or reduced lunch or Medicaid)

- School enrollment
- Rating - school absolute rating: rating level (at-risk (U), below average (B), average (A), good (G), excellent (E))
- LHSAP (HSAP passage rate within two years after taking the examination for the 1st time)
- Grad - on-time graduation rate
- EOC - % passing end of course tests

A factor or component score was created from a linear composite of a portion of the nine variables listed above. A principal component analysis was conducted to determine the variables and the optimal regression weights used to create the final school contextual variable. Due to the small sample size in the study, this one school contextual variable was then used in subsequent statistical analysis rather than using all of the variables.

A principal components analysis was conducted where one factor was retained. Loadings on the factors that were greater than 0.4 were considered "meaningful" for that factor. Two of the original variables, enrollment and percentage of female students, did not have loadings more than 0.4. All factor loadings for the remaining seven variables (percentage minority students, percentage of students with disabilities other than speech, a school poverty index, an average absolute school rating, the average HSAP passage rate, the average on-time graduation rate, and the percentage of students passing end of course tests) were meaningful; the final component score is based off of a linear composite of these seven variables weighted by standardized scoring coefficients from the principal components analysis. The factor loadings are shown below in Table IV.C.2.

Table IV.C.2

Factor Pattern for the Constructed School Contextual Variable

	Factor Loading
Minority	-71
Poverty	-90
Disab	-82
Rating	97
Grad	55
LHSAP	94
EOC	94

The school contextual score (component score) for each school is given in Table IV.C.3.

Table IV.C.3

Constructed School Contextual Variable Scores

School	School Contextual Score	Minority	Poverty	Disab	Rating	Grad	LHSAP	EOC
Apple	-0.23	84.0	84.7	12.5	3.2	83.2	90.7	50.3
Azalea	0.65	12.0	47.5	12.6	3.3	76.3	91.8	71.0
Elm	0.17	57.0	73.8	13.9	3.4	85.8	94.5	45.4
Iris	-1.91	95.0	95.0	18.7	2.3	68.2	83.6	29.9
Laurel	0.83	61.0	44.3	9.4	3.4	80.8	93.7	70.7
Orchid	-0.98	92.0	79.4	12.1	2.7	68.6	86.1	40.5
Poplar	0.96	63.0	44.8	8.7	3.7	73.3	95.0	75.0
Redwood	0.52	24.0	62.5	12.3	3.4	78.7	92.0	67.1

The school (Iris High) with the highest percentage of minority students (approximately 100%), the highest school poverty index (approximately 95% students eligible for free or reduced lunch or Medicaid), the highest percentage of students with disabilities (18.7%), the lowest absolute rating (2.3, between the "at-risk" and "below average" category ratings), the lowest HSAP passage rate within two years after taking the examination for the 1st time (83.6%) and lowest EOC (29.9% passing end of course tests) had the lowest school contextual score (-1.91).

EEDA Level of Implementation (LOI) for School-level Analyses. As already mentioned, the sample schools were selected using a purposive sampling technique to include diversity in local economic conditions and industries, diversity in the levels of school and community poverty, and diversity in the levels of policy implementation. School size, urban/rural classification, and demographic characteristics of students were also taken into consideration in site selection. After selecting specific areas of the state to provide diversity in the local industrial base and local employment options, the schools in those areas were clustered into two groups: High and Low-to-Moderate poverty schools.

Once potential sample schools were selected to ensure diversity in local employment and poverty, levels of policy implementation needed to be determined to allow for diversity in that measure. A scheme for determining levels of policy implementation was developed that included 41 data points, all related to the six most salient facets of EEDA related to high schools

(see the six facets descriptions below). These six facets were based on guidelines provided to school personnel,[3] early in the study. The study team identified the most salient initiatives for high schools (our focus in this study) and grouped them into six key facets to construct our conceptualization of LOI. PSLOI and SLOI were used during site selection and provided researchers a quick and practical way to estimate policy implementation at a number of potential sites without expending the time that was involved in analyzing the extensive data from site visits; however, once site visit and other data were analyzed, the team was able to construct a more accurate measure of policy implementation. The same six facets were used for LOI as were used for PSLOI and SLOI, but LOI data were more detailed and more rigorously analyzed and measured for LOI comparisons.

A preliminary selection level of implementation (PSLOI) score was tallied for each of 43 high schools in the state that fit the location and poverty criteria. Figure IV.C.1 illustrates the PSLOI scores of the schools considered during this early phase of the research.

PSLOI scores were based on data available from online sources, printed materials from schools, and survey data from several statewide state-administered school surveys. The scoring process was tested for inter-rater reliability and adjustments were made so the process was objective and consistent across schools. The development of the PSLOI scores allowed researchers to select ten schools suitable for inclusion in the study and then to visit those schools to validate the PSLOI scores. After site visits to these ten schools, we used additional data to update PSLOI scores to be more accurate. The new scores (called site selection level of policy implementation scores (SLOI)) were used in final sample selection of eight schools. Two of the eight sample schools selected were determined to have a relatively Low level of policy implementation, three schools were determined to have Moderate levels of policy implementation, and three schools were determined to have relatively High levels of policy implementation (for more information on sample selection and collection of data and findings on policy implementation, see Sharp et al., 2012, and Smink et al., 2010).

PSLOI and SLOI were used during site selection and provided researchers a quick and practical way to estimate policy implementation at a number of potential sites without expending the time that was involved in analyzing the extensive data from site visits; however, once site visit and other data were analyzed, the team was able to construct a more accurate measure of policy implementation. That is, while PSLOI and SLOI included accurate and pertinent data, considerably more data on policy implementation were collected during the two first site visits (spring 2009 and fall 2009). Observations, interviews, and probes into the specific contexts at each of the sample schools provided data to construct this more accurate contextual measurement of EEDA policy implementation at each school. This measurement is referred to as the EEDA

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[3]South Carolina Technical College System series, *How EEDA Works for South Carolina*, including: *An Educator's Guide to Develop and Implement the EEDA Curriculum Framework and Individual Graduation Plan* (2006a) and *An Educator's Orientation Guide to the Education and Economic Development Act* (2006b); and South Carolina Department of Education, *South Carolina Education and Economic Development Act Guidelines* (2006a).

Level of Policy Implementation (LOI). LOI was used as a school-level variable in data analysis as reported in the Observations section of this report. LOI is described next.
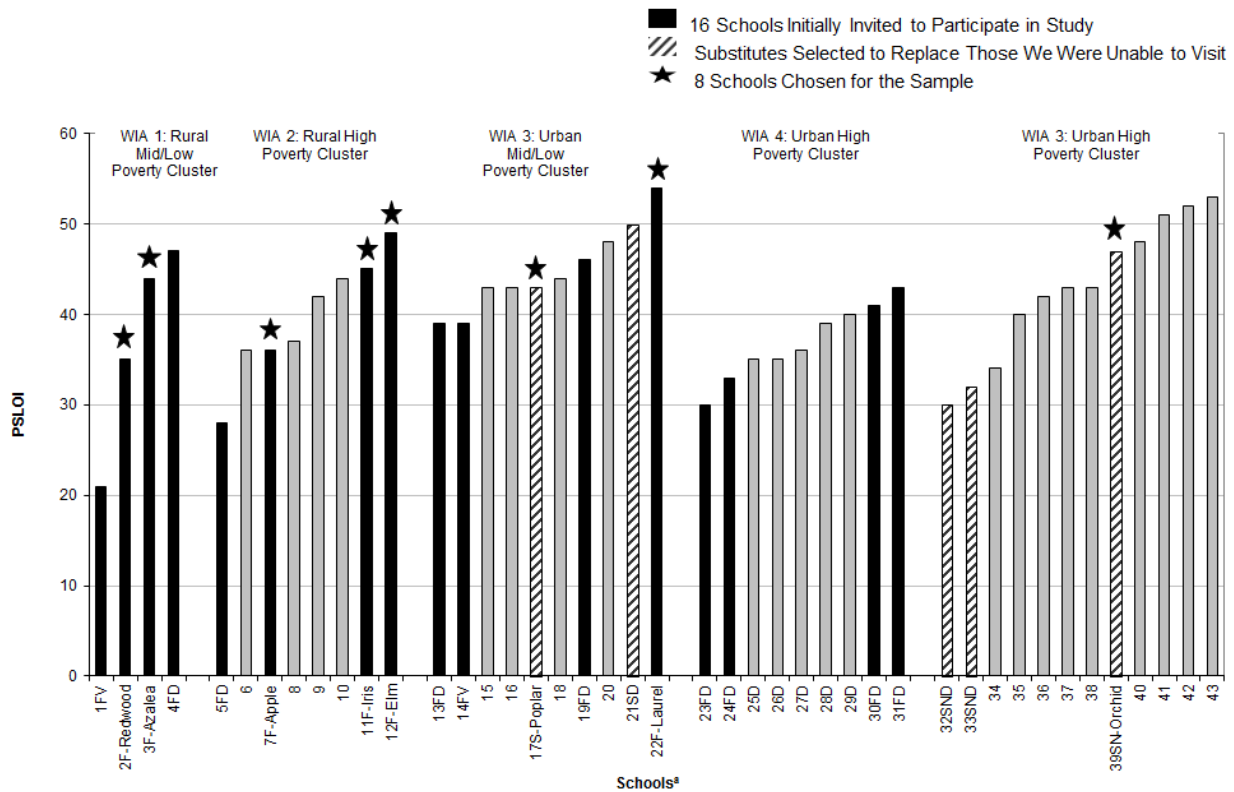
Figure IV.C.1. Preliminary selection level of implementation (PSLOI) scores for the 43 high schools considered for inclusion in the sample.

Note: The 16 original schools invited to participate are shown with solid black bars; WIA4 schools declined to participate as did several other schools (labeled with "D" in school names). Substitute schools invited to participate are shown with striped bars (and labeled with "S" in school names). Eight schools selected for study have stars above their bars. In all, 43 (31 across original 4 clusters plus 12 in new "replacement" WIA3 high poverty cluster) were given PSLOI scores and considered for inclusion in the study.

[a]Schools are numbered in order of PSLOI by WIA cluster. Letters following the numbers in school names correspond to the following codes: F = one of the first 16 schools chosen; V = visited but not selected; D = declined to participate, did not conform to criteria, or never responded to invitation; S = substitute school; N = school from new WIA3 high poverty cluster invited to participate. (Modified from Sharp et al., 2012)

LOI coding scheme and reliability checks. Both quantitative and qualitative data available on school implementation of the six facets were collected to rank schools on the contextual variable LOI. Some elements of PSLOI and SLOI were kept and additional updated sources and data were added. Only the most relevant measures were included and duplication of data/elements was avoided. These were improvements from the previous PSLOI and SLOI measurements. Another enhancement is that the LOI measure averages and standardizes data so that no one element receives more weight than others, so that all scales are comparable.

An outline of the types of data collected for each facet and sources for these data is included in Appendix K. Data related to the six facets described above were collected from the 2007-2008 and 2008-2009 school years, including: SERVE high school survey responses on EEDA implementation; SDE guidance personnel semi-annual report on EEDA-related activities; on-site interviews and focus groups with guidance personnel, teachers, principals, and assistant principals on their perceptions regarding EEDA implementation; *Student Engagement/POS Experiences Survey* responses; Levels of Awareness of EEDA across school staff, district personnel, parents, students, and business partners; and guidance personnel survey responses. Details about how these different data were collected are available in the Study Design section of this report. The six facets for which data were collected are listed below.

Six facets of EEDA identified as most pertaining to implementation of the policy in high school.

Facet 1: Identification of and assistance for high-risk students. All schools are required to identify students at risk of dropping out of school using the criteria defined by the State Board of Education, and to adopt one or more of the evidence-based strategies identified by the Board to assist identified students.

Facet 2: Integration of rigorous academic and career-focused curricula, organized into career clusters and majors. High schools must implement at least three career clusters (which may be chosen from the 16 federally defined career clusters), organize curricula around these three clusters, and create majors within them. All students are required to take 17 core academic courses. Students should meet these requirements with courses that best fit their selected major/career cluster. School districts must provide work exploration guidance activities and career awareness programs that combine counseling on career options and experiential learning with academic planning to assist students throughout their high school years in fulfilling their IGPs. Every eighth grader will design an Individual Graduation Plan (IGP) that will serve as a guide for academic, career, and postgraduation transition planning. The IGP will be developed with input from guidance personnel, parents, and students.

Facet 3: Increased counselor role in education and career planning. School counselors are seen as key players in the implementation of EEDA. EEDA requires the implementation of an approved career guidance program model in high school. All middle and high schools must provide students with the services of either a counselor with a Global Career Development Facilitator (GCDF) certification or a career specialist with a bachelor's degree and GDCF certification to facilitate activities such as helping students select majors, develop and revise IGPs and arrange for work exploration and work-based learning activities. The student-to-guidance personnel ratio at every middle and high school cannot exceed 300 to 1. Professional development related to career development must be provided for all school counselors.

Facet 4: Implementation of evidence-based high school reform. High schools must organize their programs around the 10 key practices outlined in the High Schools That Work model or another similar model approved by the South Carolina Department of Education.

Facet 5: Facilitation of local business-education partnerships and resource dissemination. Regional Education Centers (RECs) are being developed in the 12 designated Local Workforce Investment Areas in accordance with the South Carolina Workforce Investment Act. They will serve as the focal point for each region's training and education resources, helping to facilitate business-education partnerships, coordinate workforce education programs, and promote community involvement. This facet also includes each school's efforts to disseminate information on CTE and build and/or enhance school/business partnerships.

Facet 6: Articulation between K-12 and higher education or employment. Colleges must find ways to articulate with the K-12 career clusters and make sure dual enrollment credits are accepted and college curricula continue the career pathways. Articulation agreements, guidelines, and policies for dual enrollment coursework will be reviewed at the state level and recommendations made for providing seamless pathways for students from high school into postsecondary education.

Two researchers compiled the relevant data into Excel spreadsheets by each measure and school to address each element. When the data were compiled, the researchers discussed how to score each element and reliability checks were conducted.

LOI Reliability Checks. A sample of facets and elements of facets were checked for reliability. Quantitative data was triple checked for accuracy. Elements deemed to be qualitative and open to interpretation were checked for reliability.

Even though only certain elements were selected for reliability checks, it was still not an efficient use of time for researcher to perform reliability checks for these elements across all eight schools, so, two schools were selected for each facet. To select schools for reliability checks, the researchers put a list of the school identification numbers into SPSS and schools were randomly selected using the random numbers selection statistic in the select cases menu. Two out of the eight sample schools (one-fourth of the schools for each facet and element) were identified to examine elements for reliability checks for each facet checked. Researchers ensured that schools were not replaced in the list after selection to guarantee that each school had at least one facet checked for reliability of coding. Researchers also ensured that schools within the same WIA were not selected together for any one facet.

The study team conducted reliability checks on at least one-third of the qualitative elements identified in each facet checked. The identified "qualitative/open for interpretation" elements in each facet were then renumbered within that facet for the selection process. A coin was flipped for each facet. If the coin flip turned up "heads," the even-numbered elements were selected. If the coin flip turned up "tails" the odd-numbered elements were selected. For each facet, selection started with the first odd (1) or even (2) numbered "qualitative/open for interpretation" element and selection continued with odd or even numbered elements until the appropriate number of elements was selected.

The graduate student performing the reliability check received an Excel chart for each facet to be checked, with just the selected elements and all the source text to be used. The graduate student scored the elements based on the provided scoring criteria and text. For the first round of reliability checks, the graduate student and researcher reached a 75% overall agreement

for the four selected facets. For facets 1 and 5, 100% agreement was reached after the first round of reliability checks. During the second round of reliability checks, the graduate student and researcher had a 92% overall agreement for the final two facets (e.g., facets 3 and 4). After rewording one of the coding elements in facet 3, the graduate student and researcher reached 100% agreement for that facet in the second round of reliability audits. The scoring criteria were modified for one of the elements in facet 4; the researcher and graduate student reached agreement following this modification. For the final element in facet 4, the graduate student and researcher discussed the score and also came to an agreement on that score.

Scoring of EEDA LOI. Elements within the six facets were scored using the researchers' pre-determined scoring criteria for each element. If an element was used for contextual information only, then that element did not receive a score. A total of 115 elements were scored across the six measures. Some facets had more scored elements than others (e.g., Facet 1 had 6 elements; Facet 2 had 43 elements; Facet 3 had 30 elements; Facet 4 had 7 elements; Facet 5 had 20 elements; and Facet 6 had 9 elements). See Appendix K for a list of the facets and elements scored.

The scoring ranges were different across elements. For example, the highest score for one element could be a "1" with another element having "5" as the highest score. To standardize the ranges and response categories, the researchers calculated a percentage for each element using the earned score divided by the highest possible score. After each element was scored and standardized as a fraction, the proportions for all elements were averaged across each facet for each school. The final EEDA LOI scores for each school were calculated using the average percentages for facets 1 through 6 to obtain one EEDA LOI score per school.

While Appendix K gives the details of each element of each facet, Table IV.C.4 gives the number of elements within each facet, the average facet score and the facet score ranges.

Table IV.C.4

EEDA Level of Implementation (LOI) Scores: Number of Elements, Totals, and Ranges

EEDA LOI Facets	Number of Elements per Facet	Average Facet Score	Facet Score Range		
Facet 1: Assist high-risk students	6	78.9	61.7	to	92.2
Facet 2: Career-focused curricula integration	43	79.1	72.4	to	85.6
Facet 3: Increased counselor role	30	71.1	65.9	to	80.7
Facet 4: High school reform	7	77.0	54.5	to	97.1
Facet 5: Partnerships and resource dissemination	20	63.2	45.8	to	80.1
Facet 6: K-20 articulation	9	79.8	61.0	to	95.3
Total or Average Per School	115	74.9	64.2	to	85.2

Figure IV.C.2 presents the LOI scores by facet by sample school, with the total LOI score below each grouping of facet bar data for each school.
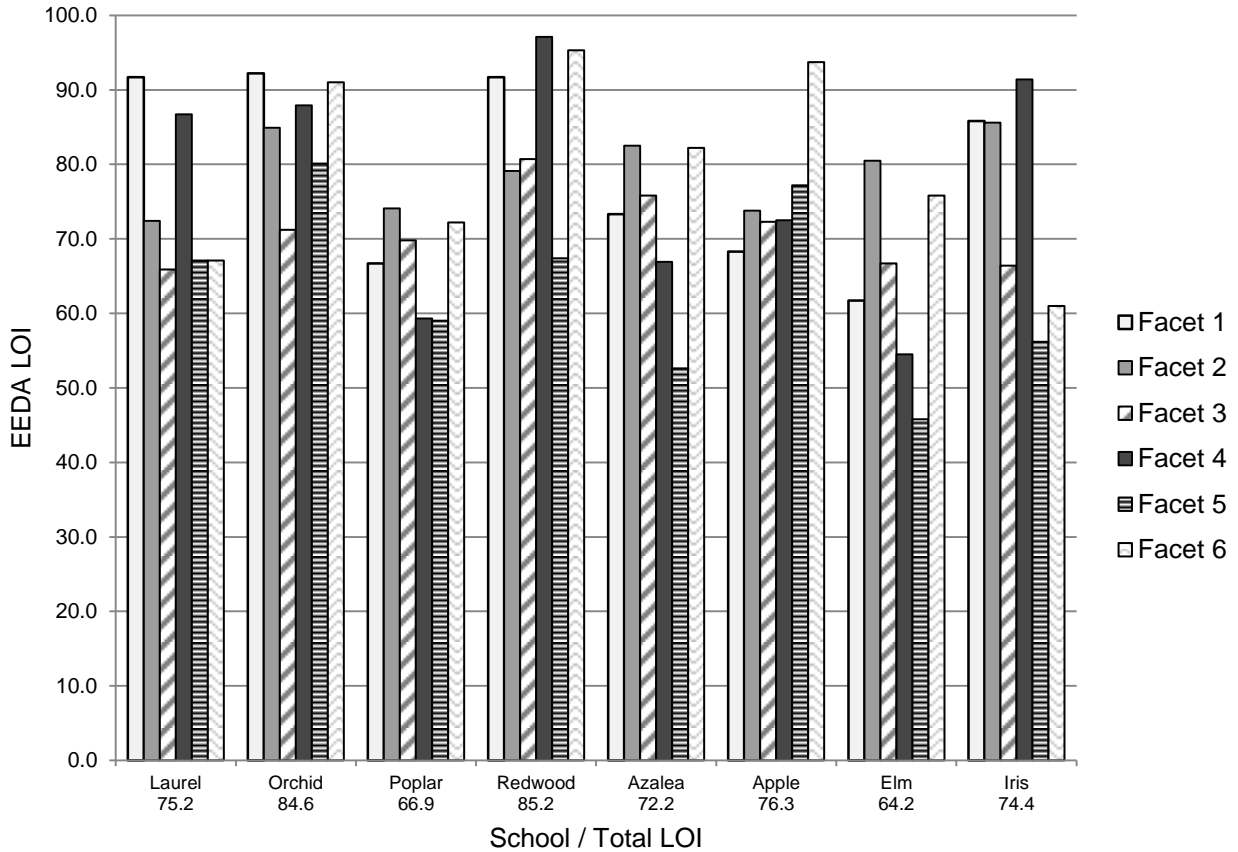
Figure IV.C.2. EEDA level of implementation (LOI) scores by facet by school. Facet 1: Assist high-risk students; Facet 2: Career-focused curricula integration; Facet 3: Increased counselor role; Facet 4: High school reform; Facet 5: Partnerships and resource dissemination; Facet 6: K-20 articulation.

Community Poverty Index for School-level Analyses. Prior to site selection, community economic data was gathered for all schools considered. A four-factor site selection poverty indicator was constructed based on a school-level poverty index and zip code data from the 2000 Census of Population, weighted by percentage distribution students enrolled at the schools considered. The SDE provided a list of zip codes and number of students in each zip code for each school in the state. The four-factor index was made up of:

- Per capita income (2000 Census by zip code, weighted by % distribution of students based on their home zip codes)
- % families in poverty with children under 18 (2000 Census by zip code, weighted by % distribution of students based on their home zip codes)

- % civilian unemployment (2000 Census by zip code, weighted by % distribution of students based on their home zip codes)
- School Poverty Index (% students eligible for Medicaid or qualified for free and/or reduced price lunch by school; average of 2004-05, 2005-06, and 2006-07)

For each factor, the data from all schools were sorted and a score from 0 to 3 was given according to the quartile rankings. For each school, for each factor, a score of 0 would be assigned if the data fell below the first quartile (or in the smallest 25% of the observations), representing the least poverty, or a score of 3 would be assigned if the data fell above the third quartile (or between 75% and 100% of the observations), representing the most poverty. Scores of 1 or 2 per factor represented mid-level poverty. The factor scores were then summed so that the resulting community poverty index ranged from 0-12 for each school. The resulting scores were then used in the site selection process. For more information on this index and how the schools scored in this area for site selection, see Smink et al., 2010.

South Carolina and the nation have experienced dramatic changes in economic conditions since the 2000 census was taken. Thus, the community poverty index was updated in year 5 of the study to incorporate updated estimates of community economic data from the 2005-2009 American Community Survey (U.S. Bureau of Census, n.d.) to be more relevant to the time period being studied in the schools. Community data was weighted for each school by the percentage of students enrolled at each school representing each community. For the portions of students representing communities not included in the American Community Survey, county data were used. (Seventy-five percent or more of the students' communities were represented in the American Community Survey.) A more updated school poverty index from the school report cards was also included. The four factors used in the revised poverty index were:

- Per capita income (2005-2009 American Community Survey data, weighted by % distribution of students based on their home zip codes)
- % families in poverty with children under 18 (2005-2009 American Community Survey data, weighted by % distribution of students based on their home zip codes)
- % civilian unemployment (2005-2009 American Community Survey data, weighted by % distribution of students based on their home zip codes)
- School Poverty Index (% students eligible for Medicaid or qualified for free and/or reduced price lunch by school 2008-2009)

As before, each factor was quartile ranked to produce a score between 0 and 3 for each factor for each school. These scores were added together to construct a revised four-factor Community Poverty Index (POV) ranging from 0-12 for each school. To make the revised index comparable to the previous index, the same group of schools (all schools considered as potential sites) was used as the comparison group for the range of poverty. The revised POV index for each of our eight sample schools is more indicative of 2009 community conditions than the previous measure used for site selection. These revised scores appear in Table IV.C.5.

The revised Community Poverty Index (Poverty) was used as a school-level variable in data analysis as reported in the Observations section of this report.

Table IV.C.5

Revised Community Poverty Index (POV) Scores per School

School	Revised Community Poverty Index (POV)
Apple	11
Azalea	5
Elm	10
Iris	12
Laurel	2
Orchid	7
Poplar	2
Redwood	8

Note. Higher index indicates greater poverty.

Programs of Study 1 (POS1) Concept- SLDS Data. The POS1 measure serves as the measure of POS for all student-level quantitative analyses of the state longitudinal data system (SLDS) student outcome data. A POS1 student is defined in this study as a student who has completed 4 or more credits in a logical CTE course sequence within a single career cluster with a postsecondary component. Cosmetology and nail care students are excluded since there are no clear formal postsecondary components to those pathways. The cohorts for POS1 calculations consist of students who were enrolled at sample schools for at least 10 days of each of three years (10th, 11th, and 12th grades) any time from the beginning of the school year until December 31 of that year. POS1 is based on a student completing a number of courses in a sequence and thus, it is not likely that POS1 students can be identified until later in high school, e.g., 11th or 12th grade. Limiting the sample to students enrolled continuously in 10th through 12th grade allows for a more comparable group of non-POS students. Data limitations prevented us from tracking students who left the eight schools in the sample (dropouts and transfers) and did not allow us to start following students in 9th grade. For these reasons, we focused our analysis on students who were enrolled in our eight schools consecutively in 10th, 11th, and 12th grades. As indicated in Tables IV.C.6 and IV.C.7, limiting the sample in this way decreases the size of the samples for both the 2009 and 2011 cohorts. However, as Table IV.C.8 indicates for cohort 2011, for example, the percentage of students identified as POS1 students increases substantially when we limit the cohort to continuous 10th through 12th grade enrollees.

Table IV.C.6

Diminishing Sample Size Using SLDS Data, 2009 Cohort, Starting and Continuing 10th Through 12th Grades, by School

School	Number in 12th Grade	Number in 11th and 12th Grade	Number in 10th Through 12th Grade	Percentage of 12th Grade Cohort Continuously Enrolled
Apple	121	96	85	70.2
Azalea	114	104	96	84.2
Elm	223	179	166	74.4
Iris	176	161	153	86.9
Laurel	399	350	299	74.9
Orchid	276	231	208	75.4
Poplar	422	348	315	74.6
Redwood	220	181	169	76.8
Total	1951	1650	1491	76.4

Table IV.C.7

Diminishing Sample Size Using SLDS Data, 2011 Cohort, Starting and Continuing 10th Through 12th Grades, by School

School	Number in 12th Grade	Number in 11th and 12th Grade	Number in 10th through 12th grade	Percentage of 12th Grade Cohort Continuously Enrolled
Apple	106	90	78	73.6
Azalea	120	109	106	88.3
Elm	213	172	159	74.6
Iris	180	166	155	86.1
Laurel	436	397	364	83.5
Orchid	344	276	243	70.6
Poplar	443	370	334	75.4
Redwood	228	192	177	77.6
Total	2070	1772	1616	78.1

It is important to note that excluding dropouts and transfers can have a meaningful impact on the results presented. Without being able to discern between dropouts and transfers, for example, it will be difficult to know the impact of EEDA on dropout rates at sample schools. In addition, POS1 and non-POS1 students may differ on a number of observable and nonobservable

characteristics that are not accounted for by the design of this study. For these reasons, results should be interpreted with caution. Analyses in this study are purely descriptive; quantitative differences do not imply causal relationships between EEDA and student outcomes or POS1 and student outcomes.

POS1 variables. Two POS1 variables were developed for analysis of data from the Class of 2009 and Class of 2011 cohorts (as defined above) in the state longitudinal data system (SLDS) database. One variable was developed at the student level and one at the school level. Both are described below.

Identifying POS1 students. A POS1 student is defined in this study as a student in the Class of 2009 or Class of 2011 cohort who was continuously enrolled in a sample school in the 10th, 11th, and 12th grade, as defined above, and completed four or more credits in a logical sequence of courses within a single career cluster that has the potential to lead to a postsecondary component. Cosmetology and nail care students are excluded since there are no clear formal postsecondary components to those pathways.

We identified POS1 students by examining the course sequences taken by Class of 2009 and Class of 2011 students through the following steps:

1. A file was created that linked course numbers to CTE career clusters using the South Carolina CATE course file book[4] and we merged this on to the course file to identify courses students from the two cohorts took within each career cluster.
2. The number of credits earned by a student within each career cluster was computed. We focused only on students who had at least four credits earned in a cluster. It is important to point out that these 4 credits in course sequences were within larger career clusters and not necessarily a sequence of courses in specific programs within these clusters. These four credits or course sequences, therefore, don't necessarily represent cohesive programs or majors. In addition, some schools offer cross-cluster majors. This method does not account for cross-cluster students unless the students take four or more units within a single cluster.
3. Each student was rated for POS1 by two independent raters analyzing course history records to determine if courses taken were within one cluster and qualified as a logical POS sequence and if a student had earned at least 4 credits within a qualifying sequence. For POS1, by logical POS sequence, we mean that a student's courses made sense as a sequence within a cluster and that the sequence was a progression of courses applicable to that cluster. Cases with different ratings were discussed between raters, and where a consensus could not be reached were coded as non-POS. Only students with a logical POS sequence of at least three courses that resulted in the accumulation of at least four credits were included in POS1.

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[4]*SASI*™ *CATE Student Reporting Procedures Guide*, Revised, Changes Effective 2008-09 School Year. Appendix E: CATE Career Clusters, see Courses and Programs within the CATE Clusters charts. Office of Career and Technology Education, South Carolina Department of Education.

Students were then categorized as either "POS1" or "Non-POS1" students. This identification process resulted in 224 POS1 and 1,267 non-POS1 students in the 2009 cohort and 244 POS1 and 1,372 non-POS1 students in the 2011 cohort.

Developing percent POS1 students school-level variable. After categorizing students as either "POS1" or "Non-POS1" students, a school-level percentage of POS1students variable was developed. To calculate this variable, the number of students identified as being POS1 students (as defined above) at each school was divided by the total number of students who were continuously enrolled in the school from 10th to 12th grade at each school between 2008-2009 and 2010-11.

Cohort definition (i.e., the number of consecutive years used to define the cohort) also impacted the percentage of students completing the POS1 course sequence. Table IV.C.8, which uses the 2011 cohort as an example, illustrates the variation in the school-level percentages, depending on the definition of the cohort. The percentage of POS1 students increases for all schools as more completed grade levels are required for the cohort, i.e., when dropouts and transfers are excluded from the cohort.

Table IV.C.8

Percentage of POS1 Students, by Varying Cohort Definitions, 2011 Cohort

School	Percentage in 12th Grade	Percentage in 11th and 12th Grade	Percentage in 10th Through 12th Grade	Number of POS1 Students in Analysis Cohort
Apple	24.5	28.9	33.3	26
Azalea	5.0	5.5	5.7	6
Elm	17.4	21.5	23.3	37
Iris	31.1	33.7	36.1	56
Laurel	9.9	10.8	11.8	43
Orchid	8.7	10.9	12.3	30
Poplar	0.5	0.5	0.6	2
Redwood	19.3	22.9	24.9	44
Total	11.8	13.8	15.1	244

To analyze trends across the SLDS POS1 variables, we generated descriptive statistics (i.e., frequencies and relative frequencies) for both POS1 students and percent POS1 students for each cohort. Crosstabulations were used for comparisons of data collected from IGPs, including career cluster selection, cluster switching, intent to complete a major, and postsecondary plans by POV and LOI. T-tests of means were used to analyze changes in percentage of POS1 students across cohorts and differences in percentages across schools in course-taking of AP/IB and dual

credit courses, attendance, and discipline. Regressions were used to analyze the relationship between the percent POS1 students variable and a variety of student- and school- level variables, such as percent POS1 students by POV and percent POS1 students by intentions to complete major, controlling for gender, a socioeconomic indicator, race/ethnicity, Limited English Proficiency (LEP), and participation in special education (EFA). A significance level of 0.05 was used for all tests of significance, where appropriate.

Programs of Study 2 (POS2) Concept - State-Defined CTE Programs. Another set of school-level program of study variables, designated POS2 variables, was developed. To provide a different perspective on programs of study in our schools as compared to the POS1 variables, the study team examined programs of study and their enrollment, starting from identified CTE programs. These variables were developed based on the CTE programs identified by the state Office of Career and Technical Education (SDE CATE) as having concentrators and completers at a sample school during the three primary years of the study, 2008-2009, 2009-2010, and 2010-2011. As was the case for POS1 variables, these variables also exclude cosmetology and nail technology programs because there is no clear postsecondary connection after high school graduation with these programs.

POS2 programs. The variables for the number of POS2 programs refer to the number of state-recognized CTE programs that were reported by the SDE CATE office to have had concentrators or completers at each sample school during the 2008-2009, 2009-2010, and 2010-2011 school years.

POS2 program ratio. A school-level variable to analyze availability and extent of POS2 programs at each school was created based on the ratio of the average enrollment to the average number of POS2 programs at each sample school over the three school years (2008-2009, 2009-2010, and 2010-2011). In other words, the ratio represents the number of students at each school per CTE program, but not actual enrollment in CTE programs. The POS2 program ratio was calculated as the average of the total school enrollment over those three school years divided by the average number of CTE programs with concentrators and completers at the school over those three school years. A high ratio indicates that there are fewer CTE programs per enrollment, signifying a lower level of implementation of CTE programs relative to other sample schools and thus a Low POS2 implementation school. For example, one high school had an average of 14 CTE programs with concentrators and completers over the three-year period and the average total enrollment for that school over those three years was 2,044. Average enrollment (2,044) was divided by the average number of CTE programs (14), producing a ratio of 146 students for every CTE program. This ratio of students to programs was relatively high, thus leading to this school being classified as a Low POS2 implementation school. The values of the POS2 program ratio by school are presented in the POS Observation section of this report. The enrollment to programs ratios for the four High POS2 implementation schools range from 55:1 to 70:1; for the two Medium POS2 implementation schools, the ratios were 94:1 and 113:1; and for the two Low POS2 implementation schools, the ratios were 145:1 and 146:1.

The POS2 program ratio is presented in two ways in this report. The individual schools' ratio scores are compared to LOI and POV score variables using scatter plots to explore relationships between the variables. When appropriate, the school contextual variable was used

to control for school circumstances. The scores are also grouped into Low, Medium, and High categories for other analyses, including comparing student outcomes across these categories from the *Student Engagement/POS Experiences Survey*.

   Percentage of POS2 completers. A POS2 completer is similar in some ways to a POS1 student, but different in several important ways as well. A POS2 completer is a secondary student considered to be a completer of a POS2 program by the SDE because he or she has earned <u>all</u> of the required units in a state-identified CTE program, which must include at least 4 Carnegie units of credit within that program. The data reported include the total number of these students at each school for each of our study years. These students, then, are not just from the Class of 2009 or the Class of 2011, as is the case for POS1 students. Instead, POS2 data include any students at each sample school who were considered completers by the SDE for a particular school year. Completers would most likely be in the 11th or 12th grade but could also be in the 10th grade. So, POS2 completers cross cohorts, unlike the POS1 students, making the number of students considered in the POS2 variable different from that of the POS1 students variable. In addition, because the POS2 completers could be in various grade levels and could include transfers in from other schools, we used a different grade span denominator than that used for the percentage of POS1students to construct the percentage of POS2 completers at any one school. We used 11th and 12th grade student enrollment at each school for each year since this group of students was the most likely to have had time to complete a POS2 program. Thus, the percentage of POS2 completers variable is the percentage of all POS2 completers compared to all 11th and 12th graders enrolled in a given school year.

   Like the percentage of POS1 students, percentage of POS2 completers is a school-level variable. Analysis using the percentage of POS2 completers variable primarily consisted of examining relationships between this variable and POV, LOI and percentage of POS1 students. The individual schools' ratio scores are compared to LOI and POV score variables using scatter plots to explore relationships between the variables. When appropriate, the school contextual variable was used to control for school circumstances. The scores are also grouped into Low, Medium, and High categories for other analyses, including comparing student outcomes across these categories from the *Student Engagement/POS Experiences Survey*.

   POS2 participants. POS2 participants are defined by the SDE CATE office to be secondary students taking one or more CTE courses in a state-recognized CTE program. For our analyses using this variable, we removed concentrators and completers to have a group of "participant-only" students who were not yet concentrating in a state-recognized CTE program.

   Differences Between POS1 and POS2 Measures. While the POS1 and POS2 measures use similar techniques for identifying POS students, they are different measures of POS for three significant reasons.

   First, POS1 and POS2 capture students at different times. POS2 is based on the number of CTE completers at a school for a specific school year. Thus it potentially counts (a) in the denominator some 11th graders as non-POS2 because they haven't fully completed a sequence when in fact they will complete a POS2 program and (b) in the numerator some 11th graders who completed a POS2 program early. Then, the denominator itself for POS2 is all 11th and 12th

graders enrolled for that particular year. POS 1 only examines students after completion of 12th grade and is thus not based on a particular school year, but a graduating cohort. The time period for POS1 is the three-year cohort period for the school. The time period for POS2 is a specific school year.

Second, POS1 and POS2 look at different populations of students – POS2 focuses on all students who have completed a POS2 program at a school. We make the assumption that these are mostly 11th and 12th graders and so that is used as the denominator in the calculations of percentage of POS2 students. POS1 focuses on students continuously enrolled in a sample school from 10th through 12th because data limitations required this to track students throughout high school for POS analysis at the student level. Thus the numerator and denominator in percentage POS1 students calculations are both based on a graduating cohort that has been at the school three consecutive years.

Finally, POS1 was not able to track students with cross-cluster POSs unless at least four credits were completed within a single cluster. POS2 would include cross-cluster POSs approved by the state. This would make the numerator larger for schools with more cross-cluster POS students.

POS1 and POS2 are therefore not directly comparable, but provide alternative measures of POS. We would generally expect the two POS measures to show similar changes over time with EEDA, though relationships between the absolute measures and other variables (e.g. LOI, POV) may differ somewhat. Where possible in the report, we look at patterns for both measures and discuss the differences.

While the POS1 and POS2 measures measure different things, we would expect that the trends in these meadures would be similar over time. Table IV.C.9 presents the changes between 2009 and 2011 for percentage of POS1 students and percentage of POS2 students. Since the two measures are so different, we produced a special POS1 calculation for this table where the denominator for calculations is 12th grade enrollment at the school for each POS1 graduating cohort's 12th grade school year. It should be noted that this POS1 data is not the same as is used in the rest of this report. It is presented here for two reasons: (a) calculating percentage POS1 students based on 12th grade school enrollment makes the results somewhat more similar to POS2 data, and (b) the table still reflects that fact that, no matter how the variables are calculated, the measures approach POS from different angles and data sources and thus will be analyzed in the rest of this report as two different ways to look at POS outcomes.

From Table IV.C.9, created just to compare various trend outcomes between POS1 and POS2, we can see that the general trend is still the same. The impact of EEDA on POS completion is unclear. Looking at this specially calculated POS1, only Laurel had a substantial increase, while all others had small to medium decreases. Looking at POS2, only Laurel had a substantial increase, three others had small decreases, and the other four had no change or possibly a small increase. The only school that had a significantly different pattern across measures was Apple. The 2009 cohort had a much lower rate of POS completion using POS1 compared to using POS2 (while the 2011 rate was higher). We could not conclusively determine the source of the descrepancy (e.g., data issues), so we recommend that quantitative results for

Apple be interpreted with caution. For discrepancies like Apple, we need to rely on other data to supplement these findings.

Table IV.C.9

Differences Between POS1 and POS2, by School, Using Unrestricted POS1 as a Percentage of 12th Graders Only for Comparison of the Two POS Variables

	POS1		POS2			
School	2009 Cohort (Percent)	2011 Cohort (Percent)	2008-2009 School Year (Percent)	2010-2011 School Year (Percent)	POS1 Percent Difference	POS2 Percent Difference
Apple	5.8	24.5	14.7	16.6	18.7	2.2
Azalea	7.9	5.0	6.2	2.6	-2.9	-3.6
Elm	22.0	17.4	17.5	15.2	-4.6	-2.4
Iris	33.5	31.1	19.0	16.3	-2.4	-2.7
Laurel	3.0	9.9	3.3	8.3	6.9	5.0
Orchid	13.4	8.7	10.2	10.4	-4.7	0.2
Poplar	1.2	0.5	3.5	5.1	-0.7	1.6
Redwood	20.9	19.3	18.4	18.8	-1.6	0.4

Note. The POS1 data presented in this table is not the same as POS1 data presented elsewhere in the report. These POS1 figures were calculated in an attempt to compare data with POS2, and analyze the percentage changes based on more comparable data, but it should be noted that comparing these two measures is not recommended. The cohorts and time periods as well as other definitional aspects of the two measures are very different.

Programs of Study 3 (POS3) Concept - CTE and non-CTE Student Groupings for Student Survey Analysis. In addition to other POS variables, an additional variable was developed for use in analysis of the *Student Engagement/POS Experiences Survey* findings. This variable is based on students' self-reported participation in career and technical education (CTE) courses. In question 14b on the *Student Engagement/POS Experiences Survey*, students were asked about their participation in CTE classes. Students were asked, "How often have you been in the following courses or programs in high school?" with one course or program category being "Vocational/career/technical education courses (such as culinary arts, cosmetology, construction, graphic communication or health science courses)." Possible responses to this survey question included "Never," "1-2 Times," or "3 or More Times."

To make the identification of POS3 students among survey respondents as similar as possible to how POS1 and POS2 students were identified, students who reported that they had been in vocational/career/technical education courses "3 or More Times" were considered "POS3 CTE students," while students who reported "Never" or "1-2 Times" for the same question were considered "POS3 Non-CTE students." A binary indicator variable was used to classify student responses into these two categories to compare POS3 CTE and Non-CTE student responses to various survey questions. If a student failed to answer question 14b on the survey or provided multiple responses, they were not included in any CTE analyses of the *Student Engagement/POS Experiences Survey*.

While POS3 is a measure of CTE POS participation, this measure comes from self-reported student data and it simply measures students' self-reported participation in CTE. The sequence of courses or concentration/completion of a CTE program of study could not be determined. Therefore, a comparison between POS1, POS2, and POS3 will not be presented here as POS3 is not a similar measure to POS1 and POS2.

Other Measures Used to Examine the Number of Programs of Study in Sample Schools. In addition to the POS1, POS2, and POS3 variables, we developed three other types of variables related to CTE course taking to explore the presence of programs of study at our sample schools. Using the tool we developed to measure which programs met a strict interpretation of the four core elements of Perkins IV, we created a fourth POS category (POS4) based on that definition. Very few majors/programs met the criteria we developed. Also, we were unable to collect enough comparable data for this variable for the 2010-2011 school year to enable comparisons between the beginning year of the study and the end of the study period. We therefore only present findings on the POS4 variable for the early years of the study in descriptive comparisons across schools. Two other POS variables (POS5 and POS6) were also identified/developed, although neither was used in quantitative analysis. The three POS variables used for descriptive purposes, but not quantitatively analyzed (POS4, POS5, and POS6), are described below. Results are included in the POS section because findings from all three of these additional methods offer important context to policy implementation and POS development in our sample schools.

SC Pathways study-defined Perkins IV POS (POS4). The steps and criteria described below were developed to enable the study team, for purposes of addressing our research questions, to examine each of a school's career majors/programs to assess which could be considered to have met the four Perkins IV core elements. The initial goal was to identify the number of majors/programs meeting this definition at two points in the study, 2008-2009 and 2011-2012, to be able to explore any changes over the study period. The first analysis of majors/programs, and development of the Perkins IV POS variable, was conducted on data from the 2008-2009 school year with some data collected in the fall of the 2009-2010 school year. These were some of the key years of policy exposure for our primary "treatment" cohort, the Class of 2011. However, in the last study year, we were only able to collect a portion of the data necessary for recalculation of this variable to study changes over time. Therefore, data presented here regarding POS4 only reflect what was present in the schools during those early study years, without comparisons to the level of development by the end of the study period.

We began exploring our options for counting POS4 by reviewing the items we had included on the Clusters & Majors Checklist. We soon realized that more specific rules/criteria/guidelines were needed to operationalize components of each of the elements. To develop these more specific criteria and guidelines, we consulted a number of sources. We spoke with content experts in the area of POS and Perkins IV at OVAE, NRCCTE, and AED, staff conducting the other NRCCTE POS studies, and staff from NASDCTEc. We reviewed the operationalization of these elements used by the other two NRCCTE POS studies and found those developed for the Rigorous Tests of POS Study to be most relevant to our study (personal correspondence with Castellano and Sundell, 2009). We also reviewed OVAE guidelines outlined in the Design Framework (Academy for Educational Development, 2009 and Office of

Vocational and Adult Education, 2010), self-assessment tools for programs of study developed for the U.S. Department of Education by the NRCCTE (2009), and by NRCCTE in conjunction with AED, MPR Associates, Inc., and the National Association of State Directors of Career and Technical Education Consortium (2007), materials developed by the League for Innovation in the Community College for the College and Career Transitions Initiative (CCTI) (n.d.), materials available on the website of the National Association of State Directors of Career and Technical Education consortium (n.d.; 2007), as well as guides developed for some state programs (e.g., for the state of Washington, see Centers of Excellence for Allied Health, Construction and Information Technology, 2009, and for the state of Illinois, see Taylor et al., 2009).

From these discussions and reviews, we developed criteria for each of the four core Perkins IV elements to use in the examination of each school's career majors/programs to determine if they met these criteria for the purposes of analysis for this study. This review process proceeded in two stages. First, since OVAE was only interested in those career majors/programs that were considered CTE majors, we set criteria to determine which of the school's career majors/programs could be considered CTE majors. Second, any of the majors/programs determined to be CTE by these criteria would then be examined further to assess whether they met the criteria for each of the four core elements. These steps and criteria used are described below, with further details provided in Appendix L.

Step 1 of Identification of Study-Defined Perkins IV POS: Determine eligibility of major/program of study for review. Since OVAE was most interested in EEDA career majors that were centered around CTE, our first step in identifying what we would call a study-defined Perkins IV POS, or POS4 program, was to determine which of the career majors at each sample school would be eligible for CTE/Perkins IV funding purposes in South Carolina or would be considered a CTE program by the SDE CATE office. There are several ways that a major or program can be considered eligible to be funded by CTE funds or officially designated as a CTE program in South Carolina. However, we developed the following method as our first step in identifying which programs and majors we would consider as being eligible to be considered a POS4 eligible for CTE/Perkins IV funding.

To pass our first step of review, a major/program had to meet at least <u>one</u> of the following five criteria:

1. *SDE CATE office approval of the major/program for funding*. A list of all of the career majors/pathways was sent to the SDE CATE office and staff was asked to report whether each major/program would be eligible for state CTE funding, by reporting "Yes" or "No." Any major/program that received a "Yes" response was considered to have passed our first step toward being eligible to be reviewed for POS elements.

2. *eIGP major CIP Code matched a SDE CATE program CIP Code*. Reported school major CIP Codes used for reporting enrollment on eIGPs were compared to CATE program CIP Codes in use during that school year (2008-2009) to find matches in codes. If an eIGP major CIP Code matched a CATE CIP Code, even if what the school and SDE CATE called the major/program differed, the major/program was considered eligible to be reviewed and was referred to in study reports by the name used by the SDE CATE office.

3. *Listed major/program name was similar to SDE CATE program name.* If a major/program was listed in the career center's registration guide, in the career section of the school's registration guide, or was an eIGP major with enrollment and had a name the same as or very similar to one in the SDE CATE office state approved program list for the designated school year but not the same CIP Code, the major/program was considered eligible to be reviewed.

4. *SDE reported CATE concentrators in this CATE program.* SDE CATE reports of CTE programs that had concentrators were examined for each of the schools. If a CTE program was reported to have concentrators in the designated school year (2008-2009) at the sample school, the major/program was considered eligible to be reviewed.

5. *District reported major/program as Perkins IV POS.* All districts that want to receive Perkins IV funding must implement at least one Perkins IV-defined POS to be eligible for funding. It was left to the states to decide what the requirements were to be to meet the four elements of Perkins IV POS. The SDE CATE office left the decision to each district to select one CTE program being implemented in their district that would meet the Perkins IV POS criteria. Data on these programs of study were requested in progress reports that districts were required to submit to the state at the end of each school year. These were the documents from which we pulled the district CATE POS for the appropriate school year (2008-2009; Flora & Whittle, 2010). Then, catalogs at sample schools were examined to find out if this POS and its 4-course sequence was being offered at the school during the specified school year. See the District Study-Defined Perkins IV POS section for more details.

Each of the majors/programs that met at least one of the above criteria, had to also meet the following requirement:

- *Major/program treated as program of study by school.* EEDA was designed to have career majors/programs developed across the curriculum for all students. To be considered a program of study, it would be important that the entire school be aware of and treat the major/program as a program of study and that information on the major/program be disseminated in some way to all students and not just those students already in CTE courses. So, in addition to meeting one of the above options, a major/program also had to be listed in one of the following: the school's registration guide for the designated year; the career center guide; or the course listings, as a major or program, or as a header/course grouping/program area of a narrow subject area outlined in the CTE section with more than one course listed under the header/area.

If a major/program met at least one of the five options and the additional requirement of being listed somewhere in course/registration materials, then the major/program was considered to be eligible to be reviewed for elements of Perkins IV. All others were considered ineligible and not reviewed further.

Step 2 of Identification of Study-Defined Perkins IV POS: Assess whether eligible programs meet Perkins IV core element criteria. Once a major/program was deemed eligible to be considered to be a POS4, the next step in the process was to examine each of the eligible CTE majors/programs, using a set of criteria developed for each of the four Perkins IV core elements for POS. As described above, we consulted a number of sources to develop these criteria in similar ways to those in the field and where possible, used criteria similar to or the same as that used in the Rigorous Tests of POS Study (M. Castellano, personal communication, 10/4/2010) to allow for some continuity across NRCCTE studies. Criteria were developed around the description of the core Perkins IV elements as described in the law:

- Incorporates secondary education and postsecondary elements
- Includes coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated non-duplicative progression of courses that align secondary education to adequately prepare students to succeed in postsecondary education
- May include the opportunity for secondary education students to participate in dual or concurrent enrollment programs or other ways to acquire postsecondary education credits
- Leads to an industry-recognized credential or certificate at the postsecondary level, or an associate's degree or baccalaureate degree.

For examining majors/programs as potential POS4, we also did not assume that if a district or the SDE CATE office declared a major or program as meeting the four core elements that these elements were actually met. All decisions about meeting or not meeting criteria were made by study team members reviewing the school's documents and interview and focus group responses.

Scoring the Perkins IV Four Core Elements for Study Purposes.

Element 1: Incorporate and align secondary and postsecondary education elements. In keeping with how the Rigorous Tests of POS Study operationalized this element, a major/program would meet this element if there was at least one articulated course, training, or apprenticeship available during high school specifically for this major/program that offered the opportunity for college or other postsecondary credit. This could include a Technical Advanced Placement (TAP) or regular Advanced Placement (AP) course, dual credit or dual enrollment course, or an apprenticeship or training course that could result in postsecondary credit. Information from the Clusters & Majors Checklist, staff interviews, and school materials were reviewed to code each eligible major on this element. If the major/program met *one* of these options, the major/program was given a "Yes" on this element.

Element 2: Include academic and CTE content in a coordinated, non-duplicative progression of courses. For this element, we were only able to incorporate some of the requirements used by the Rigorous Tests of POS Study to meet this element. As compared to our study schools, the schools examined in the Rigorous Tests of POS Study had been organized around programs of study, on average, for a longer period of time and thus would likely be further along in developing career pathways and in integrating college prep academic standards across their curriculum.

For our coding purposes, we used the text of this element in the Perkins IV law for guidance:

> Includes coherent and rigorous content aligned with challenging academic standards and relevant career and technical content in a coordinated, non-duplicative progression of courses that align secondary education with postsecondary education to adequately prepare students to succeed in postsecondary education (Carl D. Perkins Career and Technical Education Improvement Act of 2006; S250-35, Part B, Sec. 122(2)(c)(A)(ii)).

The following three criteria were thus used for Element 2:

1. Did the major/program include a coordinated progression of at least four required courses?
2. Were the core and major/program courses rigorous and aligned with South Carolina state standards and considered college prep courses?
3. Did the technical courses required for the major/program meet industry standards?

Then, based on materials and information we had available from schools, we developed various rules under which a major/program would meet these criteria. For example, we looked for progression of courses on the list of required courses for majors/programs outlined on the required IGP forms that were often included in a school's course catalog. Information from the Clusters & Majors Checklist, staff interviews, and school materials were reviewed to code each eligible major on this element. If the major/program met *all three* of these criteria, the major/program was given a "Yes" for Element 2.

Element 3: Includes dual or concurrent enrollment programs or other ways to acquire postsecondary education credits. Although Perkins IV does not require POS to offer opportunities for postsecondary education credits, i.e. this element is optional in the law, in keeping with the requirements of the Rigorous Tests of POS Study, offering at least one option for receiving postsecondary credit was a requirement to meet this element and we included this element as a requirement for a POS4. Information from the Clusters & Majors Checklist, staff interviews, and school materials were reviewed to code each eligible major/program on this element. For a major/program to receive a "Yes" for Element 3, there had to be at least one option for receiving postsecondary credit available specifically for the particular major/program and included as one of the required courses for completion of that major. A major/program's list of required courses had to include at least one dual enrollment or dual credit course, a course eligible for TAP credit, or an AP core academic course.

Element 4: Leads to credential after postsecondary training/education and/or leads to a two- or four-year degree. For a major/program to receive a "Yes" for this element, the major/program had to lead to some type of postsecondary certificate or two- or four- year degree in this subject area. Information from the Clusters & Majors Checklist, staff interviews, and school materials were reviewed to code each eligible major on this element.

Identification of Majors/Programs as POS4. To be identified as a POS4, the major/program had to have received scores of "Yes" on *all four* elements.

Reliability Check. A limited reliability analysis was conducted on coding for this variable. For consistency, one study team member did all of the coding of these elements across all schools. For reliability purposes, another study team member was involved in some of the decisions made early in reviews of the first two schools to reach agreement on how to interpret some criteria. In addition, this same team member conducted a partial reliability check on selected elements from one school and her results were similar to those of the primary team member conducting the coding.

SC Pathways study-defined district Perkins IV POS (POS5). Each South Carolina school district must annually report to the SDE CATE office at least one program in the district that demonstrates LEA efforts to comply with the Perkins IV criteria for that year. Initially, we considered using each district's one reported program as the Perkins IV POS for each school. The legislation allows states to decide whether these reported programs meet the Perkins IV core elements. In South Carolina, the decision is left to each school district. However, we could not determine whether consistent criteria were being used across districts. Nevertheless, since these programs were identified at the school district level as being Perkins IV POS, the study group explored the definitional criteria and the presence of the programs at sample schools during the 2008-2009 school year. Potential programs were analyzed as described below based on some of the same criteria described for POS4.

The study team first determined which major/program in each of our schools' districts was designated as the Perkins IV program of study for funding purposes for the 2008-2009 school year. These were determined based on the district reports of these programs for the 2008-2009 in their 2008-2009 annual progress reports to the SDE CATE office. The list of these district programs was also included in the state's summary progress report submitted to OVAE for that school year (Flora & Whittle, 2010).

The next step was to determine if each district reported Perkins IV program of study was available to students during the 2008-2009 school year at the sample school located within that particular district. This was determined based on a review of the school or career center's catalog/registration materials for that school year, using the following criteria:

a) Was the program of study listed in the catalog/registration materials of the school or career center as a major/program (as a major with an IGP template or CTE program, or as a header/course grouping/program area with more than one course listed under the header/area)?
b) Were the four core courses outlined in the district's report for that program of study listed as required for that major/program at that school in the IGP template, in the career center catalog/registration materials or in the catalog course listings? The team decided that the district courses had to be listed as either the only four courses specifically required for the major/program or if listed in a longer list with one or more additional courses, were clearly listed as the primary courses or the first in a sequence of courses for this major/program.

c) Were all four core courses listed for the district program of study available/offered (according to the course catalog at the school or career center) to students at the sample school, at their career center, and/or through another high school during the 2008-2009 school year? Courses with very similar but not the exact same names as those outlined by the district were considered to be a match to the district designated course.

Identification of Majors/Programs Qualifying as POS5. To be identified as a POS5, the District Perkins IV POS major/program had to have received scores of "Yes" on *all three* of these elements.

Reliability check. For consistency, one study team member did all of the coding for this variable for each school. For reliability purposes, another study team member also coded elements for this variable for each school. Initial reliability results were high, with disagreement on elements for majors/programs at only two schools. The two study team members were able to reach agreement on all discrepancies in coding and agreed upon the final coding across all schools.

Sample school identified programs with the strongest secondary-postsecondary linkages (POS6). During discussions about linkages between majors/programs and secondary-postsecondary linkages in interviews conducted on school sites in the fall of 2009, staff were asked which of their school's or career center's majors/programs had the best secondary-postsecondary linkages at the time of the interview. Programs that were reported by at least two staff members as having the best secondary-postsecondary linkages during interviews on POS in the fall of 2009 were included on this list.

V. Statewide Policy Implementation Context, by Facet

The EEDA was designed to be implemented in several stages beginning in 2006-2007 and be fully implemented by July 1, 2011. Our study period thus encompassed much of the beginning years of EEDA implementation, starting during the second year of the phased in implementation, 2007-2008, and going one year past full policy implementation, through the end of the 2011-2012 school year.

In this section we describe some background on implementation of the EEDA policy statewide prior to and during our study period to give context to our sample school observations. We also discuss the influence of budget cuts on policy implementation.   This section is organized by the six facets of the policy most relevant to our study and presents statewide data.

Background on Policy Implementation and Funding. The original EEDA legislation stipulated that full implementation of the policy should occur by July 1, 2011. To that end, in September 2005, the EEDA Coordinating Council (EEDACC) was established to support policy implementation. The Council is comprised of members of 12 different organizations, is supposed to represent the geographic regions of South Carolina and be representative of the ethnic, gender, rural, and urban diversity of the state. In 2006, the SDE established six committees to oversee EEDA implementation: Articulation, Dual Enrollment, High School

Graduation and Postsecondary Education Alignment Committee; At-Risk Student Committee; Communications and Marketing Committee; Curriculum Frameworks and Individual Graduation Plan Committee; Information Technology Committee; and Regional Education Centers Committee.

In that first year, the EEDACC initiated the development of a comprehensive marketing and communications plan for the Personal Pathways to Success Initiative. This plan was comprised of an extensive advertising campaign, media relations, an online presence, special events and promotions, and the development of promotional materials. The Committee also commissioned research on the extent to which this campaign reached educators, business partners, and parents.

Statewide EEDA Policy Implementation and Influence on Student Outcomes as Reported by SDE. The section below summarizes statewide progress on implementing initiatives for the six study-defined EEDA facets, as reported by SDE in its annual EEDA reports. We also discuss any SDE reports of the influence of EEDA on student outcomes gleaned from these reports. We include this information to provide additional details about the context of our study results.

EEDA Facet 1 statewide: Identification of and assistance for high-risk students. Programs for at-risk students have been a central EEDA focus since the inception of the policy. According to the SDE, by December 2006, evidence-based at-risk programs had been implemented in a majority of the school districts across the state (EEDACC, 2006); by 2008-2009, 100% of schools across the state had initiated such programs to address the needs of students at risk of dropping out (EEDACC, 2009). The At-Risk Student Intervention Implementation Guide lists 50 evidenced-based models approved by the General Assembly. In 2006-2007, 40 high schools received funding to implement an evidence-based at-risk student intervention model. The most frequently implemented programs were High Schools that Work, Jobs for South Carolina Graduates, and Star Academies. As reported in the 2008 EEDA annual report, thirty-nine schools sites reported implementing particularly innovative programs for the at-risk component of HSTW (EEDACC, 2008).

In December 2007, the EEDACC reported that 40 high schools would receive funding to implement an evidence-based intervention program for at-risk students. For the 2008-2009 school year, 79 schools representing 43 districts received innovation funding to implement evidence-based at-risk intervention model, while 68 schools, representing 30 school districts, received supplemental funding to support existing programs. Additional funding was received in 2008 to support the implementation of Jobs for America's Graduates – South Carolina (JAG-SC) programs (EEDACC, 2008). In 2009-2010, 133 schools (representing 24 school districts) received innovation funding to implement an evidence-based at-risk student intervention model; 55 schools (representing 26 school districts) received supplemental grants for existing programs. By 2010-11, 46 schools representing 24 school districts received innovation funding to implement an evidence-based at-risk student intervention model; 42 schools representing 29 districts received supplemental funding for existing programs.

By the 2008-2009 school year, nearly 33,000 students were reportedly participating in EEDA-funded evidenced-based programs designed to reduce the risk of dropping out of school, an increase over the approximately 21,000 students who were participating in such programs in the previous year. However, in the following two years, the SDE reported a slight decline in the number of students participating in such programs.

EEDA Facet 2 statewide: Integration of rigorous academic and career-focused curricula, organized into career clusters and majors. All high schools in South Carolina were required to organize high school curricula around at least three clusters of study and cluster majors. According to a November 2006 survey of district superintendents, the majority of school districts had identified, or were in the process of identifying, a minimum of three clusters of study and majors around which to organize their curricula (EEDACC, 2006). By Year 2 (2006-2007), the status on this item was reported as "completed" with nearly 90% of high schools reporting organizing their curricula around at least three clusters of study; over 50% reported having implemented at least ten of the sixteen national career clusters (EEDACC, 2007). By 2009-2010, 84% of schools districts offered at least ten of the sixteen career clusters; the remaining 16% offered between four and nine of the career clusters (EEDACC, 2010).

Academic and career and technical education templates were developed by 2005-2006 (EEDACC, 2006). By the following year, and in subsequent years (2007-2008; 2008-2009), middle schools and high schools received funding to purchase materials and organize experiences to ensure students had greater exposure to career information. By late 2008, guidelines for Individual Graduation Plan (IGP) conferences were developed and promulgated to EEDA district coordinators, school counselors, and career specialists throughout the state; these guidelines were revised in 2008-09 to incorporate information regarding advising 11th graders; similar revisions were made in the following two years (2009-10 and 2010-11) for 12th graders.

The EEDA legislation stipulated that SDE develop prototypes for individual graduation plans and the curriculum frameworks for career clusters of study. The sixteen national career clusters served as a foundation for developing these initiatives. During the first year, an electronic version of the curriculum framework and IGPs were pilot tested in six school districts to ensure smooth statewide implementation. By Year 2 (2006-2007), final revisions were made to the electronic delivery of the curriculum framework and IGPs. By Year 3 (2007-2008), the EEDA Coordinating Council (EEDACC) reported that all of the state's middle and high schools were connected to the eIGP system which was embedded with the state-approved curriculum templates. Thus, for that year and the remaining years, the status of this initiative was reported as "complete" and no funding was provided for this effort for Year 3 through Year 6.

Throughout the reporting period, several initiatives facilitated the development of IGP prototypes and curriculum frameworks for career clusters. In 2008-2009, the K-12 Majors Alignment Task Force was established to develop guidelines for assessing the effectiveness of career clusters and major alignment, curriculum managers from each school district were provided with training in the online eIGP system and the PowerSchool student information system. Career specialists and guidance counselors also benefited from such efforts: with the support of SC Educational Television, the online program, Career Clusters 101, provided counseling personnel with information about career cluster websites and online resources.

By the end of Year 2 (2006-2007), 84% of eighth graders had selected a preferred cluster of study, which was designated on their IGP. By the end of Year 6, this proportion had increased to nearly 99% of eighth graders completing an IGP in which they identified a preferred cluster of study. At that time, the top three clusters selected by students were Health Sciences; Arts, Audio-Video Technology and Communications; and Science, Technology, Engineering and Mathematics.

The EEDA mandated that students be provided with career information through the South Carolina Occupational Information System (SCOIS) or occupational information system approved by the SDE. It is also important to note that SCOIS is not only for basic career exploration. For example, the interactive exercise, Reality Check, provides students with an opportunity to cross-reference their favorite career cluster to a specific occupation. SCOIS also allows counselors, career specialists, and business partners to maintain electronic data about job shadowing, mentoring and other work-based learning experiences (EEDACC, 2010). Educators can also access training on SCOIS's STEM Career Inventories (EEDACC, 2011).

In Year 1 (2005-2006), 238 middle schools and 194 high schools reported using SCOIS; the remaining schools were using another SDE-approved occupational information system. By 2009-10, all South Carolina public elementary, middle and high schools had free access to SCOIS. Between 2006-2007 and 2010-2011, there was an 87% increase in the number of schools electing to use SCOIS (from 477 schools to 891 schools). Each year since 2006-2007, more than 100,000 students statewide completed SCOIS assessments. In addition to SCOIS, schools were also using EXPLORE and Kuder to provide career information to their students.

EEDA Facet 3 statewide: Increased counselor role in education and career planning.

Provision of training. EEDA implementation was guided by the SDE's guidance and counseling model, which helped school districts and communities to develop their own district-specific school guidance and counseling programs. In Year 1 (2005-2006), the EEDA Coordinating Council (EEDACC) reported that the state's overarching guidance and counseling model was complete and available to school districts electronically. At that time, the SDE was also updating the model to reflect EEDA content and policy. In Year 3 (2007-2008), the revised SC Comprehensive Developmental Guidance and Counseling Program was distributed throughout the state. To facilitate implementation of the model, K-12 school counselors received information and training through eight regional workshops in Year 3.

To ensure successful implementation of EEDA, guidance professionals received training and technical assistance on a variety of topics and in numerous venues. For example, in 2008-2009, nearly 4,000 Personal Pathways workshops were provided to teachers, counselors, and work-based learning coordinators throughout the state. However, in 2009-2010 and 2010-2011, there was a slight decrease in the number of Personal Pathways workshops provided to educators throughout the state.

Several organizations were involved in these career development opportunities, reflecting the extensive collaboration and partnerships that have facilitated implementation of EEDA. Guidance professionals received training at the annual Statewide Education and Business summits, statewide guidance counselor workshops, annual SC School Guidance Counselor

conferences, and through the SDE's Office of Career and Technology Education (SDE CATE). South Carolina educational television partnered with SDE to provide statewide presentations and "In Our Schools." SCOIS and Kuder representatives also provided guidance professionals with information and resources. Guidance professionals also received information and training electronically, through e-newsletters, the Carolina Careers digital video library, Carolina I-TV, and school counselor listservs. Additionally, school districts themselves provided training to counseling professionals.

Guidance counselor and career specialist duties. To facilitate policy implementation, the EEDA stipulated that school guidance counselors and career specialists limit their activities to guidance and counseling and to not perform administrative tasks. The EEDA utilized the American School Counselor Association (ASCA) guidelines for delineating a list of inappropriate (noncounseling) and appropriate (counseling) responsibilities. The noncounseling duties were to be eliminated or reassigned, so school guidance personnel could then focus more directly on students' needs. District and school administrators were encouraged to develop strategies for the elimination and reassignment of inappropriate tasks.

The EEDA stipulated specific duties associated with the Certified Career Specialist position. Beginning in Year 1 (2005-2006), career specialists must have earned their Career Development Facilitator (CDF) or Global Career Development Facilitator (GCDF) certification. Over 400 professionals reportedly held one of these two certificates by the end of 2005-2006. By the end of Year 2, approximately one-half of career specialists had met the certificate requirements. The majority of others were either enrolled in a certification course or were given provisional status. By Year 6 (2010-2011), approximately 100 % of career specialists whose positions were either fully or partially EEDA-funded had earned their certification, earned provisional status or were within the two-year eligibility guideline approved by the SDE in 2008-2009.

According to the original EEDA legislation, career specialists currently employed by the sixteen tech prep consortia must be supervised by the SDECATE office. By the end of Year 1 (2005-2006), the EEDA Coordinating Council (EEDACC) reported that the SDE was supervising the career specialists employed in SC business and education alliances. However, in Year 2 (2006-2007), the reauthorization of the Perkins legislation led to the demise of the sixteen tech prep consortia. As a result, eight of the sixteen original alliances (representing nine of the twelve Workforce Investment Area geographic regions) decided to operate under the Perkins IV, Title 1 guidelines. Funds were provided for a career specialist for each of these nine regions. By Year 3 (2007-2008), a career specialist was providing services in ten of these regions and by Year 6 (2010-2011), it was reported that the twelfth career specialist was expected to be hired in the near future. For Years 2 through 6, it was reported that the SDE supervised these career specialists.

These regional career specialists provided a variety of services, including technical assistance and professional development activities to school districts. In Year 4 (2008-2009), the regional career specialists conducted workshops for 700 secondary educators. By the following year (2009-2010), this number increased by over 100%, to 1,500 secondary educators receiving career development training.

Provision of counseling and career awareness programs to students. The EEDA stipulated that in Year 2 (2006-2007), counseling and career awareness programs on clusters of study were to be provided to all students in sixth through eighth grade. By the end of their eighth grade year, all students were required to select a preferred cluster of study. Ideally, this selection was to be made in consultation with parents, guardians, or parent/guardian designees.

Guidance counselors throughout the state were active in their efforts to provide career related information to students, as evidenced, in 2007-2008, by their coordination of 12,000 career activities for middle and high school students throughout the state. During the following year (2008-2009), the number of workshops increased by 100%, with career specialists coordinating 24,000 career development activities. The number of career development workshops increased to 29,000 by 2010-2011, representing a 241% increase over the four-year period (since 2007-2008).

Regarding Career Specialist activities, more than 3,000 career-related workshops were provided in 2010-2011, representing more than a 100% increase from 2007-2008 when 1,528 workshops were provided.

The EEDACC reported that significant progress was also made in the provision of career and technology information to parents and guardians: approximately 317,000 received such information in 2010-2011 versus 123,900 in 2007-2008. There was also a reported increase, over time, in the proportion of the state's eight graders who completed an IGP accompanied by a parent or parent designee, from 80% in Year 3 (2007-2008) to 85% in Year 6 (2010-2011). However, there was a reported slight decline over the last three years in the proportion of parents or designees who participated in at least one IGP planning conference (72% in 2008-2009; 71.5% in 2009-2010; and 67% in 2010-2011).

The EEDA Coordinating Council (EEDACC) reported that by the end of Year 2 (2006-2007), career awareness programs on clusters of study were being provided to over 90% of students in grades six through eight. Additionally, career interest inventories were available to all schools and lesson plans and career awareness and exploration programs were available as well.

Student participation in career-related activities. The benefits of this training and career development seemed to influence student participation in career development activities. By year 3 (2007-2008), the EEDACC reported that a majority of students in grades six through nine had completed at least one career assessment and/or participated in at least one career exploration activity during the year. In the subsequent years, it was reported that nearly 100% of students had participated in these activities, with the greatest percentage of students being assessed in tenth and eleventh grades. In 2007-2008, the EEDACC also reported that all middle and high school students were connected to the eIGP. Beginning in 2008-2009 and in all subsequent years, at least 97% of students developed, revised, or completed an IGP during the academic year.

EEDA stipulated that middle schools and high schools had to provide students with the services of a certified career specialist by 2006-2007 and 2007-2008, respectively. All middle

and high schools had to achieve a 300:1 student-to-guidance-personnel ratio by 2007-2008. By 2010-2011, funding was provided for 547 career specialists, an increase over 2006-07, when funding was provided for 538 career specialists in middle and high schools. Prior to the passage of EEDA in 2005, only 33% of the state's middle and high schools had achieved a 300:1 ratio or less and over 51% had a ratio of 350:1 or greater. By 2010-2011, approximately 87% of schools had achieved the 300:1 student-to-guidance-personnel ratio and only 13% had a ratio of 350:1 or greater.

The EEDA stipulated that all public high schools implement a SDE-developed or – approved career guidance program or model. School districts also had to ensure that students wanting to attend a school that offered the courses required for their major be provided with transportation to do so (if their own school did not offer such courses). During Year 1 (2005-2006), the South Carolina career guidance and counseling model was available to all schools; this model was revised in Year 3 (2007-2008).

By the end of Year 1, a majority of school districts had identified at least three clusters of study and majors or were in the process of doing so; by Year 2 (2006-2007) high school principals reported that nearly 90% of the state's high schools had selected at least three clusters of study. By the end of the first year, high schools were also allowing students desiring to transfer to other schools if their actual school did not offer the courses necessary to complete a career cluster.

The EEDACC also reported significant accomplishments in the provision of career-related experiences to students by Year 6 (2010-2011). Nearly 29,000 career events were conducted by career specialists in 2010-11 and more than 257,000 of the state's middle and high school students participated in at least one career awareness inventory. In Year 3, 81% of ninth grade students participated in an IGP conference and completed their IGPs; by Year 6 (2010-2011), 98.4% of ninth-grade students participated in these activities. Similar increases were reported for job shadowing experiences, with 60,000 students participating in such experiences in Year 4 and 67,537 participating in Year 5. Approximately 127,000 students participated in extended/work-based learning experiences throughout the 2009-10 school year. Between 2008-09 and 2010-2011, there was an 11% increase in the number of students participating in extended work-based learning opportunities (increasing from 108,000 in 2008-2009 to 120,000 in 2010-2011).

Individual Graduation Plans are an essential element of successful EEDA implementation. Such plans must be aligned with a student's particular course of study, include core academic courses, and be flexible to allow for changes in course of study, among other requirements. By the end of Year 1 (2005-2006), the EEDACC reported that the eIGP requirements for post-high school choices had been developed and were being piloted in six school districts. By the following year (2006-2007), this item was designated as "completed."

From the inception of the EEDA initiative, parents and advocates were envisioned as a central participant in student career exploration and development activities. Annual parent conferences are a primary method of communicating with parents about student progress in career exploration and development. This emphasis is reflected in the change to the name of this

section of EEDA from "Parental/Advocate Participation Integral to Career Clusters Program" to "Parental Participation and Annual Parenting Counseling Conferences" in 2006-2007.

Several awareness campaigns informed parents about the importance of participating in IGP conferences (e.g., "What Parents Need to Know about the EEDA" (2006-2007); "Dropping Out of School: Failure is Not an Option" (2006-2007); and the "Resource Guide for Parents" (2009-2010). In 2010-2011, the REC coordinators made arrangements for more than 550 speakers to discuss college access and awareness for nearly 30,000 students and parents statewide. According to the EEDACC (2011), approximately 317,000 parents/guardians received career and technology education information in 2010–2011. This figure represents a 155% increase over the number served (123,900) in 2007-2008. The proportion of parents who believed that the IGP process benefitted their children increased from 82% in 2008-2009 to 93% in 2010-2011. Additional data about student participation in IGP conferences was also provided in the EEDA annual reports, but these data were not reported in a consistent fashion, thus it was difficult to make comparisons from one year to the next.

EEDA Facet 4 statewide: Implementation of evidence-based high school reform. The EEDA legislation mandated that, by the 2009-2010 school year, all high schools across the state implement the principles of High Schools That Work (HSTW) or a similar model of organizing clusters or majors. Other state-approved models used by schools included the Content Literacy Continuum, developed by the University of Kansas Center for Research on Learning and the CARS (Crescent=Achievement, Responsibility, Stability) model developed by S.C. Anderson School District Three.

From the beginning of the reporting period (2005-2006), this initiative was reported as being "on schedule." In the first year (2005-2006), the EEDACC reported that 57% (115) of high schools had implemented HSTW. By 2010-2011, that proportion had increased to 95% with 191 HSTW sites in South Carolina (in addition to 16 Career Centers that Work (EEDACC, 2011).

EEDA Facet 5 statewide: Facilitation of local business-education partnerships and resource dissemination through regional centers. The EEDA legislation mandated that, before July 1, 2006, the EEDA Coordinating Council must designate Regional Education Centers (RECs) that would coordinate and facilitate the delivery of information, resources and services to stakeholders throughout the state, including students, educators, employers, and the broader community. In the first year, 12 RECs, corresponding to the 12 local workforce investment areas delineated by the South Carolina Workforce Investment Act, were designated. By 2007-2008, all 12 RECS had established advisory boards to oversee REC operations. In 2009-2010, the EEDACC reported that more than 240 different educators and business representatives served on the 12 REC advisory boards.

In the annual reports, the EEDACC reported on four elements of REC operations, each of which is summarized below.

(A) By the second year (2006-2007), efforts were underway to create virtual RECs. These virtual centers aimed to link educators, students and parents with pertinent career

information and resources. By 2008-09, all 12 virtual centers were in operation. By October 2009, each site reported an average of 11,066 visitors. REC coordinators actively promoted the virtual RECs through numerous meetings, workshops, conference presentations, and an electronic newsletter.

(B) By Year 3 (2007-2008), coordinators were hired for each of the 12 RECs. All of them had acquired their career development facilitation certification by Year 5 (2009-2010). The REC Coordinators were tasked with collaborating with schools and businesses in each of their regions to coordinate career-oriented learning experiences for students. A statewide development coordinator helped the advisory board to establish regional partnerships with a variety of educational and business entities.

(C) This subsection covers the oversight responsibilities of the REC Committees. By Year 3 (2007-2008), the original REC Committee was disbanded and replaced by the REC Advisory Panel (RECAP), comprised of representatives from a variety of state government, educational and business entities and the 12 REC advisory boards. During Year 5 (2009-2010), the RECAP revised REC bylaws and other documents to improve the efficiency of RECs and to encourage and facilitate productive relationships between the 12 RECs and their partners.

(D) In 2006-07, more than 200 board members were appointed by the local legislative delegations in eight established REC regions. By 2007-2008, the number of members had increased to 300 and significant progress was made on developing a strategic plan for the 12 RECs. By the end of the 2011, the membership totaled 240.

The EEDA also required that the SDE collaborate with several state organizations, including the State Board for Technical and Comprehensive Education, the Commission on Higher Education, and the South Carolina Department of Commerce and the South Carolina Employment Security Commission. Through such collaboration, stakeholders were provided with information about potential employers, labor market data, and workforce education programs for youth in particular.

In Year 3 (2007-2008), the SDE had secured a license for K4A, an online database that helps college students and adult workers to identify job opportunities. Additional information systems that have facilitated policy implementation include Connect 2 Business (for businesses) and Kuder Journey (for college students and adult workers). The number of adults registered in Kuder Journey increased by 440% between Year 4 (2008-2009) and Year 6 (2010-2011), increasing from 5,000 to 22,000 in that time frame. Before the Connect 2 Business effort was discontinued in 2009-2010 due to budget cuts, over 900 businesses had registered to post extended/work-based learning experiences. Thirteen virtual job shadowing experiences were created in 2009-10 by Microburst Learning; by Year 6 (2010-2011), 37 virtual job shadowing experiences were available to students. This effort was enhanced through the provision of more than 140 virtual job shadowing experiences available through VirtualJobShadow by 2010-2011.

EEDA Facet 6 statewide: Articulation between K-12 and higher education. Since the passage of EEDA, a variety of processes and programs have been developed to facilitate the dual enrollment of high school students in postsecondary institutions. In Year 1 (2005-2006), efforts

were initiated to improve the curriculum pathways for students to transition from high school into college. The implementation of this line item was facilitated through a partnership between representatives of the EEDA Information Technology Committee, the SDE, the South Carolina Technical College System, the South Carolina Commission on Higher Education (SC CHE), and institutions of higher education throughout the state. These efforts focused on reviewing statewide articulation agreements and identifying a list of 86 universally transferable courses. Articulation agreements for Project Lead the Way pre-engineering courses were approved by three four-year institutions as well.

In Year 3 (2007-2008), the University of Oregon's Educational Policy Improvement Center (EPIC) was contracted by SC CHE to develop and implement the South Carolina Course Alignment Project (SC CAP); the aim of SC CAP was to develop sequences of paired course (an exit-level high school course and an entry-level college course) in core subjects (English/language arts, mathematics and science). Throughout the remaining three years, this effort was facilitated by a series of key stakeholder meetings, an environmental scan of K-16 alignment issues, an interactive project web site, the collection of public comments about the College Readiness Reference Standards, and the recruitment of institutional liaisons from partner institutions. Also, by Year 3 (2007-2008), the SDE had secured an electronic student record and transcript system. In Year 4, the SC CHE had contracted with a Pennsylvania company to develop and implement a web-based course articulation and transfer system statewide.

By Year 4 (2008-2009), six four-year institutions had implemented the equivalency synchronizer, which was designed to synchronize equivalency data from each institution with the South Carolina Course Articulation and Transfer system. By October 2011, the SC Transfer and Articulation Center (SC TRAC) system was populated with approximately 551,000 course equivalencies and 770 transfer agreements. As early as Year 1 (2005-06), agreements for Advanced Placement courses and a draft policy for statewide acceptance of International Baccalaureate (IB) courses were developed. The IB credit acceptance policy was approved by the CHE in fall 2007.

Twenty-eight of the state's 33 institutions offered dual enrollment courses in Year 3 (2007-2008). By 2008-2009, 29 of the 33 institutions offered such courses. Approximately 170 different courses were offered in 2007-2008; by 2008-2009, the number had increased to 186. Technical colleges offered a total of 428 sections of dual enrollment courses in 2007-08; this number increased by 46.5% (627 courses) by 2008-2009. By 2010-2011, the state's technical colleges offered 88.2% of the total number of dual enrollment courses, the four year institutions offered 6.6% of the total and the USC regional institutions offered 5.2% of such courses (EEDACC, 2011).

These efforts seem to have influenced the dual enrollment of high school students in postsecondary education. The number of secondary students completing dual credit coursework increased from 7,532 in 2005-06 to approximately 9,900 in 2010-2011, an increase of approximately 32%.

Beginning in Year 1, the SDE's Office of Educator Quality initiated efforts to ensure that teacher preparation programs throughout the state were adequately preparing teachers,

counselors, and administrator's to implement the EEDA requirements. To facilitate this goal, in Years 3, 4, and 5, the CHE allotted $30,000 to teacher education units at all public colleges and universities to assist them with the alignment of teacher credential curricula (Year 2, 2006-2007). In Year 3 (2007-2008), consultants developed an "EEDA toolkit" to make this integration easier for institutions of higher education. A 2008 statewide EEDA Teacher Education Technical Assistance Workshop aimed to help institutions implement EEDA and incorporate performance-based standards into their educational institutions. A majority of institutions followed-up these efforts with workshops and conferences of their own, targeted toward faculty seeking information regarding how to integrate EEDA standards into their courses. In 2008-2009, training on contextual course methodology was provided by regional career specialists to over 700 secondary educators; the same training was provided to over 1,500 secondary educators the following year (2009-2010).

The Impact of Budget Cuts on EEDA Implementation as Reported by SDE. State budgeting shortfalls influenced the implementation of several EEDA initiatives; the effects of these budget cuts became especially apparent beginning in 2008-2009. In December 2008, EEDA Coordinating Council (EEDACC) members expressed concern about midyear (2007-2008) budget cuts that would influence two things: 1) the implementation of programs for at-risk students, and 2) establishing curriculum standards. Another indication of the impact of budget cuts was that all formal EEDA marketing activities were ended in July 2009. Informing students, teachers, parents, and the community about EEDA was a large part of the policy. Ending formal marketing efforts so soon may have had a negative impact on policy implementation throughout the state.

In 2008-2009, the EEDACC indicated in meeting reports that there would not be an increase in funding for career awareness programs, IGPs for middle school students and achieving the student-to-guidance personnel ratio of 300:1. The committee also indicated that a reduced funding request was not adequate to allow for continuous improvements in key technology components of certain EEDA line items (EEDACC, 2009).

Over time, the EEDACC reported a steady increase in the number of guidance counselors serving in the dual role of guidance counselor and career specialist. For example, in 2008-2009, 12% of career specialists reported serving in these dual roles; by 2011-12, this proportion had increased to 66% (EEDACC, 2011). As reported in December 2011, "this steady increase is a direct result of budget cuts: in several districts, the positions of career specialists who were not certified counselors were eliminated due to cuts in districts' budgets" (p. 23). Such trends reportedly resulted in a decrease in the number of career-related activities and workshops offered to educators, students and parents in 2009-2010.

Budget cuts also affected the operation of Regional Education Centers (RECs). In 2008-2009, due to the poor economic situation in the state, the SDE reduced their funding request for the RECs line item below the desired level. As expressed by both the SDE and EEDACC, "the current level of funding hinders the RECs [coordination and facilitation efforts] necessary to meet the identified needs in their respective regions" (EEDACC 2009, p. 30).

VI. Observations Across Sample High Schools

By the end of our final project year, we have collected and analyzed a variety of quantitative and qualitative data from the eight sample high schools. We collected both quantitative and qualitative data from sample schools for the Class of 2009 and the Class of 2011. The Class of 2009 was surveyed once, just prior to graduation, about their experiences with career-focused activities, career planning, and school engagement. The same survey was administered twice to the Class of 2011, once following their 10th grade year and again just prior to graduation. In this report, students in the Class of 2011 surveyed following their 10th grade year will be referred to as "sophomores" while students surveyed in this class prior to graduation will be referred to as "seniors." We also surveyed guidance personnel about their involvement in career-focused education and the development of student Individual Graduation Plans (IGPs) and about changes in their assigned duties since the implementation of the main elements of EEDA related to high school guidance responsibilities. Two site visits were conducted at sample schools and partner postsecondary institutions to interview school personnel about implementation of the reform policy and the progress made in career-focused education, the development of POS at their schools, and the characteristics of these POS. An additional site visit was made to each school in spring 2011 to conduct focus group interviews with the Class of 2011 as seniors. From the South Carolina Department of Education (SDE) statewide longitudinal data system (SLDS), we collected student and school-level longitudinal demographic, attendance and discipline data; 8th grade standardized test scores; course histories; and Individual Graduation Plan (IGP) data (including declaration of majors, intentions to complete majors, and postsecondary plans). From the SDE Office of Career and Technical Education (SDE CATE), we collected school-level data on state-recognized CTE programs and enrollment in these programs over the study period.

In this section we summarize our findings across sample schools gleaned from these various sources. The discussion is organized around our four research questions:

1. To what extent does South Carolina's Education and Economic Development Act facilitate the development of Programs of Study (POS)?
2. What impact does the level of local economic resources have on the implementation of EEDA and the development and implementation of POS?
3. What impact does the implementation of EEDA have on:
   a. student high school outcomes, and
   b. student postgraduation preparation and plans?
4. What impact do POS as defined in Perkins IV have on:
   a. student high school outcomes, and
   b. student postgraduation preparation and plans?

Before we turn to findings specific to these questions, however, it is important to summarize the level of EEDA implementation found in sample schools during the study period to give context to the findings on research questions.

A. EEDA Policy Implementation at Sample High Schools, Observations, and Student Outcomes

In this section we present site visit and other observations related to EEDA implementation levels in sample schools overall, illustrating the differences in levels of policy implementation (LOI) across the eight high schools. Then we discuss how the Class of 2009 (little to no exposure to EEDA) and the Class of 2011 (exposure to EEDA since 8th grade) differ on selected outcomes and how LOI was related to several of the key policy facets and various student outcomes.

Early Policy Implementation Observations Across Sample Schools, by Facet. In this section of the report, we report on findings from our initial data collection efforts on the implementation of the six facets at the eight sample schools. We report on overall EEDA implementation across all schools and highlight key differences across some schools. Much of this was early data collected during the 2009 site visits. Calculating a baseline Level of Implementation (LOI) of the policy was important to give context to the efforts at the school level regarding various parts of EEDA.

Part of our purposive sampling strategy was to be able to maximize differences between schools on policy implementation. As discussed earlier, EEDA was to be phased in over time with some infrastructure activities beginning in the 2005-2006 school year, and school-based activities beginning in the 2006-2007 school year. EEDA was to be completely implemented by the end of the 2010-2011 school year. At the time of our first site visits, 2008-2009, implementation of EEDA activities directly affecting our high schools was in its third year (see the timeline in Appendix D).

The study team identified the most salient EEDA initiatives for high schools (the focus of our study) and grouped them into six facets. Initial differences in levels of implementation were built into sample selection to ensure a sample with a range in levels of implementation of EEDA (LOI). Even after site visits provided us with more specific data to update the LOI scores for our sample schools, the selected schools were found to vary in implementation along all of the six relevant facets of the South Carolina policy (described in the Constructed Variables section). Figure VI.A.1 illustrates that the eight sample schools were found to vary relative to each other in regards to the degree of implementation of each of the six identified facets.
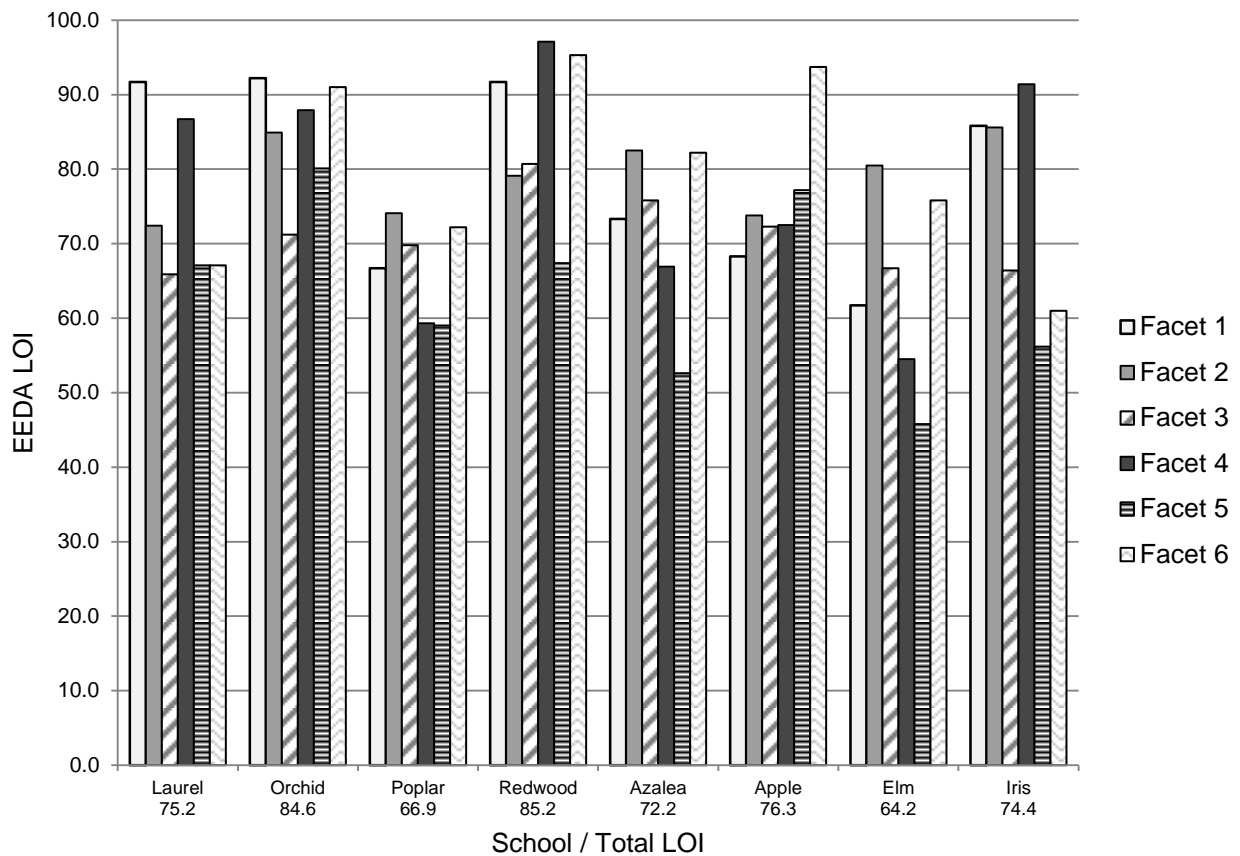
Figure VI.A.1. EEDA level of implementation (LOI) scores by facet by school. Facet 1: Assist high-risk students; Facet 2: Career-focused curricula integration; Facet 3: Increased counselor role; Facet 4: High school reform; Facet 5: Partnerships and resource dissemination; and Facet 6: K-20 articulation.

Data to determine these levels of policy information came from surveys and interviews conducted in 2009. The Class of 2009 was surveyed as seniors in 2009 and the Class of 2011 was surveyed as sophomores in 2009. Both cohorts were asked about their experiences with career-focused activities and career planning and about school engagement. We also surveyed guidance personnel about their involvement in career-focused education and the development of student Individual Graduation Plans (IGPs), as well as about changes in their assigned duties since EEDA. School personnel were interviewed about the impact of EEDA on career-focused education and the development of POS at their schools and the characteristics of these POS. A POS implementation measurement tool was developed and used to collect data on POS from sample schools. Statewide data on EEDA and CTE POS policy implementation were also acquired and analyzed. This section presents data on the early measures of LOI (implementation of the policy) at the sample schools.

Initial differences in levels of implementation were built into sample selection to ensure a sample with a range in levels of implementation of EEDA. At the time of site selection visits in

the middle of the 2008-2009 school year, two of the sample schools had a relatively low level of policy implementation, three schools had moderate levels of policy implementation, and three schools had relatively high levels of policy implementation (for more information on sample selection and collection of data and findings on policy implementation, please see Sharp et al., 2012 and Smink et al., 2010). In addition, selected schools varied in implementation along all of the six relevant facets of the South Carolina policy (described in the Study Design section). Below is a brief summary of the overall level of policy implementation at sample schools by the time of the initial site selection visits in 2008-2009.

EEDA Facet 1: Identification of and assistance for high-risk students. Schools varied in our first site visits in the extent to which they had implemented special programs to identify and assist high-risk students. Some were in the early stages of tracking the performance and outcomes for high-risk students and others were further along in their efforts.

It is important to note that only during 2006-2007 ($504,000) and 2007-2008 ($4,500,000) were at-risk programs fully funded (i.e., funded at the level of the SDE's original funding request). In December 2009, the EEDA Coordinating Council (EEDACC) expressed concern that budget cuts would negatively impact the progress made in implementing EEDA for at-risk students.

EEDA Facet 2: Integration of rigorous academic and career-focused curricula, organized into career clusters and majors. Study results indicate that by Spring 2009, the third year of IGP roll out, several schools were well along in their implementation and use of IGP documents, the IGP process and annual guidance-student-parent meetings, and the electronic IGP (eIGP) system, while others were in their first year of implementation of the eIGP system. All schools had established at least preliminary career majors, with a range from 14 to 44 career majors offered and an average of 26 majors across schools. All but one of the sample schools had organized these majors into career clusters. The numbers of career clusters at these seven high schools ranged from 11 to 14. The eighth school that was in the process of organizing their career majors into clusters during our first site visit had completed that process by the following school year and listed 16 career clusters in that year's registration materials.

Figure VI.A.2 shows the trends in clusters appearing on the statewide longitudinal data system (SLDS) Cohort 2011 IGPs as of 10th grade (2008-2009). Health Sciences was the most popular IGP cluster, followed by Science, Technology, Engineering and Mathematics (STEM) and then Arts, Audio Video Technology & Communications. Our study results seem to parallel the state reports that students tended to gravitate toward particular career clusters. Throughout the study period, across the state, eighth and ninth graders listed these same three clusters most often in their IGPs.
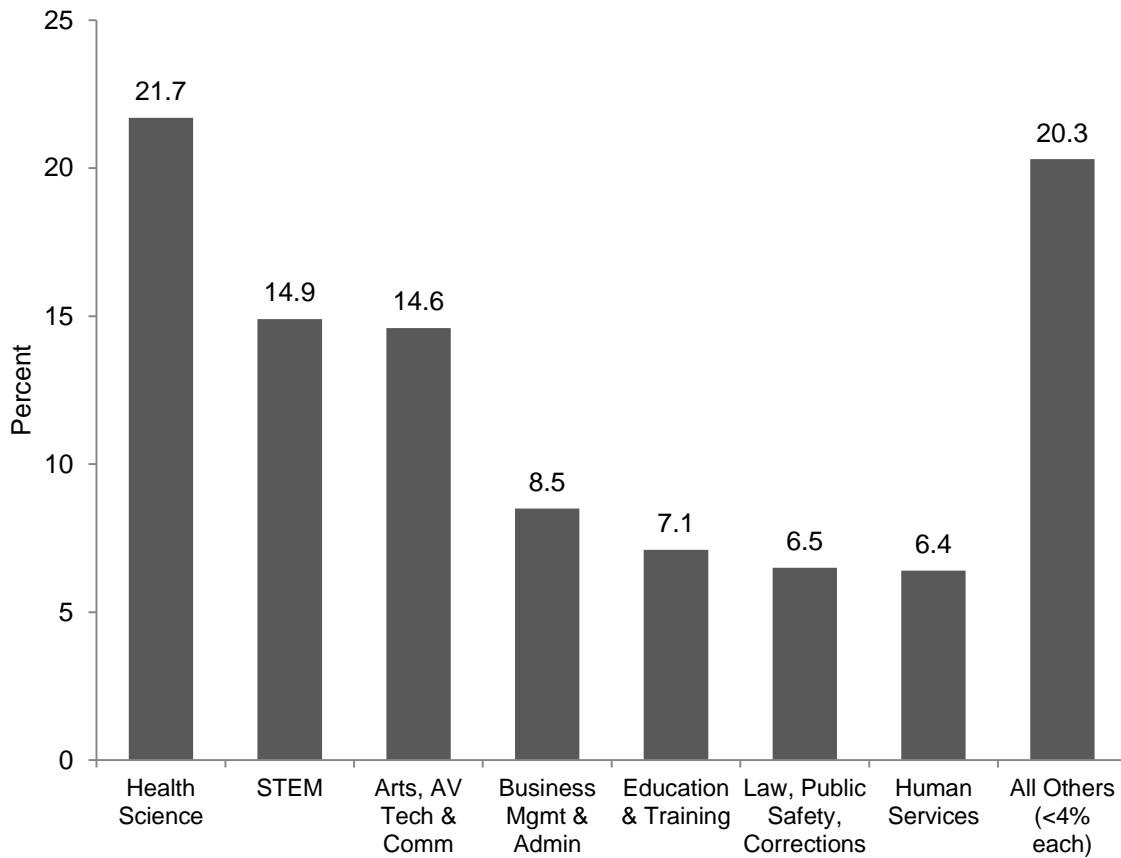
Figure VI.A.2. IGP major clusters chosen by SLDS 2011 cohort at 10th grade (2008-2009).

While the EEDA policy does not require students to complete majors, some sample students indicated as early as 10th grade, when they are required to select a career major, that they intended to progress through the requirements to complete the high school major chosen. Others indicated on their IGPs that they were only declaring a major as required for the IGP and thus can be assumed not to have plans at that time to complete the major. Figure VI.A.3 indicates that the 2011 SLDS cohort at 10th grade was split relatively evenly on intentions to complete majors. As of 10th grade, about 30% of the SLDS 2011 cohort planned to complete their selected majors. About 40% indicated that as of 10th grade, they were just declaring a major. A little less than 30% of the 10th grade IGPs had missing data on intentions to complete a particular major.
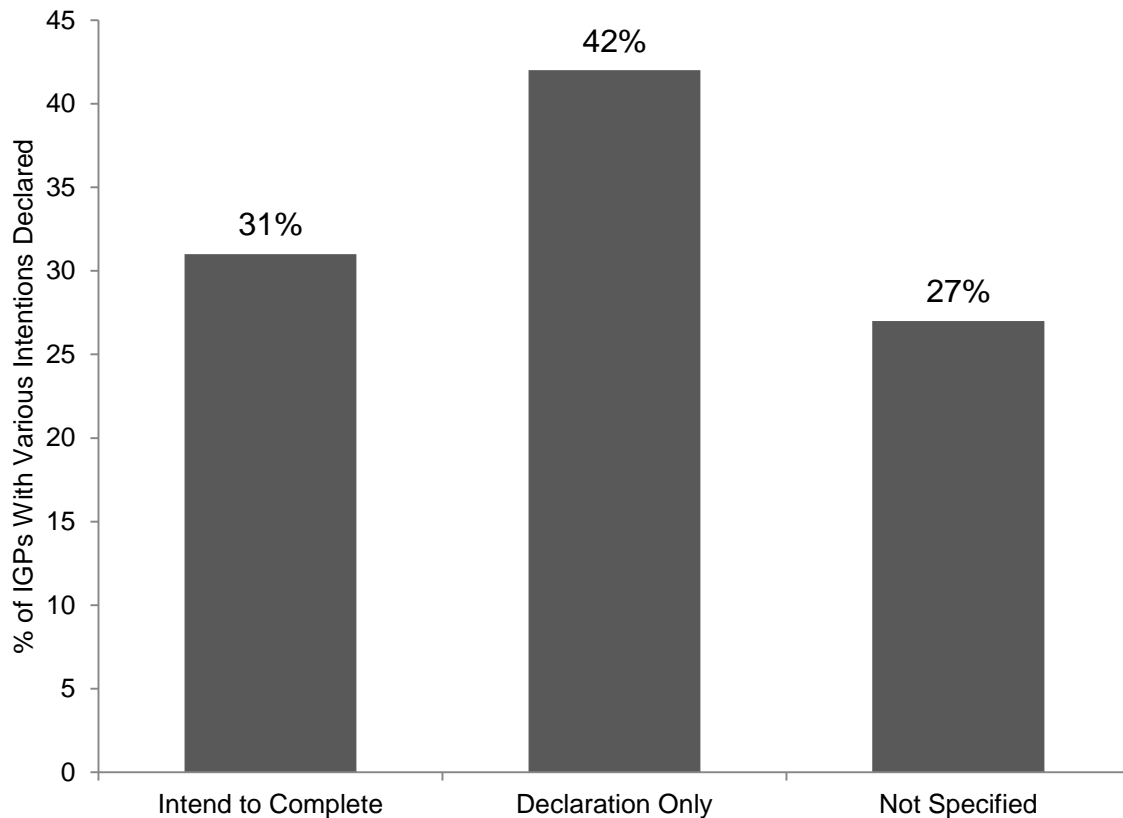
Figure VI.A.3. Students' intentions to complete majors, as indicated on 10th grade IGPs of the SLDS 2011 cohort.

The integration of rigorous academic and career-focused curricula requires training for school personnel. EEDA requires the SDE to provide this type of training and professional development as well as resources to K-12 school personnel to assist in efforts to integrate academic and career-focused curricula, including the use of cluster-of-study curriculum frameworks and of IGPs. The policy mandates that all middle and high school educators receive training in contextual teaching, involving methodologies used by teachers that focus on concrete hands-on instruction and content presentation with an emphasis on real-world application and problem solving. EEDA also requires all state colleges of education to include in their training of teachers, school counselors, and administrators the following topics: career guidance, the use of the clusters of study curriculum framework and IGPs, learning styles, the elements of the South Carolina Career Guidance Model, contextual teaching, cooperative learning, and character education. The State Board of Education has developed performance-based standards for all teachers and principals in the areas of career exploration and guidance.

Teachers in our study schools reported receiving varied amounts of training related to EEDA activities from their school, their district, or the state. The state was credited with providing good virtual job shadowing and other general resources through websites such as the Personal Pathways to Success website, the college and career planning sites through Kuder, Microburst learning sites, and the REC sites. However, guidance personnel and school-based

career specialists were reported to be the main providers of training for teachers. Teachers in sample schools were most likely to receive school or state-sponsored training in the early stages of policy implementation but little training as the implementation continued. Some teachers found this training too general and felt the need to supplement initial training with their own research. Some teachers commented that the best training they received on content integration and career clusters was through professional development provided by High Schools That Work (HSTW) staff.

Guidance personnel in study schools reported receiving at least some training on career pathways and IGP development, but the amount and type of training varied, as did the topics covered. This training was offered through a variety of channels, including the local school district, the state education department, and state and regional professional development meetings and workshops. School guidance counselors at one school reported receiving training through a local business alliance. It was not clear how much information was being provided to personnel on various CTE programs and occupations in these various workshops, since we found that many of the counselors were not aware of the full range of CTE programs and types of career opportunities available to their students. Many teachers and counselors too were taking on the responsibilities of training themselves to some degree as they could see the need to possess skills and information in this area. Regardless of the types of training described, school counselors interviewed generally felt satisfied with the training they had received.

EEDA Facet 3: Increased counselor role in education and career planning. As described in more detail earlier in this report, career guidance and counseling services are critical to the EEDA reform policy, with school guidance and counseling programs playing a key role in students' career development and career planning. Under EEDA, students are exposed to career development efforts in elementary school with the exploration of career pathways and career interests. This process of exploration continues throughout later grades and intensifies in middle school. In 8th grade, each student, along with parents or guardians, works with a counselor to develop an IGP, which includes courses required for graduation and appropriate electives that align with the student's interests, postsecondary plans, and professional goals. The process of working with counselors continues into high school where, on an annual basis, students and parents are to meet with school counselors to review and revise their IGPs. Further, school counselors with career development facilitator certification or other school personnel with such training are to provide students with career awareness and career exploration activities and work-based learning (WBL) experiences.

All high schools had access to the services of career specialists by the time of our first site visit, and all schools reported having student-to-guidance personnel ratios of 300 to 1 or less at that time, as required by EEDA. This is despite the fact that, in 2008-2009, the SDE reported that due to economic situations, the SDE had not requested an increase in the upcoming FY 2011 EEDA budget for this line item. The committee also recognized that the level of funding was not adequate to meet the 300:1 student-to-guidance personnel ratio required by EEDA. As an update, the December 2010 EEDACC annual report states, "The percentage of middle and high schools with a student-to-guidance-personnel ratio of 300:1 or less has decreased by 9% since 2008–2009, from 8% to 69% in 2009–2010. This decrease is directly attributable to the reduction in state funds because, in an attempt to offset the impact of budget reductions, some

districts have eliminated the career specialist positions and have required counselors to fulfill those duties" (p. 15).

Overall, school guidance personnel were found to be key players in policy implementation. Most counselors in the eight schools reported engaging in more career-focused activities and academic guidance because of EEDA, as well as spending less time on personal guidance, but the extent of engagement in these activities and the amount, nature, and types of career experiences they provided for students varied across sample schools.

Since counseling and career guidance and career-focused activities were such a large part of EEDA efforts ongoing in our schools, we focused a number of data collection activities in this area over the study period. Data collected and analyzed and trends discovered are described in more detail later in this section.

EEDA Facet 4: Implementation of evidence-based high school reform. All eight sample high schools indicated that they had implemented at least some of the key elements of the High Schools That Work (HSTW) reform model by the time of our first site visit in 2008-2009. Two schools had begun implementing HSTW prior to passage of EEDA (2005) while two others began implementation at the same time or shortly after EEDA's passage. The remaining four schools began implementation later but still were in compliance with EEDA's requirement of whole school reform implementation prior to 2009-2010.

During preliminary school visits, we noticed that there appeared to be a relationship between HSTW implementation and the level of acceptance of and implementation of the state EEDA policy. Schools already actively engaged in HSTW often had a head start on EEDA as well as POS implementation, due to many of the requirements of HSTW. The higher the level of HSTW implementation and the longer the school had been implementing the model, the higher the level of state policy implementation appeared to be. As will be discussed later in this section, this relationship was also found in our quantitative analysis. In addition, two of the sample schools with the highest level of implementation of HSTW also were the only schools where the study team identified study-defined Perkins IV POS.

Many schools found elements of HSTW to be highly compatible with different facets of the state policy. Some primary elements noted by staff and teachers included the modules developed to help implement the 10 HSTW key practices, the technical assistance and professional development provided by the Southern Regional Education Board (SREB) to assist with HSTW implementation, the advisor-advisee program, and the assistance the model provided in developing career pathways and ways to integrate career content into coursework. One principal told us that a key reason for electing to implement HSTW was that it would help make a "seamless transition with EEDA." Another principal described it as a "good umbrella for all we are doing." For one of the early implementation schools, HSTW was considered by the principal as "part of the fabric of their school."

The organization of schools into Smaller Learning Communities (SLCs) at three of the study sample high schools also appeared to have helped with policy and POS implementation. Staff reported that SLCs helped to increase collaboration between academic and CTE teachers,

especially in the school that organized its learning communities around career clusters. As part of the SLCs' curriculum and instruction efforts, core academic teachers are integrated with CTE and other teachers. Teachers reported that being located on the same hall, having common planning periods, working in learning community teams, and advising a cross-section of students all helped to stimulate efforts towards integration and collaboration.

Two schools had merged SLC and HSTW into the reform models at their schools. A principal at one of these schools told us that they opened with EEDA in mind and that their school's strategic plan was built around EEDA, HSTW, and SLC because they fit well together and reflected their institutional goals. The structure for career pathways at the other school had already been put into place prior to EEDA through implementation of HSTW. The passage of EEDA only strengthened this orientation. But the real impetus for the increase in their efforts on career pathways and curriculum integration, as reported by staff during interviews, came from the receipt of funding for SLCs. Staff reported that the school redesigned the curriculum around clusters and organized their learning communities around clusters of related pathways. Each learning community contained relevant content teachers for the clusters, such as for business and marketing, and core academic teachers were assigned to each community and co-located for better coordination.

EEDA Facet 5: Facilitation of local business-education partnerships and resource dissemination. Several initiatives in EEDA policy promoted partnerships between local schools and districts and local businesses for CTE and non-CTE programs. For example, EEDA created 12 Regional Education Centers (RECs) to help disseminate information about the policy to local industries and the community, to help schools to educate students and staff about career opportunities, job training, and apprenticeships, and to connect local education and businesses. Involvement with the RECs varied across sample schools, ranging from no contact to periodic contacts. Another program developed by the state and partially administered through the RECs was the Connect2Business program, which recruited businesses to be involved with local schools. At one time, over 900 businesses across the state had volunteered to have their contact information listed to be partners with their local schools.

Despite these policy initiatives, some schools were much further along than others in the formation of partnerships with the business community at the time of our 2009 site visits. Nearly all of the schools had little to no contact with their Regional Education Centers (RECs), although these centers were supposed to be assisting schools in recruiting business partners, training teachers and staff, and identifying work-based learning experiences for students. We did find that all schools were disseminating to students, parents, and school staff at least some information on CTE, career planning and IGPs, the career majors and clusters, and to some extent on work-based learning experiences.

School administrators and CTE faculty at our study high schools mentioned during our site visits that local advisory teams were an integral part of program development and important for keeping schools informed on the needs of industry. Links to business and industry were also important to comply with policy mandates for increased job shadowing, mentorship, and internship training opportunities for students. But having staff available to identify, establish, and maintain partnerships is critical to the success of these efforts, as is the availability of local

business partners. Few sample schools had staff that they could dedicate to developing these partnerships, and the remote or economically depressed locations of some schools posed serious challenges to creating the necessary partnerships with industries.

The implementation of REC activities were most certainly influenced by broader contextual factors, including budget cuts to this portion of EEDA implementation. As reported by the SDE, during Year 1 (2005-06), Year 2 (2006-07), and Year 3 (2007-08), the operation of RECs was funded at the levels requested by the SDE ($1,200,000, $1,200,000, and $2,586,000, respectively). However, in 2008-09, due to the poor economy, the SDE reduced their funding request below the desired level ($1,844,032). As expressed by both the SDE and the EEDA Coordinating Council (EEDACC), "the current level of funding hinders the RECs [coordination and facilitation efforts] necessary to meet the identified needs in their respective regions" (EEDACC 2009, p. 30). In addition, according to the SDE, the provision of career information and employment options was impacted by budget cuts. This particular section of EEDA was only funded in Year 2 (2006-07) and Year 3 (2007-08) in the amount of $45,000 each year.

EEDA Facet 6: Articulation between K-12 and higher education and industry/employment. The SDE reported that in Year 1 (2005-06), efforts were initiated to improve the curriculum pathways for students to transition from high school into college. The implementation of this line item was facilitated through a partnership between representatives of the EEDA Information Technology Committee, the SDE, the South Carolina Technical College System, the South Carolina Committee on Higher Education (SC CHE), and institutions of higher education throughout the state. These efforts focused on reviewing statewide articulation agreements and identifying a list of 86 courses with approved curriculum that would automatically transfer credits between all two-year community/technical colleges to four-year institutions of higher learning across the state. Articulation agreements for Project Lead the Way pre-engineering courses were approved by three four-year institutions as well.

Also, according to the SDE, since the passage of EEDA, a variety of processes and programs have been developed to facilitate the dual enrollment of high school students in postsecondary institutions. As early as Year 1 (2005-06), agreements for Advanced Placement courses and a draft policy for statewide acceptance of International Baccalaureate (IB) courses were developed. The IB credit acceptance policy was approved by the SC CHE in Fall 2007. In addition, efforts were also underway to increase the number of statewide articulation agreements between the community or technical colleges (which offer two-year associate degrees) and four-year colleges and universities across the state.

Our study results indicate that the articulation structures and processes varied widely across sample schools, with most schools offering at least some opportunities to students for dual credit and/or dual enrollment. All eight of the schools participating in our study reported either dual enrollment or dual credit arrangements, or both, with local postsecondary institutions. Most of these agreements were with local two-year community or technical colleges. More detail on dual credit availability and dual credit course-taking are described in the section on programs of study in the Observations chapter of this report.

Trends in Guidance and Career-Focused Activities in Sample Schools and LOI. In the previous section we reported on overall trends for EEDA across all schools during the initial year of the study that served as the basis for the level of implementation (LOI) scores for each school. Due to the centrality of counseling in the implementation of EEDA and the potential of guidance personnel to influence the development and implementation of high quality POS, we examined the role of guidance in policy implementation in the sample schools in more depth to learn whether and how guidance personnel duties changed since the implementation of EEDA. In this section, we report on these trends based on data gleaned from: (1) initial site selection visits (2008-2009) and second POS site visits (fall 2009); (2) guidance personnel surveys in 2009 and 2012; (3) additional in-depth interviews with guidance personnel in 2010 and 2012; and (4) semi-annual SDE online *GP Accountability Reports*.

Trends in implementation of career-focused activities by guidance personnel. Although EEDA was not planned to be fully implemented until the end of the 2010-2011 school year, data collected during the prior year (2009-2010) indicated that EEDA had already increased the amount of career planning activities and guidance that students were receiving in our sample high schools and changed the roles of many guidance counselors in these schools.

A primary objective of the EEDA is to increase students' access to career information and career counseling. EEDA mandated a variety of career exploration and assistance activities to be rolled in with the policy implementation. As reported by the SDE, in Year 4 (2008-2009), system enhancements allowed for South Carolina Occupational Information System (SCOIS) data to be viewed via the eIGP. By 2009-2010, all South Carolina public elementary, middle and high schools had free access to SCOIS. This system was reported by guidance personnel as being available to students at all of the sample schools.

From 2008-2009 *GP Accountability Report* data, approximately 200 ongoing career events and activities were reported by sample schools, ranging from 3 to 97 events or activities per school per year across the eight schools. Guidance personnel reported the numbers of students participating in these activities. To make comparisons possible across schools, we estimated the percentage of students served at each grade level by adding the unduplicated count of students given for each reporting period for that grade level and then dividing the total by the reported enrollment for that grade level for that year. For seven schools, it appears that nearly 100% of their ninth and tenth graders received assistance in identifying and accessing career information pertaining to various career clusters during the 2008-2009 school year. We were unable to calculate the percentage for the eighth school due to missing data. The percentage of ninth and tenth grade students who completed at least one career assessment during the school year was also nearly 100% at four of the schools, and between 93% and 100% for at least one of the grade levels at three other schools. Again, we were unable to calculate the percentage for the eighth school due to missing data. At all but one of the sample schools, 95% or more of the ninth and tenth graders appeared to have used computer-assisted career guidance systems (e.g., SCOIS, Kuder, or virtual job shadowing) to explore careers. At the remaining sample school, we were unable to calculate the percentage due to missing data.

In 2008-2009, across the state, 96% of both ninth and tenth graders, the only two grades required to develop IGPs that school year, had completed electronic IGPs (South Carolina

Department of Education, 2009a). School-level data from the 2008-2009 *GP Accountability Reports* indicate that a majority of ninth and tenth graders in our sample high schools attended an IGP conference during that school year, and at seven of the eight high schools, attendance was over 94% for both grade levels. At the eighth school, slightly less than 75% of ninth graders and a little less than two-thirds of tenth graders attended IGP conferences during that school year.

Other early (2008-2009) data from the *GP Accountability Reports* indicate that guidance personnel presented a total of 36 career development and guidance workshops to around 1,000 teachers, school counselors, and work-based constituents over the course of the year, with an average of 125 participants per workshop. The number of workshops per school ranged from 0 to 9. Guidance personnel across the eight schools were also responsible for 254 one-time career events, classes, or programs, ranging from 6 events at one school to 89 events reported at another school.

Trends in participation in policy appropriate and inappropriate duties and LOI. In surveys and interviews, school counselors reported engaging in more policy-mandated, career-focused guidance activities across all schools. As described previously, surveys were administered to school counselors in 2009 and 2012 to gather information on whether their participation in various policy-required and policy-inappropriate duties had changed since the beginning of EEDA implementation. For each survey administration, counselors were asked to indicate the extent to which their level of effort had changed since EEDA implementation on a range of duties primarily in the areas of personal/social, career, and academic issues. The scale ranged from "5" (duties have increased greatly) to "1" (duties have decreased greatly). If a duty did not apply to their position, counselors had the option of selecting "0," "not applicable, this has never been a part of my duties."

A mean indicator of perceived change was determined for appropriate and inappropriate duties for each school by year. The higher the mean is above 3, the more their involvement in that duty was perceived by counselors to have *increased* since the beginning of EEDA implementation. The lower the mean below 3, the more their involvement in that duties was perceived by counselors to have *decreased* since the beginning of EEDA implementation. A mean of 3 would indicate that they did not perceive that their involvement in that duty had changed since EEDA.

The mean reported changes for selected assigned duties are summarized in Table VI.A.1. In fall 2009, the top three duties for which counselors reported the highest perceived increase in involvement since EEDA were assisting students with the development of their career plans and IGPs, meeting with parents about career issues, and counseling students on career issues, in that order. By 2012, the top three were still the same, but the order had changed slightly. The perceived increase in time spent assisting students with IGPs and counseling students on career issues was about the same as reported in 2009. The amount of time meeting with parents was perceived to not have increased as much as in 2012 as it was perceived to have increased in 2009. Classroom guidance on career issues may have picked up some between 2009 and 2012 considering the levels of perceived increase in duties in that area (3.4 vs 3.7). These changes could indicate some shifts in the way the new demands of EEDA were being handled several

years after EEDA's first implementation; however, it should be noted that the level of involvement in most guidance activities varied widely across schools.

Table VI.A.1

Mean Perceived Change in Assigned Duties Since EEDA Implementation as Reported by School Counselors, 2009-2010 and 2011-2012

School Counseling Duties	Mean[a] 2009-2010	Mean[a] 2011-2012
Policy-Mandated Career-Focused Activities		
Assisting students with the development of their career plans and IGPs	4.6	4.1
Meeting with parents about career issues	4.3	3.9
Counseling students on career issues	4.2	4.1
Coordinating special events/programs for the school regarding career issues	3.9	3.7
Identifying and coordinating work-based/extended learning opportunities for students	3.8	3.8
Conducting professional development workshops in career development and guidance for teachers and counselors	3.6	3.4
Classroom guidance on career issues	3.4	3.7
Specifically Cited as Inappropriate Activities for Counselors[b]		
Coordinating special services referrals	3.2	3.3
Administering standardized tests	3.4	3.3
Maintaining/Completing educational records/reports (cumulative files, test scores, attendance and dropout reports)	3.8	3.6
Developing the master class schedule	3.9	3.3
Registering and scheduling students for classes	4.0	3.5
Other Related Inappropriate Activities		
Coordinating the standardized testing program	3.5	3.1
Performing hall, bus/car pick-up, cafeteria duty	3.4	2.8

Note. Responses are from the *School Counseling Duties* survey administered to school counselors during school site visits in the fall of 2009, $N = 25$, and the online version administered in the spring of 2012, $N = 29$.
[a]The mean value is based on a scale of 1 to 5, with 1 = "duty has decreased greatly" *and* 5 = "duty has increased greatly." Mean values do not include the responses of counselors who reported that this duty did not apply to them because it had never been a part of their duties (NA). *N* sizes for mean calculations range from 9 to 25, with *n* sizes of 24 or 25 for 7 of the 14 questions. For the remaining seven questions, *n* sizes vary from 9 to 20, which reflect the percentage of NA responses to these questions and the removal of these NA responses from the calculation of the means. [b]*South Carolina Education and Economic Development Act Guidelines*, South Carolina Department of Education, 2006, p. 15-16.

School counselor survey respondents also reported continued participation in activities considered to be "inappropriate" under EEDA guidelines. These included registering and scheduling students for classes, developing the master schedule, and maintaining educational records/reports. In 2009, for nearly all of these "inappropriate" duties (for six of the seven listed), counselors were more or at least equally likely to report an increase in involvement in these activities since EEDA as they were for involvement in "appropriate" or required duties. However, for 2012, for all but one of the perceived changes in duties in these inappropriate areas, counselors were less likely to report increases in inappropriate duties than for required duties. For one inappropriate duty (performing hall, bus/car pick-up, or cafeteria duty), counselors reported in 2012 that their duties had decreased in that area since EEDA. This was the intention of EEDA; that required duties would increase, while inappropriate duties would be assigned to other staff so that counselors could incorporate the new demands for increased college and career guidance.

At all but two schools, school counselors were less likely to perceive an increased involvement in the nine inappropriate duties since EEDA in 2012 than in 2009, as highlighted in Figure VI.A.4. In 2012, counselors at six out of the eight schools were less likely to report a perceived increase since EEDA than in 2009 in the following inappropriate duties: Chairing individualized education program (IEP) meetings; chairing Section 504 of the Rehabilitation Act of 1974 meetings; coordinating special services referrals; administering standardized tests; registering and scheduling students for classes; developing the master class schedule; maintaining/completing educational records/reports; handling discipline of students; and substitute teaching and/or covering classes for teachers at your school. Even though they were less likely to report increased involvement in these inappropriate duties since EEDA in 2012, the scores indicate that their involvement in these duties had not changed much since EEDA.

These findings from the survey indicate continued involvement of counselors in "inappropriate activities," as defined by EEDA guidelines, throughout the study period. Although overall during interviews, the IGP process was seen as a positive process for students and guidance personnel, the IGP was also cited as a primary factor in keeping counselors involved in "inappropriate duties" because of the merging of course scheduling and registration, both deemed "inappropriate" under EEDA (South Carolina Department of Education, 2006). With these duties merged, responsibility for student registration and developing the master course schedule was still in the hands of counselors at most sample schools.

According to the 2009 surveys and interviews, many counselors reported that they were still involved in these inappropriate activities because there were insufficient resources to hire additional staff to cover mandated duties. When asked during interviews how they managed to juggle all of their counseling duties when both testing and IGP development demands were high, counselors reported that they found ways to manage their duties using teamwork, working longer hours, or working more days of the school year.
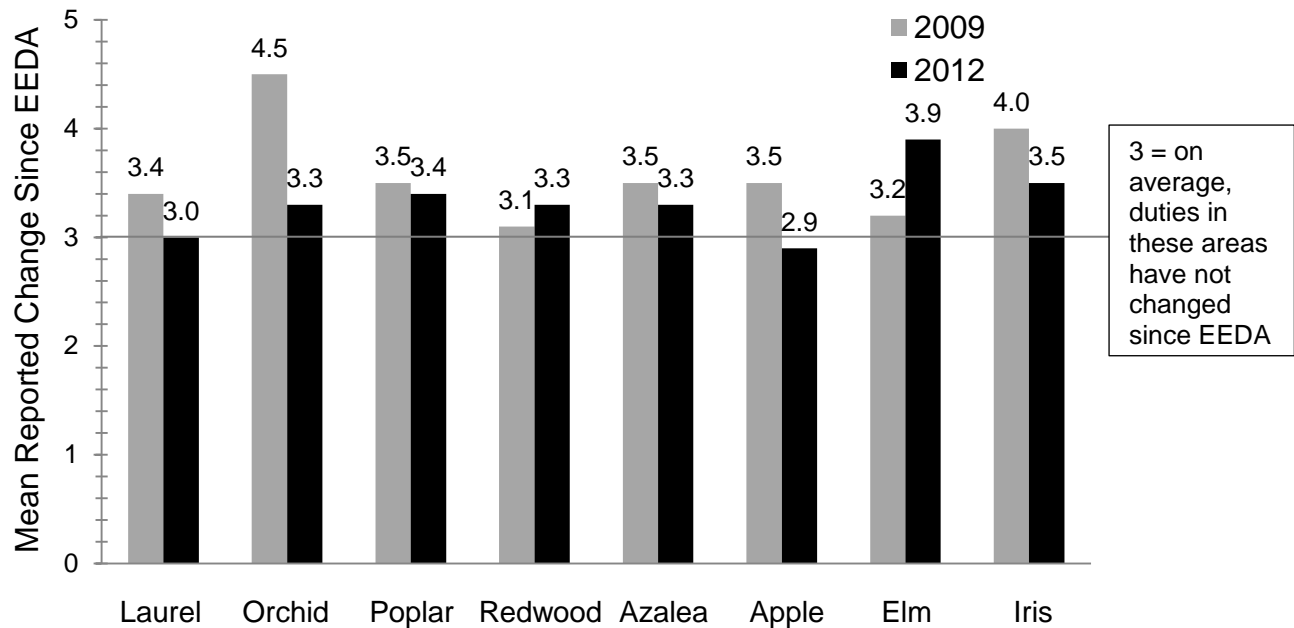
Figure VI.A.4. Comparison of mean reported perceived changes in nine inappropriate guidance counselor duties since EEDA: Fall 2009 and spring 2012.
Note. The response scale for each item was as follows: Duties have increased greatly (5), duties have increased somewhat (4), duties have not changed in this area (3), duties have decreased somewhat (2), duties have decreased greatly (1), and not applicable, this has never been a part of my duties (0). All not applicable responses were removed from calculations of means.

Reports of involvement in guidance "required duties," as defined by EEDA guidelines. As discussed earlier in the report, guidance counselors serve a critical role in implementing EEDA guidelines. In particular, guidance personnel are expected to participate in many required career-focused activities for students. These required duties for guidance counselors, as defined by EEDA, include classroom guidance on career issues; curriculum development on career issues; counseling students on career issues; assisting students with the development of their career plans and IGPs; consulting with teachers and administrators about career issues; assisting with exceptional students on career issues; meeting with parents about career issues; coordinating special events/programs for the school regarding career issues; conducting professional development workshops in career development and guidance for teachers and guidance counselors; and identifying and coordinating work based/extended learning opportunities for students.

In 2009, guidance counselors reported that their involvement with these required duties had increased somewhat or had not changed since EEDA. Counselors at five of the eight schools in 2012, on the other hand, were more likely to report less increased involvement with these required duties since EEDA (see Figure VI.A.5).
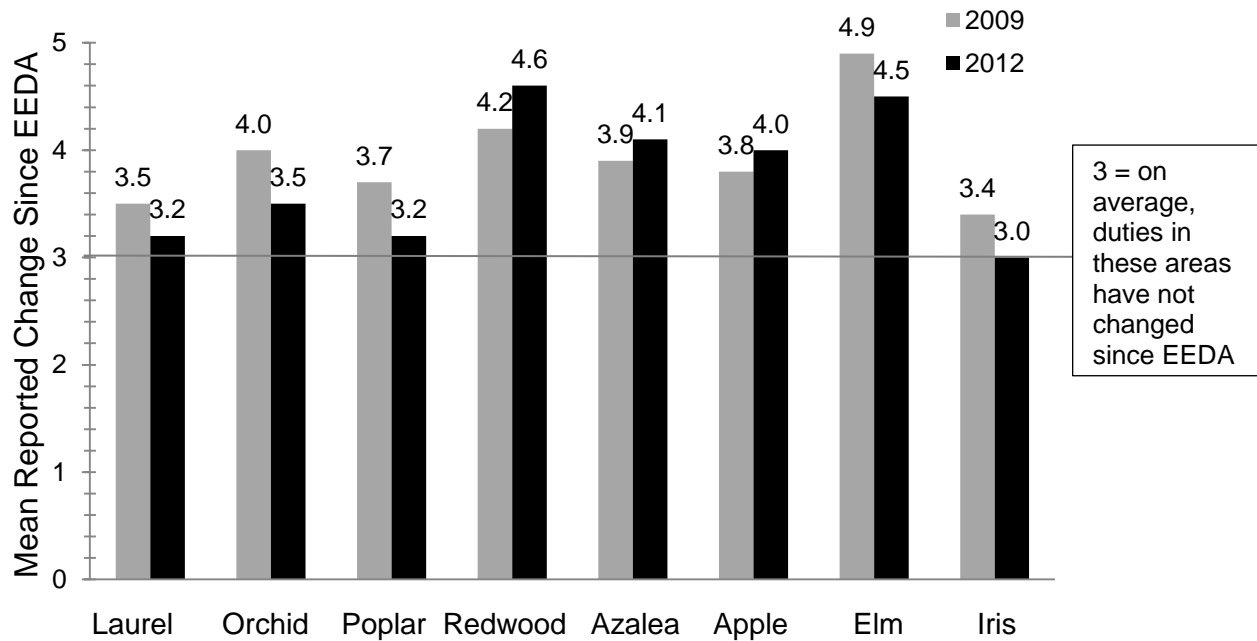
Figure VI.A.5. Comparison of mean reported perceived changes in 10 required guidance counselor duties since EEDA: Fall 2009 and spring 2012.
Note. The response scale for each item was as follows: Duties have increased greatly (5), duties have increased somewhat (4), duties have not changed in this area (3), duties have decreased somewhat (2), duties have decreased greatly (1), and not applicable, this has never been a part of my duties (0). In doing the analysis for this figure, all not applicable responses were removed from calculations of means and reported separately. If all of the guidance counselors at a particular school selected not applicable (0), then a mean was not calculated.

Differences in duties by LOI. To further explore guidance counselors' reporting of involvement in required duties, we examined the mean scores in 2009 and 2012 for increased involvement in required duties compared to a school's level of policy implementation (LOI). Similar to the findings with the inappropriate duties, there were no trends in the data to help explain differences in the 2009 and 2012 reports of guidance counselors' changes in reports of increased involvement in the required duties since EEDA was passed. A higher LOI did not point toward any specific trends in changes in reports of involvement in required guidance counselor duties (see Table VI.A.2).

Table VI.A.2

Comparison of LOI to the 2009 and 2012 Mean Reports of Perceived Change in School Counselors' Involvement in Required Duties Since EEDA, Ordered by LOI

School	LOI	2009 Mean Perceived Change in Required Duties	2012 Mean Perceived Change in Required Duties
Redwood	85.2	4.2	4.8
Orchid	84.6	4.0	3.5
Apple	76.3	3.8	4.0
Laurel	75.2	3.5	3.2
Iris	74.4	3.4	3.0
Azalea	72.2	3.9	4.1
Poplar	66.9	3.7	3.2
Elm	64.2	4.9	4.5
Average Across Schools		3.9	3.8

Note. The required duties included classroom guidance on career issues; curriculum development on career issues; counseling students on career issues; assisting students with the development of their career plans and IGPs; consulting with teachers and administrators about career issues; assisting with exceptional students on career issues; meeting with parents about career issues; coordinating special events/programs for the school regarding career issues; conducting professional development workshops in career development and guidance for teachers and guidance counselors; identifying and coordinating work based/extended learning opportunities for students.

The schools' LOIs were also compared to the school counselors' mean reports of perceived changes in involvement with inappropriate duties since EEDA, in 2009 and 2012 (see Table VI.A.3). No apparent themes emerged among the LOI scores and the reported changes among the guidance counselors' 2009 and 2012 involvement with inappropriate duties. Looking at EEDA LOI scores for each school, we did not find a trend among higher LOI scores and increased or decreased perceptions of involvement with inappropriate duties.

Table VI.A.3

Comparison of LOI to the 2009 and 2012 Mean Reports of Perceived Change in School Counselors' Involvement in Inappropriate Duties Since EEDA, Ordered by LOI

School	LOI	2009 Mean Perceived Change in Inappropriate Duties	2012 Mean Perceived Change in Inappropriate Duties
Redwood	85.2	3.1	3.3
Orchid	84.6	4.5	3.3
Apple	76.3	3.5	2.9
Laurel	75.2	3.4	3.0
Iris	74.4	4.0	3.5
Azalea	72.2	3.5	3.3
Poplar	66.9	3.5	3.4
Elm	64.2	3.2	3.9

Note. The inappropriate duties included chairing individualized education program (IEP) meetings; chairing Section 504 of the Rehabilitation Act of 1974 meetings; coordinating special services referrals; administering standardized tests; registering and scheduling students for classes; developing the master class schedule; maintaining/completing educational records/reports; handling discipline of students; and substitute teaching and/or covering classes for teachers at your school.

In-depth phone interviews. Results from follow-up phone interviews echoed the data from the surveys on duties. Twelve guidance counselors participated in in-depth phone interviews during the spring of 2010 from seven of the eight schools. During these interviews, counselors at six of the seven schools reported that their duties related to career services had increased as a result of EEDA. Counselors at the seventh school reported that they had already been highly focused on career services for students prior to EEDA, but that the policy resulted in an increased focus on Individual Graduation Plans (IGPs). Interview reports indicate that much of the counselors' time was being spent on IGP-related tasks, including an increase in one-on-one meetings with students and parents about career exploration and planning and an increase in career counseling to larger groups in classroom guidance activities and career day assemblies.

Phone interviews were again conducted in spring 2012 with school counselors at six of the eight sample schools. One to three counselors at each school agreed to be interviewed, for a total of 11 counselors interviewed across the six schools and one career development facilitator (CDF). All of the counselors interviewed were certified school counselors and had worked at their schools for 2 to 17 years. Six of the interviewees served as the guidance directors at their schools and all but one of them carried student caseloads. The reported caseloads of the interviewees ranged from 250 students to 500 students (see Table VI.A.4).

Table VI.A.4

Numbers of Counselors Interviewed by Phone and Approximate Caseloads Reported, Spring 2012

School	Number of Counselors Interviewed	Number of CDFs Interviewed	Approximate Caseload
Apple	1		200
Azalea	1		250
Elm	1		325-350
Iris		1	
Laurel	1		453
Orchid			
Poplar	1		500
Redwood	3		250

Note. Caseloads consist of one certified school counselor to student caseload ratio; CDFs are not included in the ratio. See the "EEDA's Effect on Counselor Duties" section below for a further discussion of caseload.

Most of the interviewees in both years' interviews reported that their school engaged in some of the EEDA program requirements prior to the initiation of EEDA in 2008. The most commonly reported aspects of EEDA that the interviewees reported to engage in included the development of an Individualized Graduation Plan (IGP), or similar four-year-plan, and the administration of career assessments with students.

Increased Engagement with Students & Parents. Counselors who reported in 2012 that they had engaged in academic/career planning with students prior to EEDA said that they met with most students on a yearly basis to engage in course planning and discuss postsecondary options. It was reported, however, that EEDA had helped to standardize and streamline this process and had ensured that all students and their parents are aware and engaged, at some level, in the planning process. Of the sites that reported engaging in four-year planning prior to EEDA, most did not report meeting with every student and, other than a couple of the sites, they did not make prodigious efforts to include parents in the planning process. One counselor reported that initiation of EEDA contributed to an increased level of information and parent involvement at her school:

> I think maybe the difference is that now [post EEDA initiation] is that parents are so inundated and students are so inundated with information about EEDA and SC Pathways…so I think we've had more parents to come in for IGP data, but I think it's just simply because the information is just everywhere…we've had a much larger volume of parents that want to be involved in what their students are doing (Counselor 1, spring 2012).

To clarify, this is not to imply that parental participation is 100%. Several sites continue to report that it is difficult to get parents to come to meetings; however, since the initiation of EEDA, more efforts have been made to engage and inform parents in their child's career and educational planning than prior to EEDA.

Comparison with 2009 Interview Findings. A comparison of the 2012 findings to the telephone interviews compared to the 2009 findings revealed that there has been a steady increase in parental engagement over time in the IGP process. One counselor stated, "…they've [parents have] kind of gotten in the routine of knowing this is how, this is how we work with the students, and it's [parental participation] just been increasing each year." Engagement with students has remained relatively steady over the past few years due to the requirement that each student be included in the renewal of their IGP on an annual basis.

Increased Focus on Career Development. Another aspect that EEDA reportedly added to the guidance programs is an increased focus on career development, as was reported in the 2012 phone interviews. This includes a stronger level of engagement with students not only in career planning but by providing students with a broader degree of information regarding careers by providing classroom guidance lessons on careers and career planning and development, by providing students with materials about career and educational opportunities, by bringing in local business and industry representatives to engage with students (e.g., career fairs, speakers), and by providing opportunities for students to engage in work-based learning. It should be noted, however, that work-based learning was limited at several of the schools due to the lack of viable opportunities for students.

Comparison with 2009 Interview Findings. Efforts towards increasing students' career development appears to have steadily increased over the past three years as the sample schools provide more opportunities for career development and exploration such as increased engagement in career assessments, more opportunities for engagement with community-based industry through speakers, career fairs, work-based learning opportunities, etc. For example, one site now offers two career fairs, a general career fair and a military career fair in an effort to provide students with more information and career options.

Student Career Knowledge. The counselors reported during phone interviews in 2012 that students' knowledge of career pathways and majors has increased since the initiation of EEDA. Students appear to have a greater knowledge of what's available to them as they enter into the 9th grade and this knowledge increases during their 9th grade year. One counselor stated, "I think they know where to go and get information on careers, but I think they start getting more information once they hit 9th and we start telling them how important it is for them to make plans of what they're going to do and get information on their postsecondary plans. And I think they probably do more investigating in high school then they do in the middle school." Further, there is evidence that students are receiving career information in several areas, in addition to the counseling sessions. All respondents reported that career information is shared in academic classes (e.g., English) and CTE classes.

Comparison with 2009 Interview Findings. As implied above, there has been a steady growth in students' knowledge of career pathways and majors. Students are receiving such

information prior to entering high school. For instance, students are oriented to the career pathways and available majors during their 8th grade year with middle school and high school counselors engaging in transition activities with 8th grade students. One counselor stated, "there's a lot of transition activities of introducing them to high school and what programs we have." Transition activities have increased at some of the sites since 2009 with counselors engaging in in-depth activities in an effort to prepare students to have an understanding of the options available to them and to have an increased knowledge of their own career goals.

Goal Development. One aspect of IGP development and career information that counselors stressed in 2012 interviews was useful to students was that it helps with goal development and long-term planning. Several counselors indicated that the students may not have a clear idea as to what they want to do for their long-term career, but that the process helps students to consider postsecondary options and "to have a goal when they graduate from high school…I may not know for sure what it is right this second [what I want to do], but I know what I want to do as far as the education that I want to get" (e.g., 2-year, 4-year degree). Another counselor stated, when speaking of her school's career development efforts with students, "We want to know where you [students] want to go, what you [students] want to do, what your [students'] career goals are, and we try to put as many resources in their [students'] hands…" Further, it is evident to the counselors that the students may not persist with certain goals at this stage in their development, but that the process of setting goals is important to the career exploration and development process. One counselor stated, "We're trying to help these kids form a goal whether it's a goal that's going to last throughout their entire lifetime we can't say, the process of making a goal and following through on it, however, is a good thing to learn."

Comparison with 2009 Interview Findings. Goal development was not a noteworthy theme during the 2009 interviews. However, the counselors did indicate that helping students to identify career goals was a major part of the career development process and something that they addressed during IGP meetings.

EEDA's Influence on Counselor Duties. Although many schools were already engaged in some of EEDA-like activities prior to EEDA policy initiation, there have been some clear effects of the legislation on the role of counselors. First, all of the participants interviewed in 2012 reported that they meet annually with all or most of the students in their school on a one-on-one basis to engage in the development and renewal of IGPs. Second, the process of meeting with students to engage in career and postsecondary planning has become more streamlined with a greater emphasis placed on career assessment. One contributing factor is that the IGP is standardized across schools and the schools are required to upload student data into an electronic IGP. Third, there is a stronger role for counselors to evaluate and use data. As one counselor put it, "We do, as I would say, what counselors are supposed to do—[which is to] evaluate the data and use that for planning purposes with students. That was one great thing that I saw in clarifying what our roles are." Fifth, because certified school counselors are required to meet annually with students to develop/renew IGPs, there was a strong sense that their roles are highly defined by career development, leaving little room for the engagement of students in social/personal development or other areas of student counseling/guidance services. One contributing factor to this issue is the way that EEDA defines "counselors" and how student caseloads are calculated. Although EEDA recommends a student to counselor caseload ratios to

300 to 1, career specialists are counted as counselors in this ratio. The roles of career specialists and school counselors are distinctly different, with one major component being that school counselors are required to meet annually with each student on their caseload to develop and sign the students' IGPs. Because career specialists are identified as counselors, it results in a greater caseload for school counselors. For example, one school included in this study has five school counselors and two career specialists, and it is reported to EEDA that the student to counselor ratio is approximately 300 to 1. However, in reality, the student to "certified school counselor" ratio is closer to 500 to 1, meaning that each school counselor is required to engage in 500 individual planning meetings with students and their parents during the school year.

The sites with the larger student populations reported more difficulty with the caseload issue than sites with smaller or more manageable student populations. In order to manage large caseloads and meet IGP requirements the counselors reported that they have adjusted how they divide duties among the counseling and guidance personnel and that they tend to spend more time on career guidance issues than other issues like student's personal/social development.

Comparison with 2009 Interview Findings. The issue of caseloads and how counselors are counted was a salient theme in the 2009 interviews. At that time, it appeared to be a much larger issue for some of the sites. During the 2012 interviews this issue was still a problem area, but the counselors seemed to have found ways to adjust to the problem. For example, one counselor reported that the counseling staff revised how they divided their workload, with one counselor handling all the special needs students (e.g., special education students, those with 504 plans, and English Language Learners) and the other counselors working centrally on students IGPs. However, even revising how they handle the workloads tended to leave several counselors feeling strapped for time to do other counseling activities and raised concerns that some student and school needs go unmet.

Overall, the counselors interviewed via phone in 2009 and again in 2012 identified several positive outcomes from the implementation of EEDA. Most notable is the increased engagement in career planning and exploration with students occurring through the development and annual renewal of IGPs. With other researchers (e.g., Johnson, Rochkind, Ott, & DuPont, 2010) often reporting that students have little to no engagement with their school counselors and little engagement in the career development process, the engagement in the career exploration and development at these South Carolina sites provides a positive contrast to typical guidance efforts.

Demands of IGPs and other EEDA duties changing roles and increasing workloads of school counselors. IGPs are the organizing factor for career-focused activities and planning because they outline a student's career goals and postsecondary plans as well as selection of a career cluster, major, and coursework to lead toward those goals. To be effective, IGP development requires at least some discussion between counselors and students about career exploration and planning. Counselors in the early site visits reported that most of their efforts were centered on the development and renewal of IGPs and the career services that go along with them. They reported spending much of their time on some aspect of the process; counselors with caseloads of 300 or more students reported that they spent on average three tofour months of the school year engaged in the IGP process. One counselor, with a caseload of around 400 students,

reported that "between January through right before spring break, every day is filled with 20 minute increment appointments to meet with students. So, our time is constrained" (Counselor 9, fall 2009).

The time-intensive nature of the IGP process was seen by counselors as a key factor in work overloads. At some sample schools, course scheduling and registration have been merged with the IGP process for time-management purposes. Because all of the course information is entered into the electronic IGP database (eIGP), several schools told us that they use this database to generate their semester course schedules and register students for classes. In this way, course offerings at a school may be based on student interest and requirements for selected majors as well as the traditional need to offer the basic curriculum to meet graduation requirements.

Contributions of career specialists to guidance workload restricted by EEDA guidelines. Interview and survey responses from career specialists at sample schools indicate that their duties vary widely across schools. Career specialists provide a range of activities, such as career testing, incorporating career test results into IGPs, disseminating career information to students and teachers, and helping students identify career interests. As outlined in Table VI.A.5, the majority of duties assigned to career specialists responding to our surveys related to career guidance and reflected those duties stipulated in EEDA. These duties included meeting with parents about career issues, assisting students with development of IGPs, and consulting with teachers about career issues. Overall, the EEDA specified duties reported by career specialists, however, did not alter greatly for career specialists from fall of 2009 to spring of 2012. Although career specialists are not allowed to do the final review or approval of student IGPs, all but one of the respondents reported involvement in the development of student career plans and IGPs in 2009 and all of the career specialists in 2012 reported involvement in development of student IGPs and career plans. A greater percentage of career specialists also reported involvement with identifying and coordinating work-based/extended learning opportunities for students in the spring of 2012.

No career specialists reported involvement in registering and scheduling students for classes or developing the master class schedule in 2009 or 2012. Career specialists were less likely to report involvement in some non-EEDA specified duties since EEDA in 2012 than in 2009, including administering standardized tests and performing hall/cafeteria duty. However, these career specialists were more likely to report increased involvement with other inappropriate duties in 2012, including assisting students with college planning and applications; participating on committees within the school; and substitute teaching/covering for other teachers in the school.

Table VI.A.5

Assigned Duties Reported by Career Specialists, Fall 2009 and Spring 2012

	2009 Yes	2012 Yes
Career Counseling and Guidance Duties	%	%
EEDA Specified Career Counseling and Guidance Duties		
Providing classroom guidance on career issues	100	80
Counseling students on career issues	100	100
Consulting with teachers and administrators about career issues	100	80
Assisting with exceptional students on career issues	100	100
Meeting with parents about career issues	100	100
Coordinating special events/programs for the school regarding career issues	100	100
Developing curriculum on career issues	83	80
Assisting students with the development of their career plans and IGPs	83	100
Conducting professional development workshops in career development and guidance for teachers and school counselors	83	60
Identifying and coordinating work-based/extended learning opportunities for students	33	60
Non-EEDA Specified Duties		
Assisting students with college planning and applications	50	80
Participating on committees within the school	50	100
Administering standardized tests	40	20
Performing hall, bus/car pick-up, cafeteria duty	40	0
Coordinating the standardized testing program	33	40
Consulting with teachers and administrators about personal/social issues	17	0
Substitute teaching and/or covering classes for teachers at your school	17	40
Registering and scheduling students for classes	0	0
Developing the master schedule	0	0

Note. Data are from the *School Counseling/Guidance Duties* survey of career specialists, conducted in Fall 2009 and Spring 2012. For the 2009 survey, total $N = 6$; 6 of the 7 career specialists, from 4 of the 5 sample schools reporting that they had career specialists on staff, responded to the survey. In the 2009 survey, N sizes for calculation of percentages for each item range from 5 to 6, with only two items having an N of 5. For the 2012 survey, total $N = 5$; 3 schools reporting that they had career specialists on staff that did not serve a dual role as a school counselor.

The primary EEDA administrator at the SDE reported that in her view, EEDA policy implementation would not be possible without the contributions of career specialists (S. Moore,

personal communication, August 18, 2010). She described career specialists as the connection to students as well as parents and as a primary provider of career information and career assessments for IGP development.

Regardless of the contributions career specialists may make to career activities at sample schools, however, there were mixed reports among school counselors as to whether career specialists had actually helped to reduce their workload. One of the primary reasons that career specialists cannot reduce guidance counselor student caseloads related to IGPs is that the EEDA mandates that only certified school guidance counselors can legally sign off on IGPs. So, although the state allows career specialists to be factored into a school's student-to-guidance ratio, the presence of career specialists does not reduce school counselors' student caseloads for IGPs. This was a major criticism of EEDA voiced by guidance personnel across sample schools.

Reported counselor duties not in compliance with ASCA National Model guidelines. Counselors perceived that the increase in IGP development and time spent on career services had caused an imbalance in their ability to provide comprehensive guidance services in the areas of career, academic, and personal/social, putting them out of compliance with ASCA National Model guidelines. Personal/social services were mainly limited to crisis intervention, with less time focused on programming and individual personal/social counseling. Some schools were able to continue with existing personal/social programs whereas others were forced to cut back on such programs. As one counselor commented: "We're so focused on IGPs, meeting with parents, getting career assessments done, and getting their futures planned that we don't have time to do the groups that we used to do. We don't have time to do one-on-one personal and social…We can't focus on that at all" (Counselor 5, Fall 2009). Attending to crises also put a strain on counselors' time, requiring them to delay other tasks like IGP meetings and career assessments, often resulting in longer work hours.

Guidance personnel in study schools reported receiving at least some training on career pathways and IGP development, but the amount and type of training varied, as did the topics covered. This training was offered through a variety of channels, including the local school district, the state education department, and state and regional professional development meetings and workshops. School guidance counselors at one school reported receiving training through a local business alliance. Regardless of the types of training described, school counselors interviewed generally felt satisfied with the training they had received.

Despite challenges, counselors reported feeling prepared to carry out EEDA duties. EEDA stipulates that all school guidance counselors and career specialists must receive career development and training. All guidance personnel reported receiving some training on career pathways and IGP development but the amount and type of training and the topics covered varied. Training ranged from courses and workshops to personal research and "do-it-yourself" experiences. Training sessions covered topics such as IGP development and advising students on career pathways. Regardless of the types of training described, school counselors interviewed generally felt satisfied with the training they had received and the resources and support available to them through their districts and the state, and felt prepared to provide reliable career guidance.

The IGP process has increased both one-on-one counselor-initiated interactions with students and student-initiated interactions with counselors, with interactions mainly centered around career and course-related issues. Eight of the 12 counselors interviewed reported in the fall of 2009 that the requirements involved in implementing IGPs with students have increased one-on-one counseling sessions centered on career issues and postsecondary options and plans. As one counselor noted: "I think the Act has put us more in the role of working on career exploration and meeting with and counseling students, and the registration process is a cooperative effort" (Counselor 3, fall 2009). Two of the four counselors not reporting an increase in one-on-one sessions with students in 2009 felt that they had already provided these types of comprehensive career counseling sessions prior to policy implementation.

In counselor-initiated one-on-one sessions with students, a variety of career- and postsecondary-related topics were discussed, including giving information on the different career pathways, helping with identification of career goals, and providing guidance on the selection of a major and appropriate coursework to help students achieve their identified goals. The goals of these sessions were similar across schools: to help students choose a career pathway that can meet their goals and to help students understand and consider their postsecondary options. As expressed by one counselor in 2009: "We share with them what their options are if they want to go directly into the workforce, if they want to go and get a technical degree or two-year degree or four-year degree. And, we make sure they understand what the requirements are on admissions in higher ed [education] so they could be accepted into those programs" (Counselor 12, fall 2009).

It was not clear, however, how well trained school guidance personnel were to prepare the full range of students for career opportunities, particularly those not planning on going on to college. The lack of this training by counselors was evident in our early site visits. We found that many of the counselors did not seem to have knowledge of all CTE programs and types of career opportunities available to students or to be prepared to assist the full range of students with career planning. Many teachers and counselors were taking on the responsibilities of training themselves to some degree as they could see the need to possess skills and information in these areas.

Five of the 12 counselors interviewed in fall 2009 reported an increase in student-initiated interactions. These tended to be focused on personal, social, and career-based issues. In career-related sessions, students often wanted further information on various career pathways or on course requirements for majors, advice on choosing electives, or assistance with getting into courses or changing majors. When asked to describe what students sought from career guidance, one counselor commented, "…I think they need us more. There are so many choices out there. I think it can be overwhelming and confusing to them. Just to jump off into the world—"What am I doing? Where am I going? I just don't know! Help me!" I think that what we do is vital and very important and I feel like we are doing more with EEDA and it's very needed and beneficial" (Counselor 5, fall 2009).

Trends in Student Career Planning and LOI. In this section we report on evidence of the influence of EEDA implementation at the sample high schools as related to several key student outcomes related to student career planning, based on data collected and analyzed from

responses from each administration of the *Student Engagement/POS Experiences Survey* and data from Individual Graduation Plan (IGP) and other data from the Statewide Longitudinal Data System (SLDS) dataset.

IGPs, majors, and clusters. One goal of our *Student Engagement/POS Experiences Survey* was to quantify the number and type of career-focused activities students would report being involved in and how helpful they found them. Asking these questions of students would also allow comparisons of student reports to those of counselors about activities provided to students.

EEDA guidelines require that all students develop an Individual Graduation Plan (IGP) by the end of the eighth grade and take part in an annual meeting at school to review their IGP plans and have parents sign these plans. All guidance personnel reported that students had all developed IGPs and that these meetings were taking place. Looking at *Student Engagement/POS Experiences Survey* results for seniors from the Class of 2011, a majority (69%) surveyed reported developing an IGP and a majority (72.3%) of students surveyed also reported participating in a meeting with a parent and counselor about their IGP at least once by the end of their senior year. However, 16% of students surveyed reported not having developed an IGP and 28% of students reported never having taken part in such a meeting.

These percentages may reflect problems with the terms used in the survey to describe these activities rather than lack of participation in these activities. Despite the availability of statewide standardized materials, our pilot survey and early school site visits revealed that "official" EEDA language was not used consistently across schools or even within schools. For example, IGPs at one school were called career plans, while at another they were called plans for course registration. Even though in registration and other school materials, "majors" may be delineated, they may be referred to by staff and students as programs, areas of study or concentration, or other terms. Terminology used by CTE teachers to refer to IGPs, plans, or majors often differed from that used by counselors or core academic faculty. These inconsistencies may have resulted in confusion among students in responding to some survey questions.

Although students may not have reported meeting annually with counselors, students in the Class of 2011 did identify school counselors as the most helpful in developing their career plans or IGPs. As outlined in Table VI.A.6, of those students who had developed career plans or IGPs, around half of the Class of 2011 as sophomores reported that their guidance counselor was the most helpful. Students responding from the Class of 2011 as seniors were even more likely to say that a guidance counselor was most helpful (almost 60% chose that response). This is in contrast to only 38% of Class of 2009 respondents choosing this response (of those who said they had developed plans). This trend held true also for responses of high-risk students responding to the survey. Similar patterns were found Parents were important in career planning for both cohorts (Class of 2009 and Class of 2011) and for Class of 2011 students as sophomores and as seniors. Parents were chosen as being most helpful by about 30-35% of the respondents in both cohorts.

Table VI.A.6

Student Survey Question: When you put Together Your Career Plan or 4-year Individual Graduation Plan, who was the Most Helpful in Developing Your Plan?

Percentage of Respondents	Senior Class of 2009 Percent *N*=486	Sophomore Class of 2011 Percent *N*=899	Senior Class of 2011 Percent *N*=610
Parents, step-parents or other adults with whom you live	35.4	33.4	29.5
A teacher	8.9	5.5	5.3
A guidance counselor	37.5	49.8	59.3
Friends	6.2	4.0	1.6
No one helped me to put together my career plan/4-year Individual Graduation Plan	12.1	7.3	4.3

Note. Does not include multiple responses, missing responses, or not applicable responses.

Differences by LOI. For all levels of LOI, a majority of seniors in the Class of 2011 indicated that a guidance counselor was the most helpful in developing a career plan (64.3% of seniors in High EEDA LOI, 55.6% of seniors in Medium EEDA LOI, and 59.0% of seniors in Low EEDA LOI implementation) (Table VI.A.7). The distribution of responses for who was the most helpful in developing a career plan significantly varied for the senior Class of 2011 across implementation levels ($p = 0.041$). Guidance counselors were not selected as the person most helpful in plan development across all LOI levels for the Class of 2009. It is interesting also to note that the percentages of students who selected a guidance counselor as the most helpful increased over time with each survey administration, while parents, stepparents, and other adults in the household remained important influences as well

Table VI.A.7

Student Survey Question 8 by LOI
When you put together your career plan or 4-year Individual Graduation Plan, who was the most helpful in developing your plan?

	Percentage of Respondents	Senior Class of 2009 (*N*=486) % (*N*)	Sophomore Class of 2011 (*N*=899) % (*N*)	Senior Class of 2011 (*N*=610) % (*N*)
High LOI (*N*=572)	Parents, step-parents or other adults with whom you live	27.5 (46)	24.1 (47)	24.3 (51)
	A teacher	12.0 (20)	7.7 (15)	7.6 (16)
	A guidance counselor	42.5 (71)	58.0 (113)	64.3 (135)
	Friends	4.8 (8)	2.6 (5)	0 (0)
	No one helped me to put together my career plan/4-year Individual Graduation Plan	13.2 (22)	7.7 (15)	3.8 (8)
	Total	100.0 (167)	100.0 (195)	100.0 (210)
Medium LOI (*N*=907)	Parents, stepparents or other adults with whom you live	45.2 (20)	36.8 (160)	33.1 (88)
	A teacher	7.3 (15)	4.4 (19)	4.5 (12)
	A guidance counselor	31.1 (64)	47.8 (208)	55.6 (148)
	Friends	6.8 (14)	3.5 (15)	3.0 (8)
	No one helped me to put together my career plan/4-year Individual Graduation Plan	9.7 (20)	7.6 (33)	3.8 (10)
	Total	100.0 (206)	100.0 (435)	100.0 (266)
Low LOI (*N*=516)	Parents, step-parents or other adults with whom you live	29.2 (33)	34.6 (93)	30.6 (41)
	A teacher	7.1 (8)	5.6 (15)	3.0 (4)
	A guidance counselor	41.6 (47)	47.2 (127)	59.0 (79)
	Friends	7.1 (8)	6.0 (16)	1.5 (2)
	No one helped me to put together my career plan/4-year Individual Graduation Plan	15.0 (17)	6.7 (18)	6.0 (8)
	Total	100.0 (113)	100.0 (269)	100.0 (134)

Note. Does not include multiple responses, missing responses, or not applicable responses.

A majority of the senior respondents to the *Student Engagement/POS Experiences Survey* in the Class of 2009 and Class of 2011 indicated they had selected a career cluster (81.3% and 84.9%, respectively), while 50.9% of the seniors from the Class of 2009 and 58.9% of the

seniors from the Class of 2011 reported having selected a high school major. The distribution of responses for selection of a career cluster between the two senior classes was not significantly[5] different whereas the distribution of responses for selection of a high school major did significantly differ ($p < 0.001$). Tables VI.A.8 and VI.A.9 present these data. As a reminder, caution should be taken in interpreting these data as the EEDA policy was not required to be implemented for the Class of 2009; however, some of schools across the state had all of their classes preparing IGPs even in the early years of policy implementation. Also, for both the 2009 and 2011 cohorts, terminology could have been confusing, although the survey questions were clarified after the study team received feedback from the pilot of the survey (in late 2008) that "major" and "cluster" were sometimes not well understood. We modified the terms to be "high school major" and "career cluster" for the surveys used with our cohorts.

Table VI.A.8

Student Survey Question:
Have you selected a career cluster to plan for? Classes of 2009 and 2011 as Seniors

Percentage of Respondents	Senior Class of 2009 (*N*=1020) % (*N*)	Senior Class of 2011 (*N*=929) % (*N*)
Yes	81.3 (829)	84.9 (789)
No	10.6 (108)	7.6 (71)
Don't Know	8.1 (83)	7.4 (69)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Table VI.A.9

Student Survey Question:
Have you selected a high school major within that cluster? Classes of 2009 and 2011 as Seniors

Percentage of Respondents	Senior Class of 2009 (*N*=994) % (*N*)	Senior Class of 2011 (*N*=898) % (*N*)
Yes	50.9 (506)	58.9 (529)
No	28.1 (279)	20.2 (181)
Don't Know	21.0 (209)	20.9 (188)

Note. Does not include multiple responses, missing responses, or not applicable responses.

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[5] Statistical significance judged at the 0.05 level.

A similar proportion of sophomores and seniors in the Class of 2011 indicated they had selected a career cluster to plan for (85.2% and 84.9%, respectively). Fewer seniors (58.9%) than sophomores (63.0%) in the Class of 2011 indicated they had selected a high school major.

Differences by LOI. For each of the three levels of EEDA LOI (High, Medium, and Low), a majority of the seniors in the Class of 2011 indicated they had selected a career cluster to plan for (84.8%, 86.9%, and 81.8%, respectively). The distribution of responses for high school major selection for seniors in the Class of 2011 at High, Medium, and Low EEDA LOI schools significantly differed ($p < 0.001$) with approximately 50.2%, 68.5%, and 56.2% of seniors in the Class of 2011 High, Medium, and Low EEDA LOI schools indicating they had selected a high school major, respectively (Table VI.A.10).

Table VI.A.10

Student Survey Question 2 by LOI
Have you selected a high school major within that career cluster? Class of 2011

	Percentage of Respondents	Senior Class of 2011 (*N*=898) % (*N*)
High LOI	Yes	50.2 (165)
	No	24.0 (79)
(*N*=982)	Don't Know	25.8 (85)
	Total	100.0 (329)
Medium LOI	Yes	68.5 (246)
	No	16.7 (60)
(*N*=1372)	Don't Know	14.8 (53)
	Total	100.0 (359)
Low LOI	Yes	56.2 (118)
	No	20.0 (42)
(*N*=947)	Don't Know	23.8 (50)
	Total	100.0 (210)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Similarly, as shown in Table VI.A.11, Medium LOI implementation schools had a larger proportion of seniors in the Class of 2011 (75.5%) that had put together a career plan or IGP than High (64.3%) or Low (64.6%) EEDA LOI schools ($p = 0.010$).

Table VI.A.11

Student Survey Question 6 by LOI
Have you put together a "career plan" or 4-year "Individual Graduation Plan (IGP)," that
outlines a series of activities and courses that you will take throughout high school? Class of
2011

	Percentage of Respondents	Senior Class of 2011 (*N*=905) % (*N*)
High LOI (*N*=980)	Yes	64.3 (209)
	No	18.5 (60)
	Don't Know	17.2 (56)
	Total	100.0 (325)
Medium LOI (*N*=1363)	Yes	75.5 (278)
	No	11.4 (42)
	Don't Know	13.0 (48)
	Total	100.0 (368)
Low LOI (*N*=936)	Yes	64.6 (137)
	No	18.4 (39)
	Don't Know	17.0 (36)
	Total	100.0 (212)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Student selection of career clusters relative to LOI: 2011 cohort from SLDS data. Table VI.A.12 presents the top IGP career clusters (in no particular order), by implementation level, from the state longitudinal data system (SLDS) 2011 cohort. Health Sciences was among the top two most popular areas for each of the eight schools, with 12 to 27% of students across schools choosing a major in the health sciences for their 10th grade IGP. Arts, Audio-Video Technology & Communications and Business, Management & Administration were popular across schools at all implementation levels (similar to Health Sciences). Science, Technology, Engineering and Math (STEM) was also a popular cluster across all three LOI levels.

Table VI.A.12

Top IGP Career Clusters, 10th Grade IGP, 2011 SLDS Cohort

EEDA Policy Implementation (LOI) Level		
Low (60.0-69.9)	Medium (70.0-79.9)	High (80.0-89.9)
Health Science; Arts, AV Tech & Comm; Business, Mgmt & Admin; STEM	Health Science; Arts, AV Tech & Comm; Business, Mgmt & Admin; STEM; Human Services; Education & Training; Architec & Construction	Health Science; STEM; Human Services; Education & Training

Career exploration activities. As part of the requirements for EEDA, all students in South Carolina must participate in activities to help them identify jobs or careers that may interest them. Several questions in the student survey were geared toward discovering more details about student participation in job or career identification activities. As outlined in Table VI.A.13, a majority of seniors in the Class of 2011 and seniors in the Class of 2009 reported answering job- and career-related questions on a computer or filling out a questionnaire, researching different jobs and careers, researching different colleges, universities, or military branches, speaking with or visiting someone in a career that interests them, and being in a class where someone from a local business talked about working at their company or in their career. More seniors in the Class of 2011 indicated they had answered questions relating to jobs and careers on a computer or filled out a questionnaire (83.8%) than seniors in the Class of 2009 (79.5%; $p = 0.017$). A higher percentage of seniors in the Class of 2011 reported being in a class where someone from a local business talked about working at their company or in their career (69.0%) than seniors in the Class of 2009 (60.6%; $p < 0.001$).

As outlined in Table VI.A.14, a majority of students in the Class of 2011 as both sophomores and seniors reported answering job- and career-related questions on a computer or filling out a questionnaire, researching different jobs and careers, researching different colleges, universities, or military branches, speaking with or visiting someone in a career that interests them, and being in a class where someone from a local business talked about working at their company or in their career.

Table VI.A.13

Percentage of Class of 2009 Seniors and Class of 2011 Seniors Reporting Participation in Job or Career Identification Activities

Job or Career Identification Activities	Class of 2009 Seniors	Class of 2011 Seniors
Answered questions related to jobs and careers on a computer or filled out a questionnaire.*	79.5	83.8
Researched different jobs or careers.	85.7	86.8
Researched different colleges, universities, military branches or technical/community colleges.	87.0	88.5
Spoke with or visited someone in a career that interests me.	68.4	69.2
Been in a class where someone from a local business talked about working at their company or in their career.**	60.6	69.0
Toured a local business with a group from my school.	38.1	38.0

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011at the eight sample schools in the spring of 2011 and members of the Class of 2009 at the eight sample schools in the spring of 2009.
*p < .05. **p < .01.

Table VI.A.14

Percentage of Class of 2011as Sophomores and as Seniors Reporting Participation in Job or Career Identification Activities

Job or /Career Identification Activities	Class of 2011 Sophomores	Class of 2011 Seniors
Answered questions related to jobs and careers on a computer or filled out a questionnaire.	78.8	83.8
Researched different jobs or careers.	83.8	86.8
Researched different colleges, universities, military branches or technical/community colleges.	77.9	88.5
Spoke with or visited someone in a career that interests me.	54.3	69.2
Been in a class where someone from a local business talked about working at their company or in their career.	55.8	69.0
Toured a local business with a group from my school.	22.6	38.0

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011at the eight sample schools in the fall of 2010 (following the completion of their sophomore year) and in the spring of 2011 (at the completion of their senior year). Chi-square analysis not conducted due to correlations among unmatched responses or sophomores and seniors of the Class of 2011.

Differences by LOI. Drilling down a little to see if school EEDA LOI is related to students' reports of job or career identification activities, Table VI.A.15 shows that a majority of seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools reported answering job- and career-related questions on a computer or filling out a questionnaire, researching different jobs and careers, researching different colleges, universities, or military branches, speaking with or visiting someone in a career that interests them, and being in a class where someone from a local business talked about working at their company or in their career. Higher percentages of seniors in the Class of 2011 from High EEDA LOI reported being in a class where someone from a local business talked about working at their company or in their career (74.8%) than seniors in the Class of 2011 from Medium and Low EEDA LOI schools (69.5% and 58.9%, respectively; $p = 0.001$).

Table VI.A.15

Percentage of Class of 2011 Seniors Reporting Participation in Job or Career Identification Activities

Job or Career Identification Activities	High EEDA LOI Yes (%)	Medium EEDA LOI Yes (%)	Low EEDA LOI Yes (%)
Answered questions related to jobs and careers on a computer or filled out a questionnaire.	80.8	85.9	84.7
Researched different jobs or careers.	85.3	86.5	90.0
Researched different colleges, universities, military branches or technical/community colleges.	91.0	85.8	89.1
Spoke with or visited someone in a career that interests me.	69.0	70.4	67.5
Been in a class where someone from a local business talked about working at their company or in their career.**	74.8	69.5	58.9
Toured a local business with a group from my school.	41.6	34.0	34.6

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011at the eight sample schools in the spring of 2011.
*$p < .05$. **$p < .01$.

Thinking and planning for careers. Students were asked about how much thinking and planning they had done for job-related activities. The students classified how much thinking and planning they had done into four categories: (1) I have not thought about or done this; (2) I have thought about doing this; (3) I have made plans to do this; and (4) I have already done this. There were not significant differences in the responses of seniors in the Class of 2011 and seniors in the Class of 2009 regarding their thinking and planning on gathering information about jobs of interest, taking classes to help decide what kind of job they want, participating in school or out-of-school activities that will help in the decision about the kind of job wanted, or in

volunteering, interning, or working on a job to help find out what kind of job they want to have in the future.

A majority of seniors and sophomores in the Class of 2011 indicated they had made plans or already gathered information about jobs of interest (68.5% and 61.2%, respectively), took classes to help decide the type of job wanted (64.6% and 71.6%, respectively), and had participated in school or out-of-school activities that would help to decide the type of job wanted (57.2% and 53.1%, respectively). More seniors in the Class of 2011 indicated they had made plans or already volunteered, interned, or worked on a job to help find out what kind of job they want to have in the future (56.0%) than sophomores in the Class of 2011 (45.3%).

Differences by LOI. To further investigate the relationship with this topic and LOI, we again looked at the responses from the Class of 2011 as seniors across LOI groups. A larger percentage of seniors in the Class of 2011 from Medium EEDA LOI schools reported having made plans to participate in or had already participated in volunteering, interning, or working on a job to help them find out the kind of job they want to have in the future (62.0%) than from High or Low EEDA LOI schools (51.8% and 52.2%, respectively; $p = 0.023$). There were not significant differences in the responses of seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools regarding their thinking and planning on gathering information about jobs of interest, taking classes to help decide what kind of job they want, and participating in school or out-of-school activities that will help in the decision about the kind of job wanted in the future.

Work-based learning experiences. Students also reported whether or not they participated in work-based learning (WBL) experiences. The most reported work-based learning experiences were job shadowing or work-site visits and community services and the least reported experiences were co-ops and school-based enterprise. Table VI.A.16 summarizes the work-based learning experiences of seniors in the Class of 2009 and seniors in the Class of 2011. A higher percentage of seniors in the Class of 2011 (53.4%) indicated they had participated in job shadowing or work-site visits than seniors in the Class of 2009 (39.4%; $p < 0.001$). Fewer seniors in the Class of 2011 indicated they had participated in a co-op work experience at a local business (9.5%) than seniors in the Class of 2009 (14.2%; $p = 0.002$). Additionally, fewer seniors in the Class of 2011 indicated they had participated in none of the listed work-based experience opportunities (21.0%) than seniors in the Class of 2009 (25.1%; $p = 0.032$). There were not significant differences in the proportions of seniors in the Class of 2011 and seniors in the Class of 2009 who participated in internships, community service, or school-based enterprise.

Table VI.A.16

Percentage of Class of 2009 Seniors and Class of 2011 Seniors Reporting Participation in Work-Based Learning Experiences

Work-Based Learning Experiences	Class of 2009 Seniors % (N)	Class of 2011 Seniors % (N)
Internship (work experience, but not necessarily part of a vocational, career, or technical class)	23.7 (236)	21.3 (191)
Co-op (work experience at a local business in your high school major or career cluster)**	14.2 (141)	9.5 (85)
Job shadowing or work-site visits (visits to work places to observe one worker or many workers)**	39.4 (392)	53.4 (479)
Mentoring (a match with an adult in your career area for advice and support)	17.2 (171)	20.4 (183)
Community service (volunteer work to support your local community)	40.2 (400)	38.5 (345)
School-based enterprise (working in a business run by students or teachers from your school)	12.8 (127)	11.6 (104)
None of these*	25.1 (250)	21.0 (188)

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011 at the eight sample schools in the spring of 2011.
*$p < .05$. **$p < .01$.

Table VI.A.17 summarizes the work-based learning experiences reported by sophomores and seniors in the Class of 2011. A higher percentage of seniors in the Class of 2011 (53.4%) indicated they had participated in job shadowing or work-site visits than sophomores in the Class of 2011 (36.2%). Similarly, more seniors in the Class of 2011 than sophomores in the Class of 2011 indicated they had participated in an internship (21.3% and 15.3%, respectively), mentoring (20.4 and 11.4%, respectively), and community service (38.5 and 28.7%, respectively).

Table VI.A.17

Percentage of Class of 2011as Sophomores and as Seniors Reporting Participation in Work-Based Learning Experiences

Work-Based Learning Experiences	Class of 2011 Sophomores	Class of 2011 Seniors
Internship (work experience, but not necessarily part of a vocational, career, or technical class)	15.3	21.3
Co-op (work experience at a local business in your high school major or career cluster)	8.5	9.5
Job shadowing or work-site visits (visits to work places to observe one worker or many workers)	36.2	53.4
Mentoring (a match with an adult in your career area for advice and support)	11.4	20.4
Community service (volunteer work to support your local community)	28.7	38.5
School-based enterprise (working in a business run by students or teachers from your school)	12.6	11.6
None of these	36.0	21.0

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011at the eight sample schools in the fall of 2010 (following the completion of their sophomore year) and in the spring of 2011 (at the completion of their senior year). Chi-square analysis not conducted due to correlations among unmatched responses or sophomores and seniors of the Class of 2011.

Differences by LOI. The seniors' responses from the Class of 2011 were further analyzed to see if there was any relationship between LOI and WBL for that group. Table VI.A.18 summarizes the work-based learning experiences of seniors in the Class of 2011 cohort from the student survey data from High, Medium, and Low EEDA LOI schools. A higher percentage of seniors in the Class of 2011 from Medium EEDA LOI schools (63.6%) indicated they had participated in job shadowing or work-site visits than seniors in the Class of 2011 from High and Low EEDA LOI schools (50.3% and 40.5%, respectively; $p < 0.001$). Fewer seniors in the Class of 2011 from Low EEDA LOI schools indicated they had participated in mentoring (14.2%) than seniors in the Class of 2011 from High and Medium EEDA LOI schools (22.3% and 22.2%, respectively; $p = 0.041$). There were not significant differences in the proportions of seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools who participated in internships, co-ops, community service, or a school-based enterprise.

Table VI.A.18

Percentage of Seniors in the Class of 2011 Reporting Participation in Work-Based Learning Experiences

Work-Based Learning Experiences	High EEDA LOI Yes (%)	Medium EEDA LOI Yes (%)	Low EEDA LOI Yes (%)
Internship (work experience, but not necessarily part of a vocational, career, or technical class)	19.6	20.3	25.9
Co-op (work experience at a local business in your high school major or career cluster)	9.0	10.8	7.8
Job shadowing or work-site visits (visits to work places to observe one worker or many workers)**	50.3	63.6	40.5
Mentoring (a match with an adult in your career area for advice and support)*	22.3	22.2	14.2
Community service (volunteer work to support your local community)	39.5	38.6	36.6
School-based enterprise (working in a business run by students or teachers from your school)	13.3	10.3	11.2
None of these**	22.0	15.3	29.3

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011 at the eight sample schools in the spring of 2011.
*$p < .05$. **$p < .01$.

Meetings with counselors. Data from the *Student Engagement/POS Experiences Survey* reinforced findings of increased guidance/student meetings. The number of times that seniors in the classes of 2009 and 2011 talked with their guidance counselor while putting together the career plan or IGP significantly differed ($p = 0.001$), with approximately 55% in the senior Class of 2011 and 45% in the senior Class of 2009 talking to their guidance counselor three or more times.

Differences by LOI. Table VI.A.19 presents data on responses by the senior Class of 2011 regarding number of meetings with guidance counselors, by LOI. The number of times that seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools talked with a guidance counselor when putting together a career plan or IGP significantly differed with 64.5% of seniors in the Class of 2011 from Low LOI schools indicating they had spoken with their guidance counselor three or more times while putting together this plan compared to 59.7% and 45.5% of seniors in the Class of 2011 from High and Medium EEDA LOI schools, respectively ($p < 0.001$). Although the percentages varied across LOI levels, higher LOI was not necessarily associated with the more reported meetings with guidance. As mentioned, the guidance portion of EEDA was a state-funded portion of the law; therefore, it is not surprising that across all

levels of LOI, the percentages of students who never talked to guidance about career plans or who only talked once or twice with guidance dropped between sophomore and senior years while the percentage who talked to guidance three or more times increased.

Table VI.A.19 also includes comparisons of responses regarding number of meetings with guidance counselors between the Class of 2009 and Class of 2011 as seniors by LOI. Especially for the lower LOI schools, the percentage of students never talking to their guidance counselors about a career plan dropped considerably between the 2009 cohort and the 2011 cohort as seniors.

Table VI.A.19

Student Survey Question 7c by LOI
When you put together your career plan or 4-year Individual Graduation Plan, how often did
you talk with your guidance counselor?

	Percentage of Respondents	Senior Class of 2009 (*N*=524) % (*N*)	Sophomore Class of 2011 (*N*=907) % (*N*)	Senior Class of 2011 (*N*=631) % (*N*)
High LOI	Never	6.7 (12)	17.3 (34)	6.5 (14)
(*N*=593)	1-2 Times	37.2 (67)	47.2 (93)	33.8 (73)
	3 or More Times	56.1 (101)	35.5 (70)	59.7 (129)
	Total	100.0 (180)	100.0 (197)	100.0 (216)
Medium LOI	Never	11.4 (25)	15.4 (68)	7.9 (22)
(*N*=937)	1-2 Times	51.1 (112)	51.7 (228)	46.6 (129)
	3 or More Times	37.4 (82)	32.9 (145)	45.5 (126)
	Total	100.0 (219)	100.0 (441)	100.0 (277)
Low LOI	Never	13.6 (17)	13.8 (37)	2.2 (3)
(*N*=532)	1-2 Times	44.0 (55)	47.2 (127)	33.3 (46)
	3 or More Times	42.4 (53)	39.0 (105)	64.5 (89)
	Total	100.0 (125)	100.0 (269)	100.0 (138)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Student reports of topics discussed with counselors. Students were asked if they had discussed with guidance particular topics including courses to take, going to college, possible jobs or careers for adulthood, finding a job after high school, steps necessary to pursue a career, and applying for college or vocational/technical school with their guidance counselor between the start of the 9th grade and the time the survey was administered. Of these topics, seniors in the Class of 2009 and seniors in the Class of 2011 differed significantly only in their responses of discussing what courses to take with a guidance counselor (91.4% of the seniors in the Class of 2009 and 94.1% of the seniors in the Class of 2011; $p = 0.021$).

As outlined in Table VI.A.20, fewer sophomores (71.7%) than seniors (90.8%) in the Class of 2011 indicated they had talked to a guidance counselor about going to college, courses to take (91.4% and 94.1%, respectively), possible jobs or careers (63.8% and 75.1%, respectively), finding a job after high school (35.4% and 48.3%, respectively), steps necessary to pursue a career (63.3% and 73.4%, respectively), and applying for college or vocational/technical school (44.2% and 83.8%, respectively).

Table VI.A.20

Topics Class of 2011 Cohort Reported Discussing with School Counselors in Ninth and/or Tenth Grades and by End of Senior Year

Topics	By 9th/10th Grades Yes %	By 12th Grade Yes %
What courses to take this school year	91.4	94.1
Going to college	71.6	90.8
Possible jobs or careers when you are an adult	63.8	75.0
Steps necessary to pursue your career	63.3	73.4
Applying for college or vocational/ technical school	44.2	83.8
Finding a job after high school	35.4	48.3

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011at the eight sample schools in the fall of 2009, just after their tenth grade year and in the spring of 2011 at the end of their senior year. *N* sizes for calculation of percentages range from 1,402 to 1,414 for 2009 survey and from 909 to 919 for 2011 survey. Missing and multiple responses were excluded.

Differences by LOI. Seniors in the Class of 2011 at the three levels of EEDA LOI differed in their responses of discussing going to college with a guidance counselor ($p = 0.002$) (see Table VI.A.21). Fewer seniors in the Class of 2011 Medium EEDA LOI schools indicated they had discussed going to college with a guidance counselor (86.8%) than in High EEDA LOI (94.4%) and Low EEDA LOI (91.9%) schools.

Table VI.A.21

Student Survey Question 10 by LOI
Between the start of the 9th grade and now, have you talked to a school guidance counselor about the following topics?

	Percentage of Respondents	Senior Class of 2009 % (*N*)	Sophomore Class of 2011 % (*N*)	Senior Class of 2011 % (*N*)
High LOI	a. What courses to take this school year *(N=1005)*	91.5 (322)	89.2 (281)	92.9 (314)
	b. Going to college (*N=1003*)	92.3 (323)	75.2 (237)	94.4 (319)
	c. Possible jobs or careers when you are an adult (*N=998*)	82.8 (289)	64.2 (203)	76.9 (256)
	d. Finding a job after high school (*N=1002*)	64.1 (223)	36.1 (114)	52.7 (178)
	e. Steps necessary to pursue your career (*N=1002*)	80.5 (281)	61.8 (194)	77.6 (263)
	f. Applying for college or vocational/technical school (*N=1002*)	88.5 (309)	50.2 (158)	87.6 (296)
		90.0 (325)	91.0 (599)	93.5 (345)
Medium LOI	a. What courses to take this school year (*N=1388*)			
	b. Going to college (*N=1386*)	86.3 (309)	64.4 (424)	86.8 (321)
	c. Possible jobs or careers when you are an adult (*N=1377*)	67.7 (241)	62.0 (407)	71.8 (262)
	d. Finding a job after high school (*N=1387*)	54.6 (197)	36.2 (238)	47.8 (176)
	e. Steps necessary to pursue your career (*N=1376*)	71.7 (258)	62.3 (406)	71.2 (259)
	f. Applying for college or vocational/technical school (*N=1382*)	82.8 (298)	40.7 (267)	81.2 (297)
Low LOI	a. What courses to take this school year (*N=949*)	92.9 (276)	93.7 (413)	97.2 (205)
	b. Going to college (*N=947*)	88.2 (262)	80.0 (351)	91.9 (194)
	c. Possible jobs or careers when you are an adult (*N=944*)	62.8 (186)	66.2 (290)	78.1 (164)
	d. Finding a job after high school (*N=941*)	32.2 (95)	33.9 (148)	42.1 (88)
	e. Steps necessary to pursue your career (*N=943*)	56.4 (167)	66.1 (288)	70.6 (149)
	f. Applying for college or vocational/technical school (*N=946*)	77.2 (230)	45.1 (197)	82.5 (174)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Trends in Student Engagement and LOI. Students who reported having a high school major and career cluster on the student survey were asked how much they agreed or disagreed with particular statements about having a high school major or career cluster. In particular, students were asked to indicate their level of agreement that having a high school major or career cluster has: a) made me more likely to want to come to school; b) made me less likely to want to drop out of school; c) helped me get better grades; d) helped me make connections between what I study and what type of career I want; e) made it more likely that I would take courses that I need for the future; and f) made it more likely that my parents got involved in my selection of courses.

Students were also asked to indicate how much they agreed or disagreed with statements regarding the connection between what is taught and the real-world. Students indicated agreement with statements that most of their teachers make the subject matter interesting and useful and most of their teachers make connections between what they are teaching and how it applies in the real world.

Attachment to School and having a high school major or career cluster
2009 versus 2011 seniors. In terms of student's agreement on statements about the impact of having a high school major or career cluster, the distribution of responses for seniors in the Class of 2009 and seniors in the Class of 2011 who reported having a high school major and career cluster differed significantly only for dropping out of school ($p = 0.006$). More of these seniors in the Class of 2011 agreed or strongly agreed (67.7%) that having a high school major and career cluster has made it less likely they will want to drop out of school than seniors in the Class of 2009 (62.4%). Seniors who reported having a high school major and career cluster in the Class of 2009 and in the Class of 2011 did not have significantly different distributions of agreement responses about most of their teachers making the subject matter interesting and useful, with 74.0% of seniors in the Class of 2009 and 70.6% of seniors in the Class of 2011 agreeing or strongly agreeing to this statement. However, more seniors in the Class of 2009 indicated agreement (76.7%) than seniors in the Class of 2011 (71.9%) and the two groups had significantly different distributions of agreement responses regarding the statement that most of their teachers make connections between what they are teaching and how it applies in the real world ($p = 0.005$).

2011 comparison.[6] Similar proportions of sophomores and seniors in the Class of 2011 who reported having a high school major and career cluster indicated they agreed or strongly agreed to the impact of having a high school major and career cluster. Approximately 66.7% of sophomores in the Class of 2011 that reported having a high school major and career cluster agreed or strongly agreed that having a high school major and career cluster has made them more likely to want to come to school, as compared to 68.7% of seniors in the Class of 2011. Sophomores and seniors in the Class of 2011 had similar agreement for having a high school major and career cluster has made them less likely to want to drop out of school (67.8% and 67.7%, respectively). A majority of sophomores in the class of 2011 (67.9%) and a majority of seniors in the Class of 2011 (71.4%) agreed or strongly agreed that having a high school major and career cluster has helped them get better grades. A majority of sophomores and seniors in the Class of 2011 also agreed or strongly agreed that having a high school major and career cluster has helped them make connections between what they study and the type of career they want (86.2% and 86.1%, respectively), made it more likely that they would take courses needed for the future (89.9% and 88.0%, respectively), and made it more likely that their parents got involved in the selection of courses (62.7% and 64.2%, respectively). Similar proportions of sophomores and seniors in the Class of 2011 agreed that most of their teachers make connections between what they are teaching and how it applies in the real world (72.3% and 71.9%,

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[6] Chi-square analysis was not conducted due to correlations among unmatched responses of sophomores and seniors of the Class of 2011.

respectively) as well as agreeing that most of their teachers make the subject matter interesting and useful (67.5% and 70.6%, respectively).

Class of 2011 as seniors, by LOI. No significant differences in the level of agreement among seniors that reported having a high school major and career cluster in the Class of 2011 at High, Medium, and Low EEDA LOI schools existed for any of the six statements regarding the impact of having a high school major or career cluster. Slightly fewer seniors in the Class of 2011 reporting that they had a high school major and career cluster in the Low EEDA LOI schools agreed that they were more likely to want to come to school (65.0%) than seniors in the Medium EEDA LOI schools (67.4%) and High EEDA LOI schools (72.9%). Approximately 71.1% of seniors in the Class of 2011 from High EEDA LOI schools agreed that they were less likely to want to drop out of school, compared to 67.2% from Medium EEDA LOI schools and 63.9% from Low EEDA LOI schools. A majority of seniors in the Class of 2011 from High EEDA, Medium EEDA, and Low EEDA LOI schools agreed that having a high school major and career cluster helped them to get better grades (75.1%, 71.5%, and 65.3%, respectively). Similar proportions of seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools agreed that having a high school major helped to make connections between what is studied and the type of career students want (88.8%, 86.3%, and 81.5%, respectively), made it more likely that they would take courses needed for the future (90.5%, 88.6%, 83.1%, respectively), and made it more likely that their parents got involved in the selection of courses (62.8%, 67.2%, and 59.7%, respectively). Seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools had significantly different agreement about teachers making the subject matter interesting and useful (65.2%, 76.3%, and 69.2%, respectively; $p = 0.002$) and about teachers making connections between what they are teaching and how it applies in the real world (70.2%, 77.5%, and 64.6%, respectively; $p = 0.006$).

Relevance of schoolwork and having a high school major or career cluster

2009 versus 2011 seniors. Seniors from the classes of 2009 and 2011 were asked on the *Student Engagement/POS Experiences Survey* about their agreement with statements about the usefulness of information learned in school in everyday life, for college or further training, and for their career. Seniors in the Class of 2009 and in the Class of 2011 significantly differed in their responses to all three statements ($p = 0.006$, $p = 0.044$, $p = 0.021$, respectively). Specifically, more seniors in the Class of 2009 (64.5%) agreed that the information learned in school is useful in everyday life than seniors in the Class of 2011 (58.0%). Similarly, more seniors in the Class of 2009 agreed that the information learned in school will be useful for college or further training (86.7%) and useful for a career (71.1%) than seniors in the Class of 2011 (83.3% and 65.5%, respectively).

2011 comparison.[7] Comparing the Class of 2011 students as sophomores, and then again as seniors, on their reports of agreement with statements about the usefulness of information learned in school in everyday life, for college or further training, and for their career, we found that the seniors in the Class of 2011 and sophomores in the Class of 2011 had similar agreement

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[7] Chi-square analysis was not conducted due to correlations among unmatched responses of sophomores and seniors of the Class of 2011.

to all three statements. Specifically, a majority of seniors in the Class of 2011 (58.0%) and sophomores in the Class of 2011 (58.1%) agreed that the information learned in school is useful in everyday life. Seniors and sophomores in the Class of 2011 also had similar agreement that most of the information learned in school would be useful for their career (65.5% and 68.8%, respectively). Agreement with the statement that most of the information learned in school would be useful for college or further training slightly differed among seniors and sophomores in the Class of 2011 (83.3% and 89.9%, respectively).

Differences by LOI. Seniors in the Class of 2011 from Medium EEDA LOI schools had higher agreement with the statement that most of the information learned in school is useful in everyday life (68.4%) than did seniors in the Class of 2011 from High and Low EEDA LOI schools (55.1% and 44.7%, respectively; $p < 0.001$). Agreement to the statement that most of the information learned in school will be useful for college or further training among seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools did not significantly differ with a majority agreeing or strongly agreeing (80.2%, 87.7%, and 80.4%, respectively; $p = 0.076$). Seniors in the Class of 2011 from Medium EEDA LOI schools had higher agreement with the statement that most of the information learned in school will be useful for a career (74.9%) than in seniors in the Class of 2011 from High and Low EEDA LOI schools (59.8% and 57.7%, respectively; $p < 0.001$).

Preparing for class and having a high school major or career cluster
2009 versus 2011 seniors. The student survey also asked students several items about how prepared they were for classes. The distribution of responses for seniors in the Class of 2009 and in the Class of 2011 significantly differed for the number of times students went to class without a pencil, paper, book, or other necessary supplies, with more seniors in the Class of 2011 indicating they had never done this (42.3%) compared to seniors in the Class of 2009 (35.5%; $p < 0.001$).

2011 comparison.[8] The distribution of responses between seniors and sophomores in the Class of 2011 for the number of times they went to class without their homework finished and went to class without a pencil, paper, book, or other necessary supplies were similar, with approximately 18.5% of sophomores and 20.1% of seniors in the Class of 2011 indicating they had never gone to class without their homework finished and 43.7% of sophomores and 42.3% of seniors indicating they had never gone to class without a pencil, paper, book, or other necessary supplies.

Differences by LOI. The distribution of responses from seniors in the Class of 2011 regarding the number of times they went to class without homework significantly differed, with fewer seniors from High EEDA LOI schools indicating they went to class without homework finished (16.5%) than seniors in the Class of 2011 from Medium and Low EEDA LOI schools (23.5% and 19.6%, respectively; p = 0.014). A majority of seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools indicated they had gone to class without a pencil, paper, book, or other necessary supplies one or more times (59.8%, 52.0%, and 64.2%, respectively).

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[8] Chi-square analysis was not conducted due to correlations among unmatched responses of sophomores and seniors of the Class of 2011.

Attendance. Using the state longitudinal data system (SLDS) cohort data (2009 and 2011), we analyzed attendance rates. A yearly attendance rate for each student was calculated to be the number of days attended divided by the number of days enrolled.

Table VI.A.22 presents changes in average 11th grade attendance rates across cohorts. All of the schools have relatively high attendance rates with both POS1 and non-POS1 students. There appears to have been little change in average attendance rates between the two cohorts for both groups of students.

Table VI.A.22

Change in Average 11th Grade Attendance Rates, by School, 2009 and 2011 SLDS Cohorts, Ordered from Lowest LOI to Highest LOI

	Non-POS1 Students			POS1 Students		
	2009 (%)	2011 (%)	Difference (%)	2009 (%)	2011 (%)	Difference (%)
Elm	94.8	94.3	-0.5	93.6	94.8	1.2
Poplar	97.8	97.9	0.1	99.9	98.1	-1.8
Azalea	96.1	93.8	-2.3**	95.7	95.0	-0.7
Iris	94.9	96.0	1.1	96.7	97.5	0.8
Laurel	97.1	97.2	0.1	97.5	97.8	0.3
Apple	95.8	95.9	0.1	98.5	95.3	-3.2**
Orchid	98.2	96.9	-1.3**	98.9	97.6	-1.3*
Redwood	93.8	94.4	0.6	94.7	95.3	-0.6
Total	96.6	96.4	-0.2	96.1	96.5	0.4

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.

* $p < 0.05$ level. ** $p < 0.01$.

2009 versus 2011 seniors. The *Student Engagement/POS Experiences Survey* also asked respondents about absences and being late or skipping school. The distribution of responses for seniors in the Class of 2009 and in the Class of 2011 did not significantly differ for the number of times they were late for school, the number of times they cut or skipped classes, the number of times they were absent from school, or the number of times they went to class without finishing their homework.

2011 comparison.[9]
More sophomores in the Class of 2011 than seniors in the Class of 2011 indicated they were not late for school this school year (25.3% and 21.5%, respectively), they had not cut or

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[9] Chi-square analysis was not conducted due to correlations among unmatched responses of sophomores and seniors of the Class of 2011.

skipped classes this school year (73.2% and 56.1%, respectively), and they had not been absent from school (13.2% and 9.4%, respectively).

Differences by LOI. The distribution of responses from seniors in the Class of 2011 regarding the number of times they were late for school significantly differed, with fewer seniors from High EEDA LOI schools indicating they had never been late for school (17.3%) than seniors in the Class of 2011 from Medium and Low EEDA LOI schools (23.9% and 24.1%, respectively; $p = 0.026$). The distribution of responses from seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools indicating they had skipped classes or were absent from school did not significantly differ ($p = 0.304$ and $p = 0.821$, respectively) with a majority indicating they had never skipped class and were absent one or more times.

Discipline. Using the SLDS cohort data (2009 and 2011), we also analyzed discipline rates. The rate used was the total number of disciplinary incidents (in-school suspensions, out-of-school suspensions, other dispositions other than in-/out-of-school suspensions, and school expulsions) per 100 days of school.

Table VI.A.23 presents similar data on discipline rates for the 2009 and 2011 SLDS cohorts. Changes in disciplinary incidents varied for non-POS1 students, but there were increases for POS1 students at most schools. Overall, the count of disciplinary incidents per 100 days increased for both groups, but the increase for POS1 students was larger. This is counter to what we would expect to see if EEDA and increased POS implementation had a positive impact on student engagement.

Table VI.A.23

Change in Average 11th Grade Discipline Rates per 100 Days of Enrollment, by School, 2009 and 2011 SLDS Cohorts, Ordered from Lowest LOI to Highest LOI

	Non-POS1 Students			POS1 Students		
	2009	2011	Difference	2009	2011	Difference
Elm	1.7	1.4	-0.3	1.5	1.7	0.2
Poplar	0.5	0.4	-0.1	0.0	0.0	0.0
Azalea	1.3	2.1	0.8	1.2	1.7	0.5
Iris	2.5	2.7	0.3	2.2	2.1	-0.1
Laurel	2.3	3.6	1.3**	1.9	2.3	0.4
Apple	5.1	4.2	-0.9	2.1	4.6	2.5
Orchid	0.3	0.7	0.3**	0.2	0.6	0.3
Redwood	1.8	1.5	-0.3	1.6	1.5	-0.1
Total	1.6	1.8	0.2	1.5	2.0	0.5*

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.
* $p < 0.05$ level. ** $p < 0.01$.

Trends in Postgraduation Preparation and LOI

Intention to complete a career major. The Statewide Longitudinal Data System (SLDS) data included information on students' IGP related to those students' intentions to complete their majors and which majors they chose by year.

Since majors would not have been selected until 10th grade, the data reported in Table VI.A.24 relates to intentions as of 10th grade. Recorded intentions to complete majors do not appear to be closely related to implementation levels. We might expect the high implementation schools to have a larger number of intended completers, but instead they are among the lowest.

Table VI.A.24

Percentage of IGPs Indicating Intentions to Complete Major in High School (10th Grade IGPs), by LOI

	LOI	
Low (60.0-69.9)	Medium (70.0-79.9)	High (80.0-89.9)
54.7% (Elm), 6.8% (Poplar)	90.6% (Apple), 29.7% (Iris), 80.8% (Azalea), 44.8% (Laurel)	4.1% (Orchid), 5.1% (Redwood)

Note. Each percentage reported represents the percentage of IGPs showing intentions to complete a specific career major as of 10th grade for a school within the three LOI categories shown.

Students select clusters in 8th grade, so for analysis of cluster information, we could have begun with earlier IGPs; however, to be consistent with other analyses, we looked back at the 10th grade IGPs for both cluster and major information for comparisons to 12th grade IGPs on our SLDS 2011 cohort. There is a slight negative relationship between policy implementation score and percentage of students in the 2011 SLDS cohort who selected a major in one cluster area on their 10th grade IGP and then switched to another career cluster by the time they were seniors in high school. The general trend is that the higher the level of implementation, the lower the percentage of SLDS 2011 cohort who switched majors. But as illustrated in Figure VI.A.6, the relationship is relatively weak.
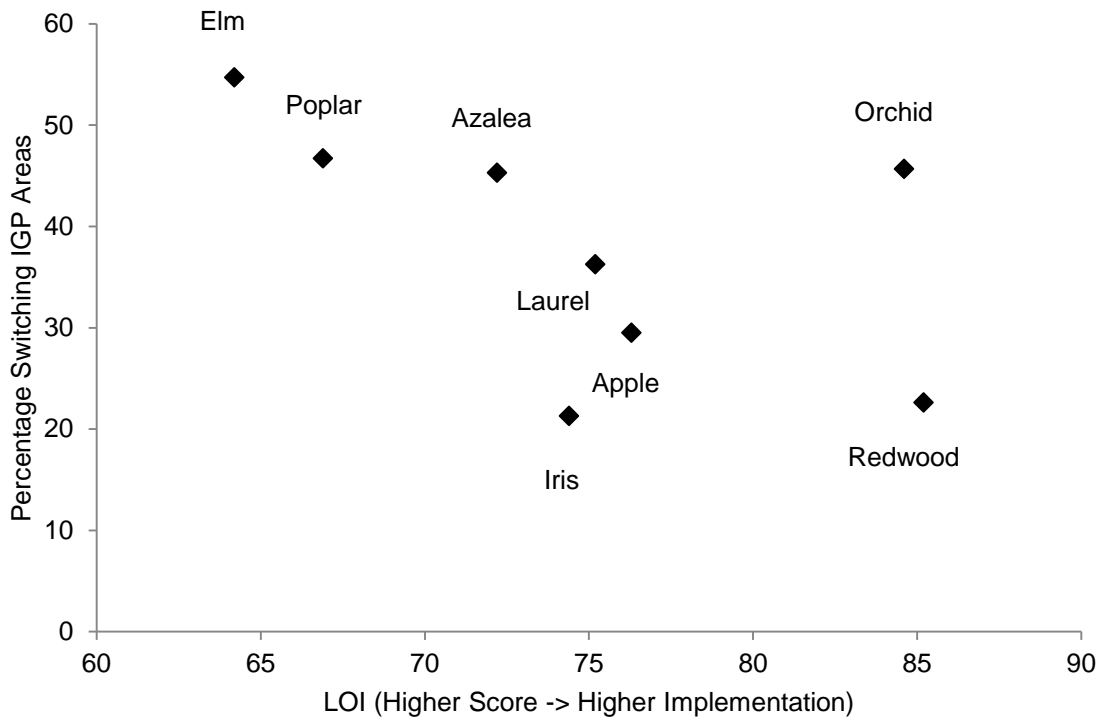
Figure VI.A.6. Percentage switching IGP career cluster by implementation score, 10th grade to 12th grade IGP of SLDS 2011 cohort

Patterns in course taking. On the *Student Engagement/POS Experiences Survey*, students were asked about course taking that allowed them to earn, or potentially earn, college credit while in high school.

Class of 2009 versus Class of 2011, seniors. The distribution of responses for the number of courses planned to take that will earn college credit by the time of high school graduation for seniors in the Class of 2009 and seniors in the Class of 2011 did not significantly differ with a majority in both classes indicating they would take one or more courses (56.3% and 54.4%, respectively). Seniors in the Class of 2009 and seniors in the Class of 2011 did not significantly differ in their responses to the number of times they took Advanced Placement courses, with approximately 45.0% of seniors in the Class of 2009 and 46.6% of seniors in the Class of 2011 indicating they had never taken these types of courses. Similarly, responses of seniors in the Class of 2009 and seniors in the Class of 2011 did not significantly differ in terms of the number of times they had taken vocational, career, or technical courses, with approximately 27% of both classes indicating they had never taken these types of courses. A similar percentage of seniors in the Class of 2009 and Class of 2011 indicated they had never taken special education courses (approximately 81% in both cases).

Class of 2011, seniors and sophomores. More seniors in the Class of 2011 (18.3%) than sophomores in the Class of 2011(3.7%) indicated they would not take any courses that would earn college credit by the time they graduated from high school. More sophomores in the Class of 2011 (52.6%) than seniors in the Class of 2011 (46.6%) indicated they had never taken Advanced Placement courses and vocational, career, or technical courses (28.6% and 27.1%, respectively). Seniors in the Class of 2011 were also asked how many vocational, career, or technical units they would have earned in their primary vocational, career, or technical program area by the time they graduate from high school. A majority of seniors in the Class of 2011 indicated they would take one or more units in these types of courses (53.6%). Similar percentages of sophomores and seniors in the Class of 2011 indicated they had never taken special education courses (80.2% and 80.6%, respectively).

Class of 2011, as seniors, by LOI. Analyzing data from the student survey of seniors in the Class of 2011, these seniors from High, Medium, and Low EEDA LOI schools significantly differed in their responses to the number of courses they plan to take that will earn college credit by the time they graduate from high school, with more seniors in the Class of 2011 from Low EEDA LOI schools indicating they would take none of these courses (28.5%) than seniors in the Class of 2011 from High and Medium EEDA LOI schools (16.5% and 13.9%, respectively; $p = 0.003$). Similarly, more seniors in the Class of 2011 from Medium and Low EEDA LOI schools indicated they had never taken an Advanced Placement course (47.9% and 53.9%, respectively) compared to seniors in the Class of 2011 from High EEDA LOI schools (40.2%; $p = 0.030$). There were not significantly different responses among seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools regarding the number of times they had taken vocational, career, or technical courses with a majority indicating they had taken one or more of these courses, as well as special education courses with a majority indicating they had never taken these courses. Seniors in the Class of 2011 were also asked how many vocational, career, or technical units they would have earned in their primary vocational, career, and technical program area; the distribution of responses to the number of units earned did not significantly differ among seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools, with a majority indicating they would take at least one unit or credit by the time they graduate from high school.

Seniors from this same cohort of survey respondents (Class of 2011 seniors) from High, Medium, and Low EEDA LOI schools significantly differed in their responses regarding the highest level of education they expect to complete with more seniors from Low EEDA LOI schools indicating they expected to complete at least a bachelor's degree (75.8%) than seniors from High and Medium EEDA LOI schools (64.5% and 64.9%, respectively; $p = 0.049$). A majority of seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools indicated their intention to enroll in a 4-year college or university, enroll in a 2-year community college, or transfer to a 4-year college or university the year after graduation (75.3%, 80.6%, and 78.1%, respectively), although the responses did not significantly differ. Seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools regarding their plan to have a job at age

30 had similar responses, with a majority indicating they planned to have a job at age 30 and providing a legitimate job name (69.8%, 68.8%, and 70.7%, respectively).[10]

Trends in Postgraduation Plans and LOI. Recall that 2011 SLDS cohort POS1 students in this study are defined as students who have been at a sample school for 3 consecutive years (10th, 11th, and 12th grades) and have earned at least 4 credits in a logical course sequence of at least 3 courses within one cluster. While we asked CTE students on the survey about postgraduation plans, we were not conclusively able to identify from the student survey students who participated, concentrated, or completed POS. And while CTE program completers were definitely completers of state identified career programs, we did not survey or receive SLDS data based on this definition. Therefore, the best variable to use to look at the relationships between being in a POS and postgraduation plans is the POS1 identification.

Students are asked to indicate postsecondary plans on their IGPs. Options include workforce/apprenticeship, two-year college/technical training, four-year college, and military. Since our research questions relate to plans to continue formal postsecondary education, we looked at college plans for the 2011 SLDS cohort of POS1 students versus non-POS1 students.

For postgraduation plans analysis of the SLDS cohorts, the latest year of postgraduation plan data for each student was used. Many students had multiple different postgraduation plan observations within a single year – 350 of the 2011 cohort had two postgraduation plans and 32 had three postgraduation plans. To address multiple reports, the following rule was used: if a student ever indicated plans for four-year college, then four-year college was used; if a student ever said two-year college, but not four-year, then two-year college was used.

Postgraduation plans from IGPs. 2011 SLDS cohort POS1 students were more likely to plan to attend a two-year college and less likely to plan to attend a four-year college/university. 2011 SLDS cohort POS1 students were slightly more likely to plan to attend some college relative to non-POS1 students, but the difference was not statistically significant (Figure VI.A.7).

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[10]Chi-square analysis comparing the distribution of responses between seniors in the Class of 2011 the Class of 2011from High, Medium, and Low EEDA LOI not conducted due to small cell counts.
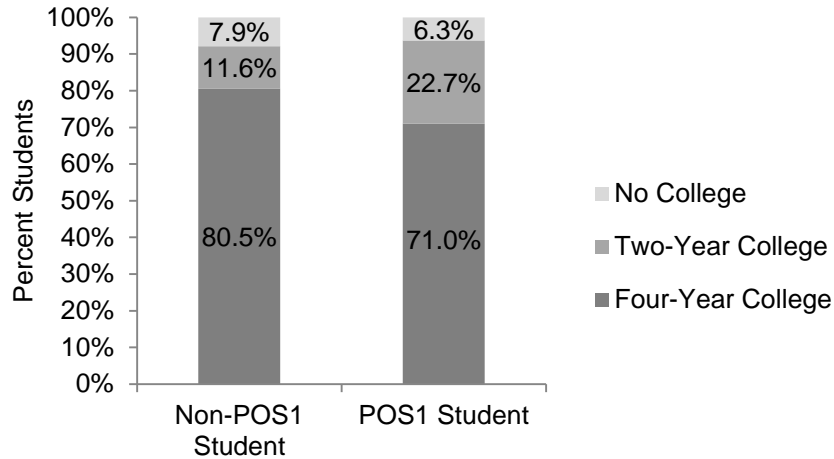
Figure VI.A.7. Postgraduation plans by POS1 status, 2011 SLDS cohort.

There was a great deal of variation in 2011 SLDS cohort students' plans across schools. Postgraduation plans do not appear to be related to POV or LOI. In Figure VI.A.8, the schools are ordered from lowest POV to highest POV and there are variations among schools at both ends of the chart, although the two lowest POV schools (Poplar and Laurel are each POV=2 schools) do have the greatest percentages of students planning to attend four-year college. As for LOI, Orchid, a high LOI school was next in order of the percentage of students planning to attend four-year college; however 10% of their students did not plan to go to college. Redwood, the highest LOI school had 6% not planning to attend college. However, Elm, the lowest LOI school had nearly the same, 5%, not planning to attend college. The relationship between postgraduation plans and POV and LOI is not clear.
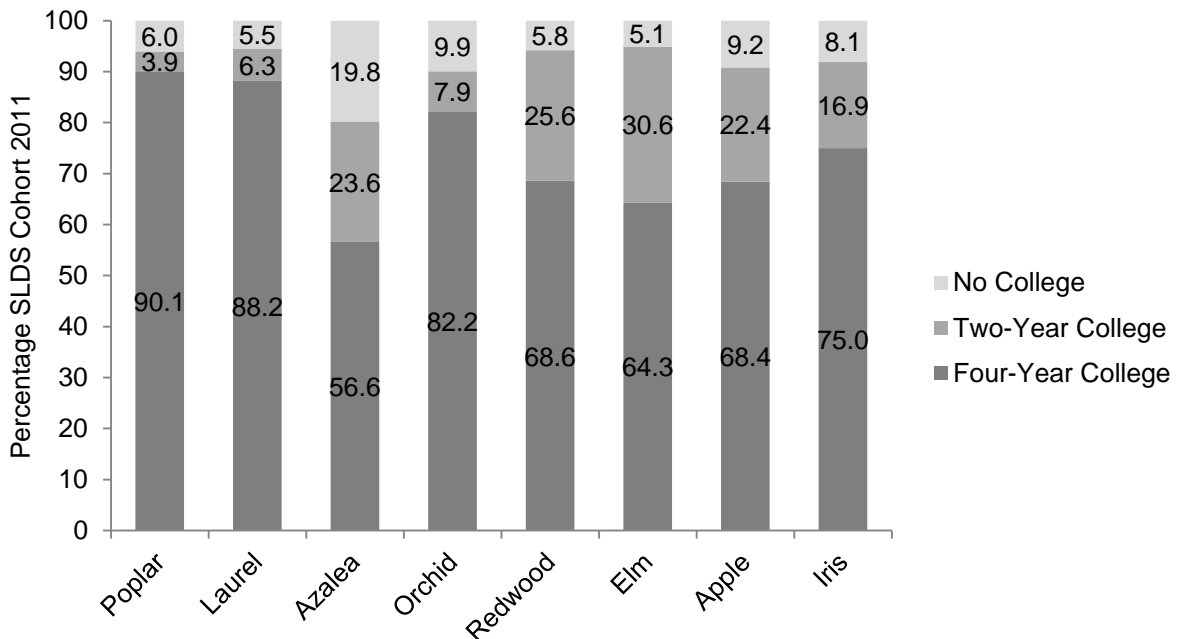
Figure VI.A.8. Postgraduation plans, all students, 2011 SLDS cohort, by school, ordered from lowest to highest POV group.

        Figure VI.A.9 provides data on the postgraduation plans of the POS1 students from the
2011 SLDS cohort. When comparing the school-level data in Figure VI.A.9 to that in Figure
VI.A.8, it should be noted that the numbers of 2011 SLDS cohort POS1 students (Figure VI.A.9)
are small compared to the total cohort illustrated in Figure VI.A.8, especially for Poplar and
Azalea. Nevertheless, a comparison of the whole 2011 SLDS cohort versus the POS1 students
presents data related to POS and postsecondary plans. The one school where all students
planned on attending college, Poplar, had too small of a sample (2 students) to draw any
conclusions. Laurel, a Low POV, but higher LOI school had 88% of its total 2011 SLDS cohort
planning to attend a four-year college, but a little less of the POS1 students with such plans and a
little more POS1 students planning to attend two-year and slightly more not planning to attend
college. No obvious trends are evident when looking across other combinations of High POV,
High LOI, Low POV, and Low LOI.

        Azalea, the only Moderate POV and Medium LOI school in the sample, has the highest
percentage of both the total SLDS 2011cohort and the POS1 students within the cohort (20% and
17% respectively) who do not plan to go to college. While this is only one school, and this
school only had six POS1 students, it is our only school that is both Medium LOI and Moderate
POV.
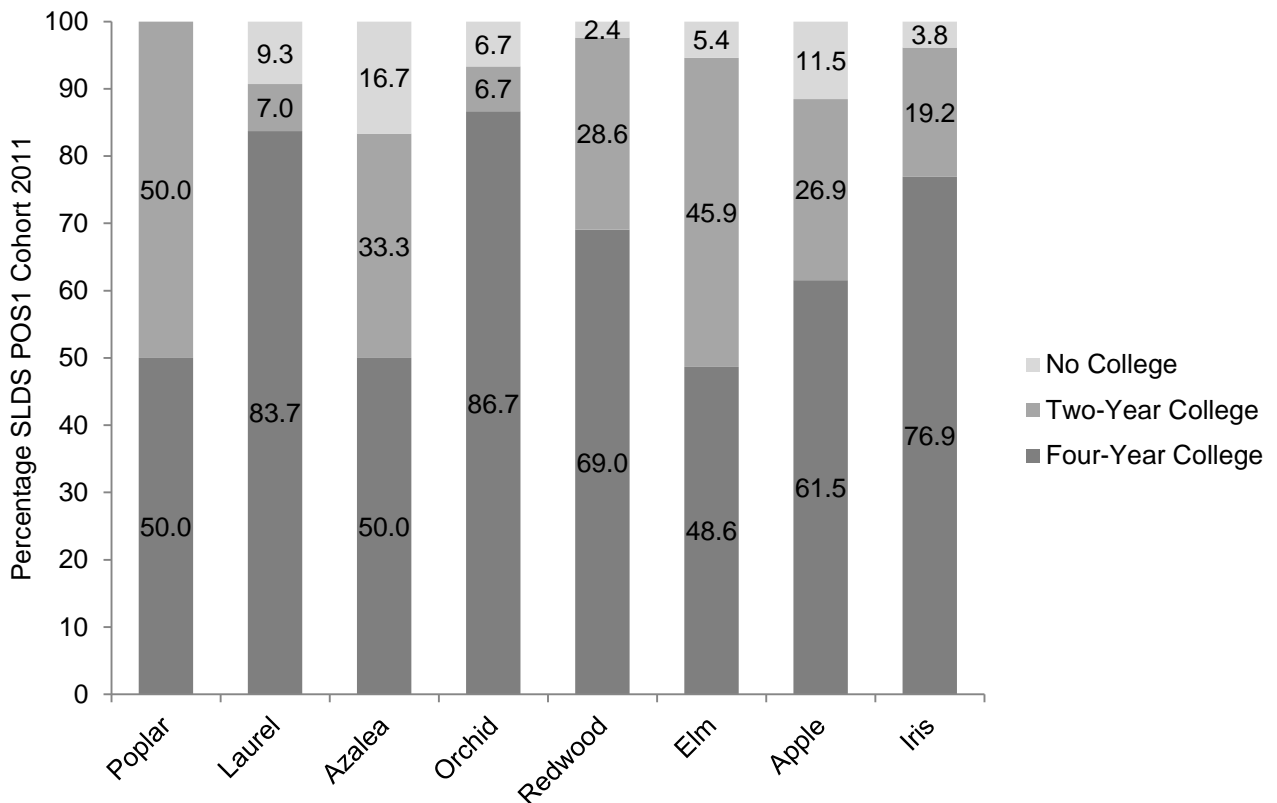
Figure VI.A.9. Postgraduation plans of POS1 students, 2011 SLDS cohort, by school.
Caution should be used in interpreting data from Azalea and Poplar because the number of POS1
students at each of these schools is less than 10.

Postgraduation plans differed for POS1 students in the 2011 SLDS cohort depending on the career cluster of their POS, as outlined in Table VI.A.25. Note that only those clusters with 10 or more students completing a POS1 course sequence are included in this table. Students in Business, Health Science, and Art, AV Tech, & Communications were the most likely to plan to attend a four-year college. Students in Transportation, Distribution and Logistics and Manufacturing were the most likely to plan to attend a two-year college. Students in Agriculture, Food & Natural Resources were the most likely to not plan to attend any college.

Table VI.A.25

Postgraduation Plans for POS1 Students by Career Clusters, 2011 SLDS Cohort

	N	Plan to Enroll at Four-Year (%)	Plan to Enroll at Two-Year (%)	No Plans to Enroll (%)
Agr., Food & Natural Resources	10	50.0	30.0	20.0
Architecture & Construc.	28	60.7	25.0	14.3
Art, AV Tech, & Communications	20	75.0	25.0	0.0
Business, Management & Admin.	33	93.9	3.0	3.0
Health Science	53	84.9	15.1	0.0
Hospitality & Tourism	27	59.3	29.6	11.1
Manufacturing	28	50.0	39.3	10.7
Trans., Distr., and Logistics	22	50.0	40.9	9.1

Note. Only those clusters with 10 or more students completing a POS1 are included in this table.

Postgraduation plans from surveys. On the *Student Engagement/POS Experiences Survey*, students were asked about plans for after high school, both formal education and work. Although as we mentioned earlier, we cannot connect students' reported plans on surveys to whether a student was in a POS, reviewing responses to these questions can give some additional context about members of our cohorts' future plans for education and its relation to their career major area.

Class of 2009 versus Class of 2011, as seniors, postgraduation plans. Seniors in the Class of 2009 and seniors in the Class of 2011 significantly differed regarding the highest level of education they expected to complete, with slightly more seniors in the Class of 2011 indicating they would not finish high school (4.7%) than seniors in the Class of 2009 indicating the same (2.2%; $p = 0.008$). However, totaling all the responses of those aspiring to some college, more seniors in the Class of 2011 plan to continue formal postsecondary education (81.8%) than seniors in the Class of 2009 (79.0%). Seniors in the Class of 2011 were

additionally asked if the main thing they planned to do the year after graduation from high school was connected to their concentration area they had during high school, with a majority indicating a connection (62.7%). A majority of seniors in both the Class of 2009 and Class of 2011 indicated they would enroll in a four-year college or university, enroll in a two-year community college, or transfer to a four-year college/university the year after graduating from high school (79.2% and 78.1%, respectively)[11].

Class of 2011, seniors and sophomores, postgraduation plans. Sophomores and seniors in the Class of 2011 had similar responses of the highest level of education they expect to complete, with a majority in each class indicating they would complete a bachelor's degree, master's degree, or doctoral degree (67.0% and 67.2%, respectively) (see Table VI.A.26). More sophomores (81.9%) than seniors (78.1%) in the Class of 2011 indicated they would enroll in a four-year college or university, a two-year community college, or transfer to a four-year college or university the year after high school.

Table VI.A.26

Student Survey Question 17: As things stand now, what is the highest level of education you expect to complete?

Percentage of respondents	Senior Class of 2009 % (N)	Sophomore Class of 2011 % (N)	Senior Class of 2011 % (N)
Not finish high school	2.19 (22)	4.18 (59)	4.65 (43)
Graduate from high school or earn my GED	12.25 (123)	6.94 (98)	9.19 (85)
Attend college but not complete a degree	2.09 (21)	1.35 (19)	1.62 (15)
Complete a certificate or associate's degree	11.45 (115)	12.11 (171)	12.97 (120)
Complete a bachelor's degree	24.90 (250)	21.32 (301)	25.51 (236)
Complete a master's degree	23.90 (240)	26.56 (375)	24.00 (222)
Complete a doctoral degree	16.63 (167)	19.12 (270)	17.73 (164)
Don't Know	6.57 (66)	8.43 (199)	4.23 (40)
Total	100.00 (1004)	100.00 (1412)	100.00 (925)

*Does not include multiple responses, missing responses, or not applicable responses.
The distribution of responses for seniors in the Class of 2009 and seniors in the Class of 2011 is significantly different ($\chi^2_1 = 19.1392, p = 0.0078$).

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[11] Chi-square analysis comparing the distribution of responses between seniors in the Class of 2009 and seniors in the Class of 2011 not conducted due to small cell counts.

B. Evidence of Perkins IV-Defined POS and Their Relationship to Student Outcomes in Sample Schools

Evidence of Development and Implementation of Perkins IV-Defined POS Across Schools. Our first research question asks "To what extent does South Carolina's Education and Economic Development Act facilitate the development of programs of study?" In previous sections, we described the level of implementation of the policy across schools to have some estimate of how much of the "treatment" or levels of the EEDA policy students were being exposed to at each of the sample schools. The next step in addressing this question is to explore the possible subsequent influence of the various levels of EEDA implementation on the development of programs of study. This second aspect of the question required that the study team operationalize the concept of "program of study." As was described earlier in the Study Design section, we faced several challenges when trying to operationalize this concept. The state policy we were studying encompasses more than just CTE courses and programs, unlike the other two studies, and it was necessary to develop measures that could be applied across the entire high school curriculum or at least a wider range of career pathways. Particular majors and programs to be offered to students was left up to individual schools and districts, leading to inconsistent naming and CIP code assignments as well as varied placement in career clusters. In addition, the elements of Perkins IV POS, as outlined in the law and supporting implementation materials provided by OVAE, were not sufficiently defined to allow for easy translation into direct measures for each element. These and other challenges are described in further detail in the Challenges of Defining and Counting POS section of this report.

To address these challenges, the study team operationalized the Perkins IV core elements for the purposes of the study. We also used several alternative approaches from varied data sources to present a broader picture of potential programs of study at sample schools. We identified two data sources, available for the school years of most interest in the study (2008-2009 to 2010-2011), that we thought could provide quantitative information on programs of study from slightly different angles using differing approaches. The third data source, a student survey, was developed and administered during the study period. These data sources were used to develop our three primary analysis variables.[12] In addition, we used qualitative data to supplement the quantitative data, so that when pieced together, a broader picture of the level of development of programs of study at our sample schools could be provided.

The three primary variables used in analysis, POS1, POS2, and POS3, came from three different data sources. POS1 variables are derived from the South Carolina state Department of Education's (SDE) State Longitudinal Data System (SLDS) and follow two cohorts of students, the Class of 2009 and the Class of 2011, from 10th through 12th grades in our sample schools using available student-level data. Data for the POS2 variables, also derived from the SDE, came from their Career and Technical Education (CATE) office database that is used for Perkins IV reporting to OVAE on state-recognized CTE programs and participants. The CATE data do not follow specific cohorts but are reported by enrollment by year and could include students in a variety of cohorts. In addition, the CATE data analyzed here were school-level, rather than

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[12] Further descriptions of the data sources and development of these variables are contained in the Study Design section of the report.

student-level, data. So, although not directly comparable, POS1 and POS2 data and variables are complementary and offer opportunities for comparison across data sources as well as add unique perspectives not offered through the other data source.

POS3 variables are based on survey response data collected from our two target cohorts, the Class of 2009 and the Class of 2011. The *Student Engagement/POS Experiences Survey* was administered to the Class of 2009 as seniors and to the Class of 2011 as sophomores and again as seniors. As was discussed in the Study Design section, students were not randomly selected for survey administration. Instead, each school was asked to survey as many in the targeted cohort as possible in the targeted school year. These data are therefore not comparable to the POS1 and POS2 data, but do provide additional information not available through the other data sources. Thus, they contribute to a fuller picture of the students' experiences of the policy and programs of study at sample schools.

In addition to the primary variables, other secondary and more descriptive variables were developed or obtained to supplement the information provided by the POS1, POS2 and POS3 variables. One of these descriptive variables, a Study-Designed Perkins IV POS (POS4), was developed by the research team to measure the four core elements of the Perkins IV legislation. The other two descriptive variables, District-Identified CATE Perkins IV POS (POS5) and School-Reported POS (POS6), were developed from other sources, which are described in the Study Design section. This supplementary information was gleaned from on-site interviews and focus groups conducted during the two site visits with guidance personnel, teachers, principals, and assistant principals; from student focus group interviews conducted during a third site visit to each school; from content analysis of school archival and web materials on available courses, majors, and career clusters, and on career development and planning; from analysis of school responses to a Clusters & Majors checklist; and from information compiled from an SDE CATE annual report.

Findings from the three primary analysis variables as well as the descriptive variables are described below.

Three Primary Analysis Variables: POS1, POS2, and POS3.
Findings on POS1 students: Evidence from SLDS data about student course-taking.
Data used to develop POS1 variables are student-level data from the SDE's Statewide Longitudinal Data System (SLDS). Students were considered to be in either the 2009 or 2011 SLDS cohort if they were at sample schools the last three years of high school and progressed through 10th, 11th, and 12th grades during those last school years. They were considered SLDS cohort POS1 students if they completed four or more credits in a logical progression of at least three CTE courses that complete at least four credits in a single cluster. It is important to keep in mind, particularly as we compare POS1 results to POS2 results, that POS1s are course sequences within a cluster but do not necessarily reflect a recognized CTE major or program as is the case for POS2s. (See the description of POS1 under the Constructed Variables section for more information.)

Defining the cohorts in this way (i.e., the number of consecutive years used to define the cohort) impacted the percentage of students identified as completing a POS1 course sequence (POS1s). Table VI.B.1, which uses the 2011 SLDS cohort as an example, illustrates the

variation in the school-level percentages, depending on the definition of the cohort. The percentage of POS1 students (students completing a CTE course sequence) increases for all schools as more grade levels are included. The percentages being used for our analysis, except where noted, are in the third column, "Percent in 10th through 12th grade."

Table VI.B.1

Percent POS1 Students, by Varying Cohort Definitions, 2011 SLDS Cohort

	Percent in 12th Grade	Percent in 11th and 12th Grade	Percent in 10th through 12th grade	Number of POS1 Students in Analysis Cohort
Apple High	24.5	28.9	33.3	26
Azalea High	5.0	5.5	5.7	6
Elm High	17.4	21.5	23.3	37
Iris High	31.1	33.7	36.1	56
Laurel High	9.9	10.8	11.8	43
Orchid High	8.7	10.9	12.3	30
Poplar High	0.5	0.5	0.6	2
Redwood High	19.3	22.9	24.9	44
Total	11.8	13.8	15.1	244

As shown in Figure VI.B.1, the percentage of students who completed POS1 course sequences (percent POS1 students) varies widely across schools for the 2011 graduating cohort. Overall, approximately 15% of students completed a POS1, but the percent POS1 students across schools ranged from less than 1% to around 36%.
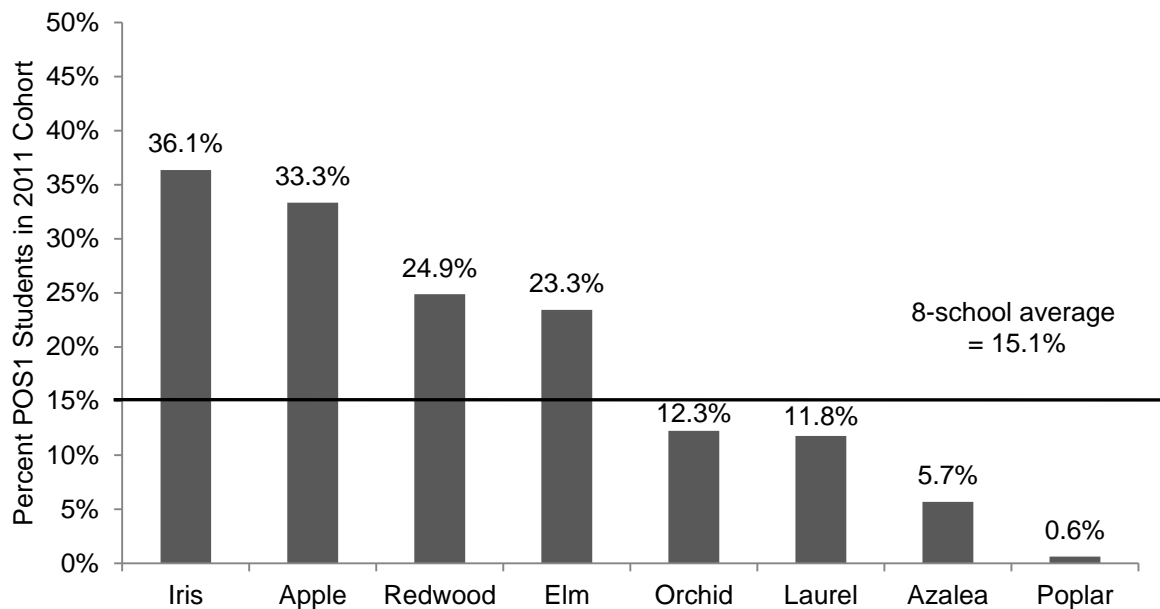
Figure VI.B.1. Percentage of 2011 SLDS cohort completing four credits in logical CTE course progression in a career cluster (Percent POS1 Students)

Comparisons between the 2009 and 2011 SLDS cohorts (Table VI.B.2) indicate that only two of the schools had increases in percent POS1 students between the two cohorts. Both of the schools that experienced increases in percent POS1 students, Apple and Laurel, fall in the top half of policy implementation scores, although they are medium policy level schools rather than high level. In addition, the school with the largest decrease in percent POS1 students between the two cohorts, Elm, is a low policy implementation school. However, the school with the second largest decrease in percent POS1 students between the cohorts, Orchid, is one of the two schools with the highest policy implementation scores. This suggests some association between strong policy implementation and increases in the proportion of students completing a POS1 course sequence but not a consistent trend.

Table VI.B.2

Change in Percent POS1 Students by SLDS Cohort

School	2009 Cohort	2011 Cohort	POS1 Change
Apple	8.2	33.3	25.1**
Laurel	4.0	11.8	7.8**
Poplar	1.6	0.6	-1.0
Redwood	27.2	24.9	-2.4
Iris	38.6	36.1	-2.4
Azalea	9.4	5.7	-3.7
Orchid	17.8	12.3	-5.4
Elm	29.5	23.3	6.2
Total	15.0	15.1	0.1

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.
**$p < .01$.

Apple experienced the greatest increase in percent POS1 students over the period. But as we explored the reasons for this large increase, and compared the findings from POS1 to POS2, we feel that this sharp increase in percent POS1 students is an anomaly in the POS1 data. As will be discussed in the next section, in the POS2 data, the percentage of POS2 completers at Apple does increase between the 2009 and 2011 cohorts, but not to the same degree as in POS1 course sequence completers. In addition, the number of POS2 programs available to students in both cohorts during that time period was low—four programs—and remained at that level over the three-year period. Further, a comparison of the numbers of students considered course progression (POS1) or program completers (POS2) between the two data sources (shown later in see Table VI.B.8) shows far fewer students in the POS1 2009 cohort than those of the POS2 2009 cohort, while the numbers of students for the 2011 cohort across the two data sources were very similar. It may also be the case that tracking students' course-taking and inferring that certain course progressions in a cluster represent a CTE program may not be as valid a method at some schools for inferring the presence of POS as it might be for others. We think, therefore, that this large increase reflects an anomaly in the counting of POS1 for that school for that cohort and do not feel that it reflects the true trend between the two POS1 cohorts.

On the other hand, Laurel, a relatively new school built around EEDA, experienced a steady growth in CTE programs and percent completers over the three-year period. This school was established around the time that EEDA legislation was being developed and the school was designed to meet the demands of the new policy for the curriculum to be centered around career majors and clusters. The steady increase probably reflects the school's building of programs over time as the high school became more established. As will be discussed in the next section, the number of POS2 programs at Laurel grew from seven programs in the 2008-2009 school year to 21 in the 2010-2011 school year.

The other six schools (Poplar, Redwood, Iris, Azalea, Elm, and Orchid) experienced decreases in percent POS1 students between the two cohorts, although most were relatively small declines. Given that EEDA emphasizes the development of career majors and pathways, we might have expected at least a slight increase in the percentage of POS1 students between the 2009 (pre-policy) and 2011 (early-policy) cohorts at most schools. However, since the policy was in its early stages of implementation for the 2011 cohort, it is possible that this pattern reflects more of a lag in getting programs into place to meet the demands of the new policy. Some schools were developing and/or dropping program offerings during that time period and declines may just reflect this adjustment period. It is also important to remember that EEDA is putting into place programs of study across the curriculum and not just in CTE, and thus, courses offered for CTE programs may have been reduced temporarily while courses for other career majors/pathways were being put into place to meet the requirements of the policy.

Findings on POS2 primary school-level variables: Evidence from SDE CATE data on state-recognized CTE programs and enrollment. Data for the POS2 primary variables are from the SDE's CATE office and represent data on state-recognized CTE programs and enrollment in those programs over the study period. Unlike for POS1 variables, enrollment is not based on specific cohorts but includes any student at a sample school that is considered by the state to be a participant, concentrator, or completer[13] in a state-recognized CTE program that has potential postsecondary ties in a given school year. Students could be in any grade, but are most likely juniors and seniors during each school year.

It is also important to note here, that, unlike for analyses with the POS1 and POS3 variables, due to the fact that we only had eight sample schools and the fact that the variables

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[13]As defined by the SDE CATE office, a Participant is a secondary student taking one or more CTE courses who is not a concentrator or completer in a state-recognized CTE program. A Concentrator is a secondary student with an assigned CIP Code who has earned three or more Carnegie units of credit in a state-recognized CTE program. A Completer is a Concentrator who has earned all of the required units in a CTE program identified by the assigned CIP Code. A state-recognized CTE program must include four or more Carnegie units of credit in CTE courses which lead to a career goal. (SDE CATE office, *Career and Technology Education Local Plan,* For Fiscal Year 2009-2010 (FY 10), Columbia, SC. Cosmetology and nail technology programs are excluded since they have no clear postsecondary connection after high school graduation.

described in this section are school-level variables, significance tests on trends across time are not statistically powerful in explaining relationships and are not appropriate for examining between school relationships.

POS2 Programs. The SDE CATE office recognized CTE programs in 14 of the 16 career clusters approved by Perkins IV in both the 2008-2009 and 2010-2011 school years. There were no state-recognized programs during those school years in the Finance and Government and Public Administration clusters. POS2 programs are those that the SDE CATE office recognized as a CTE program and had possible postsecondary ties that were reported to have concentrators or completers at one or more sample schools during the 2008-2009, 2009-2010, and 2010-2011 school years. The requirement that programs have possible postsecondary ties meant that cosmetology and nail technology programs were excluded.

Across our eight sample schools in both 2008-2009 and 2010-2011, there were concentrators or completers in POS2 programs in all 14 of these career clusters (see list in Table VI.B.3). The cluster with the most diverse POS2 programs offered across sample schools in 2008-2009 was Business, Management, & Administration with 12 POS2 programs, followed by four in both Manufacturing and Marketing, Sales, & Service. In 2010-2011, the cluster with the most diverse POS2 programs across sample schools was again Business, Management, & Administration with seven programs, although with almost half the number of programs available in that cluster in 2008-2009. In addition, there were four POS2 programs again in Manufacturing and four POS2 programs in Architecture and Construction offered across sample schools

An interesting pattern emerged in POS2 programs at our three largest high schools, Laurel, Orchid, and Poplar (Laurel and Poplar were also the most four-year college oriented). During the study period, these three schools developed a number of custom or cross-cluster POS2 programs. Developing these types of programs gave the schools more flexibility in what courses they could require than for the standard state-recognized programs that had set lists of courses and credits required for program completion. Over the period, Poplar offered the most of these programs, with approximately 60% of their POS2 programs being either custom or cross-cluster programs. About 40% of Laurel's POS2 programs were either custom or cross-cluster and about one-third of POS2 programs at Orchid were of this type. Two other schools offered these types of programs, with one being offered during the study period at Azalea and two at Iris.

Table VI.B.3

Sixteen Federal Career Clusters and Variety of CTE Programs in Sample Schools by Cluster and Year, 2008-2009 and 2010-2011

Career Cluster	2008-2009 Number CATE Programs	2010-2011 Number CATE Programs
Agriculture, Food, & Natural Resources	1	3
Architecture & Construction	3	4
Arts, Audio/Video Technology & Communications	3	3
Business, Management & Administration	12	7
Education & Training	1	1
Finance[a]	0	0
Government & Public Administration[a]	0	0
Health Science	2	2
Hospitality and Tourism	1	2
Human Services	3	2
Information Technology	3	2
Law, Public Safety, Corrections & Security	1	3
Manufacturing	4	4
Marketing, Sales & Service	4	3
Science, Technology, Engineering & Mathematics	1	2
Transportation, Distribution & Logistics	3	3

[a]No state-recognized CATE programs were offered in Finance in South Carolina during the 2008-2009 school year, but were added during the 2009-2010 school year. No state-recognized CATE programs were offered in Government and Public Administration in South Carolina between the 2008-2009 and 2010-2011 school years.

The average number of POS2 programs at sample schools between 2008-2009 and 2010-2011 was 12.8 programs, with an overall 33.7% increase in the number of programs over the time period. But that average number and change in percentage over the period mask the differences across schools and the fact that the increase in POS2 programs is due mainly to changes at two of the eight sample high schools. As shown in Figure VI.B.2, two schools, Laurel and Orchid, had large increases in numbers of POS2 programs over the three-year period. During the same period, another school, Iris, had a large decrease in the number of POS2 programs at the school. Three schools had no net change in number of programs over the three-year period, although two of these schools either experienced an increase or decrease in 2009-2010.
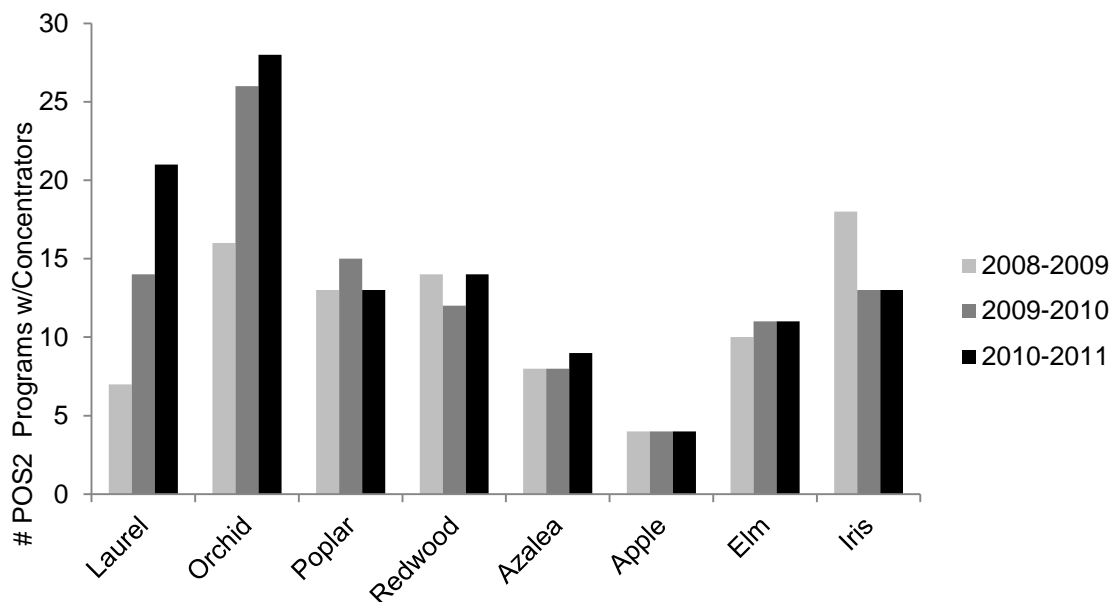
Figure VI.B.2. Number of POS2 majors/programs with possible postsecondary ties with concentrators and completers, 2009-2011. For the purposes of POS2 variables, as defined by the SDE CATE office, a Concentrator is a secondary student with an assigned CIP code who has earned three or more Carnegie units of credit in a state-recognized CTE program. A Completer is a Concentrator who has earned all of the required units in a CTE program identified by the assigned CIP code. A state-recognized CTE program must include four or more Carnegie units of credit in CTE courses that lead to a career goal. (SDE CATE office, *Career and Technology Education Local Plan,* For Fiscal Year 2009-2010 (FY 10), Columbia, SC. Cosmetology and nail technology programs are excluded since they have no clear postsecondary connection after high school graduation.

Again, it is important to remember that the policy was relatively new during these years and majors/programs and career pathways across the curriculum were still being developed for CTE as well as other types of majors/programs. POS2 programs are limited to only those majors/programs that are state-recognized CTE programs. Changes may have been occurring at sample schools in non-CTE programs, such as journalism or performing arts, and these changes would not be identified in this analysis. In addition, during this period, the SDE CATE office was also reorganizing state-recognized programs in several clusters, primarily in Business, Management, and Administration and in Marketing, dropping some courses, adding new ones and/or renaming programs. Some of the programs in the business cluster were also moved into the Finance Cluster starting in the 2009-2010 school year. Some of the changes at our sample schools reflect this rearrangement at the state level.

As was discussed previously in relation to findings on POS1 students, it was not surprising to find that Laurel had the largest increase in POS2 programs over the study period. Laurel is a relatively new school where the curriculum was designed around career majors and clusters to meet the requirements of the EEDA policy. Given the school's focus and the short amount of time it has been operating, the steady increase in programs might be expected, as the high school became more established and developing programs to meet the needs of their school.

Iris was the only sample school that had a reduction in the number of POS2 programs between 2009 and 2011. And, the decrease was relatively large and occurred between the 2008-2009 and 2009-2010 school years, when five out of 18 POS2 programs were no longer offered. There were a number of changes going on at that high school during the study period that may have contributed to this trend. In the second year of the study, due to low test scores, this school was targeted for improvement by the SDE. This meant that the school had to develop a plan and focus more attention on math and English Language Arts to address the low test scores and de-emphasize other areas. At the same time, between the 2008-2009 and 2010-2011 school years, due to budget cuts and lower student enrollment, the school lost 35% of its teachers. But the drop in student enrollment was only slightly less than 15%, meaning higher student-to-teacher ratios across all courses. But still loss in enrollment meant further cuts in teachers. Teachers were lost across the curriculum, including from CTE, and a number of courses and programs had to be discontinued.

POS2 Program Ratio of Students to POS2 Programs. To be able to make more meaningful comparisons across schools, we developed another POS2 variable, the POS2 program ratio. Comparison of the number of POS2 programs across schools is misleading since there is such a range in enrollment across schools, from under 500 to a little over 2,000. A better measure to use for comparison is the ratio of school enrollment to the number of POS2 progams at each sample school during each school year. The lower the ratio, the higher the number of POS2 programs available to students and thus considered a higher POS2 implementation school.

The range in these ratios across schools is illustrated in Figure VI.B.3. As can be seen in the figure, there was variation in some of the schools in the ratio over time, with ratios at all but two schools decreasing by the 2010-2011 school year, although the decrease at Azalea was very small. The decrease in ratio means that at these schools, there was a possibility for easier access to POS2 programs for students over the time period. Some of this decrease is due to dropping enrollment in four of the six schools over that period, particularly at Apple and Redwood, where there was no overall POS2 program growth during that period.

In essence, although six of the schools showed improvement in the ratio, only two of the schools, Laurel and Orchid, had improvement in the ratio of POS2 enrollment to programs that might be linked to increases in the number of POS2 programs. Orchid had a decline in enrollment while at the same time adding POS2 programs, a combination that contributed to the school having the lowest POS2 program ratio by 2010-2011. The school with the most dramatic drop in the POS2 program ratio, Laurel, was the school with staff that reported a high commitment to the EEDA policy and development of pathways. The school had both an increase in enrollment and an increase in the number of POS2 programs over that period. Even though Laurel increased their number of programs over time, given their higher enrollment, there is still a high ratio of enrollment to POS2 programs relative to other sample schools, although definitely much reduced by the 2010-2011 school year. Recall that the POS2 program ratio is the ratio of school enrollment to programs and so a lower ratio would be considered to be associated with greater POS2 implementation.
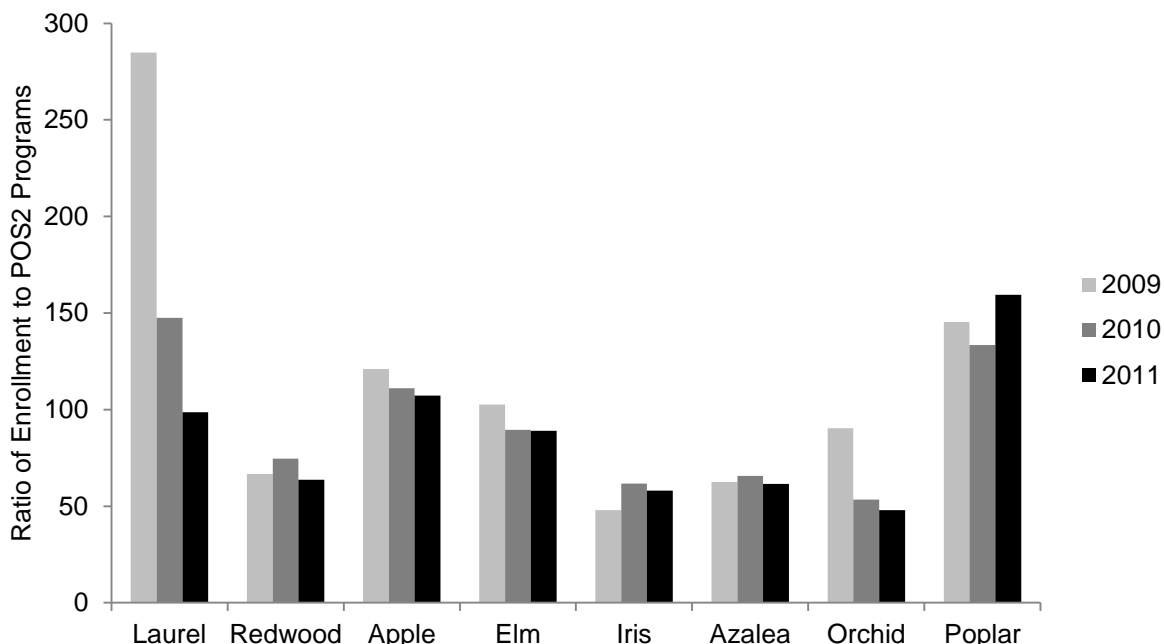
Figure VI.B.3. Ratio of school enrollment to number of POS2 programs (POS2 program ratio), 2009-2011

At two schools, the POS2 program ratio increased over the three-year period. One of these schools, Poplar, had the highest POS2 program ratio by the 2010-2011 school year. Over that time period, the school had a 10% increase in enrollment, which would impact the ratio. This enrollment increase was not offset by an increase in the number of POS2 programs that year. Although there was a slight increase in POS2 programs in 2009-2010 at that school, the number dropped again in 2010-2011 to the same number of programs available in 2008-2009. Of all of the sample schools, this high school seemed most to emphasize four-year college preparation as opposed to expansion of CTE program options for students. In fact, it was noted during site visits in 2009 that there seemed to be stigma attached to taking CTE at this school and also that college-bound students were encouraged to take as many Advanced Placement (AP) courses as possible, rather than CTE courses, since few, if any, of the CTE courses carried AP credit.

To simplify the POS2 program ratio concept for use in quantitative analysis, we decided to use an average of enrollment and POS2 programs over the three-year period to construct a single POS2 program ratio variable. The POS2 program ratio refers to each school's average school enrollment for the three-year period between 2008-2009 and 2010-2011, divided by the average number of POS2 programs with concentrators/completers at each school for those three years. The resulting ratios are shown in Figure VI.B.4. Across all schools, the average ratio of enrollment to POS2 programs over the three-year period was 93:1, with values ranging from a high of 146:1 enrollment to POS2 programs at Laurel, down to a low of 55:1 enrollment to POS2 programs at Iris.
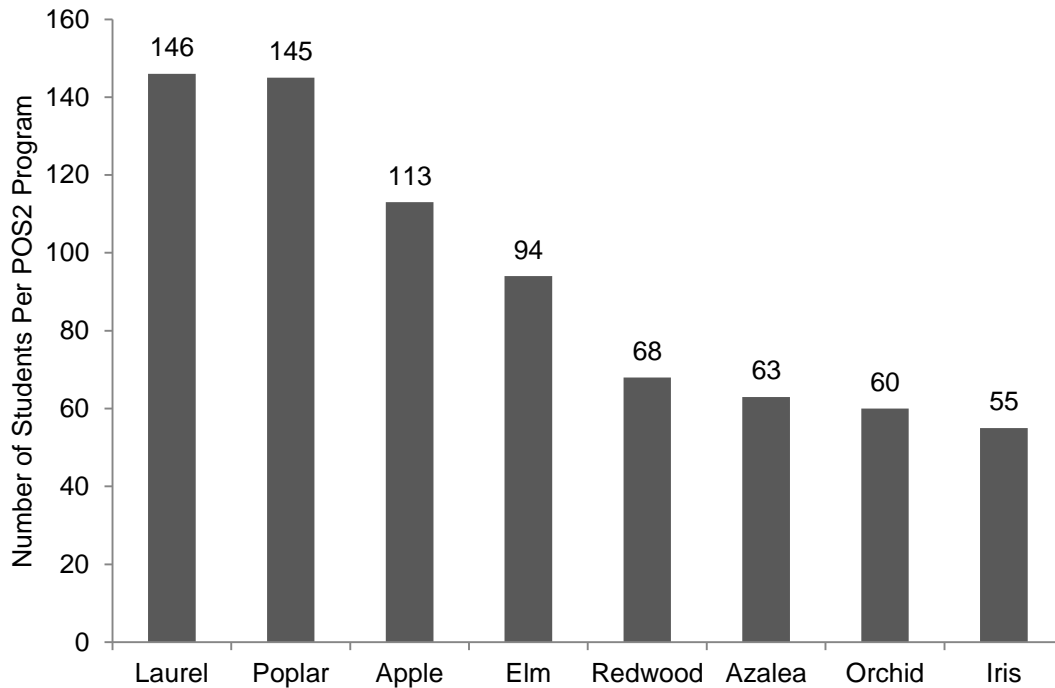
Figure VI.B.4. Average ratio of student enrollment to POS2 programs by school, 2009-2011

In addition, we also grouped the program ratios into three groups for analyses with some of our constructed variables. We developed the groupings based on the range across schools. As shown in Table VI.B.4, the highest ratios of 146:1 and 145:1 were categorized as low POS2 program implementation schools (Low). The mid-range ratios of 113:1 and 94:1 were categorized as medium POS2 implementation schools (Medium). The lowest ratios of 68:1 or below were considered as high POS2 implementation schools (High).

Table VI.B.4

Three-Year Average Number of POS2 Programs, School Enrollment, Ratio of Students to Programs and POS2 Implementation Groups, 2009 - 2011

School Name	Average Number POS2 Programs 2009-2011	Average Total School Enrollment 2009-2011	Average POS2 Program Ratio 2009-2011	POS2 Program Implementation Level Groups
Laurel	14	2,044	146	Low
Poplar	14	1,988	145	Low
Apple	4	452	113	Medium
Elm	11	997	94	Medium
Orchid	23	1,393	60	High
Redwood	13	907	68	High
Azalea	8	527	63	High
Iris	15	806	55	High
All Schools	12.8	1,139	93	--

The two Low POS2 program implementation schools are Laurel and Poplar. Both schools have the highest average enrollment over the three-year period, which would contribute to the higher enrollment to POS2 program ratios. As discussed above, the Low POS2 implementation level for Poplar seems to mirror the level of effort found at the school in the area of POS2 program development. However, averaging over three years of data to develop these ratios provides a somewhat misleading view of the efforts underway in POS2 development at Laurel because it masks the dramatic drop in the POS programs ratio over that time from 285:1 down to 99:1. When averaged, the school's higher student enrollment relative to most other schools and increases in numbers of students over the time period offsets the addition of new POS2 programs. Without averaging, the school's POS2 implementation level would fall into the medium POS2 implementation range. This school, however, is the only one where using the average POS2 program ratio does not accurately reflect the three-year trend.

Four schools fall into the High POS2 implementation level: Orchid, Redwood, Azalea and Iris. The school with the lowest average POS2 program ratio was Iris. There was not much change at Redwood over the study period as the school began with a low ratio and maintained about the same ratio across the three school years, with the slight decrease in ratio due to a slight drop in enrollment. Nor was there a large change at Azalea in terms of the average POS2 program ratio over the time period. However, it appears that the development of POS2 programs at these schools may have begun prior to our study period, since they started with such low ratios, and the schools were maintaining already established POS2 programs during those school years.

Iris is an interesting case because not only did their enrollment drop at that time but their number of POS2 programs also dropped, yet it still continued to have a low ratio and therefore a High implementation level of POS2 programs. One reason for this is that the school started with a low ratio in 2008-2009.

Orchid is also different from other schools in terms of POS2. This school had a drop in enrollment over the study period but had the second largest increase in POS2 programs over the period. This increase in programs seems to be the result of the convergence of some unique factors at the school. Orchid has had a long-term commitment to offering CTE programs on its campus. The structure for career pathways had already been put into place at the school prior to EEDA through implementation of High Schools That Work. The passage of EEDA only strengthened this orientation. But the real impetus for the increase in their efforts on career pathways and curriculum integration, as reported by staff during interviews, came from the receipt of funding for Smaller Learning Communities. Staff reported that the school redesigned the curriculum around clusters and organized their small learning communities around clusters of related pathways. Each smaller learning community contained relevant content teachers for the clusters, such as for business and marketing, and core academic teachers were assigned to each academy and were co-located for better coordination. Development of POS2 programs was one product of this effort, which was then reportedly strengthened through the policies put in place by EEDA.

Trends in Appropriate and Inappropriate Duties by POS2 Student-to-Program Ratio Groups. As described in previous sections, surveys were administered to school counselors in 2009 and 2012 to gather information on whether their participation in various policy-required

and policy-inappropriate duties had changed since the beginning of EEDA implementation. For each survey administration, counselors were asked to rate the change in their duties on a scale that ranged from "5" (duties had increased greatly) to "1" (duties have decreased greatly). There was also a "0" response (not applicable, this has never been part of my duties), which were removed from the mean calculations. The duties listed were then divided into two groups: appropriate duties and inappropriate duties.

A mean indicator of change was determined for appropriate and inappropriate duties for each school by year, as shown in Table VI.B.5 and Table VI.B.6. The higher the means are above 3, the more their involvement in required duties was perceived by counselors to have *increased* since the beginning of EEDA implementation. The lower the means below 3, the more their involvement in required duties was perceived by counselors to have *decreased* since the beginning of EEDA implementation. A mean of 3 would indicate that they did not perceive that their involvement in these duties had changed since EEDA.

School counselors' mean reports of change in involvement in duties required by the state policy since the beginning of EEDA implementation for both 2009 and 2012 were compared across POS2 program implementation level groupings (based on student-to-POS2 program ratios and grouped as High, Medium or Low) (Table VI.B.5). The only consistent trend in reports across POS2 program implementation groups was that at three of the four schools in the High POS2 implementation group, counselors were more likely to report a perceived increase in their involvement in required duties since EEDA in 2009 than in 2012. At the other High implementation school, counselors were more likely to report a perceived increase in required duties in 2012 than in 2009. Reports were mixed for the other two implementation level groups, with counselors at one school more likely to report increased involvement in these duties in 2012 while counselors at the other school less likely to report increased involvement in 2012. Of the three schools where counselors were more likely to report a perceived increase in their involvement with required duties since EEDA in 2012 than in 2009, one school was a High POS2 implementation school, one a medium, and one a Low POS2 implementation school.

The school counselors' mean reports from 2009 and 2012 of perceived involvement in duties deemed *inappropriate* for counselors by the state policy since the beginning of EEDA were then compared across POS2 program implementation groupings (Table VI.B.6.). Again, the only consistent trend in reports across POS2 program implementation groups was among the four High POS2 implementation schools, where counselors at all four schools were more likely to report a perceived increase in their involvement in inappropriate duties since EEDA in 2009 than in 2012. One of these schools, Orchid, had the largest disparity in reports between the two school years. Counselors at that school reported a large increase in inappropriate duties since EEDA implementation in 2009, while in 2012 they reported little change in these duties over that period. Reports were mixed for the other two implementation level groups, with counselors at one school more likely to report increased involvement in inappropriate duties in 2012 while counselors at the other school was more likely to report increased involvement in these duties in 2009. Apple, a POS2 Medium implementation school, was the only school where counselors reported in 2012 a slight decrease in their involvement in inappropriate duties since EEDA began. It was the only time that counselors at any school reported a decline in duties, either inappropriate or required, since the implementation of EEDA.

Table VI.B.5

Comparison of POS2 to the 2009 and 2012 Mean Reports of School Counselors' Reported Involvement in Required Duties

School	POS2 Implementation Groups	2009 Mean Reports of Required Duties	2012 Mean Reports of Required Duties	Change in Mean 2009-2012
Orchid	High	4.0	3.5	-0.5
Azalea	High	3.9	4.1	0.2
Redwood	High	3.5	3.2	-0.3
Iris	High	3.4	3.0	-0.4
Elm	Medium	4.9	4.5	-0.4
Apple	Medium	3.8	4.0	0.2
Laurel	Low	4.2	4.8	0.6
Poplar	Low	3.7	3.2	-0.5

Note. The required duties included classroom guidance on career issues; curriculum development on career issues; counseling students on career issues; assisting students with the development of their career plans and IGPs; consulting with teachers and administrators about career issues; assisting with exceptional students on career issues; meeting with parents about career issues; coordinating special events/programs for the school regarding career issues; conducting professional development workshops in career development and guidance for teachers and guidance counselors; identifying and coordinating work based/extended learning opportunities for students.

Table VI.B.6

Comparison of POS2 to the 2009 and 2012 Mean Reports of School Counselors' Reported Involvement in Inappropriate Duties

School	POS2 Implementation Groups	2009 Mean Reports of Inappropriate Duties	2012 Mean Reports of Inappropriate Duties	Change in Mean 2009-2012
Orchid	High	4.5	3.3	-1.2
Iris	High	4.0	3.5	-0.5
Azalea	High	3.5	3.3	-0.2
Redwood	High	3.4	3.0	-0.4
Apple	Medium	3.5	2.9	-0.6
Elm	Medium	3.2	3.9	0.7
Poplar	Low	3.5	3.4	-0.1
Laurel	Low	3.1	3.3	0.2

Note. The inappropriate duties included chairing individualized education program (IEP) meetings; chairing Section 504 of the Rehabilitation Act of 1974 meetings; coordinating special services referrals; administering standardized tests; registering and scheduling students for classes; developing the master class schedule; maintaining/completing educational records/reports; handling discipline of students; and substitute teaching and/or covering classes for teachers at your school.

POS2 Completers. The calculation of POS2 completers comes closest to how the SLDS data were coded for analysis of POS1 students. Based on the definition used by the SDE CATE office, a POS2 completer is a secondary student who has earned <u>all</u> of the required units in an identified CATE program, which must include at least four Carnegie units of credit within that program. The distribution of completers across clusters for the 2008-2009 and 2010-2011 school years is outlined in Figure VI.B.5. In both years across sample schools, there were by far the largest percentages of completers in POS2 programs in the Health Science cluster. Higher percentages of completers between the two school years were also found in the Hospitality & Tourism (primarily in Culinary Arts) and Architecture and Construction (mainly in general building construction) clusters. The largest increase in the percentage of completers was in POS2 programs in the Science, Technology, Engineering, & Mathematics cluster, in large part due to the increase in enrollment in Project Lead The Way.
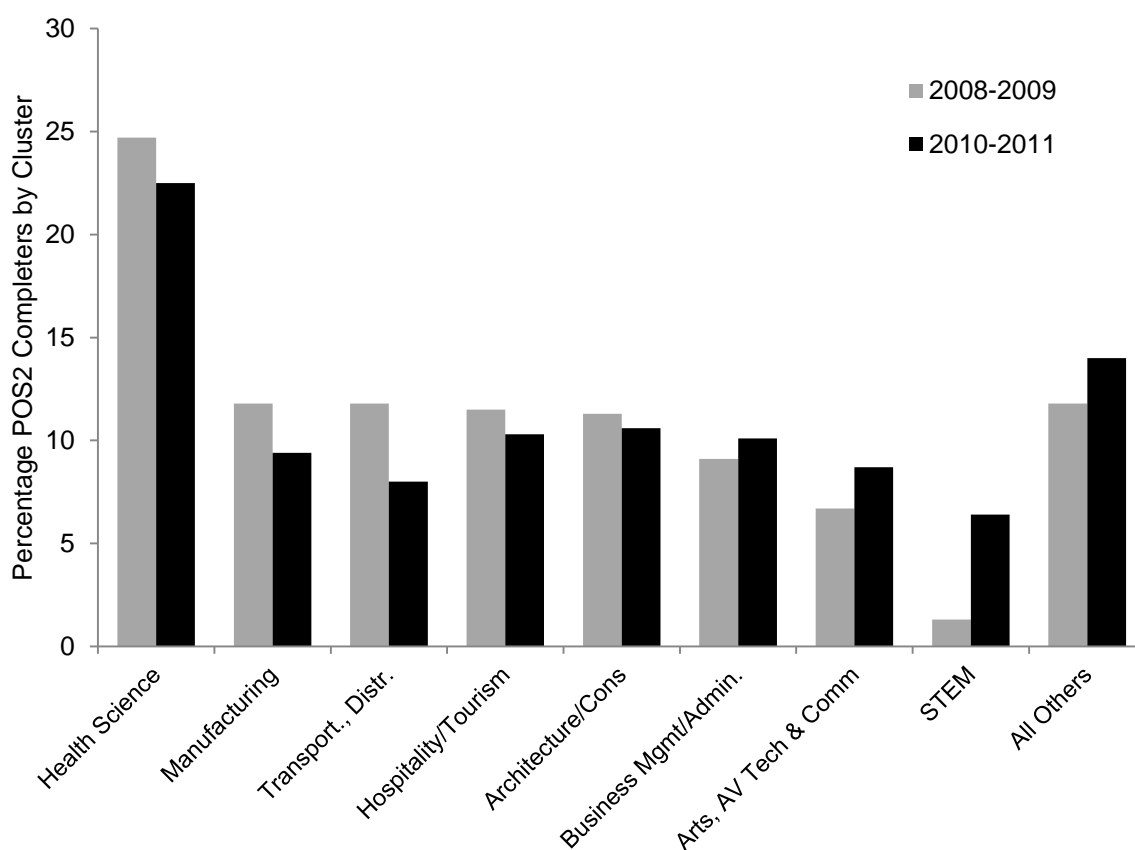
Figure VI.B.5. Percentage of completers by POS2 program cluster by year, 2008-2009 and 2010-2011

Across sample schools, the average number of POS2 completers increased from 47 to 55, an increase of 28% between the 2008-2009 and 2010-2011 school years. Figure VI.B.6 shows the trends in number of POS2 completers at each school for each of the school years over the three-year period. As shown, at five of the eight schools there was an increase in the number of POS2 program completers. Two of the five schools, Laurel and Poplar, had much higher net

increases over the three-year period than the other schools (200.0% and 65.5%, respectively). The other three schools had similar, more moderate, increases that ranged from about 10% to 16% in the number of POS2 completers over the period. Three schools had a decline in number of POS2 completers over the three-year period. The largest decrease occurred at Azalea, with a 46.2% decrease in number of POS2 programs between those school years.
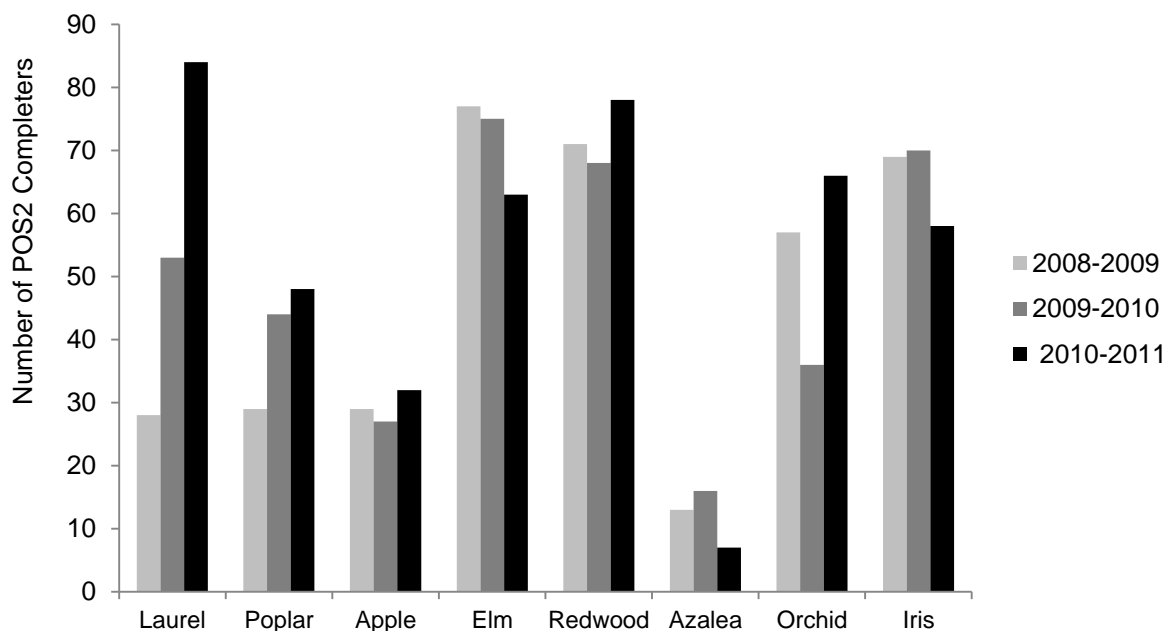
Figure VI.B.6. Number of POS2 completers for all students, 2009-2011

The school with the most consistent trends across POS2 variables is Laurel. During that three-year period, the number of POS completers increased substantially as did the number of POS2 programs, while the ratio between students and POS2 programs declined substantially.

The patterns for other schools, however, are not as consistent across POS2 variables. Among the four schools that were categorized as High POS2 implementation schools, only two of these schools, Orchid and Redwood, had modest increases in the number of POS2 completers over that three-year period. On the other hand, Azalea and Iris both had decreases in the number of POS2 completers, with almost a 50% decrease at Azalea in POS2 completers over the time period. Earlier discussion of economic challenges and loss of teachers, programs, and courses help to explain the drop in number of completers for Iris. It is not as clear why the drastic reduction occurred at Azalea. During that period there was growth in both enrollment and the number of POS2 programs, though only a modest increase in POS2 programs at the school. .

In addition, Poplar, a school that had the same number of programs in 2010-2011 as in 2008-2009 and an increase in the POS2 program ratio, experienced the second-highest percentage gain in number of POS2 completers. It is possible that knowledge of and interest in POS2 programs has increased due to the EEDA policy and better information dissemination on the programs, but further investigation is necessary to best understand the trends at this school.

POS2 Completers as Percent of 11th and 12th Grade Enrollment. It is also important, when comparing changes across schools in numbers of completers, as it was for the trends in other POS2 variables, to keep in mind the differences in enrollment and to help rule out the possibility that any differences over the time period may be due to changes in enrollment rather than in program completion. To take enrollment into consideration for comparing number of POS2 completers across schools, we calculated the percentage that POS2 completers are of the total number of 11th and 12th graders at a school for each school year. Only 11th and 12th graders are used in the calculation since completion of a POS2 program is not usually possible until at least the 11th grade. The percent POS2 completers is therefore the total number of reported POS2 completers at any sample school for the year divided by the total 11th and 12th grade enrollment at the school for that year.

The average percentage of POS2 completers as percentage of 11th and 12th grade enrollment across schools was around 12% in both the 2008-2009 and 2010-2011 school years. The highest percentage of POS2 completers by the 2010-2011 school year was 18.8% at Redwood and the lowest was at Azalea, with 2.6% POS2 program completers.

The trends and amount of change across schools varied, as it did for other POS2 variables, as shown in Figure VI.B.7. Five of the eight schools had increases in percent POS2 completers, with substantial increases at two schools, Laurel and Poplar. Laurel had a steady increase over the period, and the increase at Poplar occurred between the 2008-2009 and 2009-2010 school years and remained the same through the 2010-2011 school year. One school, Apple, had a moderate increase in percent POS2 completers, while for the remaining schools, Orchid and Redwood, the increase was minimal.

Percent of POS2 completers declined at the other three sample schools. The most dramatic decrease occurred at Azalea between the 2009-2010 and 2010-2011 school years.
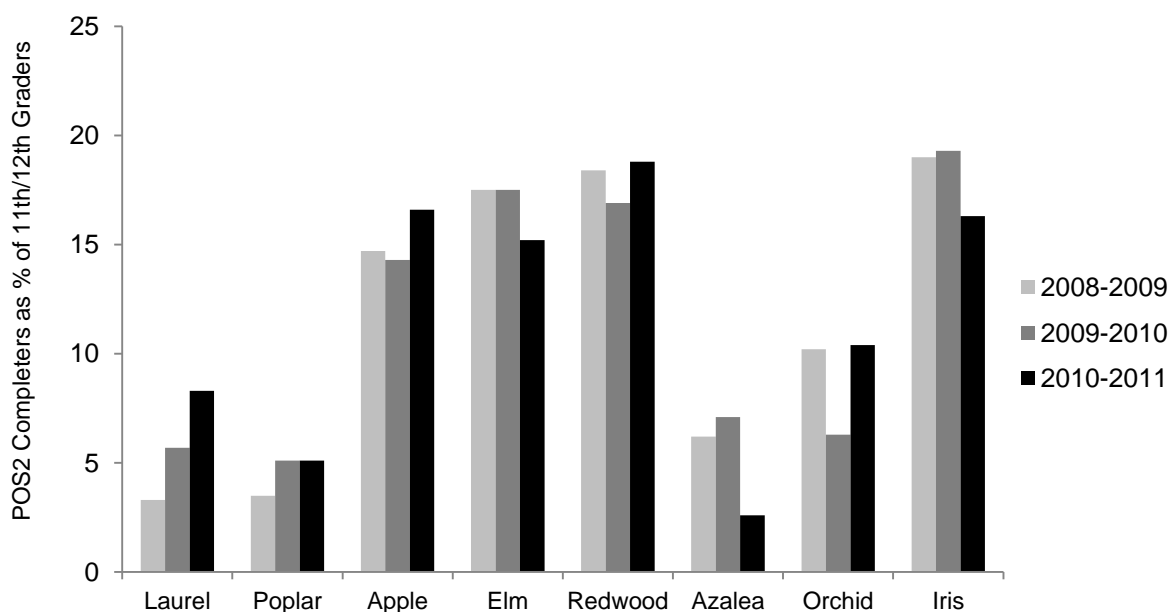
Figure VI.B.7. POS2 completers as percentage of 11th and 12th graders by school, 2009-2011

Since we are interested in the difference between two cohorts of students at our schools, the Class of 2009 (pre-policy) and the Class of 2011 (early-policy), percent POS2 completers were estimated for each cohort. These are cohort estimates rather than true cohort percentages, given the way in which the percentages are calculated. Unlike for POS1 students, the calculation of these percentages is based on any students who were reported as completers of POS2 programs in a given year by the SDE CATE office, regardless of their grade level. The cohort estimates are based on an assumption by the study team that the majority of students that completed POS2 programs in either 2009 or 2011 were seniors, and therefore members of the two cohorts, but may include students from younger cohorts as well. Developing these cohort estimates also allow for some comparison between POS1 students and POS2 completers, which are discussed in a later section. In addition, although estimated trends for both cohorts are outlined here, in quantitative analysis with other variables, only the data for the Class of 2011 percent POS2 completers for the 2010-2011 school year are used, since the Class of 2011 is our "treatment" group.

The estimates for the percent POS2 completers from each of the two cohorts are outlined in Table VI.B.7. At only three of the sample schools did the percent POS2 completers increase between the 2009 Cohort and the 2011 Cohort, but these increases were small. Little change was found between the two cohorts at two schools. At the other three sample schools, the percent POS2 completers declined between the two cohorts.

Table VI.B.7

Estimated Percentage POS2 Completers by Cohort[a] by School and POS2 Program Implementation Level

School	2009 Cohort	2011 Cohort	POS2 Change	POS2 Program Implementation Level Groups
Orchid	10.2	10.4	0.2	High
Redwood	18.4	18.8	0.4	High
Azalea	6.2	2.6	-3.6	High
Iris	19.0	16.3	-2.7	High
Apple	14.7	16.6	2.2	Medium
Elm	17.5	15.2	-2.4	Medium
Laurel	3.3	8.3	5.0	Low
Poplar	3.5	5.1	1.6	Low
Total	11.6	11.7	0.1	--

[a]These do not represent a true cohort figure like for POS1 students. We made an assumption that most of the students completing a POS2 program in 2008-2009 would be seniors and thus members of the Class of 2009. The same assumption was made about the figures for the Class of 2011.

At all four High POS2 program implementation schools, based on the ratio of students to POS2 programs, either there was essentially no change between the cohorts on percent

completion or declines in completion. In fact, one of these schools had the largest decrease in percent POS2 completers, although still a small decrease. As was discussed previously, this lack of change or even slight decline in program completers may indicate that programs were already in place prior to EEDA that the 2009 cohort and 2011 cohort both had access to. This might mean that both cohorts at these schools had similar access to POS2 programs and the courses allowing them to complete them. Orchid, however, had a relatively large increase in the number of programs over that time period, yet there was little change in the number of completers over the three school years. This may indicate a lag in access to programs and courses over the period as new programs are established, not allowing students to be able to complete a program before they graduate. Or, it is also possible that the programs were not adequately promoted to students.

Consistent with other trends described above, Laurel had the largest increase in percent POS2 completers between the two cohorts, although the increase was still relatively small.

Relationship Between POS2 Program Ratios and Percent POS2 Completers. As shown in Figure VI.B.8, there is no real relationship between having a low ratio of enrollment to POS2 programs and the percentage of POS2 completers. Increasing the availability of POS2 programs does not necessarily lead to increases in POS2 program completion by students.
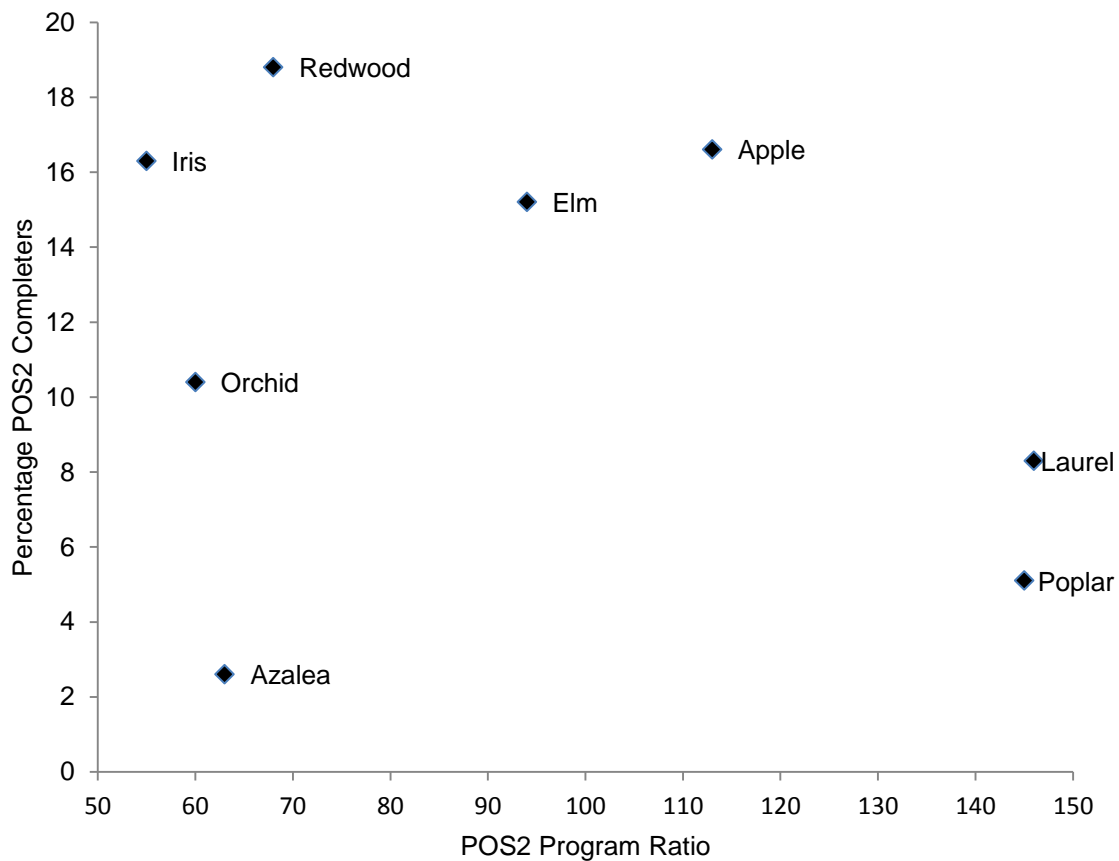
Figure VI.B.8. Percentage POS2 completers by POS2 program ratios.

Comparisons Between POS1 and POS2 Data Sources. As described in the Study Design section, POS 1 and POS 2 are not directly comparable, but provide alternative measures of POS. We would generally expect the two POS measures to show similar changes over time with EEDA, however, and can examine whether the same trends appear to be occurring in cohorts within and across schools. The percentage of POS1 students completing logical course sequences in a single career cluster were compared to the percentage of POS2 completers, as outlined in Table VI.B.8. Although there were slight differences between the two data sources and more substantial ones on three schools, no statistically significant differences were found between POS1 and POS2 for the Class of 2009 cohort and no significant differences were found between POS1 and POS2 for the Class of 2011 cohort.

Table VI.B.8

Percent POS1 Students (Special Formula)[a] and Percent POS2 Completers by Cohort and School

School	Percent POS1 Students		Percent POS2 Completers		POS1 Change	POS2 Change
	2009 Cohort	2011 Cohort	2009 Cohort	2011 Cohort		
Apple	5.8%	24.5%	14.7%	16.6%	18.7%	2.2%
Azalea	7.9%	5.0%	6.2%	2.6%	-2.9%	-3.6%
Elm	22.0%	17.4%	17.5%	15.2%	-4.6%	-2.4%
Iris	33.5%	31.1%	19.0%	16.3%	-2.4%	-2.7%
Laurel	3.0%	9.9%	3.3%	8.3%	6.9%	5.0%
Orchid	13.4%	8.7%	10.2%	10.4%	-4.7%	0.2%
Poplar	1.2%	0.5%	3.5%	5.1%	-0.7%	1.6%
Redwood	20.9%	19.3%	18.4%	18.8%	-1.6%	0.4%

Note: POS1 SDE SLDS Students: POS1 students are students who completed 4 or more credits in a logical progression of courses designated as CTE courses by the Career and Technical Education (CATE) office of the South Carolina State Department of Education (SDE) that were included within a single career cluster. POS2 Completers: A CATE Concentrator who has earned all of the required units in a CATE program identified by the assigned CIP Code. A state-recognized CATE program must include 4 or more Carnegie units of credit in CATE courses which lead to a career goal. (SDE CATE DEFINITIONS (Secondary) (Local Plan Instructions, *Career and Technology Education Local Plan,* For Fiscal Year 2009-2010 (FY 10)). Both exclude cosmetology and nail technology programs.
[a]Calculation for percent POS1completion for this table differs from that used earlier (Table VI.B.2). Rather than using 10th-12th grade enrollment as the denominator, 12th grade enrollment was used as the denominator to make it more closely approximate the denominator used for POS2 and thus, more comparability between the two measures.

Percentages at three schools resulting from these two data sources are more dissimilar than for the others: Apple, Iris and Orchid. As described in the section on POS1 findings, the differences between the two data sources at Apple appear to be an anomaly in the POS1 data. At Iris, the trends in data between POS1 and POS2 are similar; there are just a consistently larger percentage of POS1 course progression completers than POS2 program completers. After exploring the number of POS1students (course sequence completers) and POS2 completers (POS2 program completers), the number of student completers identified in each data source are

very similar. The difference appears to be the total enrollment figure used to calculate the percentage, with the POS1 cohort enrollment figure being much smaller than that used for POS2, making the resulting percentage of POS1 completer students higher than for POS2. There appear to be at least two contributing factors to differences in POS1 and POS2 estimates between the cohorts from the two data sources at Orchid. First, POS1 course sequences do not include cross-cluster programs and there are a number of those at Orchid, particularly for the 2010-2011 school year. Second, the POS1 course sequences also appear to exclude completers taking courses at the school district career center, values that are included in the POS2 count.

> ***Findings on POS3 student-level variable: CTE and Non-CTE course takers from Student Survey.*** To allow for a slightly different angle on POS participation with data from students reports and perspectives, an additional variable, POS3, was created from student survey responses from the *Student Engagement/POS Experiences Survey*. Students were asked on the survey about how often they had taken vocational/career/technical courses (such as culinary arts, cosmetology, construction, graphic communication, or health science courses) during high school. Students were grouped into two categories: students who self-reported that they had taken three or more CTE courses were categorized as "CTE students" and students who self-reported that they had taken none or one or two CTE courses during high school were categorized as "non-CTE students."

It is important to note before reviewing the resulting groupings, that these CTE and non-CTE groupings developed for POS3 analyses cannot be directly compared to those of completers from either POS1 and POS2, due to the very different nature and source of these data. POS1 data are archival data from the SDE statewide longitudinal data system (SLDS) and POS2 data are archival data from the SDE CATE office. POS3 data are from surveys administered to students in the two target cohorts and, as was decribed in the Study Design section, were administered to as many of the students in the cohort in the appropriate grade level as possible but do not represent random samples of the cohort. The POS 3 variable was created primarily for analysis of the student survey data.

As shown in Table VI.B.9, overall, the distribution of responses for seniors in the Class of 2009 and seniors in the Class of 2011 is not significantly different, with approximately 30% of students reporting taking a CTE course three or more times by the end of their senior year (the time of survey administration).

Table VI.B.10. and Figure VI.B.9. show the differences in percentages of students who self-reported taking three or more CTE courses by the end of high school by cohort and school. These differences generally mirror the trends we found in these schools on various POS2 variables. Azalea had a large decrease in the number of POS2 program completers and Laurel had a large increase in the number of POS2 program completers between the time the 2009 cohort took the survey as seniors and the time when the 2011 cohort took the survey as seniors. Three schools had trends in survey reports counter to those in the school archival data but it is difficult to discern the reason for these differences. One reason may be that seniors are often difficult to reach at the end of the school year, when the surveys were administered. At Redwood and Azalea, students taking CTE courses would have been off-campus at the career center and would not have been administered the survey there. Some students may have been

completing internships and been be mainly off-campus or might have already completed academic core course requirements and thus were not in the classes that were surveyed.

Table VI.B.9

Student Reports of Number of Times Took Vocational/Career/Technical Courses While in High School

Percentage of respondents	Senior Class of 2009 % (*N*)	Senior Class of 2011 % (*N*)
Non-CTE (Never, 1-2 Times)	71.16 (708)	70.38 (644)
CTE (3 or More Times)	28.84 (287)	29.62 (271)
Total	100.00 (995)	100.00 (915)

Note. Source: *Student Engagement/POS Experiences Survey*, from administrations with cohorts in the spring of their senior year. The data does not include multiple responses, missing responses, or not applicable responses.

Table VI.B.10

Percentage POS3 Students of Class of 2009 and Class of 2011 Surveyed as Seniors by School

School Name	Percent POS3 Class of 2009	Percent POS3 Class of 2011	POS3 Difference in Percent 2009-2011
Elm	38.0	36.9	-1.1
Poplar	21.0	24.3	3.3
Azalea	29.7	14.5	-15.2
Iris	20.8	25.4	4.6
Laurel	18.6	30.5	11.9
Apple	40.2	39.4	-0.8
Orchid	27.3	28.2	0.9
Redwood	41.8	36.2	-5.6
Total	29.7	29.4	-0.3
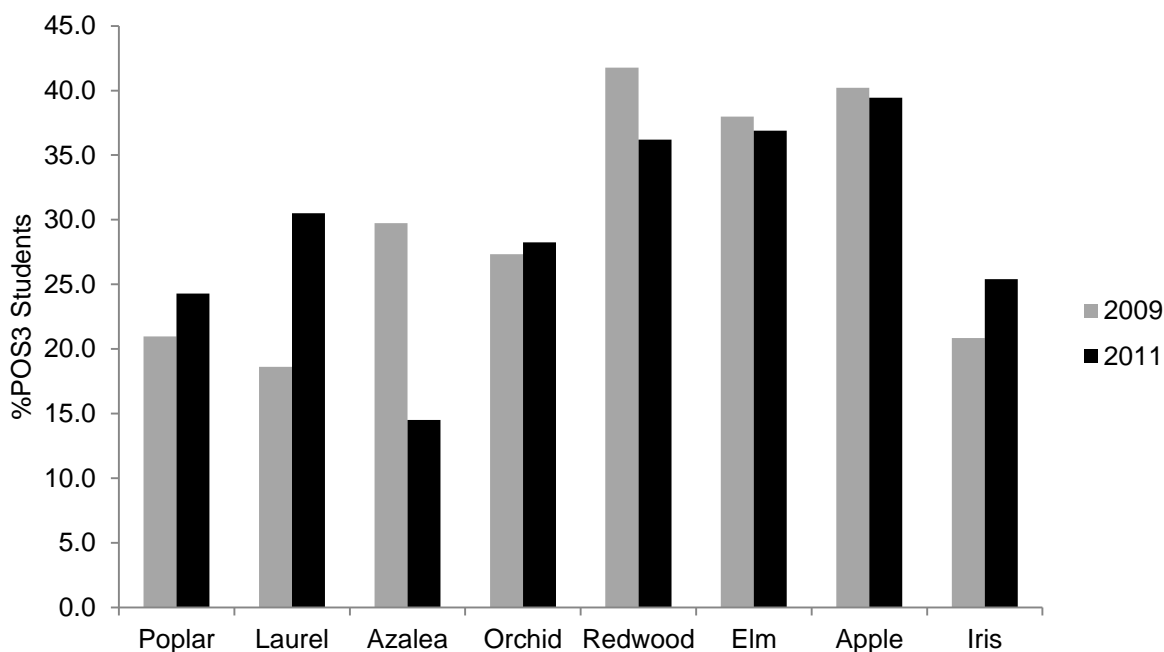
Figure VI.B.9. Percentages of seniors who self-reported that they had been in three or more vocational/career/technical courses (POS3 students), by class and school

Findings on POS2 secondary variables: Overall participation in POS2 programs over the study period (Unduplicated count of participants, concentrators, and completers in POS2 programs)

Percent POS2 participants. In addition to looking at trends in the number of POS2 programs and POS2 program completers, the study team also wanted to explore trends in overall participation in these types of programs between 2008-2009 and 2010-2011. The SDE CATE office defines three types of participants in state-recognized CTE programs that were described earlier in this section: participants, concentrators, and completers. Unduplicated counts of these groups were collected from the SDE CATE office for each of the three school years and these data were combined to calculate the total number of students enrolled in POS2 programs in each of these years. The total number of participants for a given year was then divided by the school's total enrollment for that year, resulting in the percentage of POS2 participants for each school for each of those three school years.

Overall, the average total enrollment in POS2 programs between 2008-2009 and 2010-2011 was 62.3%, a majority of students. However, there was a decline in participation in these programs at sample schools over the three-year period, from a high of 65.5% of all students participating in a POS2 program in 2008-2009 down to 58.2% of all students participating in 2010-2011, a 13.2 % decrease in overall POS2 program participation. At all but one school, Poplar, overall CTE enrollment declined over the period. The most substantial decreases came at Azalea (down 32%), followed by Iris (down 26%). These trends are consistent with patterns we have described earlier at these schools on other POS2 variables. Although overall enrollment in these programs declined over the period, still at least half of the students enrolled at each sample

school had taken at least one POS2 program course over the study period, with an average range from 50.0% of students participating at Poplar to 73.4% of students participating at Iris.

POS2 participation rates relative to overall enrollment varied across schools over the study period as highlighted in Figure VI.B.10. Rates at individual schools also fluctuated from year to year. Some of this variation is due to declining enrollment at some of the schools over this period (Orchid, Redwood, Apple, Iris, and Elm), making the relative participation rates vary regardless of growth or decline in number of POS2 programs. From the figure, it appears that two schools, Iris and Poplar, experienced increases in overall percent POS2 program participation over the study period. Iris, however, as mentioned above, had a decline in POS2 enrollment over that period. Their apparent gain in percentage of POS2 enrollment is due to the fact that there was a larger decline in overall enrollment (down 12.5%) than in POS2 enrollment (down 5.6%) between those school years.

On the other hand, there was an increase in participation in POS2 programs at Poplar over the study period. Poplar, which had the lowest participation rate in 2008-2009, experienced a net gain of approximately 13% in POS2 enrollment over the three-year period. But Poplar still had the lowest overall average percentage of POS2 participants of any school over the study period, with 50% of their student body taking at least one POS2 program course.
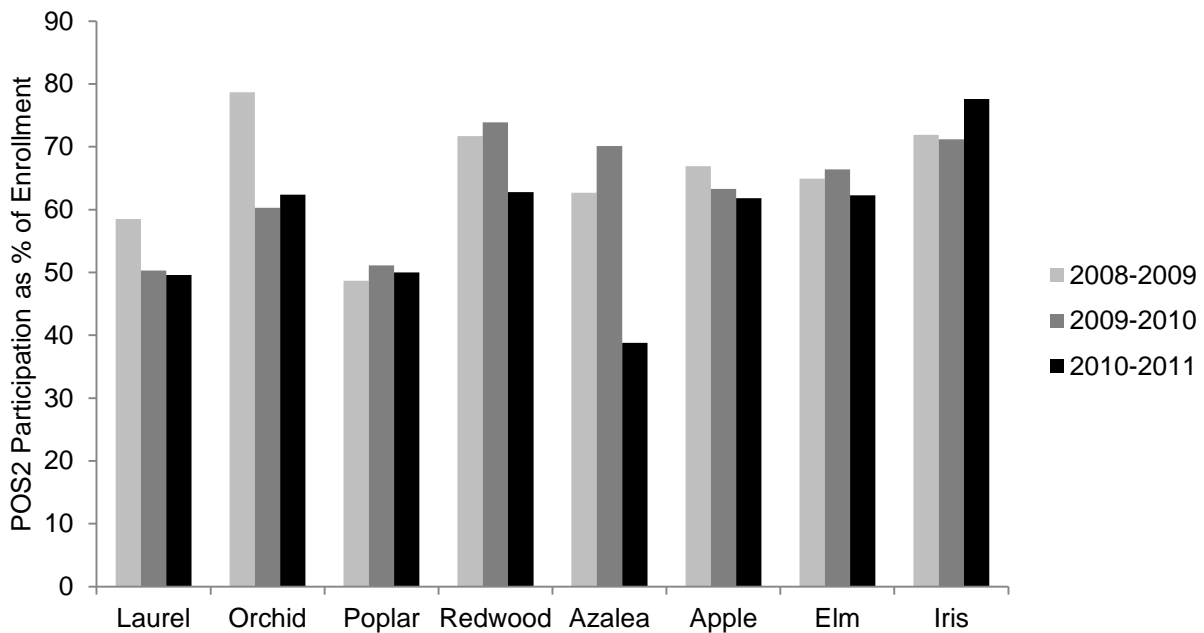
Figure VI.B.10. Total participation in POS2 programs as percentage of school enrollment by school by year, 2009-2011

The two schools with the greatest drop in percentage of POS2 program participation were Azalea and Orchid. The decline in percentage participation in POS2 programs at Azalea mirror trends found in other POS2 variables. Orchid, on the other hand, had increases in some aspects of POS2 program participation and implementation and declines in other areas. Even with the

decrease in enrollment in these programs, however, Orchid still had the third highest average percentage of students participating in POS2 programs, 67.4%. This was partially due to the fact that they started with the highest percentage of students participating during the 2008-2009 school year, with almost 80% of the student body taking at least one course in a POS program that year.

These trends contradict reports of students and staff during site visits, where there was a perception at a number of schools that not only had awareness of CTE increased, but also that CTE course-taking by students had changed and/or increased during the study period. At least half of students were taking at least one POS2 program course by the 2010-2011 school year. However, the numbers of students participating steadily declined or stayed the same during that period at all but one school.

It may be the case that some teachers *are* seeing more students in their classes, even if overall enrollment isn't increasing, if IGPs are in fact channeling students to more, and perhaps more diverse, POS2 program courses. In addition, teachers at a number of schools reported more appropriate placement of students in their and other POS2 courses/programs and that may have influenced their perception of an increase in participation rates. Students may just be more aware of CTE courses as options and assume there is more participation or there may be changes in the types of students participating and that may have changed perceptions of the amount of participation in the POS2 programs.

POS Influence on Student Outcomes: Results from SLDS POS 1 Data and Student Survey Data. Our modified research question four asks "What impact do POS as defined in Perkins IV have on: student high school outcomes and student postgraduation preparation and plans?" The SLDS POS1 student archival data from both 2009 and 2011 cohorts and the *Student Engagement/POS Experiences Survey* responses from the Class of 2011 as seniors were analyzed to help address these issues. We have focused on these survey responses because this cohort is our early policy group and they took the survey at the end of their senior year. This means that these students would have been exposed to the policy throughout high school by the time they responded to the survey.

Although earlier in this report, differences found in these student outcomes were analyzed relative to LOI and in a later section differences relative to POV will be discussed. Some of these differences will be touched on at the end of this section. This section focuses on differences found in these student outcomes across our differing POS variables. The discussion on student high school outcomes is divided into two parts: (1) student career planning outcomes and (2) student engagement outcomes. The discussion on student postgraduation preparation and plans is also divided into two parts: (1) student postgraduation preparation and (2) student postgraduation plans. We will be exploring differences in these outcomes across POS1 students, POS2 groupings, and the POS3 CTE and non-CTE student groupings.

Trends in student career planning. In this section we will be exploring evidence from the SLDS POS1 student data and from student survey responses on the types of career planning activities that students were involved in while in high school and how involvement in these may have differed across schools with differing levels of POS2 program implementation or whether a

student was considered involved in a POS of some type. Career planning activities include development of IGPs, selection of majors and career clusters, meetings with counselors, and involvement in career exploration and planning activities. The SLDS and student survey data provide information on different activities and different perspectives on some of the same activities.

IGPs, majors and clusters. SLDS data indicate that some of the schools began developing IGPs for cohorts before the first EEDA cohort (the Class of 2011) was required to have one. By the time that the Class of 2011 had graduated from our eight sample schools, SLDS data indicate that all members of the 2011 cohort across all schools had completed an IGP at some time during high school. However, the reports of the Class of 2011 who were surveyed at the end of their senior year diverge somewhat from this trend. Although a majority of Class of 2011 students responding to the survey indicated that they had developed such a plan, at no school did all students report putting together a career plan/IGP nor did 100% of any subgroup of students. Percentages reporting that they had developed a career plan/IGP also varied significantly across schools by the level of POS2 implementation and between POS3 CTE and non-CTE students. Contrary to what might be expected, larger proportions of seniors in the Class of 2011 cohort surveyed at Medium POS2 implementation schools (79.9%) reported having put together a career plan/IGP than those at High (69.0%) or Low (60.3%) POS2 implementation schools (p<0.001). A significantly (p=0.025) higher proportion of POS3 CTE students (75.8%) reported putting together a career plan/IGP than non-CTE students (66.6%).

Students were also asked if they had selected a career cluster to plan for or had selected a high school major, both primary aspects of IGP development. Although a larger majority of senior Class of 2011 students responding to the survey indicated that they had selected a career cluster to plan for than had indicated that they had developed a career plan/IGP, at no school did all students report having selected a career cluster. Similar to the pattern found for developing a career plan/IGP, students at Medium POS2 implementation schools were more likely to report selecting a career cluster (89.1%) than those at High POS2 implementation schools (85.3%) or Low POS2 implementation schools (80.9%), although the difference was not significant.

The pattern was similar for reports on selection of high school majors, where the distribution of responses significantly differed (p=0.002) by POS2 implementation level, with a higher proportion of senior Class of 2011 students at Medium POS2 implementation schools (72.2%) reporting that they had selected a high school major but also with a higher proportion of students at Low (58.7%) as compared to those at High (54.6%) POS2 implementation schools reporting selecting a high school major.

There was also a significant difference between the percentages of POS3 CTE and non-CTE students reporting that they had selected a career cluster to plan for or had selected a high school major. A significantly higher proportion of senior POS3 CTE students in the Class of 2011 indicated that they had selected a career cluster to plan for (92.9%; p<0.001) and had selected a high school major (67.7%; p=0.003) than non-CTE students (81.7% and 55.8%, respectively).

As noted earlier from the SLDS cohort data and illustrated in Figure VI.B.11, the most popular career clusters selected by the Class of 2011 on their 10th grade IGPs were Health

Sciences, followed by Science, Technology, Engineering & Mathematics (STEM), and then Arts, Audio-Video Technology & Communications.
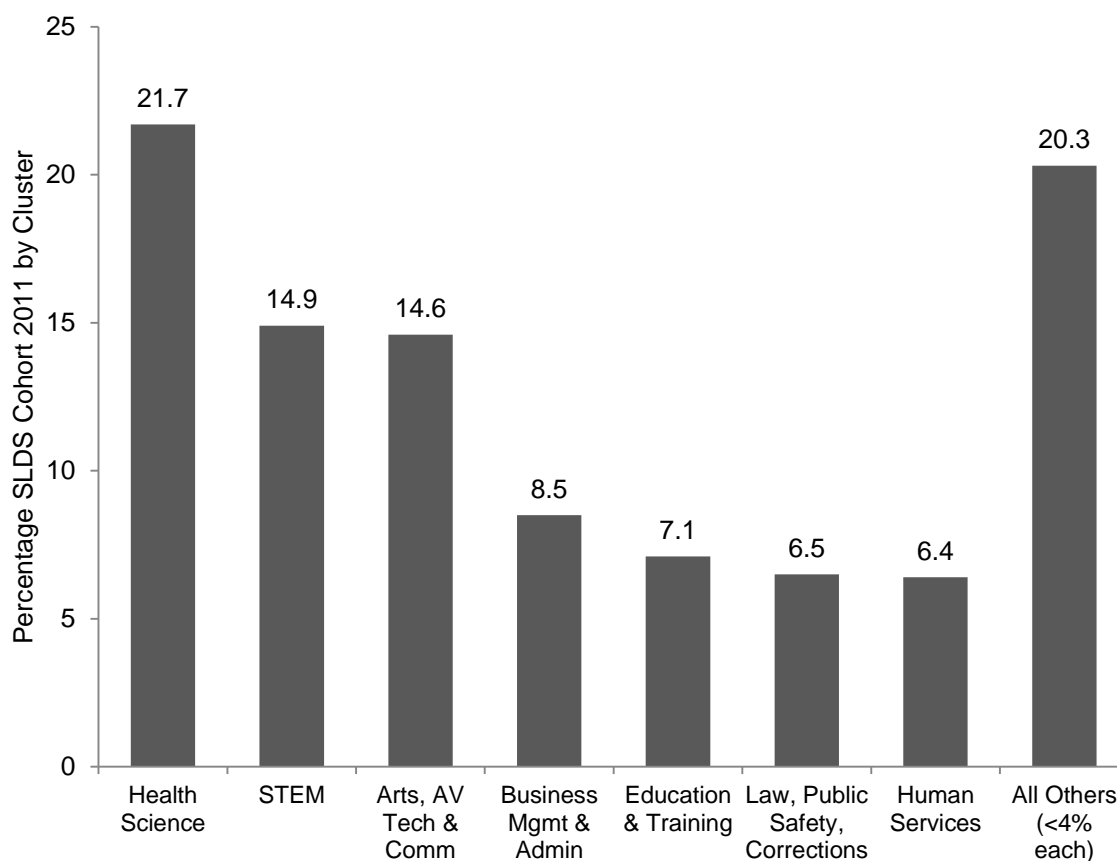
Figure VI.B.11. IGP major clusters chosen by 2011 cohort in 10th grade

Meetings with counselors. No significant differences were found in trends in the amount of times that students reported meeting with guidance counselors on career plan/IGP development across POS2 implementation levels or between POS3 CTE and non-CTE students. There was no significant difference in the number of times that the Class of 2011 seniors from High, Medium, and Low POS2 implementation schools reported talking with a guidance counselor when putting together a career plan or IGP. Between approximately 50% and 58% indicated they had spoken with their guidance counselor three or more times while putting together this plan. A similar pattern emerged in responses between senior Class of 2011 POS3 CTE students and non-CTE students. The number of times that POS3 CTE students as seniors in the Class of 2011 and non-CTE students talked with their guidance counselor while putting together their career plan or IGP, did not significantly differ, with 57.1% of POS3 CTE students and 53.1% of non- CTE students talking to their guidance counselor three or more times.

Significant differences were also not found in trends on student reports of who was most helpful in developing their career plan/IGP, with a majority of seniors reporting that a guidance counselor was most helpful. For all levels of POS2 implementation, a majority of seniors indicated that a guidance counselor was the most helpful in developing a career plan (61.4% of

seniors in High, 58.1% of seniors in Medium, and 55.3% of seniors in Low POS2 implementation schools). Again, the trend was similar for responses of POS3 CTE and non-CTE students. A majority and similar percentage of both POS3 CTE (59.4%) and non-CTE (58.6%) students reported that a guidance counselor was the most helpful in developing their career plan/IGP.

Students were asked if they had discussed particular topics including courses to take, going to college, possible jobs or careers for adulthood, finding a job after high school, steps necessary to pursue a career, and applying for college or vocational/technical school with their guidance counselor between the start of the 9th grade and the time the survey was administered. Of these topics, seniors in the Class of 2011 at the three levels of POS2 implementation differed in their responses of discussing finding a job after high school and steps necessary to pursue a career with a guidance counselor (p<0.001 and p<0.001, respectively). Fewer seniors in the Class of 2011 Low POS2 implementation schools indicated they had discussed finding a job after high school (31.1%) and steps necessary to pursue a career (60.1%) than in High POS2 (53.4% and 77.8%, respectively) and Medium POS2 (55.6% and 77.3%, respectively) implementation schools. Significant differences in reports of discussing any of these topics were not found, however, between POS3 CTE and non-CTE senior Class of 2011 respondents.

Career Exploration Activities. Several questions on the *Student Engagement/POS Experiences Survey* were geared toward discovering more details about student participation in activities to help them identify jobs or careers that may interest them. As outlined in Table VI.B.11, a majority of seniors in the Class of 2011, regardless of whether they were in a High, Medium, or Low POS2 implementation school, reported answering job- and career-related questions on a computer or filling out a questionnaire, researching different jobs and careers, researching different colleges, universities, or military branches, and speaking with or visiting someone in a career that interests them. However, significantly higher percentages of seniors in the Class of 2011 from High POS2 implementation schools reported being in a class where someone from a local business talked about working at their company or in their career (74.9%) than from Medium and Low POS2 implementation schools (63.7% and 59.4%, respectively; $p < 0.001$). In addition, significantly more seniors in the Class of 2011 from High and Medium POS2 implementation schools reported touring a local business with a group from school (41.6% and 43.3%, respectively) than from Low POS2 implementation schools (25.6%; $p < 0.001$).

Significant differences in job/career identification experiences were also found between POS3 CTE students (students taking three or more CTE courses) and non-CTE students (students taking fewer than three CTE courses), as outlined in Table VI.B.12. Similar to differences found between schools by POS2 implementation levels, significantly higher percentages of Class of 2011 senior POS3 CTE students reported being in a class where someone from a local business talked about working at their company or in their career (73.8%) and touring a local business with a group from school (45.5%) than non-CTE Class of 2011 seniors (66.7%, and 34.9%, respectively; p=0.036 and p=0.003, respectively). In addition, for two other activities, significantly higher percentages of POS3 CTE seniors than non-CTE seniors reported that they researched different jobs or careers (91.4% and 85.0, respectively: p=0.009) or spoke with or visited with someone in a career of interest (77.5% and 65.9%, respectively; p<0.001).

Table VI.B.11

Percentage of Seniors in the Class of 2011 Reporting Participation in Job or Career Identification Activities by POS2 Implementation Level

Job or /Career Identification Activities	High POS2 Implementation Yes (%)	Medium POS2 Implementation Yes (%)	Low POS2 Implementation Yes (%)
Answered questions related to jobs and careers on a computer or filled out a questionnaire.	83.0	82.5	86.6
Researched different jobs or careers.	86.6	86.0	88.0
Researched different colleges, universities, military branches or technical/community colleges.	89.5	83.6	89.8
Spoke with or visited someone in a career that interests me.	69.3	67.3	70.4
Been in a class where someone from a local business talked about working at their company or in their career.**	74.9	63.7	59.4
Toured a local business with a group from my school.**	41.6	43.3	25.6

Note. POS2 implementation levels are based on the ratio of students-to-POS2 programs at sample schools, with the lower the ratio, the higher the implementation level. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011as seniors at the eight sample schools in the spring of 2011.
*$p < .05$. **$p < .01$.

Table VI.B.12

Percentage of Class of 2011 POS3 CTE and Non-CTE Seniors Reporting Participation in Job or Career Identification Activities

Job or /Career Identification Activities	Class of 2011 POS3 CTE Seniors	Class of 2011 POS3 Non-CTE Seniors
Answered questions related to jobs and careers on a computer or filled out a questionnaire.	86.2	82.5
Researched different jobs or careers.**	91.4	85.0
Researched different colleges, universities, military branches or technical/community colleges.	90.6	87.8
Spoke with or visited someone in a career that interests me.**	77.5	65.9
Been in a class where someone from a local business talked about working at their company or in their career.*	73.8	66.7
Toured a local business with a group from my school.**	45.5	34.9

Note. POS3 CTE seniors are those students who reported taking three or more CTE courses and Non-CTE seniors are those who reported taking less than three CTE courses. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011as seniors at the eight sample schools in the spring of 2011.
*$p < .05$. **$p < .01$.

Thinking and Planning for Careers. Students responding to the survey were asked about how much thinking and planning they had done for job-related activities. The students classified how much thinking and planning they had done into four categories: (1) I have not thought about or done this; (2) I have thought about doing this; (3) I have made plans to do this; and (4) I have already done this. There were not significant differences in the responses of seniors in the Class of 2011 from High, Medium, and Low POS2 implementation school regarding their thinking and planning on gathering information about jobs of interest, taking classes to help decide what kind of job they want, participating in school or out-of-school activities that will help in the decision about the kind of job wanted, and volunteering, interning, or working on a job to help find out the kind of job wanted in the future.

Although there were no significant differences in the survey responses of seniors in the Class of 2011 by POS2 implementation level, there were significant differences between responses of POS3 CTE Class of 2011 seniors and non-CTE Class of 2011 seniors about participation in these activities. Significant differences were found between the responses of POS3 CTE students and non-CTE students on all four of these activities. Higher percentages of POS3 CTE students than non-CTE students reported having made plans or already having gathered information about jobs of interest (77.9% and 64.8%, respectively; p<0.001), taking classes to help decide what kind of job they want (75.3% and 59.6%, respectively; p<0.001), participating in school or out-of-school activities that will help in the decision about the kind of job wanted (67.4% and 52.8%, respectively; p<0.001), and in volunteering, interning, or working on a job to help find out what kind of job they want to have in the future (64.6% and 51.9%, respectively; p<0.001).

Work-Based Learning Experiences. Students also reported on the student survey whether or not they participated in work-based learning (WBL) experiences. The most reported work-based learning experiences were job shadowing or work-site visits and community service and the least reported experiences were co-ops and school-based enterprise. Table VI.B.13 summarizes the work-based learning experiences of seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools. More seniors in the Class of 2011 from Low POS2 implementation schools indicated they had participated in an internship (29.0%) than seniors in the Class of 2011 from High and Medium POS2 implementation schools (20.0% and 14.6%, respectively; p=0.002). A higher percentage of seniors in the Class of 2011 from High POS2 implementation schools (57.4%) indicated they had participated in job shadowing or work-site visits than seniors in the Class of 2011 from Medium and Low POS2 implementation schools (45.1% and 50.5%, respectively; p=0.014). Fewer seniors in the Class of 2011 from Medium POS2 implementation schools indicated they had participated in mentoring (12.2%) than seniors in the Class of 2011 from High and Low POS2 implementation schools (24.2% and 17.9%, respectively; p=0.002). There were not significant differences in the proportions of seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools who participated in co-ops, community service, or school-based enterprise. Fewer seniors in the Class of 2011 from High POS2 implementation schools indicated they had not participated in any of the work-based learning experiences provided (18.1%) than seniors in the Class of 2011 from Medium and Low POS2 implementation schools (26.8% and 23.2%, respectively; p=0.036).

Table VI.B.13

Percentage of Seniors in the Class of 2011 Reporting Participation in Work-Based Learning Experiences by POS2 Implementation Level

Work-Based Learning Experiences	High POS2 Implementation Yes (%)	Medium POS2 Implementation Yes (%)	Low POS2 Implementation Yes (%)
Internship (work experience, but not necessarily part of a vocational, career, or technical class)**	20.0	14.6	29.0
Co-op (work experience at a local business in your high school major or career cluster)	9.8	10.4	8.0
Job shadowing or work-site visits (visits to work places to observe one worker or many workers)*	57.4	45.1	50.5
Mentoring (a match with an adult in your career area for advice and support)**	24.2	12.2	17.9
Community service (volunteer work to support your local community)	36.9	36.6	43.3
School-based enterprise (working in a business run by students or teachers from your school)	12.8	12.2	8.5
None of these*	18.1	26.8	23.2

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011 at the eight sample schools in the spring of 2011.
*$p < .05$. **$p < .01$.

In contrast to differences found across schools by POS2 implementation level in participation in these work-based learning experiences, only one significant difference was found in reports of Class of 2011 POS3 CTE seniors and non-CTE seniors about participation in these types of experiences. A higher percentage of POS3 CTE students (15.4%) indicated that they had participated in a co-op compared to non-CTE students (6.7%; $p<0.001$).

Trends in student engagement. This section explores evidence from the SLDS POS1 student data and from student survey responses on various measures of student engagement and attachment and how these outcomes and/or perceptions may have differed across schools with

differing levels of POS2 program implementation or whether a student was considered involved in a POS of some type.

Measures include: archival data on attendance and discipline from the SLDS, student self-reports on attendance, and several series of questions related to their engagement with school.

Attendance. Table VI.B.14 presents changes in average 11th grade attendance rates across cohorts, based on the SLDS 2011 cohort data. All of the schools have relatively high attendance rates for both POS1 and non-POS1 students. Although some of the differences are statistically significant, there appears to have been little substantial change in average attendance rates between the two cohorts for both groups of students. Much change would not be expected, given the already high rates. If there was any trend, it was more toward a slight decrease in attendance rates between the 2009 and 2011 cohorts for both POS1 and non-POS1 students. The biggest change in attendance was a decrease of 3% for POS1 students at Apple, the school with the largest increase in POS1 students across cohorts.

Table VI.B.14

Change in Average 11th Grade Attendance Rates for SLDS 2011 Cohort by POS1 Status by School

	Non-POS1 Students			POS1 Students		
	2009	2011	Difference	2009	2011	Difference
Apple	95.8	95.9	0.1	98.5	95.3	-3.2**
Azalea	96.1	93.8	-2.3**	95.7	95.0	-0.7
Elm	94.8	94.3	-0.5	93.6	94.8	1.2
Iris	94.9	96.0	1.1	96.7	97.5	0.8
Laurel	97.1	97.2	0.1	97.5	97.8	0.3
Orchid	98.2	96.9	-1.3**	98.9	97.6	-1.3*
Poplar	97.8	97.9	0.1	99.9	98.1	-1.8
Redwood	93.8	94.4	0.6	94.7	95.3	-0.6
Total	96.6	96.4	-0.2	96.1	96.5	0.4

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.
* $p < 0.05$. ** $p < 0.01$.

On the student survey, students were asked about absences and being late or skipping school. The distribution of responses for POS3 CTE seniors in the Class of 2011 and non-CTE seniors in the Class of 2011 did not significantly differ on reports of the number of times they were late for school or the number of times they cut or skipped classes. However, the distribution of responses for seniors in the Class of 2011 POS3 CTE seniors did significantly

differ from non-CTE seniors for the number of times they were absent from school, with more POS3 CTE seniors indicating they had done this five or more times (29.9%) as compared to non-CTE seniors (22.9%; p=0.022).

In contrast, the distribution of survey responses across levels of POS2 implementation differed significantly across all three measures of attendance. Fewer Class of 2011 seniors from High POS2 implementation schools indicated they had never been late for school (18.0%) than seniors from Medium and Low POS2 implementation schools (24.4% and 27.5%, respectively; p=0.004). More seniors from Medium POS2 implementation schools indicated they had never cut or skipped classes (68.6%) than seniors from High and Low POS2 implementation schools (56.0% and 46.9%, respectively; p<0.001). Finally, more seniors from High POS2 implementation schools reported that they were never absent from school (10.6%) than seniors from Medium and Low POS2 implementation schools (9.2% and 6.6%, respectively; p=0.049).

Discipline. Table VI.B.15 presents SLDS 2011 cohort data on discipline incident rates. Changes in discipline incidents varied across schools for non-POS1 students, but there were increases for POS1 students at most sample schools. Overall, discipline incidents increased for both groups, but the increase for POS1 students was larger. Again, Apple, the school with the biggest increase in POS1s between 2009 and 2011, had the largest increase in discipline incidents for POS1 students (2.5 additional incidents per 100 days of enrollment).

Table VI.B.15

Change in Average 11th Grade Discipline Incidents per 100 Days of Enrollment for SLDS 2011 Cohort by POS1 Status

	Non-POS1 Students			POS1 Students		
	2009	2011	Difference	2009	2011	Difference
Apple	5.1	4.2	-0.9	2.1	4.6	2.5
Azalea	1.3	2.1	0.8	1.2	1.7	0.5
Elm	1.7	1.4	-0.3	1.5	1.7	0.2
Iris	2.5	2.7	0.3	2.2	2.1	-0.1
Laurel	2.3	3.6	1.3**	1.9	2.3	0.4
Orchid	0.3	0.7	0.3**	0.2	0.6	0.3
Poplar	0.5	0.4	-0.1	0.0	0.0	0.0
Redwood	1.8	1.5	-0.3	1.6	1.5	-0.1
Total	1.6	1.8	0.2	1.5	2.0	0.5*

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.
* $p < 0.05$. ** $p < 0.01$.

Attachment to school. Students responding to the survey that reported having a high school major and career cluster were asked how much they agreed or disagreed with particular

statements about having a high school major or career cluster. In particular, students were asked to indicate their level of agreement with whether having a high school major or career cluster has: a) made me more likely to want to come to school; b) made me less likely to want to drop out of school; c) helped me get better grades; d) helped me make connections between what I study and what type of career I want; e) made it more likely that I would take courses that I need for the future; and f) made it more likely that my parents got involved in my selection of courses.

Among the Class of 2011 seniors that reported having a high school major and career cluster, significant differences were found in the level of agreement across schools with differing POS2 implementation levels for three of these six statements. Consistently, higher percentages of these seniors at High and Medium POS2 implementation schools than those at Low POS2 implementation schools reported agreement with these three statements. More of the Class of 2011 seniors in the High POS2 implementation schools (73%) and Medium POS2 implementation schools (72.9%) agreed that they were more likely to want to come to school than seniors in the Low POS2 implementation schools (54.9%; p=0.004). Approximately 71.7% of seniors in the Class of 2011 from High POS2 implementation schools agreed that they were less likely to want to drop out of school, compared to 64.8% from Medium and 61.7% from Low POS2 implementation schools (p=0.002). Seniors in the Class of 2011 from High and Medium POS2 implementation schools agreed more frequently that having a high school major and career cluster helped them to get better grades (75.7% and 73.4%, respectively) than seniors at Low POS2 implementation schools (59.5%; p=0.015).

In contrast, significant differences were found between POS3 CTE seniors and non-CTE students on the other three statements. First, the two groups significantly differed on the two statements most related to future careers. A higher percentage of POS3 CTE seniors in the Class of 2011 agreed that having a high school major and career cluster helped make connections between what is studied and the type of career they wanted (89.6%) and made it more likely to take courses needed for the future (89.9%) than non-CTE Class of 2011 seniors (84.0%, and 86.7%, respectively; p=0.003 and p=0.002, respectively). In addition, a higher percentage of POS3 CTE seniors in the Class of 2011 agreed that having a high school major and career cluster has helped them to get better grades (75.5%) than non-CTE seniors in that class (68.8%, p=0.024).

Many Class of 2011 senior CTE and non-CTE students interviewed in focus groups across our sample schools felt that developing an IGP and having a career cluster helped their performance in their classes and made them work harder. As one CTE student explained, "I know that my grades have been really, really good in this particular program, because it's something I'm actually interested in, and I like doing. It's kind of easy to do, because you're interested." Another student mentioned that "[W]hen you can select classes you like, you can perform better." Another CTE student reported that her "field Health Sciences made me do better in math. And I hate science, but to be a nurse, you got to have like math and science so I have to pay more attention." One senior reported that he thought that having an IGP showed him that the school really cared about him and his future:

> At first, when I got to high school, I was like they just want to get you to graduate. They
> don't care anything about your future, and all kind of stuff. But when they started doing
> this, I'm like, yes they do, because they're asking me what I want to be when I graduate,

what I plan to do, and how I plan to get there, and they're giving me classes to help me get there and prepare myself, so they do care.

Preparing for class. The student survey also asked Class of 2011 senior respondents several items about how prepared they were for classes. The number of times these students reported going to class without homework significantly differed, with fewer seniors from Low POS2 implementation schools indicating that they went to class without homework finished (14.0%) than seniors in the Class of 2011 from High and Medium POS2 implementation schools (20.6% and 26.4%, respectively; p=0.030). A majority of seniors in the Class of 2011 from all POS2 implementation level schools indicated they had gone to class without a pencil, paper, book, or other necessary supplies one or more times (57.7%, 57.2%, and 58.1%, respectively). The distribution of responses on these same items between POS3 CTE and non-CTE seniors in the Class of 2011 did not significantly differ.

Relevance of schoolwork. Finally, students were asked about their agreement with a number of statements about the relevance of their schoolwork. Seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools had similar agreement about teachers making the subject matter interesting and useful (69.2%, 73.7%, and 71.7%, respectively) and about teachers making connections between what they are teaching and how it applies in the real world (72.2%, 73.7%, and 70.1%, respectively). Differences between responses of POS3 CTE seniors in the Class of 2011 and non-CTE seniors about teachers making the subject matter interesting and useful were also not significant, with 73.1% of POS3 CTE seniors and 69.6% of non-CTE seniors agreeing or strongly agreeing to this statement. However, there were significant differences in responses between these two groups on whether most of their teachers make connections between what they are teaching and how it applies in the real world. More POS3 CTE seniors from that class (76.7%) indicated agreement than did non-CTE seniors (70.1%; (p=0.035).

Students were also asked on the survey about the usefulness of information learned in school in everyday life, for college or further training, and for their career. Higher percentages of seniors in the Class of 2011 from High and Medium POS2 implementation schools agreed with the statement that most of the information learned in school is useful in everyday life (61.3% and 63.8%, respectively) than did seniors in the Class of 2011 from Low POS2 implementation schools (46.1%; p<0.001). Seniors in the Class of 2011 from Medium POS2 implementation schools had higher agreement with the statement that most of the information learned in school will be useful for a career (73.3%) than did seniors in the Class of 2011 from High and Low POS2 implementation schools (66.7% and 56.6%, respectively; p=0.003). No significant differences were found across student responses from schools with differing levels of POS2 implementation in agreement to the statement that most of the information learned in school will be useful for college or further training, with a majority agreeing or strongly agreeing (83.0%, 86.4%, and 81.5%, respectively; p=0.665).

POS3 CTE seniors in the Class of 2011 significantly differed in their responses from non-CTE seniors in the Class of 2011 to only one of the three above statements. Specifically, a higher percentage of POS3 CTE seniors (88.9%) agreed that most of the information learned in school would be useful for college or further training than non-CTE seniors (81.0%; p=0.010). POS3 CTE seniors had slightly higher agreement with the statements that most of the information learned in schools is useful in everyday life (63.2%) and useful for their career

(68.0%) than non-CTE seniors (56.1% and 64.5%, respectively), but the differences were not significant.

Being more motivated in the courses for their career cluster/major was a common theme among senior Class of 2011 students interviewed during focus group discussions. For example, one student said, "I think it made me more motivated to like the classes that I was in. This is going to help you in the long run, for when you're in college and stuff." Another student explained that "without the IGP I would have no idea what I wanted to do. Would be taking classes for no reason." And students felt more motivated to come to school, as one senior illustrated:

> My classes made me want to come to school more, because I fell in love with Sociology when I took it, because I wasn't able to take my Psychology class because it was full. But once I had Sociology and classes that were leading towards it, it gave me motivation to go to that class, and it gave me more motivation to stay in school.

Trends in postgraduation preparation. Resources did not allow us to collect follow-up data from our Class of 2011 graduates on their activities after high school graduation. We were, however, able to collect some information from the SLDS POS1 cohort database and from student surveys on some of our sample students' efforts during high school to prepare for further education or training or for employment. Specifically, we collected and examined data on student intentions to complete their identified career major, the amount of switching of clusters between their 10th and 12th grade years, major completion and course-taking, particularly patterns in taking dual credit and/or AP/IB courses.

Intentions to complete a career major. As described in Section A of this chapter, students were asked while developing their annual IGP whether they intended to just declare a career major (Declare Only) or intended to complete a career major (Intent to Complete) before graduation. Across schools, we found a range in reports of those intending to complete a major as compared to those declaring a major only. There were also wide variations across schools in the percentages who didn't specify whether they intended to complete or just declare. The majority of students at two schools, Orchid (89.8%) and Redwood (79.6%) did not specify whether they would complete or just declare a major. The percentages of students at other schools that did not specify ranged from 2.7% up to 29.4%.

SLDS 2011 cohort students who stated on at least one IGP that they intended to complete their chosen major were almost twice as likely to complete a POS1 as students who reported that their major was "Declare Only" (Figure VI.B.12). However, there were still 81% of intended completers who did not end up being identified as POS1 students.
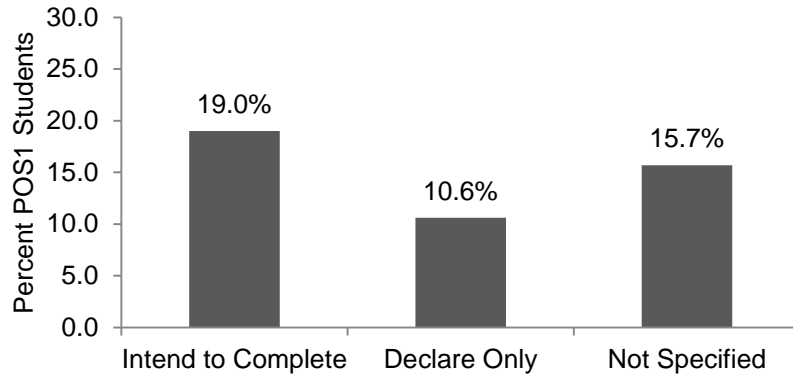
Figure VI.B.12. Percentage of 2011 SLDS cohort students by intentions to complete major on 10th grade IGP. On the IGP form, students are given two options concerning completion of their declared major: "Intend to Complete" or "Declare Only."

Having larger percentages of students who reported an intent to complete a major on their 10th grade IGP was not consistently related to a school having a larger percentage of POS1 students. Figure VI.B.13 compares the percentage of 2011 cohort students at each sample school who specified a preference on their 10th grade IGP and specified that they intended to complete a major to the percentage of POS1 students. There was not a consistent trend across schools in this relationship. At only two of the schools, Redwood and Iris, were there similar percentages of students who reported an intent to complete a major and those who were identified as POS1 students. At five of the other schools, there were larger percentages of those reporting an intent to complete a major than the other schools, but with only one exception (Apple), these schools had lower percentages of POS1 students than either Iris or Redwood. The most extreme example of this trend was at Azalea, which had the second highest percentage of students reporting plans to complete a major (91%), but fewer than 6% of students identified as POS1 students.
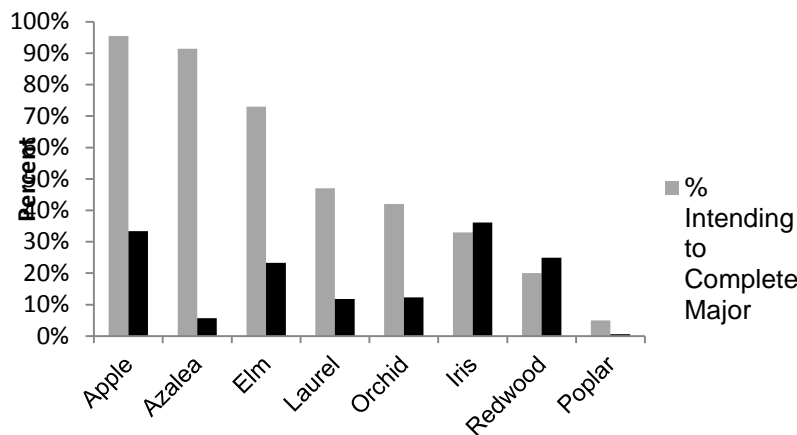
Figure VI.B.13. Intentions to complete major (10th Grade IGPs) and percent POS1 students for SLDS 2011 cohort. The percent intending to complete major value in this figure is based on those students who specified on their 9th or 10th grade IGP whether they would "Intend to Complete" a major or "Declare Only." Those students that did not specify whether or not they would Intend to Complete or Declare Only on their 9th or 10th grade IGP were excluded from these percentages.

Switching career clusters. According to trends in the SLDS data, 37.8% of the students in the 2011 cohort in sample schools changed their career cluster between their 10th grade and 12th grade IGP. The percentage of these students who switched IGP career clusters between 10th grade and 12th grade varied across sample schools, ranging from a low of 21.3% at Iris to 54.7% at Elm, as shown in Figure VI.B.14.
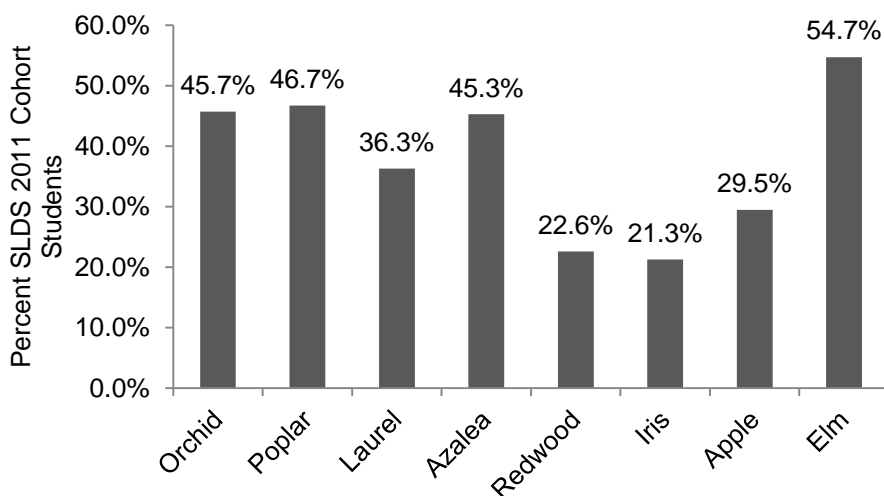
Figure VI.B.14. Percentage of 2011 POS1 students who switched IGP career clusters between 10th and 12th grade IGPs by school

The numbers of SLDS 2011 cohort students switching career clusters between their 10th and 12th grade IGPs also varied between POS1 and non-POS1 students. POS1 students were less likely to have changed the cluster identified on their IGP by the 12th grade than non-POS1 students (26.6% and 41.2%, respectively). Results differ slightly by strength of intentions to complete a major. Interestingly, as shown in Figure VI.B.15, POS1 students who said they planned to complete their identified major on their 10th grade IGP were more likely to have switched their career cluster on their 12th grade IGP.

Switching clusters between the 10th and 12th grade IGP also meant that a number of 2011 POS1 students completed a course progression in a cluster different from the one identified on their 10th grade IGP. Across all eight schools, 94 students ended up completing a POS1 outside of their original area of interest (38.5%). As shown in Figure VI.B.16, the percentage of POS1 students who completed a POS1 in a different cluster than was reported on their 10th grade IGP varied from 27.0% at Elm to 53.3% at Orchid.
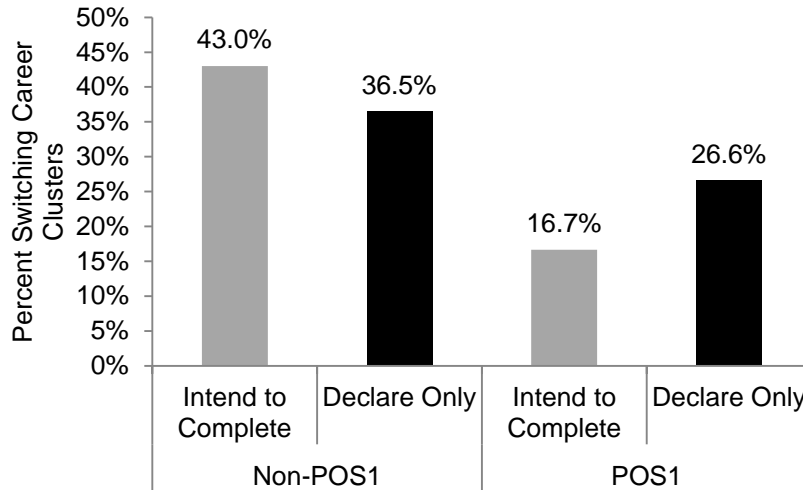
Figure VI.B.15. Percentage of SLDS 2011 cohort who switched career clusters between 10th and 12th grade IGPs by intent to complete major and POS1 status. Students were asked on their IGPs whether they intended to complete their major. "Intend to Complete" in the chart indicates that a student reported on their IGP their intent to complete their major and "Declare Only" indicates that a student declared a major but did not report intending to complete that major.
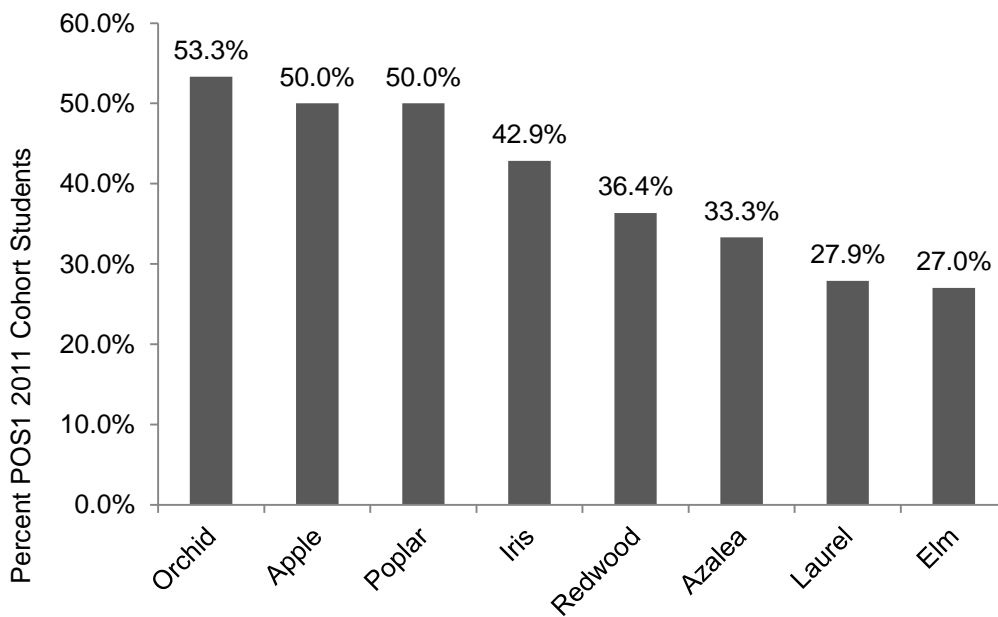
Figure VI.B.16. Percentage of POS1 2011 cohort students completing in cluster different from 10th grade IGP. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.

As described above, many of the students in the SLDS 2011 cohort completed a POS1 course sequence in a cluster different from the one they originally planned to pursue (as noted in their 10th grade IGP). Since schools are required to have students complete yearly IGPs, the 12th

grade IGP would be expected to reflect at least the career cluster in which a student completed a POS1. However, this is not the case. For approximately 25% of POS1 students, their 12th grade IGP career cluster did not match the career cluster in which their POS1 was completed. Patterns across schools are shown in Figure VI.B.17. As illustrated in the figure, Poplar had the fewest POS1 clusters matching 10th grade IGP clusters, but a trend at this school is difficult to discern due to the low number of POS1 students identified at this school. Elm and Laurel had the most POS1 clusters matching 10th grade IGPs. One reason for this may be the fact that the POS1 data is based on a sequence of courses that the study team identified as a logical progression from a single career cluster. The actual career major and cluster and courses that were considered a part of this major that a student completed may differ from those identified by researchers.
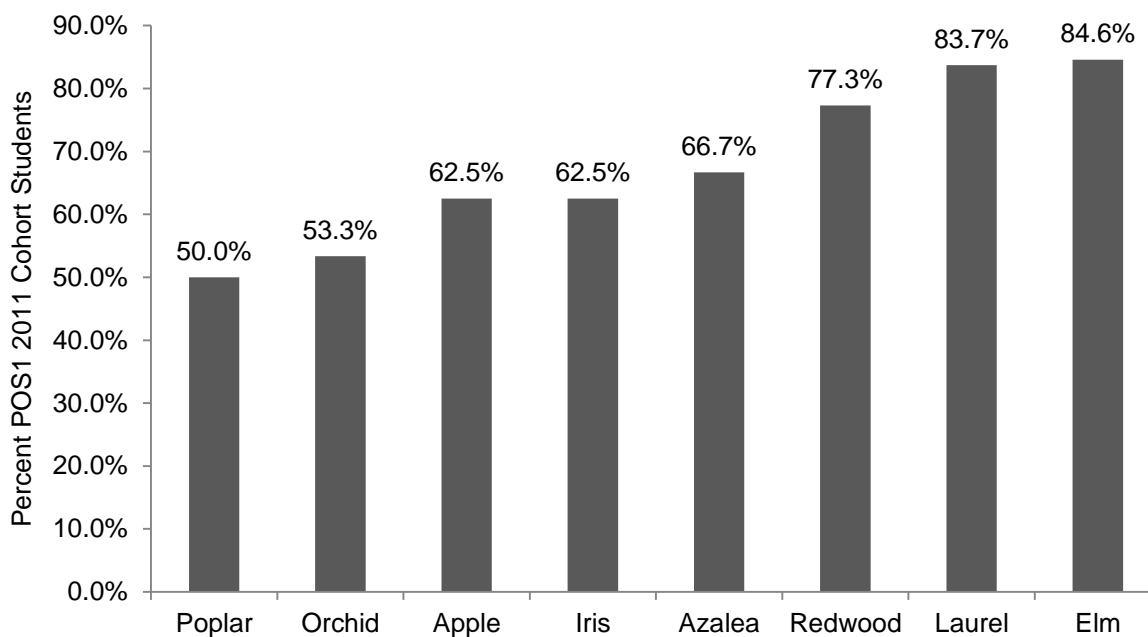
Figure VI.B.17. Percent of POS1 2011 SLDS cohort students with 12th grade IGP career cluster that matched cluster of POS1. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.

Patterns in Course-Taking. As shown in Table VI.B.16, in general, POS1 students in the 2011 SLDS cohort were significantly less likely than non-POS1 students to take any AP/IB courses ($p > .001$). In addition, for students who did take at least one Advanced Placement course, POS1 students took fewer courses and thus earned fewer than half as many credits in these courses as non-POS1 students. On the other hand, POS1 students were significantly more likely to take dual credit courses. Among students who do take dual credit courses, however, the average number of courses taken and thus credits earned, are approximately the same for POS1 and non-POS1 students. However, POS1 students earn more total courses credits than their non-POS1 counterparts in 11th grade.

Table VI.B.16

Course-Taking for 2011 SLDS Cohort POS1 and Non-POS1 Students

	2011 Cohort Non-POS1	2011 Cohort POS1	Difference
Percent Students AP/IB	27.6	8.6	-19.0**
Average Number of AP/IB Credits	3.5	1.5	-2.0**
Percent Dual Credit	8.9	16.0	7.1**
Average Number of Dual Credits	2.6	2.5	-0.1
Number of 10/11th Total Course Credits	7.3	8.0	0.7**

* $p < 0.05$. ** $p < 0.01$.

The across school averages mask a substantial amount of variation at the school level. Results are similar across sample schools for non-POS1 2011 SLDS cohort students, with 25% to 35% earning at least one credit in an AP or IB course (Table VI.B.17). The exception is Iris, where there are no students who are reported to have taken an AP or IB course because there were no AP or IB courses available at that school during the time period examined. With regard to POS1 students, however, there was greater variation across schools and significant differences between POS1 and non-POS1 students in taking these types of courses. At only one school, Orchid, were there comparable percentages of POS1 and non-POS1 students who had taken AP or IB courses. One reason for this may be that Orchid was the only school that offered both AP and IB course throughout the study period.

At three of the sample schools (Azalea, Elm, and Poplar) where AP and/or IB courses were offered, none of the POS1 students in the 2011 cohort completed a credit in an AP or IB course, while at least a quarter of non-POS1 students in this cohort completed a credit in these types of courses. At two schools (Apple and Laurel), approximately half of the number of POS1 students took AP/IB courses as non-POS1 students. While at the eighth school, Redwood, only around 5% of POS1 students took these courses as compared to approximately 26% of non-POS1 students in this cohort.

Table VI.B.17

Percentage of SLDS 2011 Cohort Non-POS1 and POS1 Students Taking AP/IB Courses by School

	2011 Cohort Non-POS1	2011 Cohort POS1	Difference
Apple	32.7	15.4	-17.3*
Azalea[a]	26.5	0.0	-26.5**
Elm	28.0	0.0	-28.0**
Iris[b]	NA	NA	NA
Laurel	29.7	18.6	-11.1*
Orchid	25.0	23.3	-1.7
Poplar[a]	35.4	0.0	-35.4**
Redwood	26.3	4.5	-21.8**
Total	27.6	8.6	-19.0**

[a]Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10. [b]AP/IB courses were not available at Iris during the study period.
*$p < 0.05$. ** $p < 0.01$.

Table VI.B.18 provides the school-level data for dual credit course-taking by 2011 SLDS cohort POS1 and non-POS1 students. According to interview data from sample schools from 2008-2009 and articulation agreement information from the fall of 2009, options for dual enrollment were available at all schools and all but Poplar offered dual credit options to students in at least several of their career majors. The schools with the fewest options during those two school years were Apple and Laurel. The lack of options helps to explain the trend at Apple, where neither non-POS1 nor POS1 students had taken any dual credit courses. At two other schools, Orchid and Poplar, no POS1 students in that cohort had taken these courses while less than 1% of non-POS1 students had taken dual credit courses. Since there were options available to students at both of the schools, it is not clear why neither of the groups in the 2011 cohort had taken these types of courses. It is possible that they were only offered off-campus and partner community colleges were not located close to either school. In addition, it is important to keep in mind that patterns among POS1 students at Poplar may be misleading since fewer than 10 students from the 2011 cohort were identified as POS1 students.

Table VI.B.18

Percentage of 2011 SLDS Cohort Non-POS1 and POS1 Students Taking Dual Credit Courses by School

	2011 Cohort Non-POS1	2011 Cohort POS1	Difference
Apple	0.0	0.0	0.0
Azalea	4.1	0.0	-4.1*
Elm	17.8	5.4	-12.3*
Iris	11.2	25.0	13.8*
Laurel	8.9	11.6	2.8
Orchid	0.5	0.0	-0.5
Poplar	0.6	0.0	-0.6
Redwood	39.8	40.9	1.1
Total	8.9	16.0	7.1**

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.
*$p < 0.05$. **$p < 0.01$.

Among the four schools with more substantial dual credit enrollment, there is significant variation, where percentage of POS1 students taking dual credit ranges from 5% to 41%. And at one of these schools, Iris, about twice as many POS1 students had taken dual credit courses as compared to non-POS1 students. At two other schools, Laurel and Redwood, similar percentages of POS1 and non-POS1 students had taken dual credit courses. For the final school (Elm), however, less than a third as many POS1 students were enrolled in dual credit relative to non-POS1 students.

Large differences in course-taking were also found between the SLDS 2009 and 2011 POS1 students. Overall, a larger percentage of POS1 students in the 2009 cohort took AP/IB courses than in the 2011 cohort, while a significantly larger percentage of POS1 students in the 2011 cohort took dual credit courses than those in the 2009 cohort, as shown in Table VI.B.19. Students in both cohorts, however, whether they took AP/IB or dual credit courses, earned similar numbers of credits in these courses.

While the average percentage of SLDS POS1 and non-POS1 students taking AP/IB courses changed slightly between the 2009 and 2011 cohorts, only a few of the differences were statistically significant (Table VI.B.19). For non-POS1 students, the average number of 11th grade credits earned was higher in 2011 (p=.001). In 2011, the percentage of POS1 students taking dual credit significantly increased (p=.014).

Table VI.B.19

Change in Course-Taking Over Time by SLDS Cohort

	2009 Cohort	2011 Cohort	Difference
Non-POS1 Students			
Percent Students AP/IB	26.2	27.6	1.4
Average Number of AP/IB Credits	3.4	3.5	0.1
Percent Dual Credit	9.7	8.9	-0.8
Average Number of Dual Credits	2.3	2.6	0.3
Number of 10/11th Credits	7.0	7.3	0.3**
POS1 Students			
Percent Students AP/IB	10.8	8.6	-2.2
Average Number of AP/IB Credits	1.6	1.5	-0.1
Percent Dual Credit	8.6	16.0	7.4*
Average Number of Dual Credits	2.1	2.5	0.4
Number of 10/11th Credits	7.9	8.0	0.1

$* \, p < 0.05. \, ** \, p < 0.01.$

Examining changes in AP/IB course taking by school shows that there was a significant amount of variation in differences for POS1 and non-POS1 students (Table VI.B.20). For example, Laurel and Redwood had declines in AP/IB enrollment for POS1 students, while enrollment for non-POS1 students increased. At Apple, the rate of AP/IB enrollment increased dramatically for both groups, while AP/IB enrollment at Elm and Orchid decreased for both groups. Not only was there a decrease at Elm, the percentage of students taking AP/IB courses went from 10% of the 2009 cohort down to no students in the 2011 cohort. A similar trend occurred at Poplar, where, although 20% of the 2009 cohort took AP/IB courses, no students in the 2011 cohort had taken these courses. But again, this trend may be misleading since it is based on so few POS1 students at this school. Only one school, Apple, had an increase in AP/IB course-taking for POS1 students and the increase was significant.

Table VI.B.20

Change in Percentage Taking AP/IB by SLDS POS1 Status, Cohort and School

	Non-POS1 Students			POS1 Students		
	2009	2011	Difference	2009	2011	Difference
Apple	12.8	32.7	19.9*	0.0	15.4	15.4*
Azalea	32.2	26.5	-5.7	0.0	0.0	0.0
Elm	35.9	28.0	-7.9	10.2	0.0	-10.2*
Iris[a]	NA	NA	NA	NA	NA	NA
Laurel	16.9	29.7	12.8**	25.0	18.6	-6.4
Orchid	36.5	25.0	-11.5*	27.0	23.3	-3.7
Poplar	35.5	35.4	0.1	20.0	0.0	-20.0
Redwood	25.4	26.3	0.9	11.4	4.5	-6.9
Total	26.2	27.6	1.4	10.8	8.6	-2.2

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10 for both cohorts. [a]AP/IB courses have not been available at Iris since 2006-2007.

*$p < 0.05$. **$p < 0.01$.

       Overall, the percentage of SLDS POS1 students taking dual credit nearly doubled between the two cohorts, while the percentage of non-POS1 students taking dual credit remained constant. Two schools (Redwood and Iris) were responsible for the majority of this increase in dual credit enrollment, as shown in Table VI.B.21. Laurel was the only school with a decrease in dual credit course-taking among POS1 students between the two cohorts. However, the school had an even larger decrease among non-POS1 students.

       At three schools, Apple, Orchid and Poplar, no POS1 students and few if any non-POS1 students in either cohort took dual credit courses. The lack of participation at Apple in either cohort was probably in large part due to the fact that few dual credit options were available at the school at least during the 2008-2009 and 2009-2010 school years. There were, however, a number of dual credit options available to students at both of the other schools. The pattern for POS1 students at Poplar may be misleading since fewer than 10 POS1 students were found in either cohort. At Azalea, although low percentages of non-POS1 students took dual credit courses in both cohorts, no POS1 students in either cohort took these types of courses. It is difficult to discern if this is a pattern at this school since so few POS1 students were found in either the 2009 or 2011 cohort.

Table VI.B.21

Change in Percentage Taking Dual Credit by SLDS POS1 Status, Cohort and School

School	Non-POS Students			POS Students		
	2009	2011	Difference	2009	2011	Difference
Apple	0.0	0.0	0.0	0.0	0.0	0.0
Azalea	2.3	4.1	1.8	0.0	0.0	0.0
Elm	20.5	17.8	-2.7	2.0	5.4	3.4
Iris	10.6	11.2	0.6	6.8	25.0	18.2**
Laurel	17.3	8.9	-8.4**	16.7	11.6	-5.1
Orchid	0.0	0.5	0.5	0.0	0.0	0.0
Poplar	0.3	0.6	0.3	0.0	0.0	0.0
Redwood	29.5	39.8	10.3	27.3	40.9	13.6
Total	9.7	8.9	-0.8	8.6	16.0	7.4*

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10 for both cohorts.

* $p < 0.05$. ** $p < 0.01$.

Differences in student survey reports of course taking across POS2 implementation levels. Seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools significantly differed in their responses to the number of courses they planned to take that would earn college credit by the time they graduated from high school, with more seniors in the Class of 2011 from Low POS2 implementation schools indicating they would take none of these courses (28.0%) than seniors in the Class of 2011 from High and Medium POS2 implementation schools (14.6% and 16.6%, respectively; p<0.001). Somewhat similar percentages, however, of students in this class across the High, Medium, and Low POS2 implementation schools reported that they would earn college credit in four or more courses by the time they graduated (24.9%. 27.4%, and 23.2%, respectively).

Seniors in the Class of 2011 were also asked on the student survey how many vocational, career, or technical units they would have earned in their primary vocational, career, and technical program area by the time they graduated. The distribution of responses, however, did not significantly differ among seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools, with close to a majority in each level of POS2 implementation indicating they would take at least one unit or credit by the time they graduated from high school.

Trends in postgraduation plans. In addition to information on postgraduation preparation by students in our two cohorts, we were also able to collect some information from

the SLDS POS1 cohort database and from student surveys on some of our sample students' plans and expectations for future education and employment. Specifically, from student IGP data available in the SLDS cohort data, we collected and examined data on student plans after graduation, whether it was to enter the workforce or an apprenticeship, attend a two-year college or technical training, attend a four-year college, or go into the military. We were also able to ascertain more detailed postgraduation plans from students responding to our student survey.

Postgraduation plans from 2011 SLDS Cohort IGPs. Based on data entered on 12th grade IGPs for the 2011 cohort, POS1 students were more likely to plan to attend a two-year college and less likely to plan to attend a four-year college than non-POS1 students , although the majority of students in both groups are planning to attend a four-year college at some time after graduation (Figure VI.B.18).
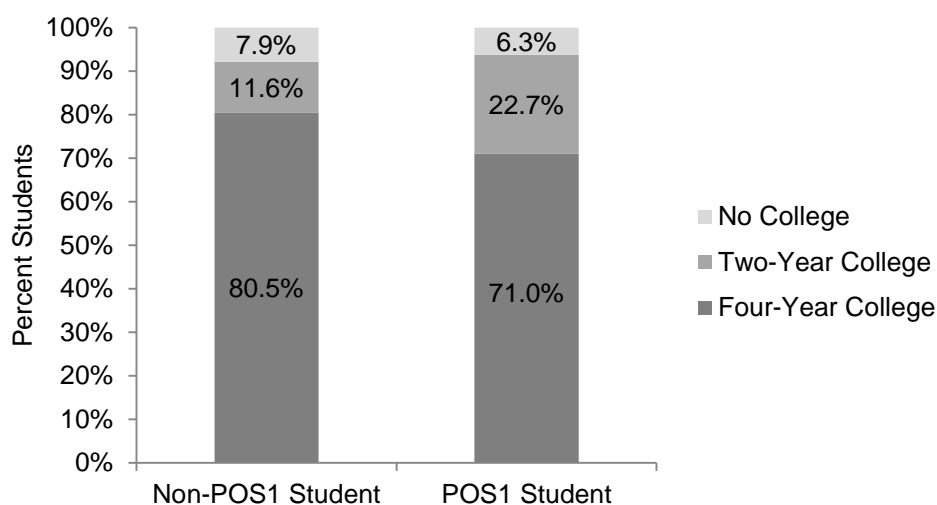
Figure VI.B.18. Postgraduation plans by POS1 status, SLDS 2011 Cohort

Figure VI.B.19 shows the variation in trends in postgraduation plans for 2011 SLDS POS1 students across schools. Although at all schools the vast majority of students are planning to attend college after graduation, there is a lot of variation across schools as to whether they plan to attend a two-year or four-year college. The percentage of POS1 students planning to attend a four-year college ranges from 48.6% to 86.7%. At only one of the schools, Poplar, are all POS1 students planning to attend either a two- or four-year college. The largest percentage of POS1 2011 cohort students not planning to attend college are those at Azalea (16.7%) and Apple (11.5%).
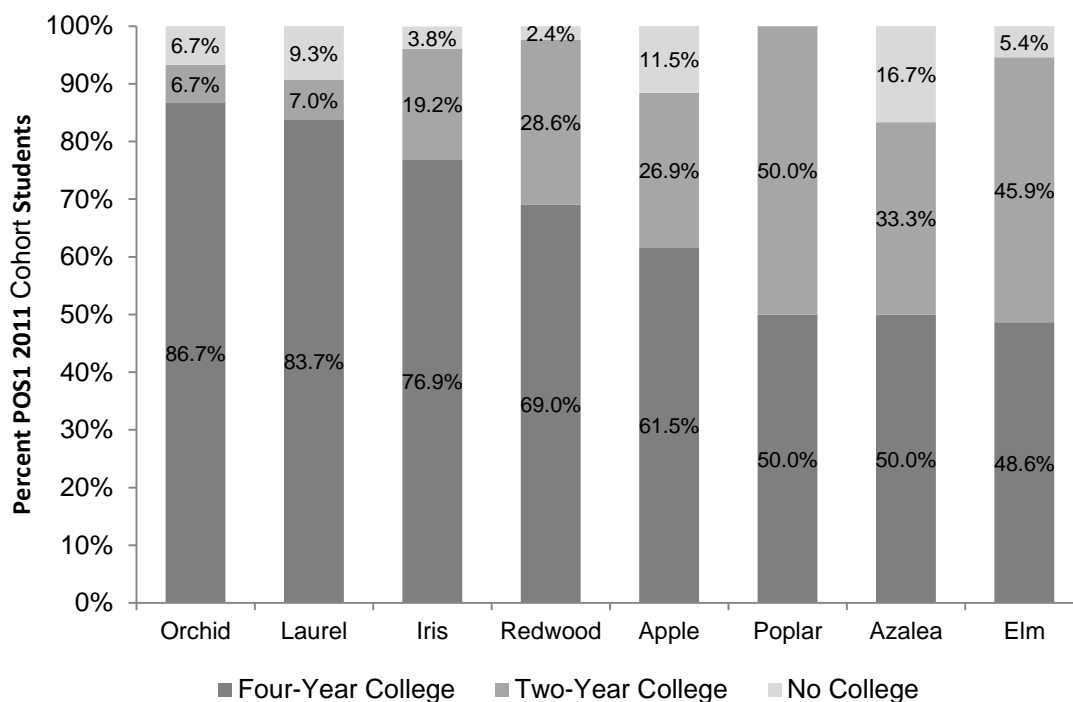
Figure VI.B.19. Postgraduation plans for 2011 SLDS POS1 students by school. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.

Postgraduation plans also differ for 2011 SLDS POS1 students by the career cluster in which their POS falls, as shown in Table VI.B.22. It is important to note that, due to small sample sizes, comparisons should be interpreted with caution. Only those clusters where there were at least 10 students completing a POS1 are included in the table. Students in Business, Health Science, and Arts, AV Tech, & Communications were the most likely to plan to enroll at a four-year college. Students in Transportation, Distribution and Logistics and Manufacturing were the most likely to plan to enroll at a two-year college and those in Business, the least likely to plan to enroll in a two-year college. Students in Agriculture, Food & Natural Resources were also the most likely to plan not to enroll in college, with 20.0% reporting on their IGP that they did not planned to either go into the military or find a job.

Table VI.B.22

Postgraduation Plans for POS1 Students by Career Cluster, 2011 SLDS Cohort

	N	Plan to Enroll at Four-Year %	Plan to Enroll at Two-Year %	No Plans to Enroll %
Agric., Food & Natural Resources	10	50.0	30.0	20.0
Architecture & Construction	28	60.7	25.0	14.3
Art, AV Tech, & Communications	20	75.0	25.0	0.0
Business, Management & Admin.	33	93.9	3.0	3.0
Health Science	53	84.9	15.1	0.0
Hospitality & Tourism	27	59.3	29.6	11.1
Manufacturing	28	50.0	39.3	10.7
Transp., Distribution, & Logistics	22	50.0	40.9	9.1

Note. Only those clusters with 10 or more students completing a POS1 are included in this table.

Postgraduation plans from survey responses. As was the case for reports on their IGPs, a majority of seniors surveyed in the Class of 2011 from High, Medium, and Low POS2 implementation schools indicated their intention to enroll in a 4-year college or university, enroll in a 2-year community college, or transfer to a 4-year college or university the year after graduation (76.2%, 76.8%, and 83.3%, respectively) and these responses did not significantly differ. Seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools did significantly differ in their responses regarding the highest level of education they expect to complete with more seniors from Low POS2 implementation schools indicating they expected to complete at least a bachelor's degree (84.5%) than seniors from High and Medium POS2 implementation schools (61.5% and 62.3%, respectively; $p<0.001$).

Similar responses about future plans for education were found between POS3 CTE seniors and non-CTE seniors in the Class of 2011. A majority of both POS3 CTE seniors and non-CTE seniors in the Class of 2011 indicated they would enroll in a 4-year college or university, enroll in a 2-year community college, or transfer to a 4-year college or university the year after graduating from high school (77.5% and 79.7%, respectively). In addition, seniors in these groups did not significantly differ regarding the highest level of education they expected to complete, with a majority indicating they would earn at least a bachelor's degree.

Students were also asked on the survey to look ahead to when they were 30 years old and indicate whether they planned to have a job at that time and provide the name of the job they planned to have at that time. Seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools regarding these plans had similar responses, with a majority indicating

they planned to have a job at age 30 and providing a legitimate job name (69.1%, 70.4%, and 70.1%, respectively).[14]

In contrast, a larger percentage of POS3 CTE seniors in the Class of 2011 indicated they planned to have a job at age 30 and provided a legitimate job name (75.9%) than non-CTE seniors (67.1%). However, the percentage of POS3 CTE seniors (25.1%) indicating that they plan to have a job at age 30 but didn't know what type of job they would have was higher than for non-CTE seniors (13.6%).

Findings from Descriptive POS Variables. The three methods used to count Perkins IV-type POS programs that will be discussed in this section were not used in more detailed analysis due to issues described in the study design section of this report. However, the results from these measures of programs of study are important for giving context to what is happening in sample schools.

Findings on study-defined Perkins IV POS (POS4): Evidence from study developed criteria using qualitative and quantitative data sources. As we have discussed, we faced challenges applying the Perkins IV core elements to the career majors and CTE programs in our sample schools. One challenge was that the state policy we were studying encompasses more than just CTE courses and programs and we needed to develop measures that could be applied across the entire high school curriculum. Another was that the elements of Perkins IV POS, as outlined in the law and supporting implementation materials provided by OVAE, were not sufficiently defined to allow for easy translation into direct measures for each element.

To address these challenges, the study team decided to operationalize the Perkins IV core elements for the purposes of the study and construct a study-defined variable for Perkins IV POS (POS4). To develop more specific criteria and guidelines for POS4, we reviewed a number of sources (see description in the Study Design section of this report). Based on these reviews, we developed criteria for each of the four core elements to use in the examination of each sample school's career majors/programs to determine if they met these criteria for the purposes of analysis for this study. For more on these criteria, please refer to the Study Design section of this report and Appendix L. As described earlier, we restricted our review to only those career majors that were considered to be state-recognized CTE majors. Next, based on the study-developed criteria, we examined these state-recognized CTE majors, to discern which of these met the set criteria.

To conduct these reviews, we utilized a variety of data sources and information on these CTE majors, including information gleaned from on-site interviews and focus groups conducted during the two site visits with guidance personnel, teachers, principals, and assistant principals; from content analysis of school archival and web materials on available courses, majors, and

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[14]Chi-square analysis comparing the distribution of responses between seniors in the Class of 2011from High, Medium, and Low POS2 implementation schools was not conducted due to small cell counts.

career clusters, and on career development and planning; from analysis of school responses to a Clusters & Majors checklist; and from information compiled from an SDE CATE annual report.

It is also important to note here that the original intention was to analyze elements of these CTE majors relative to the study-developed criteria at two points in the study: once at the beginning of the study, using data from the 2008-2009 school year and the fall of 2009 and then again during the final study year, 2011-2012. However, as previously noted, we were unable to collect adequate comparable data for this variable for the 2010-2011 school year. Therefore, the findings presented here are only from the early years of the study, but do reflect majors available to our primary cohort, the Class of 2011, during their 10th and 11th grade years.

As shown in Table VI.B.23, a total of 175 CTE majors/programs were identified as being available at sample schools during the 2008-2009 school year, with an average of about 22 CTE majors/programs identified per school. There was a range across schools in the number of total CTE majors/programs identified during that school year. Apple had the lowest number of identified programs, with 12 CTE majors/programs during that school year, while the highest number were identified at Orchid, which had 44 CTE majors/programs.

Table VI.B.23

Number of CTE School Majors/Programs Identified and Number and Percent Reviewed, 2008-2009

School	Total CTE Majors/Programs	Total Eligible/Reviewed CTE Majors/Programs	Percent CTE Majors/Programs Eligible for Review
Orchid	44	22	50.0
Poplar	24	11	45.8
Laurel	22	11	50.0
Iris	22	18	81.8
Redwood	18	13	72.2
Elm	17	9	52.9
Azalea	16	14	87.5
Apple	12	8	66.7
Total	175	106	60.6

Of the total programs, 106 (60.6%) met the study criteria to be eligible to be reviewed for evidence that they met the criteria for a POS4, with a wide range in number eligible across schools. At all but one school, at least 50% or more of the programs were found to be eligible for further review. Poplar, which had the lowest percentage considered eligible for further review, had 45.8% of its CTE majors/programs identified as eligible for further review. The two

schools with the highest percentage found eligible for review were Azalea (87.5%) and Iris (81.8%). One eligibility criterion that eliminated a number of majors/programs was the requirement that the major/program be treated as a major/program by the school and be advertised in some school materials available to students, so that students would be aware of its availability.

Using the study-developed criteria for the four core Perkins IV elements to review eligible programs, of the 106 CTE majors/programs found to be eligible for review, only nine (11.8%) met the criteria for all four elements to be considered POS4 majors/programs. And, as shown in Table VI.B.24, these POS4 were found at only two (25%) of the eight sample schools, Redwood and Iris. Six POS4 were identified at Redwood out of the 13 eligible CTE majors/programs or 46.2% of all eligible CTE majors/programs and one-third of all identified CTE majors/programs offered at that school for the 2008-2009 school year. All of these POS4 were offered at the school's career center partner. There were three POS4 identified at Iris, representing 17% of eligible CTE majors/programs and 14% of all CTE majors/programs offered at that school for the 2008-2009 school year. All of these POS4 were offered in partnership between the school and local community college and courses offered to students on either the high school or community college campus using the same community college faculty. At both schools, more POS4 programs were found in the Manufacturing cluster than any other career cluster. The other career clusters where POS4 were identified were Arts, AV Technology, & Communications, Hospitality & Tourism, and Transportation, Distribution, & Logistics. Interestingly, three of the majors/programs identified at these two schools were the same majors/programs: Machine Technology, Welding Technology, and Automotive Technology and primarily in the Manufacturing cluster.

Table VI.B.24

CTE School Majors/Programs that Met the Four Core Perkins IV Elements, Based on Study-Defined Criteria

School	2008-2009 POS4	Career Cluster	Location of Program
Redwood	Graphic Communications	Arts, AV Technology & Communications	CC
	Culinary Arts	Hospitality & Tourism	CC
	Core Electronics	Manufacturing	CC
	Machine Technology	Manufacturing	CC
	Welding Technology	Manufacturing	CC
	Automotive Technology	Transportation, Distribution & Logistics	CC
Iris	Machine Technology	Manufacturing	HS[a]
	Welding Technology	Manufacturing	HS[a]
	Automotive Technology	Transportation, Distribution & Logistics	HS[a]

Note. CC=career center; HS=high school.
[a]Available in partnership with local community college on both the high school and community college campus.

Table VI.B.25 summarizes the findings across schools on each of the four core elements and how many of the eligible CTE major/programs at each sample school met the POS4 criteria for each element. The element where schools met the least number of study-developed criteria for that element was Element 2. To be considered to have met this element, a CTE major/program had to meet all three criteria developed for that element. None of the CTE majors/programs at five of the schools met all three criteria. For one of the criterion, having all core and major courses be considered "college prep," none of the CTE majors/programs at half of the schools met this criterion. This criterion was generally an "all or none" proposition, since all schools offered the same list of core academic courses for each of the majors/programs. All four of these schools were still offering some below college-prep level courses to students and included these courses on each major's IGP as courses that could be taken to meet graduation requirements. It was decided that if only one of the core academic courses listed in the IGP lists for majors was a non-college prep course, then all courses were not considered to be college prep for the school's majors/programs and therefore, none of the school's majors/programs met this criterion.

Therefore, all of the CTE majors/programs at those schools did not meet that criterion. A high percentage of CTE majors/programs also did not meet the first criterion for Element 2, the inclusion of a coordinated progressive sequence of at least four courses required to complete that major/program.

Table VI.B. 26 shows the number and percentages of eligible CTE majors/programs across sample schools that met various criteria. On average, a little less than one-third (29.3%) of the eligible CTE majors/programs met criteria for three of the four elements. At only two schools, Azalea and Apple, did at least half of the eligible CTE majors/programs meet criteria for three of the four elements. For the other schools, percentages ranged from 13.6% at Orchid up to 44.4% at Elm.

Although on average, almost half (47.2%) of the eligible CTE majors/programs either included at least one dual credit option or had some type of articulation agreement for postsecondary training or college credit, the percentages across schools varied widely. Around 70% of majors/programs at both Azalea and Redwood offered some type of college credit or postsecondary training option. Percentages at the other schools ranged from a low at Orchid of 22.7% up to 62.5% at Apple.

A little over half of the eligible CTE majors/programs across schools were reported to lead to some type of postsecondary training or education or a two- or four-year degree. Again, there was a great degree of variation across sample schools. At Poplar, only a little over one-fourth (27.2%) of eligible CTE majors/programs were reported to lead to postsecondary education/training/degrees, while at Redwood, the vast majority (84.6%) of eligible CTE majors/programs reportedly led to postsecondary options. In addition to Poplar, two other schools had fewer than half of their eligible CTE major/programs lead to postsecondary options. At the other schools, at least half of the eligible CTE majors/programs were reported to lead to postsecondary options.

Table VI.B.25

Number of CTE Majors/Programs that Met Requirements for Perkins IV POS (POS4), 2008-2009

Sample School	CTE Majors/Programs		Element 1 — Incorporate and align secondary and postsecondary	Element 2 — Include academic and CTE content in coordinated, non-duplicative progression of courses elements				Element 3 — Include dual credit or concurrent enrollment or other options to receive college credit	Element 4 — Leads to credential after postsecondary training/education or leads to 2- or 4-year degree				TOTAL Number Study-Defined Perkins-IV POS
	Total 2008-2009 CTE Majors/ Programs[a]	Total Eligible/ Reviewed 2008-2009 CTE Majors/ Programs[b]	Has an active/current major-specific written articulation agreement spelling out alignment OR Offers at least one dual credit/enroll or TAP course in major	Coordinated progression of courses: at least 4 course sequence to complete major	All core and major-required courses are "college prep"	Major-specific required courses aligned with industry standards	Met all 3?	At least one dual credit/enroll or TAP course offered in major OR AP courses if listed under required courses for major	Results in industry-recognized or sponsored credential -- at post-secondary level	Results in 2-year degree	Results in 4-year degree	Met at least one?	
Laurel	22	11	3	0	11	5	0	3	0	4	2	4	0
Orchid	44	22	5	4	22	12	4	4	2	10	10	10	0
Poplar	24	11	6	6	0	8	0	4	2	3	3	3	0
Redwood	18	13	9	10	13	13	10	9	2	11	7	11	6
Azalea	16	14	10	2	0	11	0	10	1	8	4	8	0
Apple	12	8	5	1	0	5	0	5	1	4	3	5	0
Elm	17	9	5	4	0	5	0	5	2	7	5	7	0
Iris	22	18	7	10	18	13	8	7	1	11	3	11	3
Total #	175	106	50	37	64	72	22	47	11	58	37	59	9
Avg #	21.9	13.3	6.3	4.6	8.0	9.0	2.8	5.9	1.4	7.3	4.6	7.4	--

[a]Total includes the majors/programs reported in the school catalog's 2008-2009 catalog or registration materials that were reported as eligible for CTE funding in South Carolina (SC) by the state CTE office, programs with enrollment that matched a SC CTE program CIP Code, and/or programs that the SC CTE office reported had concentrators in that program at that school for the 2008-2009 school year. [b]Based on meeting one of 5 options and 1 additional requirement.

Table VI.B.26

Number of Eligible CTE School Majors/Programs That Met Some of the POS4 Elements, 2008-2009

School	Number Eligible/Reviewed CTE Majors/Programs N	Number of Perkins IV POS N	Number of Eligible CTE Majors/Programs Meeting 3 of 4 Elements N (%)	Percent Eligible CTE Majors/Programs with Dual Credit Options and/or Some Type of Articulation Agreement N (%)	Percent Eligible CTE Majors/Programs with Coordinated Sequences of Courses N (%)	Percent Eligible CTE Majors/Programs Leading to Post-Sec Training/Education/ Degree N (%)
Laurel	11	0	2 (18.2)	3 (27.3)	0 (0)	4 (36.4)
Orchid	22	0	3 (13.6)	5 (22.7)	4 (18.2)	10 (45.5)
Poplar	11	0	2 (18.2)	6 (54.5)	6 (54.6)	3 (27.3)
Redwood	13	6	4 (30.8)	9 (69.2)	10 (76.9)	11 (84.6)
Azalea	14	0	8 (57.1)	10 (71.4)	2 (14.3)	8 (57.1)
Apple	8	0	4 (50.0)	5 (62.5)	1 (12.5)	5 (62.5)
Elm	9	0	4 (44.4)	5 (55.6)	4 (44.4)	7 (77.8)
Iris	18	3	4 (22.2)	7 (39.0)	10 (55.6)	11 (61.1)
Total	106	9	31 (29.3)	50 (47.2)	37 (34.9)	59 (55.7)

Not surprisingly, Redwood, which had six POS4s, had the highest or close to the highest percentages of eligible CTE majors/programs that had dual credit options, majors/programs that were reported to lead toward postsecondary options, and majors/programs with coordinated sequences of courses. At Iris, on the other hand, the other school with POS4s, eligible CTE majors/programs did not consistently have many of the elements. Other schools had majors/programs that were high on some elements but low on others. For example, Azalea had the highest percentage of eligible CTE majors/programs with dual credit options but one of the lowest percentages of majors/programs with coordinated sequences of courses. Apple had relatively large percentages of eligible CTE majors/programs with dual credit options and majors/programs that were reported to lead to postsecondary education/training/degrees but had one of the lowest percentages of eligible CTE majors/programs with coordinated sequences of courses.

Relationship Between LOI and POS4. Table VI.B.27 illustrates the relationship between policy level implementation (LOI) groups and POS4. As outlined, there was some relationship between LOI and the number of POS4s identified at schools and the percentage of eligible CTE majors/programs that met the study-defined criteria for at least three of the four elements of POS4, as operationalized by the study team. The school found to have the highest number of POS4s, Redwood, was a high LOI school, while the other school with POS4s was a medium LOI school. The two schools with 50% or more of their eligible CTE majors/programs that met criteria for at least three of the four elements of POS4, Azalea and Apple, were medium LOI schools. The other high LOI school, Orchid, however, had the lowest percentage of eligible CTE majors/programs that met criteria for at least three of the four elements of POS4. And one school Elm, a low LOI school, had a higher percentage of eligible CTE majors/programs that met criteria for at least three of the four elements of POS4 than several of the medium LOI schools.

Table VI.B.27

Number of Eligible CTE School Majors/Programs That Met POS4 Elements by LOI and POV, 2008-2009

School	Number Eligible/ Reviewed CTE Majors/ Programs *N*	Number of POS4 *N*	Percentage of Eligible CTE Majors/Programs Meeting 3 of 4 POS4 Elements %	LOI Level	POV Level
Redwood	13	6	30.8	High	Medium
Iris	18	3	22.2	Medium	High
Azalea	14	0	57.1	Medium	Medium
Apple	8	0	50.0	Medium	High
Elm	9	0	44.4	Low	High
Laurel	11	0	18.2	Medium	Low
Poplar	11	0	18.2	Low	Low
Orchid	22	0	13.6	High	Medium
Total	106	9	29.3		

Relationship Between POV and POS4. The relationship between the level of community economic resources (POV) groups and POS4 is also illustrated in Table VI.B.27. There was a stronger relationship between POV and the number of POS4s identified at schools and the percentage of eligible CTE majors/programs that met the study-defined criteria for at least three of the four elements of POS4, as operationalized by the study team. The two schools found to have POS4s were a medium and a high POV school. In addition, the schools with higher levels of poverty tended to have higher percentages of their eligible CTE majors/programs meet the criteria for at least three of the four elements of POS4. On the other hand, two schools with some of the lowest percentages of their eligible CTE majors/programs that met the criteria for at least three of the four elements of POS4, Laurel and Poplar, were low POV schools.

Findings on district-identified CATE Perkins IV POS (POS5). As mentioned in the study design section, we did not assume that the district-identified CATE Perkins IV program of study used by districts to receive Perkins funding for the 2008-2009 school year would necessarily be one of the career majors/programs in our schools for that school year; thus we developed criteria to examine their presence. As is outlined in Table VI.B.28, at only two of the schools was the district program of study determined as meeting all of the criteria to be considered a POS5.

Table VI.B.28

2008-2009 District-Identified CATE Programs for Perkins IV Funding Purposes Meeting Requirements for District Perkins IV POS

School	District-Identified CATE Perkins IV Major/Program	Met All Requirements for POS5
Laurel	Project Lead The Way	No
Orchid	Project Lead The Way	No
Poplar	Project Lead The Way	No
Redwood	Health Science Technology	No
Azalea	Health Science Technology	Yes
Apple	Health Science programs (no specific major/ program of study identified)	No
Elm	Health Science programs (no specific major/ program of study identified)	No
Iris	Auto Mechanics	Yes

Findings on school-identified Programs of Study (POS6). Another way we attempted to identify Perkins IV-type POS was to ask school staff during the fall of 2009 school site visits which of their career majors/programs had the best secondary- postsecondary linkages at the time of our visit. School responses appear below in Table VI.B.29.

Table VI.B.29

Majors/Programs That Schools/Career Centers Reported Having Strongest Secondary-Postsecondary Links for 2008-2009 School Year (POS6)

School	School-Reported Major/Program with Strong Secondary-Postsecondary Links (POS6)	District-Identified Perkins IV Major/Program for Funding Purposes	Met Requirements for POS5	Met Requirements for POS4
Laurel	Health Sciences			No
	Culinary Arts			No
	Project Lead the Way (PLTW)	PLTW	No	No
Orchid	Health Sciences, particularly CNA program			No
	PLTW	PLTW	No	No
	Business, particularly Accounting			No
Poplar	Health Sciences			No
	Engineering Design & Technology (PLTW)	PLTW	No	No
	Visual Arts & Design			No
Redwood & Arbor Career Center	Health Sciences	Health Sci Tech	No	No
	Culinary Arts			Yes
Azalea & Woodland Career Center	Health Science	Health Sci Tech	Yes	No
	Horticulture			No
Apple	Culinary Arts – most emphasized			No
	Building Construc-tion—most emphasized			No
	Health Sciences	Health Sci Progs	No	No
	Horticulture			No
Elm	Health Sciences	Health Sci Progs	No	No
	Business, particularly Accounting & Marketing			No
Iris	Accounting			No
	Administrative Support Servs			No
	Machine Tool			Yes
	Welding			Yes
		Auto Mechanics	Yes	Yes

In all but one of the schools, Health Science was identified as having strong ties to postsecondary training and/or 2- or 4-year degree programs. These programs also usually included opportunities for students to work toward certifications in First Aid, CPR, and/or as Certified Nurse Aids while in high school and take courses to prepare students to take the Pharmacy Technician exam after graduation. Three schools identified their culinary arts program and three of their business programs, particularly accounting, as having the best links with postsecondary. Project Lead The Way is mentioned by the three schools whose districts identified this program as their Perkins IV-type program of study for funding purposes. These are also the most college–prep oriented schools in our sample. Seven of the eight sample schools identified the district's Perkins-IV-type programs of study used for funding purposes as one of their majors with the strongest secondary-postsecondary ties. Programs identified at only two of the schools met the study-defined criteria for POS4. And, not all of the POS4 majors/programs identified at these two schools were reported by school staff as having strong secondary-postsecondary links. At Iris, the district program was not mentioned as having strong secondary-postsecondary links by school staff, but the program did meet the requirements to be both a POS5 and a POS4.

C. Career-Focused School Reform and Its Influence on the Development of Perkins IV-Defined POS

One of the main research goals of this study was to explore the extent to which the implementation of a comprehensive statewide career pathways school reform policy would facilitate the development of Perkins IV-defined POS. As discussed earlier, the six facets of the state EEDA policy, along with additional policy elements, closely match many of the basic requirements of the Perkins IV legislation. Both focus on the integration of academic and career and technical content and emphasize academic rigor across all coursework. EEDA and Perkins both emphasize the development of programs of study for students to help them plan for their future careers and to assist with seamless transitions between secondary and postsecondary education. To assist with this transition, both require an alignment between secondary and postsecondary elements.

However, it is important to keep in mind that the EEDA is a much broader, more all-encompassing, reform of high school curricula than Perkins IV and targets more than traditional CTE courses and programs. EEDA attempts to implement school reform across all schooling, from kindergarten through postsecondary education and training, and across all curricula, not solely CTE, to improve secondary outcomes and enhance postsecondary career preparation and transition into the labor force for all students. Development of career pathways or programs of study are, therefore, only a portion of the reform efforts and are intended to cross all curriculum, not just CTE. In addition, requirements for the development of pathways/programs of study are not as specific as those developed for Perkins IV-defined POS. Some of these differences were described earlier in this report and other relevant differences will be noted here.

EEDA and Influence on Development of Foundations for POS. In this section, we examine evidence that the EEDA may facilitate the development of Perkins IV-defined POS by establishing parts of the foundation considered necessary for their development. These findings stem from analyses of the following data: (1) observations and interviews conducted with school

personnel during the two on-site visits, (2) two guidance personnel surveys and follow-up interviews with school counselors, (3) student survey responses, (4) the SDE's GP Accountability Reports, and (5) EEDA annual reports to the legislature.

Findings will first be discussed relative to observations of how EEDA may help to lay groundwork for some of the core elements of Perkins IV-defined POS established in the Perkins IV legislation. Although our study preceded, and thus was not originally designed to examine, the 10 components of the POS Design Framework developed by OVAE (U.S. Department of Education, 2010), we report here relevant observations on several of the components particularly relevant to our study.

Core Elements of Perkins IV POS. As described earlier, Perkins IV outlined three mandated core elements for Perkins-IV funded POS and one optional element. Here we provide findings on the ways in which EEDA may be facilitating the development of the foundation necessary for POS at our eight sample schools through these four core elements.

Core Element 1. Incorporate and align secondary and postsecondary educational elements. The study team found that increased attention was being paid to aligning secondary and postsecondary programs at the state level as well as at many of the sample schools, but it is unclear whether this is due to Perkins IV, EEDA, or some combination of factors. EEDA legislation facilitates alignment between secondary and postsecondary education in several ways.

One potential way for the EEDA to facilitate alignment is through the mandated IGP process. A goal of IGP development is to help students link their secondary coursework with postsecondary training and education. To facilitate these linkages, two EEDA initiatives were begun through the state's Commission on Higher Education (CHE): the South Carolina Course Transfer and Articulation System (providing information through the SC Transfer and Articulation Center, SC TRAC) and the South Carolina Course Alignment Project (SC CAP). In addition, the statewide EEDA Coordinating Council (EEDACC) established two committees to help oversee these efforts: the Articulation, Dual Enrollment, High School Graduation and Postsecondary Education Alignment Committee and the Curriculum Frameworks and Individual Graduation Plan Committee. The state has also called on industry-specific advisory committees to help develop curricula and assist with the efforts toward active statewide course alignment and articulation.

The SC CAP aims to develop sequences of paired courses (an exit-level high school course and an entry-level college course) in core subjects (English/language arts, mathematics and science). Seventeen paired courses have been developed, with accompanying course packets containing course syllabi and scoring rubrics. The courses not only aim to strengthen alignment between high school and postsecondary learning but also to align the content with the South Carolina College Readiness Reference Standards (EEDACC, 2011).

SC TRAC provides online information and services to students who may be participating in dual enrollment courses. The online portal provides tools that make it easier for students to evaluate how coursework transfers among and between all of SC's two- and four-year public

colleges and universities, helping to eliminate barriers to degree completion, including additional expenses and delays involved when courses do not transfer as expected.

One difference to keep in mind when discussing findings in our sample schools, is that Perkins IV places a greater emphasis than EEDA on explicit, career-related, links between secondary and postsecondary education/training. Sample schools in our study with strong, well-established CTE programs and experienced CTE faculty were more likely to have better alignment between secondary and postsecondary instruction than those with weaker CTE programs. In addition, schools that had a career center that was close by the school also tended to have better alignment. However, we found that that alignment was often better when the career center was not only close to the high school but also had a good working relationship with a local community college partner. This was particularly the case when the local community college partner valued the links between the high school's and college's programs and coursework and were active partners in developing the high school curriculum and programs and in recruiting students. In several schools, either the community college curriculum was being used by the high school teacher or a community college faculty member was teaching the courses, sometimes on the high school campus, strengthening the alignment between levels. For example, at one of the sample high schools, local community college faculty was teaching the courses at both the high school and college levels for the Machine Technology and Welding programs. Eighty-five to ninety percent of credits in these high school courses transferred to the college's two-year program in this and other related areas, providing a seamless alignment between the high school and college programs.

Core Element 2. Include coherent and rigorous academic and relevant CTE content in a coordinated, non-duplicative progression of courses. EEDA legislation requires an integration of academic and CTE content and an alignment between resources and instructional materials for all courses and the state's content standards. The EEDA legislation stipulated that SDE develop prototypes for individual graduation plans and the curriculum frameworks for career clusters of study. The sixteen national career clusters served as a foundation for developing these initiatives. According to EEDA annual reports (EEDACC, 2008), by the third year of implementation, 2007-2008, an electronic version of the curriculum framework and IGPs had been developed and piloted and all of the state's middle and high schools were connected to the eIGP system which was embedded with the state-approved curriculum templates. In 2008-09, a statewide K-12 Majors Alignment Task Force was established to develop guidelines for assessing the effectiveness of career clusters and major alignment and curriculum managers from each school district were provided with training in the online eIGP system and guidance personnel with information about career cluster websites and online resources.

EEDA also requires the state to provide training in contextual teaching to all middle and high school educators; this training must emphasize methodologies that focus on hands-on instruction and content presentation with an emphasis on real-world application and problem solving. Study researchers did find some evidence of the integration of academic and CTE content, often due to efforts by individual teachers. Integration came in the form of the integration of academic standards and content into CTE courses, introduction of real-world experiences into academic courses, through efforts to integrate literacy and/or reading or math across the curriculum or into CTE courses, and some career-focused instruction.

When asked how much integration of career and real-world content was occurring in their academic and other courses, responses from Class of 2011 students during focus groups was mixed. Some students did mention that core academic teachers were trying to give some real-world examples of how their subject related to certain fields. For example, several students mentioned math courses where teachers mentioned that math would be important for the medical field or for architecture. Of the academic courses, English (senior project assignments, journaling about career interests and career portfolio development), economics, and government classes were most often mentioned as including real-world examples and discussions of what careers these subject areas could lead to. However, CTE courses were the most often mentioned as courses where various careers were discussed, being given real-world examples and completing hands-on projects. These courses also more often included speakers from relevant industries/businesses than non-CTE courses.

The organization of schools into Smaller Learning Communities (SLCs) at three of the study sample high schools appears to have increased collaboration between academic and CTE teachers, especially in the school that organizes its learning communities around career clusters. As part of the SLCs' curriculum and instruction efforts, core academic teachers are integrated with CTE and other teachers. Teachers find that being located on the same hall, having common planning periods, working in learning community teams, and advising a cross-section of students all help to stimulate efforts towards integration and collaboration.

When exploring the type of foundation established by EEDA to support programs of study, it is important to remember differences between EEDA career majors and Perkins IV-defined POS. Programs of study under EEDA are referred to as "career majors." While career majors and the Perkins IV-defined POS share some characteristics, they also differ in several ways. In the South Carolina policy, career majors are considered areas of academic focus and include "a sequence of four elective courses leading to a specified career goal" (South Carolina Department of Education, 2006, p.3). Elective courses for career majors can include both CTE and academic courses. In contrast, POS, as defined in the Perkins IV legislation, include a sequence of three related CTE courses and have a greater emphasis on the development of structured sequences of courses.

Of the available CTE majors/programs with postsecondary ties reviewed for this study, the most likely to offer a logical sequence of at least four courses were culinary arts, some health sciences programs, and programs in the areas of manufacturing, construction, and transportation. The majors/programs least likely to offer logical sequences of courses were those in the areas of business, marketing, and information technology.

The IGP process at schools has helped to increase the amount of activity and coursework planning to ensure that high school experiences are related to students' majors and to help students prepare for their careers after graduation. Counselors reported to us that a variety of career- and postsecondary-related topics were discussed during required meetings with students, including giving information on the different career pathways, helping with identification of career goals, and providing guidance on the selection of a major and appropriate coursework to help students achieve their identified goals. The goals of these sessions were similar across schools: to help students choose a career pathway that can meet their goals and to help students

understand and consider their postsecondary options. Many student-initiated interactions with counselors also centered around career and course-related issues, where students often wanted further information on various career pathways or on course requirements for majors, advice on choosing electives, or assistance with getting into courses or changing majors.

One of the stumbling blocks to the development of rigorous programs of study at sample schools was that schools are required to offer all students core academic courses that meet South Carolina academic standards, with an emphasis on offering college prep-level courses or higher across the curriculum. Only half of sample schools had evidence in their catalogs or guarantees from staff during interviews that all students, regardless of career major, were taking all college prep courses to graduate. At four of the eight sample schools, non-college prep math and/or science courses were still allowed for some students and outlined on the IGPs in school catalogs as core academic courses available for completion of career majors.

School staff at the eight sample schools spoke of facing the challenge of trying to get low performing students through core academic courses to meet these stricter graduation requirements. In the past, low performing students were often placed in CTE programs and schools and districts had developed core academic courses specifically for these programs. These courses were called "applied" math or science courses, or math and science for the "technologies," and included content thought to prepare students for technical careers but not necessarily for college or that met state academic standards. When pushed to make all courses meet state standards and to offer college prep content to all students, schools were facing challenges with struggling students who would no longer be able to take lower level courses and still graduate. Some schools offered additional remediation courses in core academic content areas or developed two-course sequences that would be a semester or a year longer than the regular college prep academic course, and worked toward bringing the student up to meet the state standards but at a slower pace.

One school outlined a career prep diploma in both their 2008-2009 and 2010-2011 catalogs that was not specified just for special education students, that included core academic courses with "academic standards intended to prepare students to qualify for technical colleges and colleges with 'open' selectivity" and elective CTE courses to match the students' interests. Most schools still offered remediation courses and often two-sequence courses in English and in math and science to give students college prep-level content over a two-course sequence rather than a one-course sequence and help prepare students for the high school exit exam/state standards. To meet the state's requirements, a student had to usually take both courses in a sequence. Additionally, some of the science courses were identified as not counting towards college admission but were designed to help students prepare for a technical career.

We asked CTE teachers during our 2009 interviews and focus groups whether students were coming to their courses prepared with the appropriate academic skills to be able to handle their course content. Repeatedly, we heard from these teachers that many students were still entering their courses without the skills necessary to the coursework. Students were lacking adequate math skills and reading comprehension and CTE teachers found themselves having to provide remediation so that students would be ready to handle the content in their courses. This was found across a variety of program areas, from health science and horticulture to construction

and manufacturing. CTE in several schools was still being used as a "dumping ground" for low-performing students or as an alternative program for students with continual disciplinary problems. CTE teachers perceived that the IGP process was helping somewhat but had not alleviated the "dumping ground" problem for many teachers. Some CTE teachers pointed out that they now had all levels of students, from low- to high-performing students, in the same class and that they needed to address the diverse needs of these students, but were being asked to do this without the teacher aids that were often available in core academic courses.

Several CTE teachers spoke of a struggle to attract higher-level students to their courses because of the challenge in ensuring that students taking their courses would get appropriate credit for the amount and level of work they do in these courses. Both health science and horticulture teachers spoke of the frustration resulting from the lack of recognition of the rigor of their courses, the lack of honors and/or dual credit for CTE courses, and a lack of acceptance of credit for what they taught from local colleges, particularly four-year colleges.

Core Element 3. May include the opportunity for secondary students to participate in dual or concurrent enrollment programs or other ways to acquire postsecondary education credits. As part of the development of strong career pathways and mandates of both Perkins IV and EEDA, there has been progress in South Carolina in developing and strengthening articulation agreements between schools and districts, community colleges, and four-year colleges and universities, with increases in dual credit and credit transferability options for students at many of our sample schools. Since the passage of EEDA, a variety of processes and programs have been developed to facilitate the dual enrollment of high school students in postsecondary institutions. The EEDA Coordinating Council (EEDACC) surveyed all of the state's two- and four-year postsecondary institutions about the transferability of dual enrollment courses. From these survey responses, a brochure was created to outline for students the various credit transfer options available at the state's public colleges and universities (EEDACC, 2011). By 2008-2009, 29 of the state's 33 public postsecondary institutions offered dual enrollment courses and this number continued to 2010-2011. Technical colleges offered 627 courses by the 2008-2009 school year. By 2010-11, the state's technical colleges offered 88.2% of the total number of dual enrollment courses, the four-year institutions offered 6.6% of the total and the USC regional institutions offered 5.2% of such courses (EEDACC, 2011).

These efforts seem to have influenced the dual enrollment of high school students in postsecondary education. According to the EEDACC annual reports, the number of secondary students completing dual credit coursework increased from 7,532 in 2005-06 to approximately 9,900 in 2010-11, an increase of approximately 32%.

Although opportunities for dual credit may have increased over our study period and more information on them may have been made available, our student survey data relative to students' plans to take these types of courses didn't significantly differ between the Class of 2009 and the Class of 2011. A majority in both classes as seniors indicated that they would take one or more dual credit courses (Class of 2009, 56.3% and Class of 2011, 54.4%). Nor did seniors in the Class of 2009 and seniors in the Class of 2011 significantly differ in their responses to the number of times they took Advanced Placement courses, with approximately

45.0% of seniors in the Class of 2009 and 46.6% of seniors in the Class of 2011 indicating they had never taken these types of courses.

Overall data on our two study cohorts in the SLDS data indicate a similar pattern where there was no overall increase in the percentage of students between the 2009 and 2011 cohorts who took either AP/IB and/or dual credit courses. However, as will be described in more detail later in this section, there was wide variation in AP/IB and dual credit course-taking across schools and between POS1 and non-POS1 students. There were significant increases in the percentage of students taking these courses at two schools between the two cohorts, declines at four schools, one significantly, and no change at the seventh school between the cohorts. Percentages of 2011 SLDS cohort students taking AP/IB courses at these seven sample high schools varied widely, ranging between 21% and 25% of students taking these types of courses in the 2011 cohort. At the eighth school, AP/IB courses had not been offered since the 2006-2007 school year.

In the case of dual credit courses, overall there was no increase in the percentage of students taking these courses between the 2009 and 2011 cohorts. Again, there were wide variations across schools, where at three sample schools there were essentially none to few students taking dual credit courses, no change at one school, slight increases at two other schools, a significant increase at one school and a significant decline at another school.

As will be described in more detail later in this section, there were significant differences between the course-taking patterns of POS1 and POS2 students across schools and cohorts. Overall, 2011 POS1 students were significantly more likely to have taken take dual credit courses than 2011 non-POS1 students but that was not the case for POS1 students in the 2009 cohort. There was a significant increase in the percentage of POS1 students who took dual credit courses between the 2009 and 2011 cohorts. Non-POS1 students in both the 2009 and 2011 cohorts were consistently more likely to have taken AP/IB courses but only non-POS1 students in the 2009 cohort were consistently more likely than POS1 students to have taken dual credit courses.

Students at our sample schools, as well as schools across South Carolina, however, face several challenges with regard to dual credit courses. One theme heard in nearly every school was that when postsecondary plans are considered, students, parents, and counselors often have to weigh the tradeoffs for students in choosing CTE courses over core academic courses, honors, Advanced Placement (AP), or dual-credit academic courses. One challenge of choosing CTE courses over other courses is that CTE courses only count for elective credit. In order to graduate from high school in South Carolina, a student must earn 24 units of credits, 17 units in core academic courses and 7 in elective courses. For those planning to go to a four-year postsecondary institution, 1 unit of the 7 elective units must be spent in another year of foreign language. Students may find it difficult to fit in the exact electives they desire. In addition, even if students have room in their schedules to take a CTE elective course, they may face problems getting into the course because of limited space or limited time offerings of CTE courses.

Another major challenge for students in taking CTE courses is the impact that CTE courses can have on a student's GPA. Students with goals to attend four-year colleges,

particularly those colleges that are more highly selective, work to get their GPAs as high as possible to help improve their prospects for college admission and scholarships. In addition, several of the state scholarships available in South Carolina require a 3.0 GPA or higher (LIFE and South Carolina HOPE scholarships) or, depending on SAT or ACT scores, either a 3.5 or 4.0 GPA (Palmetto Fellows Scholarships) to be eligible (South Carolina Commission on Higher Education, n.d.). Because AP classes carry greater weight than CTE classes, a student may find it more advantageous to their GPA to take an AP course versus a CTE course without the extra weight. Dual credit courses also help to boost GPAs, because in most districts, AP and dual credit courses carry the same weight. Students would not face GPA penalties if these options were consistently available for CTE courses. We found at sample schools, however, that options for dual credit or AP credit in CTE courses were often limited and did not provide a viable option for many students. A similar problem occurs with honors credit, where some schools reported that only recently had some CTE courses received honors level credit. These course options were not consistently available across all schools.

Core Element 4. Lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree. Perkins IV requires a direct link to a postsecondary level credential, while EEDA does not emphasize the direct link to a credential, only that the career major courses must help to prepare students for success in postsecondary education or a particular field. There were still a number of career majors at every school that were reported to have a postsecondary component culminating in a credential, certificate, or degree at the postsecondary level. In addition, all of the sample high schools or their partner career centers offered opportunities for students to earn industry-recognized credentials while in high school in at least one of their CTE prorgams. Administrators interviewed at several schools wished more certificate programs were available to high school students. A lack of industry-qualified teachers to provide the instruction for certification in some areas was often cited as an obstacle. The schools in our study also work with local employers to learn what skills and credentials are needed, and then design their programs around these requirements.

In our review of CTE school majors/programs in our eight sample schools to assess whether they met study-defined Perkins IV POS elements (POS4, discussed in more detail in the next section), an average of approximately 56% of CTE majors/programs reviewed had some type of postsecondary link, such as to further training or to two- or four-year degrees in that area. It varied widely from school to school, however, from a low of 27.3% of reviewed programs to a high of 84.6%. The school with the highest percentage of CTE major/programs reviewed that was found to have programs leading to postsecondary training/education/degrees was a school with close ties to a career center that had a strong working relationship with the local community college. The emphasis was often on two-year degrees but also those that could lead from two-year into four-year. Two other schools with approximately 60% of their CTE programs/majors were high poverty schools that focused on the development of CTE programs to help their students get through high school and into further education. Their focus was on offering certification programs that might requires some education after high school as well as on helping student progress into two-year degree programs, several of which could also lead to four-year degree programs. The school with the lowest percentage of CTE programs/majors with close

postsecondary ties was one our largest schools, with a primary focus on four-year college preparation and less on the development of CTE programs.

During interviews with CTE faculty in 2009, concerns were raised about the requirement that the attainment of a postsecondary credential be used as an indicator of the success of POS. We were told that many high school students who performed well in internships or cooperative placements were being offered full- or part-time employment when, or sometimes even before, they graduated. Not counting such employment offers as proof of success of POS, because they do not meet the criterion of postsecondary degree or credential attainment, ignores the benefit of high school credential-based programs in helping graduates successfully move into career-related employment upon graduation.

OVAE Design Framework. OVAE's Career and Technical Programs of Study Design Framework for POS was developed to provide policy guidance to states on the development of POS. Along with the other four NRCCTE POS studies, we agreed to incorporate observations on these 10 components in our data collection, and observations relative to six of these components are summarized here.

Guidance counseling and academic advisement. As described in more detail earlier in this report, career guidance and counseling services are critical to the EEDA reform policy, with school guidance and counseling programs playing a key role in students' career development and career planning. Under EEDA, students are exposed to career development efforts in elementary school with the exploration of career pathways and career interests. This process of exploration continues throughout later grades. In eighth grade, each student, along with parents or guardians, works with a counselor to develop an IGP, which includes courses required for graduation and appropriate electives that align with the student's interests, postsecondary plans, and professional goals. The process of working with counselors continues into high school where, on an annual basis, students meet with school counselors to review and revise their IGPs. Further, school counselors with career development facilitator certification or other school personnel with such training provide students with career awareness and career exploration activities and WBL experiences.

In 2007-08, the year prior to our first visits to sample schools, the revised SC Comprehensive Developmental Guidance and Counseling Program designed to facilitate policy implementation, was distributed throughout the state. To facilitate implementation of the model, K-12 school counselors received information and training through eight regional workshops during that school year. To ensure successful implementation of EEDA, throughout the reporting period, the statewide plan was to provide guidance professionals with training and technical assistance on a variety of topics and in numerous venues. All guidance personnel reported receiving some training on career pathways and IGP development, at least in the first year or so, but the amount and type of training and the topics covered varied. Training ranged from courses and workshops to personal research and "do-it-yourself" experiences and covered topics such as IGP development and advising students on career pathways.

Due to this centrality of counseling in the implementation of EEDA and to the development and implementation of high quality POS, we examined the role of guidance in

policy implementation in the sample schools to learn whether and how guidance personnel duties changed since the implementation of EEDA. We found that EEDA has affected the role of counselors and the depth and breadth of information that students receive about their educational and career opportunities in career and technical fields. EEDA emphasizes students' need to engage in career development activities such as exploration, interest assessments, and talking about career issues and career options with knowledgeable adults, thus making school counseling an essential service.

Key to much of the ongoing change in sample schools is the development and maintenance of students' four-year IGPs. The purpose of these plans is to provide students with an academic blueprint toward graduation and beyond, based on their career goals and within the context of their career pathway. IGPs often provide students with access to career assessment data, aiding them in matching their career interests and personality traits with career goals and postsecondary options. As compared to results from the other NRCCTE POS studies, it appears that when these types of plans are emphasized, as under EEDA, students are likely to receive more academic and career guidance services.

Students when asked about the IGP process during focus groups often mentioned that they liked having a plan, that it made school more relevant and gave them a purpose for taking their courses. For example, one Class of 2011 senior said that "[I]t gives you kind of a plan. You're not just taking random classes." Another Class of 2011 senior further described their experience:

> I think that it did help us know what we wanted to do. And in the beginning, we never knew what we want to do. We were confused, we were young. We didn't even know what we wanted to be. And then it just helped guide us. Like we got to try this out, and if we thought we were interested in it, we'd try it, and if we didn't like it, we could switch and try something else. And it did lead us. I do think that.

Some students also mentioned that they liked learning about the variety of jobs available in various occupations and having a chance to think about and plan for their future career. As one Class of 2011 senior noted:

> When I first said that I want to do criminal justice, I was just thinking strictly attorney, because you'll see on TV all the powerful attorneys and everything. But once I took the classes, I had no idea how many different job positions were in the field of criminal justice. I narrowed it down to studying criminal law. And so that's what I'm going to major in when I go to college.

The EEDA emphasis on the role of guidance counselors and the IGP requirements have increased the amount of time counselors spend with students engaging in one-on-one career-based counseling, with an increased effort to meet with every student on an annual basis. Further, there has been a greater effort to promote CTE programs to students and engage parents in the course and career planning of their children.

In both 2009 and 2012, guidance counselors reported on surveys that their involvement in required career development activities with students and teachers and career counseling duties with students and parents had increased somewhat or had not changed since the beginning of

EEDA implementation. Over the time period, counselors also reported in interviews that, although the amount of time they spent with students remained steady over the period, there had been a steady increase in parental engagement in the IGP process. Efforts over that period had been made to increase opportunities for students in career exploration and development, such as through career assessments and work-based learning experiences. Identification of career goals also seemed to be a more important part of the IGP process in 2012 than 2009. In addition, counselors also reported a steady growth in students' knowledge of career pathways and majors, partially due to transition activities being offered to students in middle school to prepare them to enter high school.

However, in both 2009 and 2012, counselors also reported continued involvement in inappropriate duties, such as administering standardized tests; registering and scheduling students for classes; developing the master class schedule; and maintaining/completing educational records/reports. Interestingly, although overall the IGP process was viewed by counselors as a positive process for students and guidance personnel, the IGP was also cited as a primary factor in keeping counselors involved in these types of "inappropriate duties" because of the merging of course scheduling and registration. Counselors did report that they were better able to handle their increased workloads in 2012 than in 2009. However, the demands of EEDA still produced work overloads for many counselors and left some counselors unable to do other counseling activities and raised concerns that they were having to leave many school and student needs unmet,

Legislation and policies. Research on educational reform has repeatedly emphasized leadership as essential to successful reform efforts. Our study offers an opportunity to explore the impact of a state-directed, comprehensive career-pathways/POS reform model on the delivery and outcomes of career-oriented education. Because the legislation affects all high schools, the study is drawing upon naturally occurring variations in implementation, community resources, and extent of exposure to the changes required by the legislation to assess the factors that influence its impact.

Early evidence from sample schools indicates that the legislation's requirements regarding guidance have increased the number and types of career-focused activities at sample high schools and the amount of influence that counselors and career specialists have on the educational and career plans of students. These increases are in large part due to the IGP process, a key to career planning for students, increasing student contact with guidance personnel about career planning, and providing a link between student interests and career goals and their high school coursework. The IGP process, in combination with other career-focused activities, has also resulted in increased awareness of CTE, reduction in some of the stigma attached to taking CTE courses, increased likelihood of more appropriate placement of students in CTE courses, and improved efforts to disseminate CTE information to students, parents, and educators.

Although the structure and content of the state policy help to streamline guidance roles and responsibilities, some schools reported that it was difficult to implement EEDA fully without additional resources. Only some facets of the legislation have received state funding, which has

made it difficult for most schools, particularly those in high-poverty communities, to fully implement the policy.

Partnerships. School administrators and CTE faculty at our study high schools mentioned local advisory teams as an integral part of program development and important for keeping schools informed on the needs of industry. Links to business and industry were also important to comply with policy mandates for increased job shadowing, mentorship, and internship training opportunities for students. However, having staff available to identify, establish, and maintain partnerships is critical to the success of these efforts, as is the availability of local business partners. Few sample schools had staff that they could dedicate to developing these partnerships, and the remote or economically depressed locations of some schools posed serious challenges to creating the necessary partnerships with industries.

Despite these obstacles, several initiatives in EEDA policy help promote partnerships between local schools and districts and local businesses for CTE and non-CTE programs. EEDA created 12 virtual Regional Education Centers (RECs) to help disseminate information about the policy to local industries and the community, to help schools to educate students and staff about career opportunities, job training, and apprenticeships, and to connect local education and businesses.

As reported in the EEDA annual reports, a coordinator was hired for each of the 12 RECs and the centers were developed to be "virtual centers" and provide access to the above types of resources for each region online. Various types of online resources were made available. For example, a Connect 2 Business site, which recruited businesses to be involved with local schools, had up to 900 businesses listed before it had to be discontinued in 2009-2010 due to budget cuts. Virtual job-shadowing experiences were created in partnership with several companies over the study period, including 37 job shadowing experiences through Microburst Learning and more than 140 virtual job shadowing experiences available through VirtualJobShadow by the 2010-2011 school year.

We found, however, during early site visits that schools' involvement with the RECs varied across sample schools, ranging from no contact to periodic contact. One school had more contact with the REC because the coordinator lived in their district. Some RECs were more active than others in adding content to their websites and reaching out to schools and districts with resources and services.

Professional development. EEDA requires the SDE to provide training, professional development, and resources to K-12 school personnel in various aspects of the policy, such as the use of cluster-of-study curriculum frameworks and of IGPs. The policy mandates that all middle and high school educators receive training in contextual teaching, involving methodologies used by teachers that focus on concrete hands-on instruction and content presentation with an emphasis on real-world application and problem solving. EEDA also requires all state colleges of education to include in their training of teachers, school counselors, and administrators the following topics: career guidance, the use of the clusters of study curriculum framework and IGPs, learning styles, the elements of the South Carolina Career Guidance Model, contextual teaching, cooperative learning, and character education. The State

Board of Education has developed performance-based standards for all teachers and principals in the areas of career exploration and guidance.

Teachers in our study schools reported receiving varied amounts of training related to EEDA activities from their school, their district, or the state. The state was credited with providing good virtual job shadowing and other general resources through websites and other resources. However, guidance personnel and school-based career specialists were reported to be the main providers of training for teachers. Teachers in sample schools were most likely to receive school or state-sponsored training in the early stages of policy implementation but little training as the implementation continued. Some teachers found this training too general and found it necessary to supplement initial training with their own research. Some teachers commented that the best training they received on content integration and career clusters was through professional development provided by High Schools That Work (HSTW) staff.

Guidance personnel in study schools reported receiving at least some training on career pathways and IGP development, but the amount and type of training varied, as did the topics covered. This training was offered through a variety of channels, including the local school district, the state education department, and state and regional professional development meetings and workshops. School guidance counselors at one school reported receiving training through a local business alliance. Regardless of the types of training described, school counselors interviewed generally felt satisfied with the training they had received.

College and career readiness standards. One of the goals of EEDA is that all of South Carolina's students complete high school fully prepared for successful employment, further training, or postsecondary study; this goal is to be achieved by requiring high academic standards across the curriculum, integration of academic and CTE content, and opportunities for work-based experiences. Each student's IGP includes postsecondary options and all students are encouraged to take the SAT or the ACT college readiness tests.

Even though EEDA emphasizes that students complete high school to be fully prepared for the future, the students surveyed from our sample schools who had been exposed to the policy (Class of 2011) had lower expectations that they would complete high school as compared to an earlier cohort (Class of 2009). Regarding the highest level of education they expected to complete, although the percentages were low, more seniors in the Class of 2011 than seniors in the Class of 2009 indicated that they would not finish high school (4.7% and 2.2%, respectively; $p = 0.008$). However, a majority of seniors in both the Class of 2009 and Class of 2011 indicated they would enroll in a 4-year college/university, enroll in a 2-year community college, or transfer to a 4-year college/university the year after graduating from high school (79.2% and 78.1%, respectively).[15]

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[15] Chi-square analysis comparing the distribution of responses between seniors in the Class of 2009 and seniors in the Class of 2011 not conducted due to small cell counts.

One obstacle to readiness for employment involves students' lack of engagement in WBL activities. Administrators at several sample schools noted that students are often restricted from engaging in WBL activities due to age requirements (under 18 years of age), safety issues, and legal restrictions in certain occupations.

Students surveyed in sample schools were asked about participation in WBL activities. The majority of students (70-75%) in both the Class of 2009 and Class of 2011 as seniors reported having participated in at least one WBL activity. And, fewer seniors in the Class of 2011 (those exposed to early policy) indicated they had participated in *none* of the listed work-based experience opportunities (21.0%) than seniors in the Class of 2009 (those with little to no policy exposure; 25.1%; $p = 0.032$). Job shadowing or work-site visits and community services were the most frequently reported WBL experiences, while co-ops and school-based enterprise were the least reported WBL experiences.

Credit transfer agreements. All eight of the schools participating in our study reported either dual enrollment or dual credit arrangements, or both, with local postsecondary institutions at the beginning of the study period. A number of the schools reported upcoming efforts to update and/or reactivate old agreements with local community college partners and/or develop new agreements. These dual credit agreements were primarily with local two-year institutions but schools also had agreements with four-year institutions. Sample schools were also anticipating being able to capitalize on the effort to create statewide articulation agreements between the community or technical colleges (which offer two-year associate degrees) and four-year colleges and universities across the state. Currently, 86 statewide courses with approved curriculum will automatically transfer from state two-year community/technical colleges to four-year institutions of higher learning across the state.

During the study period, the SC CHE contracted to have a statewide, web-based course articulation and transfer system developed and it was launched in April, 2010. By October 2011, the system was populated with approximately 551,000 course equivalencies and 770 transfer agreements (EEDACC, 2011).

Influence of the Reform Policy on CTE Awareness and Participation. Ensuring coordination of academic and relevant CTE content and appropriate progression of courses requires communication at schools between school counselors and academic and CTE teachers. It also may require some changes in awareness and perceptions of CTE courses and programs by students, parents, and school staff, to reduce barriers to participation in these programs. In recent years, CTE policy leaders and educators have been making efforts to revise the instruction provided in CTE courses and programs while at the same time changing perceptions of these courses and programs. We were interested in finding out if an emphasis on career planning and the required development of IGPs and selection of career pathways in our sample schools had changed the level of awareness of CTE, perceptions of CTE, and patterns in CTE course-taking at these schools. During interviews with school staff at the sample high schools and several partner career centers in 2009, these issues were often raised by staff when asked about changes in their schools since implementation of EEDA. These issues were also raised by researchers during interviews. The following are highlights of findings from these discussions.

Increase in counselor awareness and knowledge of CTE courses and programs and dissemination of that information through the IGP process. During Year 3 POS site visits, guidance personnel reported learning more about CTE offerings at their schools. Counselors commented that, because of EEDA and the IGP process, they were required to learn about available CTE courses and programs in their schools to better assist students in developing IGPs. CTE teachers at six of the eight sample schools reported that the IGP process helped them to identify students for their programs and that more, and/or more focused, students were being directed to their programs. One CTE teacher noted that the "career focus on IGPs has made CATE [CTE courses] more useful to students." This increase in awareness and information sharing resulted in reports at some schools of an increase in the number of students taking CTE courses.

The impact of EEDA requirements and the IGP process on guidance personnel's knowledge of CTE programs was particularly apparent during discussions with guidance personnel at two high schools that use career centers to provide CTE courses and programs. These personnel commented that they now know much more about the offerings of the career center. They reported an increase in interaction and information sharing with career center staff. They noted that center staff representatives now meet annually with ninth-grade classes to provide information on center programs. An administrator at one of these schools noted that "EEDA has pushed us to talk more with the career center, and in different ways…Before, the career center did its own thing and we did ours…We know now we must tie this closer together." At the other high school, one of the administrators said that her school is "depending on the career center more now; the four-year plan brings the career center more into play now than before EEDA."

Reports from the two 2008-2009 *GP Accountability Reports* support interview comments that CTE information is being disseminated to educators, parents, and students in at least seven of the eight sample schools. Guidance personnel were asked to provide the number of educators, parents, and students who had been provided with information on their district's CTE programs during that school year. It is unclear which personnel schools considered to be in the category of "educators" at their school, since it was not specified on the form, but we assumed that teachers and guidance personnel at the sample high schools, and possibly guidance personnel at feeder middle schools, were included in this category along with any other high school program staff. Based on the numbers of teachers and guidance personnel reported in the *2009 School Report Card* for each school (South Carolina Department of Education, 2009b), the numbers of educators reported appear to indicate that the vast majority of school program staff at seven of the eight sample high schools received CTE program information at least once during the school year. These reports also indicate that the vast majority of ninth and tenth graders at these seven schools were provided CTE program information. At the remaining sample school, only small numbers of parents and educators relative to staffing and enrollment at the school were reported to have received information on available district CTE programs during that school year. It was unclear if none of the ninth or tenth graders received information at this school or whether the data were missing on this variable for students.

Perception of more appropriate CTE placement. CTE teachers at several schools not only reported an increase in numbers of students being directed into their courses but also more

appropriate placement of students in their CTE courses and programs. Use of the IGP at some sample schools as a screening device helped students and parents have more realistic expectations for students' career and academic goals and resulted in more careful placement of students into academic and CTE courses. Rather than assign academically struggling or misbehaving students to any open CTE courses, counselors have been encouraged by the IGP process to review students' past performance and career goals and try to relate these goals and abilities to appropriate courses and programs. This resulted in reports from a number of CTE teachers that they were getting students in their courses who were better prepared academically and "who want to be there," because the course fits their career goals. One of the career centers where staff conducted interviews reported increased enrollment. Staff at the other center reported that high school guidance personnel were helping with recruitment while the IGPs were helping them to identify students for programs. These efforts were also reflected in student comments made during focus groups with Class of 2011 seniors. For example, one senior commented that he found out about "a whole bunch of classes that were available to me that I didn't even know existed," while another reported that he "didn't know we had engineering classes until IGP."

In addition, as a result of implementing a model focused on career pathways, a number of school administrators were rethinking how best to prepare students for graduation and the future. Some administrators commented to researchers that the model has caused them to think about finding ways to make sure that all students have some practical skills to prepare them for the work world after graduation, whether by getting a certification of some kind or by participating in an apprenticeship or internship before graduation.

Reduction in stigma of CTE courses at some schools. Inclusion of CTE courses in IGP discussions and career clusters and increased awareness and information sharing about CTE programs and courses by guidance personnel and CTE faculty may have contributed to changes in perceptions of CTE. At several schools, any stigma associated with taking CTE courses or attending a career center had been reduced in recent years. During the fall 2009 interviews at five of the sample schools, we asked staff specifically about whether any stigma was associated with participation in CTE programs. Staff at three of these schools reported a reduction in negative views toward CTE, a change they attributed to efforts to better inform students, parents, and the community about what CTE courses and programs can offer. At one of these schools, employability was mentioned as a draw. Staff at the other two schools pointed to IGPs, clusters, and majors, along with integration of CTE into core classrooms, as being key factors in reducing stigma. At the fourth school, staff reported that a negative connotation of CTE programs persisted among students and parents, although they were making some effort to address it. For example, this school was conducting a campaign to showcase high-paying career options for CTE majors and working to increase the number of higher GPA-weighted CTE courses, by, for example, assigning honors or AP credit to CTE courses. But students at this school received mixed messages about CTE courses. Despite a campaign to heighten awareness of CTE at this school in some high-paying areas, some faculty and administrators at this school indicated that they still felt that some students are more "suited" for CTE while others are more "suited" for college. Finally, at the fifth school, staff commented that the problem with some students enrolling in CTE courses lay in the fact that CTE courses often carry a lower weight and result in a lower GPA that can hinder college entry, rather than any stigma associated with taking CTE courses.

The research team hypothesized that part of the reduction in stigma may be related to the greater interaction occurring at some schools between CTE and non-CTE teachers. Historically in our sample schools, CTE and "academic" programs had been somewhat isolated from each other. Three of the five schools asked about stigma were organized into Smaller Learning Communities (SLCs). In these schools, groups of core academic and CTE teachers are housed together in SLCs, reducing the physical isolation between CTE and academic faculty that is common on comprehensive high school campuses. SLC groupings have the potential to reduce isolation and offer opportunities for core academic teachers to become more familiar with available CTE programs, to observe CTE teachers planning and teaching, and to better understand that CTE programs do have rigor, as well as to increase interaction between CTE faculty and non-CTE students.

This opportunity for consistent interaction between CTE and non-CTE faculty and students in SLCs has the potential to reduce the stigma attached to CTE programs. However, only one of the three SLC schools visited reported reductions in CTE stigma, and that was a school that was newly organizing their SLCs around career clusters. Another school that randomly placed students into SLCs reported that CTE was still not as attractive to students as it would be if more CTE courses carried higher GPA weighting. And researchers noted that at the third SLC school, being housed together did not appear to have helped to reduce the stigma attached to CTE, which was still being perpetuated by students, parents, and administrators at the school.

Relationships Between LOI and POS1 and POS2. In this section, we explore the question of whether the EEDA may be helping to facilitate the development of Perkins IV-defined POS by examining the relationship between sample school LOI scores and our various measures of programs of study, including POS1 and POS2. As described earlier, these measures are drawn from three different data sources and approach programs of study from several different angles.

Is there a relationship between LOI and the percentage of students completing a POS1 course sequence (POS1 students)? POS1 student data were collected on two cohorts from the SDE data warehouse's longitudinal database (SLDS): Class of 2009 and Class of 2011. POS1 students were those students identified as completing POS1 course sequences (POS1 students) at sample schools from these two cohorts. Analysis of the percentage of 2011 SLDS cohort POS1 students and a school's level of policy implementation uncovered a small positive association between the two. Higher implementation levels were often associated with higher percentages of POS1 students but the trend was not consistent across all schools. This inconsistency is illustrated in Figure VI.C.1, where high percentages of identified POS1 students are shown to be in Low LOI (policy implementation) (60-69), Medium LOI (70-79), and High LOI (80-89) sample schools. There was also a school in the high LOI group with a lower percentage of POS1 students than several of the Medium LOI schools.
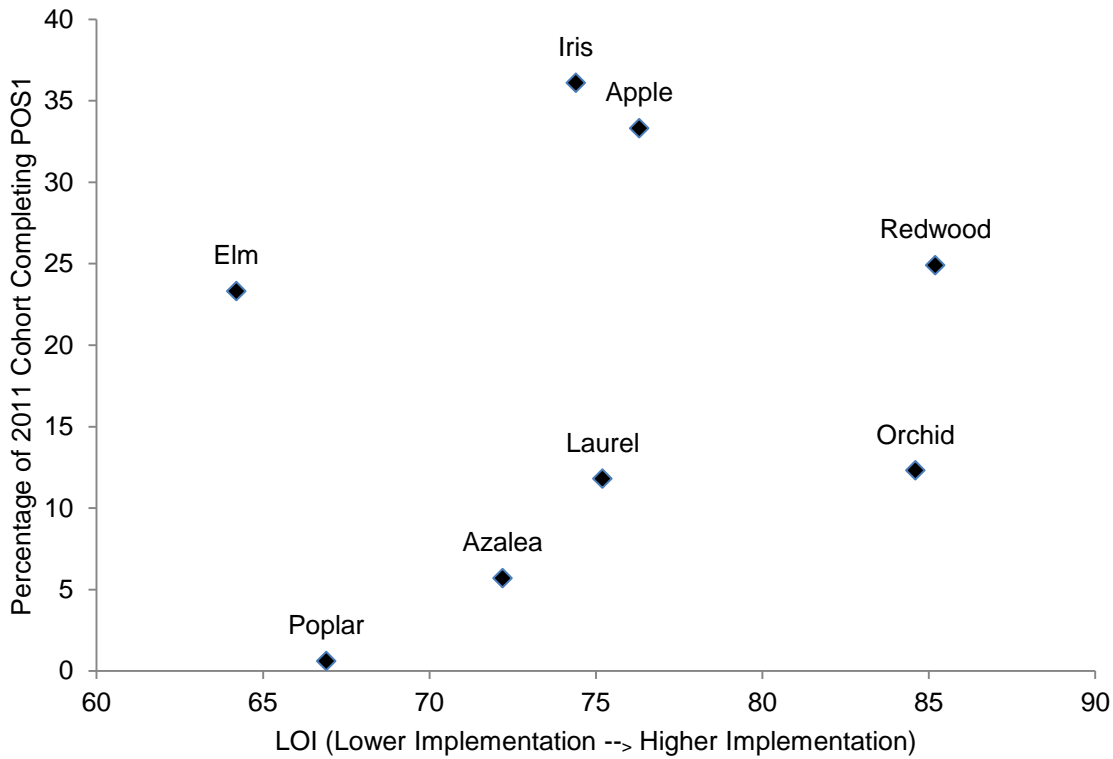
Figure VI.C.1. Percentage of SLDS cohort 2011 completing POS1 by LOI

LOI may not have had anything to do with overall percentage of students completing POS1 course sequences (POS1s) because the schools started at very different points prior to EEDA. We might expect the change in the percentage of POS1 students from the 2009 (pre-policy) to 2011 (early-policy) cohorts to be more closely related to policy implementation. Table VI.C.1 presents the change in the percentage of POS1 students between the two cohorts, ordered from the school with the highest level of policy implementation to the school with the lowest level. Interestingly, only two of the schools had increases in the percentages of POS1 students, while we might have expected to see most or all of the schools see increases in percentages of POS1 students. Both of the schools with increases in percentages of POS1 students fall in the top half of Medium policy implementation scores. This suggests some association between higher EEDA policy implementation and increases in the proportion of students completing POS1 course sequences.

Table VI.C.1

Percentages of POS1 Students by Cohort by Implementation Level and Differences in Percentages

School	2009 Cohort (%)	2011 Cohort (%)	Difference	EEDA Implementation
Redwood	27.2	24.9	-2.4	High
Orchid	17.8	12.3	-5.4	High
Apple	8.2	33.3	25.1**	Medium
Laurel	4.0	11.8	7.8**	Medium
Iris	38.6	36.1	-2.4	Medium
Azalea	9.4	5.7	-3.7	Medium
Poplar	1.6	0.6	-1.0	Low
Elm	29.5	23.3	-6.2	Low
Total	15.0	15.1	0.1	

Note. Caution should be used in interpreting data from Azalea and Poplar because the number of POS1 students at each of these schools is less than 10.
**$p < .01$.

Is there a relationship between LOI and the number of students who completed a POS2 program and the number of POS2 programs? As described earlier, data for the POS2 variables are from the SDE's CTE office and represent data on state-certified CTE programs and enrollment in those programs over the study period. Unlike for POS1 students, the number of completers is not based on specific cohorts but includes any student at a sample school that is considered by the state to be a concentrator, completer, or participant in a state-approved CTE program in a given school year. Students could be in any grade, but are most likely juniors and seniors during each school year.

Similar to the relationship between POS1 students and LOI, there was a slightly positive association between the level of policy implementation and the percent POS2 completers at sample schools. As shown in Figure VI.C.2, overall, as the level of policy implementation at a school increased, the percentage of POS2 completers also tended to increase. However, there were at least two schools that had either much lower or much higher percentages of completers than expected; Azalea had a much lower than expected percentage of POS2 students while Elm had a much higher than expected percentage of POS2 students. Finally, the two High LOI schools did experience an increase in percentage of POS2 students between the 2009 and 2011 school years, but the increase was only slight. Patterns at the Medium and Low implementation schools, however, were not consistent.
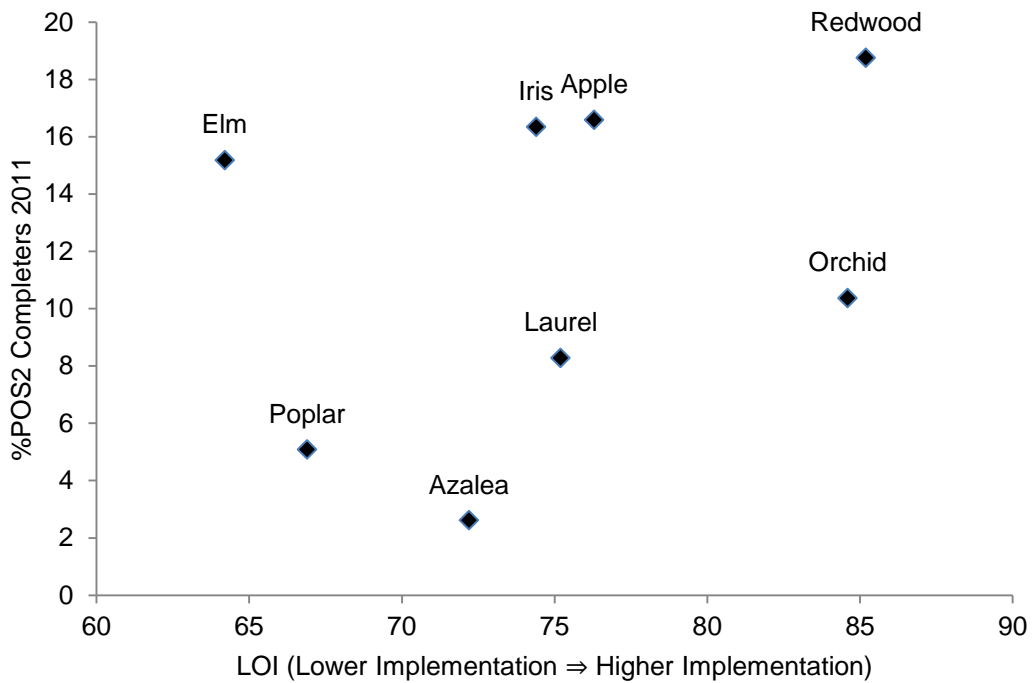
Figure VI.C.2. Percentages of POS2 completers in 2010-2011 by school and LOI

Table VI.C.2 shows the changes in percent of POS2 completers (comparing the 2008-2009 school year with the 2010-2011 school year) by implementation level. As noted, there does not seem to be a pattern in the relationship between level of implementation and changes in the percentage of students who completed POS2 programs. In general, at High implementation schools, there was a slight increase in the number of students who completed POS2 programs. For the four Medium LOI schools, two experienced a slight increase (5.0% and 2.2%); however, two experienced a decrease in the percentage of students completing POS2 programs. Similarly, for both the Low LOI schools, one experienced a slight decrease (2.4%) while the other experienced a slight increase (1.6%) in the percentage of POS2 completers.

Table VI.C.2

Changes in Percentage POS2 Students by Cohort, Ordered by EEDA Policy Implementation Level (LOI)

School	2009 Cohort (Percent)	2011 Cohort (Percent)	Percent Difference	EEDA Implementation (LOI)
Redwood	18.4	18.8	0.4	High
Orchid	10.2	10.4	0.2	High
Apple	14.7	16.6	2.2	Medium
Laurel	3.3	8.3	5.0	Medium
Iris	19.0	16.3	-2.7	Medium
Azalea	6.2	2.6	-3.6	Medium
Poplar	3.5	5.1	1.6	Low
Elm	17.5	15.2	-2.4	Low

To assist with comparisons in number of programs across schools, we calculated a ratio of a schools' total average enrollment between 2008-2009 and 2010-2011 to the average number of POS2 programs available at a school between those school years (POS2 program ratio). The lower the ratio of enrollment to POS2 programs at a school, the higher the number of programs relative to enrollment and thus, we assumed for the purposes of this study, the higher the implementation of CTE programs at that school.

There was a slightly negative association between LOI and POS2 program ratios, where, in general, the higher the level of LOI, the lower the number of students to POS2 programs, although there was a high degree of variation among Medium and Low policy implementation schools.

As shown in Figure VI.C.3, a slight negative association was found between level of policy implementation (LOI) and the POS2 program ratio. In general, the higher the level of LOI, the lower the number of students to POS2 programs. Where there are lower numbers of students per POS2 programs (lower POS2 program ratios), such as at Iris, we have considered this as an indication of a generally higher level of POS2 program implementation at the school, and the potential for better availability of POS2 programs for students. All of the schools generally follow this trend, although there was a high degree of variation among Medium and Low policy implementation schools. Laurel, in particular, did not follow the general pattern because it had the highest POS2 program ratio, indicating a low student to program ratio, even though it was a Medium policy implementation school.
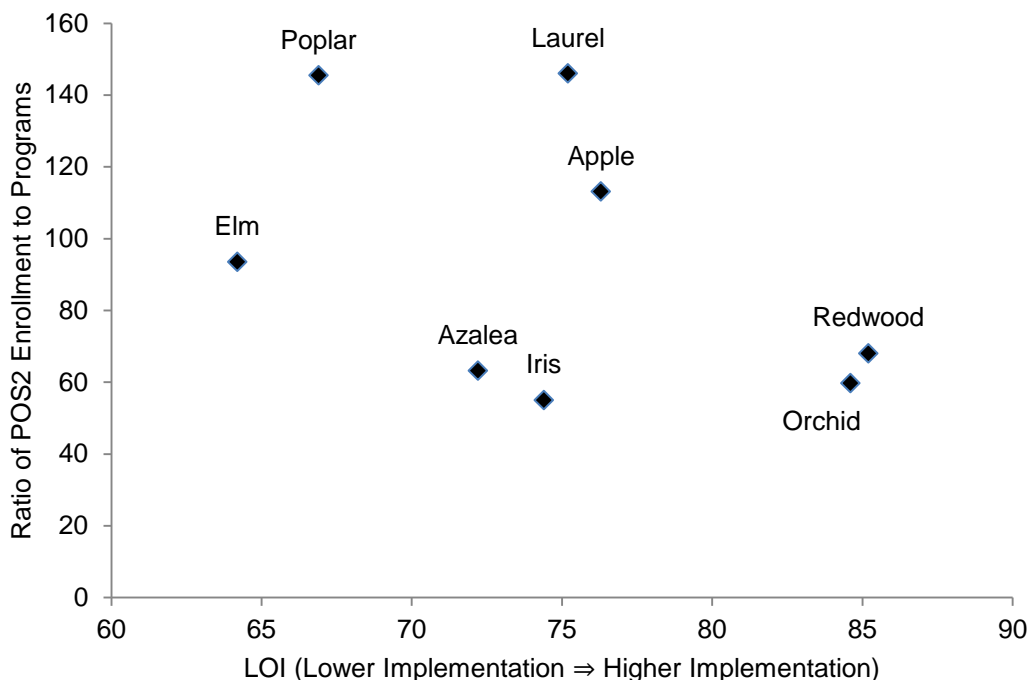
Figure VI.C.3. Ratios of school enrollment to number of POS2 programs, 2009-2011 averages, by school and LOI

Relationships between LOI, POV, and POS variables. Level of implementation does come into play more strongly, however, when controlling for poverty levels of schools as will be described in the section on the influence of poverty on POS (Section D). When schools are grouped into similar levels of community resources, LOI was related to POS2 program completion. Under similar economic circumstances, schools with higher LOI scores were more likely to have higher percentages of POS2 completers as well as higher POS2 program ratios (see Figure V.D.7 and Figure V.D.8).

Relationships between specific LOI facets and POS variables. Information gathered through our interviews about the development and maintenance of POS suggested that, even though the association between total LOI levels and POS variables was small, there might be stronger associations between some of the individual facets of policy implementation and POS variables. Given staff perspectives gleaned during interviews and focus groups, of particular interest were two of the facets.

One of these, Facet 2, centers around the integration of rigorous academic and career-focused curricula, requires that the high school curriculum be organized into career clusters and majors, emphasizes the development of Individual Graduation Plans for all students as well as the provision of opportunities for students to participate in work-based experiences. We expected that schools that had begun work on aspects of this facet before and/or during the early stages of EEDA, which would be reflected in a higher score on this facet in 2008-2009 when data was collected, would also have more POS2 programs in place and thus a lower average enrollment to POS2 program ratio by the end of the 2010-2011 school year.

As expected, there was evidence of a strong relationship between the score on this facet and a school's POS2 program ratio. As illustrated in Figure VI.C.4, the higher the ratio of enrollment to POS2 programs, the more likely that elements of this facet were in place. Schools where staff described early starts on cluster development and/or commitment to POS2 program development had higher scores on this facet. Redwood and Azalea have low ratios in large part due to partnerships with local career centers where POS2 programs were well established prior to EEDA. The staff at Iris not only has been committed to the development of the POS2 programs but also benefitted from the established programs of their partner community college that were available to their students. Orchid, as was discussed earlier, has had a long-term commitment to offering CTE programs on its campus and the foundation for clusters and majors, and thus POS2 programs, was already being put into place prior to EEDA.
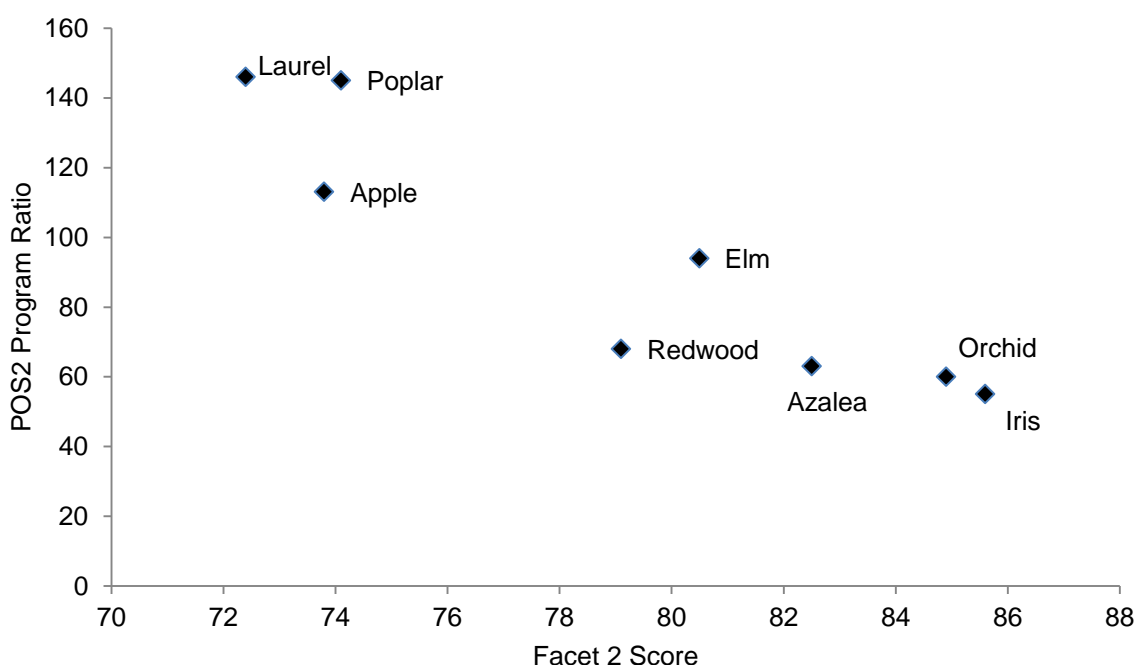
Figure VI.C.4. POS2 program ratios by scores on Facet 2. Facet 2: Career-focused curricula integration.

Laurel, the school described earlier that was designed around clusters and majors and thus would be expected to have a higher score on this facet and a lower enrollment to POS2 program ratio, appears to be the exception to this relationship. However, as was pointed out earlier in this section, Laurel's POS2 program ratio is misleading because the school was still relatively new when data were first collected and the numbers of programs drastically increased between 2008-2009 and 2010-2011, dropping the ratio at the school from 285:1 down to 99:1. This would put the school in the medium level of implementation on this facet and more in line with the pattern of other schools committed to implementation of elements of this facet.

A similar association was not found between the percentage of POS2 completers and scores on Facet 2.

The second facet that the team thought might be more highly associated with the ratio of enrollment to POS2 programs and also the percentage of POS2 completers was Facet 4. Facet 4 centers around the implementation of evidence-based high school reform, which for all of our sample high schools, meant the implementation of High Schools That Work (HSTW). Staff at schools like Orchid and Laurel mentioned that implementing HSTW gave them a big boost in implementing career-focused education and organizing curriculum around career clusters and majors. We expected there to be a relatively strong relationship between higher scores on this facet and higher percentages of POS2 completers and lower POS2 program ratios and lower POS2 program ratios. Figures VI.C.5 and VI.C.6 illustrate the patterns in these variables across schools.
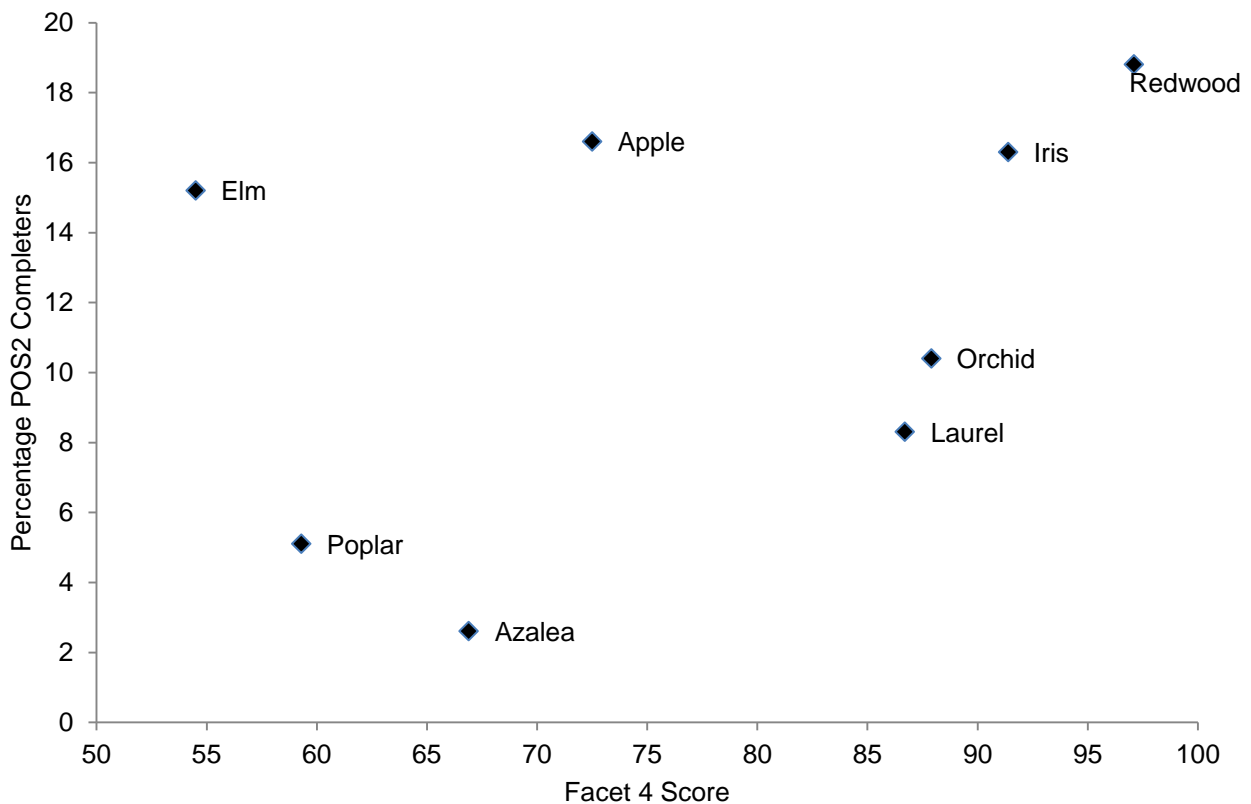
Figure VI.C.5. Percentage POS2 completers by scores on Facet 4. Facet 4: High school reform.
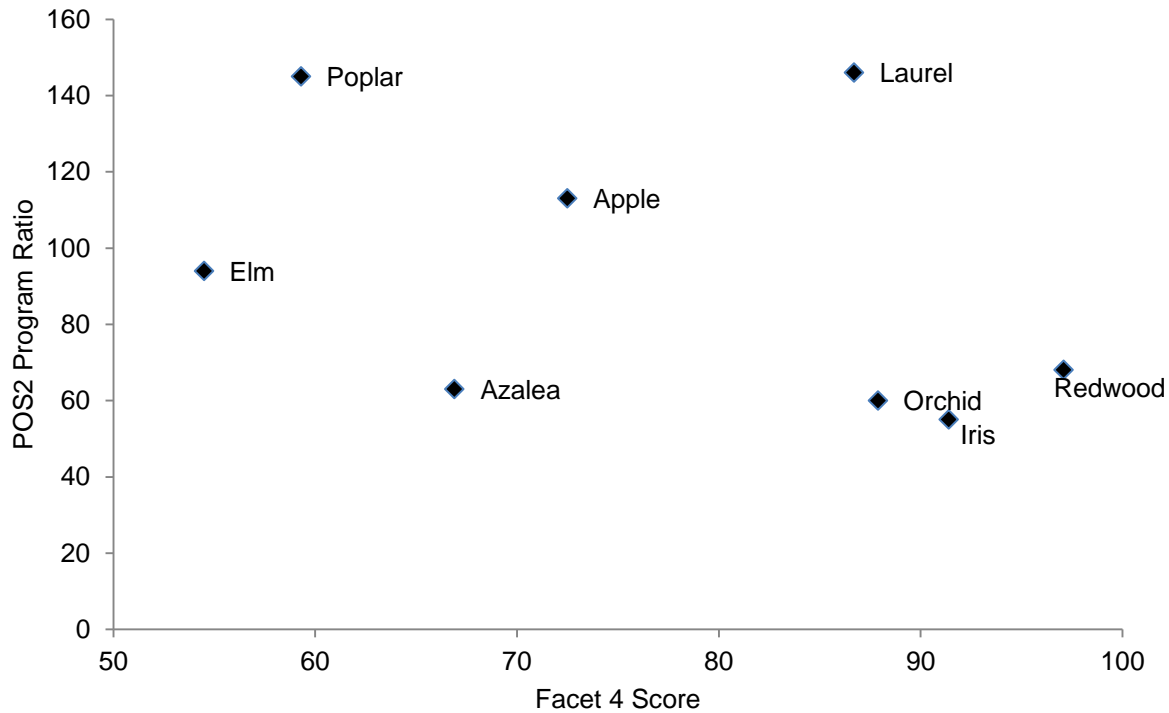
Figure VI.C.6. POS2 program ratios by scores on Facet 4. Facet 4: High school reform.

There was a small positive association found between the percentage of POS2 completers at a sample school and the school's scores on Facet 4, as outlined in Figure VI.C.5. This indicates that there was some relationship between the extent of implementation of HSTW at schools and the percentage of POS2 completers, where schools that were found to be farther along in implementation were more likely to have higher percentages of POS2 completers. However, this relationship was stronger among schools with higher levels of implementation of this facet while there was a lot of variation among schools with lower levels of implementation of this facet.

A similar, although small, association was also found between the ratio of student enrollment to POS2 programs at a school and the school's score on Facet 4, as shown in Figure VI.C.6. Similar to the pattern found for percentage of POS2 completers, the association was stronger for schools with higher levels of implementation of Facet 4 than for those with lower levels of implementation. Laurel, again, follows the pattern more closely than is indicated in the figure due to the use of the average ratio over the three years and not the ratio in the last year that data was collected.

Although there was a strong relationship between the level of implementation of HSTW and both POS2 programs ratio and percentage POS2 completers at Orchid, it was not as strong as might be expected. Staff told us that the structure for career pathways had already been put into place at the school prior to EEDA through implementation of High Schools That Work and that the passage of EEDA only strengthened this orientation. But since the real impetus for the increase in their efforts on career pathways and curriculum integration, as reported by staff

during interviews, came from the development of Smaller Learning Communities, it lessened the impact of this facet on the school's POS outcomes.

In addition to an association between Facets 2 and 4 with some of the POS variables, there was also a slight negative association between the increased role of guidance personnel in career planning (Facet 3) and the POS2 program ratios. The higher the school scored on the increased roles of counselors in career education at the school, the lower the ratio between enrollment and POS2 programs and thus the indication of better availability of POS2 programs to students at the school. But the relationship was relatively weak and strongest for those schools with the highest scores on this facet and less consistent for the other schools. No association was found between this facet and the percentage of POS2 completers.

Relationships between POV and POS1 and POS2. Schools with lower levels of community resources resulting in higher poverty (POV) scores consistently had the greatest proportion of POS1 students, while schools with higher levels of community resources (and lower POV scores) had fewer POS1 students. A similar pattern was found for POS2 program completers for the 2010-2011 school year. Schools with higher POV levels tended to have a higher percentage of POS2 completers than schools with lower POV levels. No clear connection, however, was found between the POV level and the number of POS2 programs at a school. Evidence was mixed as to an association between POV and ratios of school enrollment to POS2 programs (POS2 program ratios). The two schools with the lowest POV levels not only had smaller percentages of POS2 completers than other schools but also had much higher POS2 program ratios than other schools. The pattern among the Medium and High POV level schools was not as clear cut. The Medium POV schools tended to have similar POS2 program ratios but varied percentages of completers, while the High POV schools had exactly the opposite pattern. These trends in poverty and POS variables will be described in more detail in the next section.

D. Local Economic Resources and Their Influence on Career Pathways Policy and POS Implementation and Student Outcomes

The levels of policy implementation at the eight high school sample sites have been affected by a variety of variables, many related to the level and availability of resources from the district, surrounding community, and the state. Policy implementation was enhanced (or hindered) by the presence (or absence) of jobs and job shadowing opportunities in communities, resources available within school districts, changes to state funding for EEDA, changes in other areas of funding for educational services (based at least in part on the each local area's tax base), and myriad home and community variables linked to local poverty and the economic conditions of the geographic areas surrounding each school.

Research question two asks "What impact does the level of local economic resources have on the implementation of EEDA and the development and implementation of POS?" To explore the influences of school and community resources at the sample schools, the study team analyzed information gleaned from on-site interviews and focus groups conducted during the two site visits with guidance personnel, teachers, principals, and assistant principals; from student focus group interviews conducted during a third site visit to each school; from content analysis of school archival and web materials on available courses, majors, and career clusters, and on

career development and planning; from analysis of school responses to a statewide EEDA survey; and from information compiled from an SDE EEDA annual report. A local economic resources, community poverty (POV), index was constructed and calculated for each of the eight sample schools and used to analyze policy implementation and outcomes in the context of school and community/family economic resources.

When research question two was first added to the study plan, it was thought that the greater the poverty at the schools, in the communities where the schools are located, and among the students and families connected to the schools, the more barriers there would be to not only implementing a reform policy, but also in providing the relevant, timely and well-developed programs of study that students and communities might demand. The results of including measures of local economic resources and comparing them to the development of programs of study and the levels of policy implementation has produced some of the most clear and surprising relationships among school-level variables found in this study. While limited resources at schools and in communities do provide significant challenges for schools as we noted from site interviews, the relationship between community poverty and outcomes is not always that clear. The conclusion is not only that poverty is a barrier to policy implementation, but also that poverty can be a catalyst for communities to seek out real reform. It appears that poorer local economic conditions can provide motivation for schools to be especially committed to policies and programs that might help their students find pathways out of poverty and learn about career options beyond what might be available in their local communities.

Community Poverty Levels (POV) Across Sample Schools. As described in the Study Design section of the report, the eight sample schools were chosen to be diverse in community economic conditions. Ratings of community economic conditions for site selection were based on a school report card reported poverty index for 2007-2008 and Census of Population data from 2000. Since EEDA was passed in 2005 and the baseline data collection period for this study was 2008-2009, once updated school data and community economic data were available, the original POV figures were revised to capture changes in local economies that may have occurred between 2000 and 2009. Table VI.D.1 shows that once put into an index, the order of the rankings of the sample schools stayed close to what the original selection data showed. It should be noted, however, that since the poverty index figures are not absolute, but are relative to other schools within the WIAs considered for inclusion in the study, if one area prospers, the index may show more relative improvement in that area and a reduction in conditions in other areas since they are relatively indexed.

The school experiencing the most dramatic changes in local economic conditions was Laurel, which experienced an overall improvement in economic conditions over that time period. Laurel, though located in a rural area of the state, is fairly close to one of the larger cities in the state. Over the years, it may have benefited from that proximity. However, looking at community economic data for the community in which Laurel is located, the economy appears to have been quite volatile over the past several years, with wide fluctuations in both unemployment and per capita income. The community is fairly small and so changes in the economy such as a major industry moving in or out, would have a stronger impact per capita. A large industry employer fairly close to Laurel could also have had some impact. Whatever the cause, the community in which Laurel is located appears to have experienced some influx of

prosperity. Poplar, Laurel and Orchid are the schools in the study closest to (or located within) larger urban areas of the state. The urban areas of the state may have been able to capitalize on changes in economic opportunities better than the rural portions of the state and proximity to an urban area may have benefited the communities close by. One of our more urban sample schools, Orchid, was originally included as a high poverty cluster school. Orchid's site selection poverty index score was 9, and thus it was ranked as having the fourth most economically challenged community location in our study. After our adjustments for new school poverty indices and Census estimates of community poverty, Orchid switched places in poverty ranking with Redwood. Redwood, located in a smaller, more rural community, took on a relatively higher poverty ranking than Orchid between our 2000 and 2009 ratings.

Table VI.D.1

Original and Revised Community Poverty Indices per School

School	Original Site Selection Poverty Cluster: 2000	Original Community Poverty Index (Higher Indicates Greater Poverty) 2000	Revised Community Poverty Index (Higher Indicates Greater Poverty) 2009	Change in Index[a]
Poplar	Low-to-moderate	2	2	0.0%
Laurel	Low-to-moderate	4	2	50.0%
Azalea	Low-to-moderate	4	5	-25.0%
Redwood	Low-to-moderate	6	8	-33.3%
Orchid	High	9	7	22.2%
Elm	High	12	10	16.7%
Apple	High	12	11	8.3%
Iris	High	12	12	0.0%

[a]Positive numbers in the "Change in Index" column represent improvements in conditions relative to other schools in the areas of the state we considered for this study.

Overall Trends by POV. In addition to school-specific qualitative and quantitative data, anecdotal evidence of the effect of poverty on policy implementation was collected during site visits. One of the requirements of the EEDA is that every student, beginning in 8th grade, is to attend a yearly IGP meeting with a guidance counselor and a parent or guardian present. Guidance personnel at one of the schools with low levels of school and community resources noted that parents in lower income and rural communities had transportation problems or difficulty taking time off work to attend meetings. There were also reports from several schools that information on IGP meetings and the process was not consistently reaching all parents. Various factors can hinder the ability of schools to get information out to parents, including lack of home resources such as computers in lower income homes. On the other hand, during a site visit interview at one of the lower poverty (more affluent) schools, guidance personnel reported that many of their students' parents pushed dual credit and AP courses and college prep. For those parents, the IGP meetings might not be a priority. This information at this lower poverty

school was given in the context of why more students were not signing up for CTE classes. With students trying to take as many high level, college credit earning, core curriculum classes, it would be difficult to schedule in completion of CTE programs of study.

The study team reviewed some of the mandated activities of the policy, including the IGP meetings, and included questions in the *Student Engagement/POS Experiences Surveys* to investigate whether local poverty is related to the degree to which those activities were observed across the sample schools. The team looked at student-level data from the student surveys (Class of 2009 as seniors and the Class of 2011 as sophomores and as seniors) and also analyzed SLDS (Class of 2009 cohort and Class of 2011 cohort) data across levels of the school community poverty index. Below are some highlights from various data sources.

Career clusters, majors, career planning, and IGPs, by POV. Across the state, schools reported to the state that over 98% of all students at all grade levels (8th-12th grades) had IGPs in place for 2010-2011 (South Carolina Department of Education, 2011, S. Moore, personal communication). For our SLDS cohorts, we find that 100% of the students in the SLDS 2011 cohort across all schools had prepared an IGP at some point between 9th and 12th grades. Even some students in the SLDS 2009 cohort had IGPs, though the Class of 2009 would not have been required to have IGPs. Table VI.D.2 illustrates the percentage of students within the SLDS cohorts who had an IGP at some point between 9th and 12th grade.

Table VI.D.2

Percentages of Students in SLDS Cohorts Who Completed an IGP Sometime in High School, Ordered from Lower to Higher POV (Poplar and Laurel had equal POV)

	2009 Cohort (Percent)	2011 Cohort (Percent)	Percent Difference
Poplar	0.6	100.0	99.4
Laurel	39.8	100.0	60.2
Azalea	92.7	100.0	7.3
Redwood	0.0	100.0	100.0
Orchid	0.5	100.0	99.5
Elm	0.0	100.0	100.0
Apple	0.0	100.0	100.0
Iris	0.0	100.0	100.0
Total	14.2	100.0	85.8

On the on-site *Student Engagement/POS Experiences Surveys*, students were asked if they had put together an IGP plan. For the Class of 2011 as sophomores and seniors, the percentages of students responding "yes" to putting together an IGP or four-year plan were

higher at High poverty schools than at Moderate or Low poverty. The percentages of students at Moderate poverty schools across all three groups of students responding yes were also higher than those at Low poverty schools (Table VI.D.3).

Table VI.D.3

Student Survey Question: "Have you put Together a "Career Plan" or 4-Year 'Individual Graduation Plan (IGP),' that Outlines a Series of Activities and Courses That you Will Take Throughout High School?"

	Percentage of Respondents	Senior Class of 2009 (*N*=986) % (*N*)	Sophomore Class of 2011 (*N*=1388) % (*N*)	Senior Class of 2011 (*N*=905) % (*N*)
High Poverty (*N*=949)	Yes	52.1 (162)	76.7 (263)	78.6 (232)
	No	34.7 (108)	13.1 (45)	8.8 (26)
	Don't Know	13.2 (41)	10.2 (35)	12.5 (37)
	Total	100.0 (311)	100.00 (343)	100.0 (295)
Moderate Poverty (*N*=1222)	Yes	52.1 (221)	66.8 (275)	66.6 (257)
	No	30.7 (130)	17.7 (73)	17.4 (67)
	Don't Know	17.2 (73)	15.5 (64)	16.1 (62)
	Total	100.0 (424)	100.00 (412)	100.0 (386)
Low Poverty (*N*=1108)	Yes	49.4 (124)	56.9 (360)	60.3 (135)
	No	31.9 (80)	22.4 (142)	21.4 (48)
	Don't Know	18.7 (47)	20.7 (131)	18.3 (41)
	Total	100.0 (251)	100.0 (633)	100.0 (224)

Note. Does not include multiple responses, missing responses, or not applicable responses.

It should be noted that members of the Class of 2009 at all schools in South Carolina were not required to have IGPs. It is surprising that a majority of seniors in the Class of 2009 indicated on the *Student Engagement/POS Experiences Survey* that they had put together a career plan. Some schools across the state did have other types of career planning tools in place prior to EEDA and some actually implemented the EEDA policy for classes ahead of schedule. It is therefore possible that some of the Class of 2009 may have actually had EEDA IGPs, but it is also possible that some members of the Class of 2009 had other types of high school course planning tools and thus responded "yes" to that survey question.

An indication of how far along our sample schools were in getting their electronic IGP (eIGP) systems up and running may be found by looking at early district data, provided by SDE in spring 2008. According to 2008 data on schools' progress toward implementing the eIGP system, three of our original four high poverty schools are in districts that were a little over half as far along on a scale of 0-8 as districts in which three of the four Low/Moderate poverty schools are located. The anomalies, in terms of levels of poverty and eIGP progress, are Iris and Azalea, as shown in Table VI.D.4. The district in which Iris is located was farther along toward

eIGP implementation than districts where the other High poverty schools in our sample are located. The district in which Azalea is located was not as far along as districts where the other Low to Moderate poverty schools are located.

Table VI.D.4

District Progress Toward Electronic IGP Implementation, 2008

School	School Poverty Cluster Determined Prior to Site Selection: High Poverty or Low to Moderate Poverty	Progress in District Toward eIGP Implementation as of 2008, Original Scale of 0-8, Grouped into 4 Levels
Apple	High	Mid Level - 3
Elm	High	Mid Level - 3
Orchid	High	Mid Level - 3
Iris	High	Mid Level - 4
Azalea	Low-to-moderate	Low Level - 2
Laurel	Low-to-moderate	Mid Level - 4
Poplar	Low-to-moderate	Mid Level - 4
Redwood	Low-to-moderate	Upper Level - 4

Note. Personal communication with State Department of Education. Progress by districts statewide was provided on a scale of 0-8. Schools were not identified. Levels were determined by the study team based on status information provided. Statewide, 6% of the 86 reporting districts were at Level 1 (had not begun/little work on getting eIGP system - lack of equipment and/or training); 10% were at Level 2 (schools generally connected to the system - some equipment, software and data processing in place, some training); 27% were at Level 3 (schools testing the system – using data and testing entry/transmission, etc.); and 50% were at Level 4 (schools near full production and use of eIGP system, e.g. curriculum converted to production, security in production, or using system to create student eIGPs).

The *Student Engagement/POS Experiences Survey* included two questions on the selection of career clusters and selection of high school majors within the career clusters. The EEDA policy requires students to select, by the end of the 8th grade, a career cluster in which to focus, and by the 10th grade, a high school major within that cluster. Students may change clusters and majors at any time. Cluster and major selections are recorded on the student IGPs. Tables VI.D.5 and VI.D.6 present information on students' self-reports of selection of clusters and majors, from the student surveys of Class of 2009 as seniors, Class of 2011 as sophomores, and Class of 2011 as seniors, by level of POV. It's not surprising that the percentages of "yes" answers across both of these questions and across all three levels of POV are higher for the sophomores. The survey was administered just after the students' sophomore school year. Most of them, therefore, would have just completed their 10th grade IGPs, in which selection of a major would have been required. What is interesting that for both questions ("Have you selected a career cluster?" and "Have you selected a major?"), the greatest percentages of "yes" answers were from the sophomores and seniors (Class of 2011) at the high poverty schools. This finding could indicate higher implementation of this portion of the policy at high poverty schools, or it could indicate that the students in the high poverty schools are more likely to recall selecting a cluster and major.

Table VI.D.5

Student Survey Question: "Have you Selected a Career Cluster to Plan for?"

	Percentage of Respondents	Senior Class of 2009 (*N*=1020) % (*N*)	Sophomore Class of 2011 (*N*=1442) % (*N*)	Senior Class of 2011 (*N*=929) % (*N*)
High Poverty (*N*=980)	Yes	84.8 (278)	89.3 (317)	88.2 (262)
	No	11.3 (37)	6.2 (22)	6.1 (18)
	Don't Know	4.00 (13)	4.5 (16)	5.7 (17)
	Total	100.0 (328)	100.0 (355)	100.0 (297)
Moderate Poverty (*N*=1255)	Yes	78.5 (339)	86.7 (365)	84.8 (341)
	No	12.3 (53)	6.4 (27)	7.5 (30)
	Don't Know	9.3 (40)	6.9 (29)	7.7 (31)
	Total	100.0 (432)	100.0 (421)	100.0 (402)
Low Poverty (*N*=1156)	Yes	81.5 (212)	82.0 (546)	80.9 (186)
	No	6.9 (18)	6.0 (40)	10.0 (23)
	Don't Know	11.5 (30)	12.0 (80)	9.1 (21)
	Total	100.0 (260)	100.0 (666)	100.0 (230)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Table VI.D.6

Student Survey Question: "Have you Selected a High School Major Within That Career Cluster?"

	Percentage of Respondents	Senior Class of 2009 (*N*=994) % (*N*)	Sophomore Class of 2011 (*N*=1409) % (*N*)	Senior Class of 2011 (*N*=898) % (*N*)
High Poverty (*N*=947)	Yes	54.9 (173)	69.7 (241)	68.9 (197)
	No	28.3 (89)	14.2 (49)	16.4 (47)
	Don't Know	16.8 (53)	16.2 (56)	14.7 (42)
	Total	100.0 (315)	100.0 (346)	100.0 (286)
Moderate Poverty (*N*=1225)	Yes	46.8 (199)	61.3 (252)	51.7 (201)
	No	31.3 (133)	16.6 (68)	23.1 (90)
	Don't Know	21.9 (93)	22.1 (91)	25.2 (98)
	Total	100.0 (425)	100.0 (411)	100.0 (389)
Low Poverty (*N*=1129)	Yes	52.8 (134)	60.4 (394)	58.7 (131)
	No	22.4 (57)	15.5 (101)	19.7 (44)
	Don't Know	24.8 (63)	24.1 (157)	21.5 (48)
	Total	100.0 (254)	100.0 (652)	100.0 (223)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Review of SLDS data shows that health sciences is the most popular cluster listed on student IGPs for the SLDS 2011 cohort (Class of 2011 students who were at one of our sample schools each of three years 10th, 11th, and 12th grade). Science, engineering, and mathematics (STEM) and arts, audio video technology and communications follow health sciences in popularity for that cohort. Figure VI.D.1 illustrates these findings. Note that the data illustrated in Figure VI.D.1 are from the 10th grade IGPs for our defined 2011 SLDS cohort.
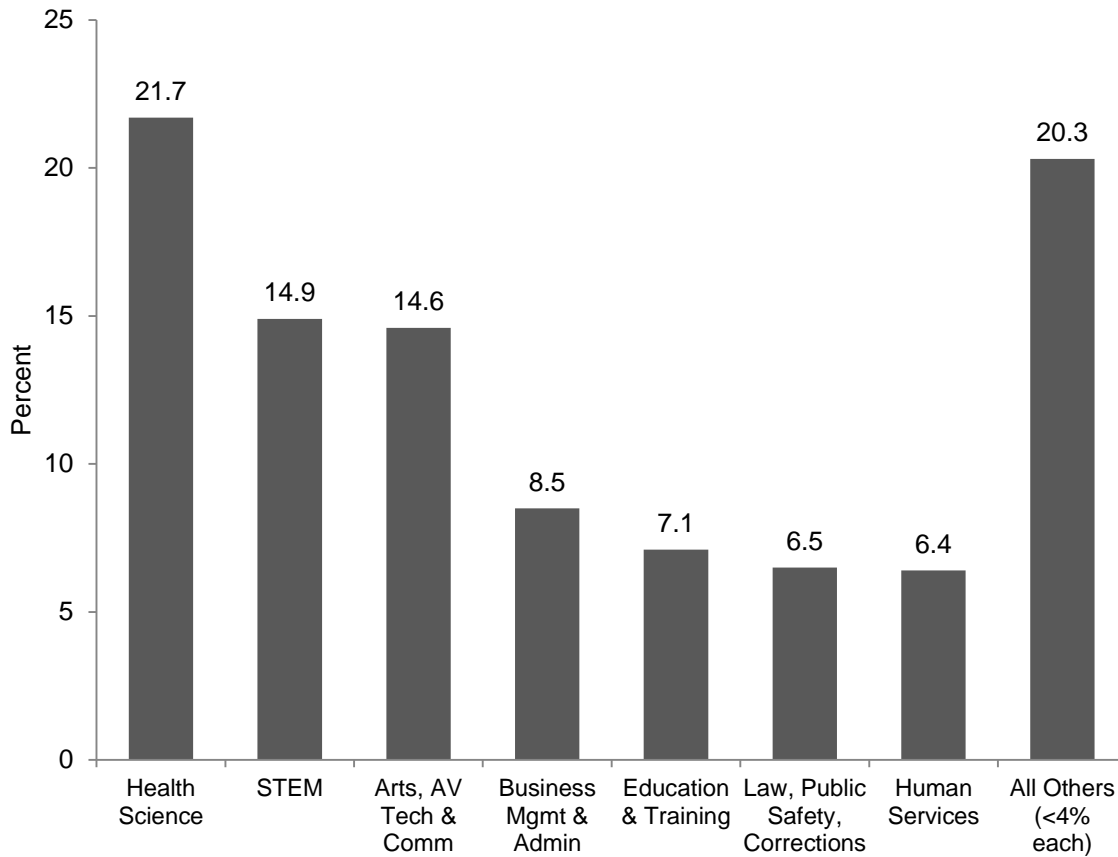
Figure VI.D.1. IGP major clusters chosen in 10th grade by SLDS 2011 cohort

Table VI.D.7 presents the top IGP career clusters by poverty level and implementation level outside of health sciences. Health sciences is among the top two most popular areas for each of the eight schools, regardless of LOI level or POV level, with 12 to 27% of students across schools choosing a major in the health sciences cluster for their 10th grade IGPs. STEM was popular at the Medium and Low poverty schools, but not so much at the High poverty schools. Arts, audio-video technology & communications and business, management & administration were popular across schools of all poverty and implementation levels (similar to health sciences).

Table VI.D.7

Top IGP Career Clusters (Excluding Health Sciences): 10th Grade IGPs of 2011 SLDS Cohort

POV Level	EEDA Policy Implementation (LOI) Level		
	Low (60.0-69.9)	Medium (70.0-79.9)	High (80.0-89.9)
High (9-12)	Arts, AV Tech & Comm; Business, Mgmt & Admin	Arts, AV Tech & Comm; Human Services; Education & Training	
Medium (5-8)		Arts, AV Tech & Comm; Education & Training; Architec & Construction	STEM; Human Services; Education & Training
Low (0-4)	STEM; Business, Mgmt & Admin	STEM; Arts, AV Tech & Comm	

IGP data from the SLDS 2011 cohort, show that as of 10th grade, about one-third of the 2011 cohort planned to complete their selected majors. About 40% indicated that as of 10th grade, they were just declaring a major, without an intention to complete the major at that point. Less than one-third of the IGPs had missing data on intentions to complete a particular major as of 10th grade.

IGP intentions do not appear to be clearly related to POV (Table VI.D.8). Two schools in the most disadvantaged communities (POV indices of 9 to 12) had some relatively high percentages of students planning to complete majors (73.1% and 95.5%), but one did not (33.3%). The school with the most intended completers as of 10th grade (Apple, 95.5%) was on the high end of the poverty scale (POV index = 11). Apple also had the second highest percentage of POS1 students (33%). However, the school with the highest percentage of POS1 students (Iris, 36%) and the highest POV (POV = 12) was the school with 33.3% of 10th graders intending to complete their career majors in high school. This could be an indication that intentions were highly related to actual completion at this school or it could indicate lower expectations of completion or there could be some other explanation. One of the Low POV schools (Poplar, POV = 2) only had 5.4% of their 10th graders planning to complete their high school majors, while the other Low POV school (Laurel, POV = 2) had 47% of their students planning to complete their majors.

It should be noted that completion of majors is not a requirement. Some schools may encourage completion of majors through special recognitions or certificates of completion at graduation. The study group heard about this in one of the pilot interview schools, but we did not find that this was highlighted as a practice at any of our sample schools. (This, however, was not specifically investigated.) As covered in Section VI.C, the significance of data related to intentions to complete in regards to POS completion is that SLDS data showed that Cohort 2011

students who stated that they planned to complete their chosen major were almost twice as likely to complete a logical 4-course CTE progression, and be considered POS1 completers for this study, than students who reported that their major was "Declaration Only" (significant at the $p <$ 0.001 level). However, 81% of intended major completers in the cohort did not complete a POS1.

Table VI.D.8

Percentages of 10th Grade IGPs of SLDS 2011 Cohort Indicating Intentions to Complete Majors

	LOI		
POV Level	Low (60.0-69.9)	Medium (70.0-79.9)	High (80,0-89.9)
High (9-12)	73.1% (Elm)	95.5%, 33.3% (Apple, Iris)	
Medium (5-8)		91.4% (Azalea)	41.7%, 20.0% (Orchid, Redwood)
Low (0-4)	5.4% (Poplar)	47.0% (Laurel)	

The EEDA policy does not require, encourage, or discourage *completion* of high school majors, and allows students to switch majors and clusters declared on their IGPs at any time during high school. At least a couple of high school seniors mentioned during focus group interviews that they thought it was better to change majors in high school than for that to happen at college. One student talked about how she had been in one career area, but found out that it wasn't what she thought it would be and thus switched into something she likes much better. Analyzing SLDS data for the 2011 cohort, we found that the percentage of students who switched IGP career clusters between 10th grade and 12th grade varied across high schools from 21% at Iris High to 55% at Elm High. Both Iris and Elm fall on the high side of the community poverty scale (Figure VI.D.2).
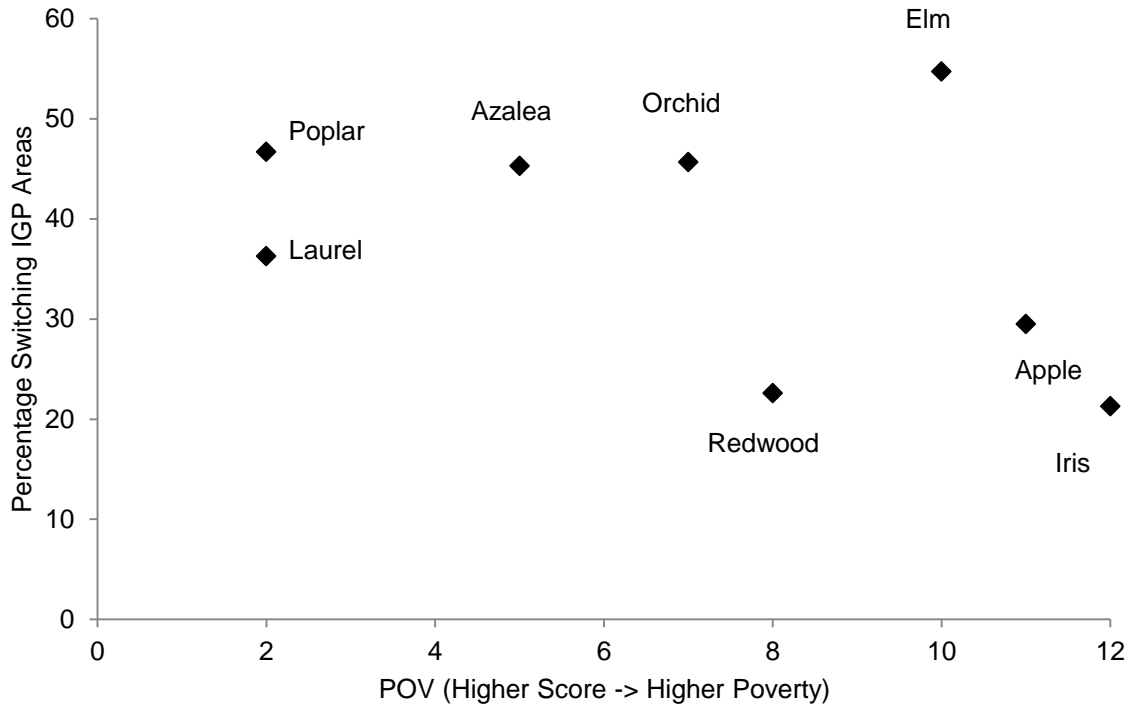
Figure VI.D.2. Percentages of SLDS cohort 2011 students at sample schools whose IGPs indicate a change in career cluster between 10th grade IGP and 12th grade IGP, by POV

There could be any number of reasons why a student would switch clusters between 10th grade and 12th grade. More switching between clusters may be related to being in a community with more employment options. Perhaps students recognize more variety in career paths open to them in communities where more people are working in more varieties of jobs. As mentioned earlier, both Poplar and Orchid are located fairly close to one of the larger cities in the state. Laurel and Elm are also fairly close to larger cities as is Azalea. Redwood, Apple and Iris are not as close to more populated areas of the state. Switching clusters could also show more emphasis on exploration of careers. However, switching clusters could show lack of clarity in options or lack of adequate guidance/direction. Not switching clusters during high school could indicate an increased sophistication toward career options during the course of high school in the more disadvantaged or more rural areas, whether due to the IGP process or something else. Or it could indicate less variety in options apparent to students in these geographical areas. Both switching and not switching could be related to a lack of available courses. Switching could be related to poor access to courses in certain clusters; a student in a higher grade level may find that he/she has taken all the courses desired or available in a certain cluster and then change to another for the course options or there could be other reasons.

Student focus group data could provide some insight into how the IGP is used in ways perhaps not captured when only looking at career plans. Reviewing student focus group transcripts from Apple, one of the more remotely located schools, there are indications from students that the IGP provides more than just a career path for the students. At this school, in

particular, other things were mentioned. One student at Apple said "It [the IGP process] caused me to sit with my mom and counselor to plan." Another Apple student said "It [the IGP process] influenced us to be serious with school…not playtime." Another said "The [IGP] process has helped me realize that I need math." Clearly, there is more going on during the IGP process than career planning. At Poplar, one of the schools with students who switched clusters the most, student focus group transcripts include statements about meeting each year with the counselor and the counselors' doors always being open. The emphasis from the student's point of view seemed to be more about trying things and discovering interests, rather than focusing on one particular career cluster, major, or POS throughout high school.

Career planning. Focusing again on the results of the *Student Engagement/POS Experiences Survey*, some data related to clusters, majors and IGPs did not vary significantly across school community poverty levels. For example, during the IGP meetings, students meet with guidance counselors to discuss careers and planning. Looking at the *Student Engagement/POS Experiences Survey* data, the number of times that seniors in the Class of 2011 from High, Moderate, and Low poverty schools talked with a guidance counselor when putting together a career plan or IGP did not significantly differ, with between 50% and 60% indicating they had spoken with their guidance counselor three or more times while putting together this plan. Also, for all levels of the poverty indicator score, a majority of seniors in the Class of 2011 indicated that a guidance counselor was the most helpful in developing a career plan (59.2% in High poverty schools, 61.6% in Moderate poverty schools, and 55.3% in Low poverty schools) and this did not vary significantly across POV.

Students were asked if they had discussed particular topics including courses to take, going to college, possible jobs or careers for adulthood, finding a job after high school, steps necessary to pursue a career, and applying for college or vocational/technical school with their guidance counselor between the start of the 9th grade and the time the survey was administered. Of these topics, seniors in the Class of 2011 at the three levels of POV differed in their responses of discussing going to college ($p = 0.001$), finding a job after high school ($p < 0.001$), steps necessary to pursue a career ($p < 0.001$), and applying for college or vocational/technical school ($p = 0.033$). Table VI.D.9. illustrates any differences based on community poverty index to these questions about what was discussed with guidance counselors on the *Student Engagement/POS Experiences Survey*. The table presents comparisons of responses from the Class of 2009 as seniors, the Class of 2011 as sophomores, and the Class of 2011 as seniors.

Table VI.D.9

Student Survey Question: "Between the Start of 9th Grade and now, Have You Talked to a School Guidance Counselor About the Following Topics?"

	Percentage of Respondents Responding "yes"	Senior Class of 2009 % (*N*)	Sophomore Class of 2011 % (*N*)	Senior Class of 2011 % (*N*)
High Poverty	a. What courses to take this school year (*N*=970)	89.0 (290)	88.9 (312)	94.5 (277)
	b. Going to college (*N*=969)	87.0 (281)	74.2 (261)	88.1 (259)
	c. Possible jobs or careers when you are an adult (*N*=963)	69.9 (225)	63.4 (222)	74.2 (216)
	d. Finding a job after high school (*N*=964)	55.4 (179)	42.7 (149)	54.8 (160)
	e. Steps necessary to pursue your career (*N*=964)	72.6 (236)	68.9 (239)	76.7 (224)
	f. Applying for college or vocational/technical school (*N*=967)	82.8 (269)	48.9 (171)	80.8 (236)
Moderate Poverty	a. What courses to take this school year (*N*=1248)	92.1 (395)	90.7 (381)	93.7 (374)
	b. Going to college (*N*=1246)	91.3 (390)	76.9 (323)	94.7 (378)
	c. Possible jobs or careers when you are an adult (*N*=1238)	80.7 (343)	70.1 (295)	78.3 (307)
	d. Finding a job after high school (*N*=1245)	59.4 (253)	39.2 (165)	53.3 (212)
	e. Steps necessary to pursue your career (*N*=1243)	77.5 (330)	66.8 (279)	78.5 (313)
	f. Applying for college or vocational/technical school (*N*=1244)	87.3 (372)	50.5 (212)	87.4 (348)
Low Poverty	a. What courses to take this school year (*N*=1124)	93.3 (238)	93.3 (600)	94.5 (213)
	b. Going to college (*N*=1121)	87.5 (223)	66.9 (428)	87.2 (197)
	c. Possible jobs or careers when you are an adult (*N*=1118)	58.3 (148)	59.9 (383)	70.7 (159)
	d. Finding a job after high school (*N*=1121)	32.6 (83)	29.0 (186)	31.1 (70)
	e. Steps necessary to pursue your career (*N*=1114)	55.1 (140)	58.1 (370)	60.1 (134)
	f. Applying for college or vocational/technical school (N=1119)	76.6 (196)	37.5 (239)	81.3 (183)

Note. Does not include multiple responses, missing responses, or not applicable responses.

Responses to questions involving talking to counselors about four of the topics listed in Table VI.D.9. (items b, d, e, and f) appear to vary depending on POV. Students in schools in mid-POV communities reported more that they had talked to guidance about going to college as well as applying to college and steps to pursue their careers. Students in Low POV communities reported much less talking to guidance about finding a job after high school, a good bit less talking to guidance about steps necessary to pursue their careers and somewhat less talking to guidance about going to college, compared to both the mid and high POV groups. Community poverty does not seem to be related to items a or c, students talking to guidance about what courses to take in high school or possible jobs or careers as an adult. However, it is interesting that seniors from the Class of 2009 in the Low POV (more affluent) communities had a much lower percentage who reported talking to guidance about possible jobs or careers as an adult, compared to the Moderate and High POV schools than the seniors from the Class of 2011 reported on that topic compared to their counterparts in Moderate and High poverty schools.

Appropriate and inappropriate guidance duties. From review of the guidance counselor surveys of duties, conducted in 2009 and 2012, and site visit interviews, there seems to be no strong relationship between changes in duties and appropriate/inappropriate duties based on community poverty levels. Inadequate school budgets and school staffing were reported as challenges to schools in policy implementation across all schools. Many counselors reported that they were still involved in certain inappropriate activities (as defined in guides to EEDA implementation) because there were insufficient resources to hire additional staff to cover mandated duties. When asked during interviews how they managed to juggle all of their counseling duties when both testing and IGP development demands were high, counselors reported that they found ways to manage their duties using teamwork, working longer hours, or working more days of the school year. Although funding is available to hire career specialists to assist with the new duties, counselors generally felt that funding was inadequate for implementing the new policy requirements. Staff in all of the schools visited, regardless of local economic conditions, seemed to be struggling to carry out the policy without being able to hire more staff.

The study team developed a series of questions to measure the changes in duties of counselors and career specialists since EEDA implementation. On the school counselors' survey, counselors were asked to select a response that best represented how their participation in the listed duties had or had not changed since the beginning of implementation of the EEDA at their school. The scale ranged from "5" (duties have increased greatly) to "1" (duties have decreased greatly). The duties listed were then grouped into two groups: appropriate duties and non-appropriate duties. A mean indicator of change was determined for "appropriate" and for "non-appropriate" duties. ("Not applicable" responses were not included in the means.) (See the Study Design section for more details on the survey administration and methods of analysis.)

The results were analyzed in the various contexts, including POV levels. The schools' POV indices were compared to the school counselors' mean reports of involvement with inappropriate duties in 2009 and 2012 (see Table VI.D.10). The higher the means are above 3, the more inappropriate duties increased. The lower the means are below 3, the less inappropriate duties increased. A mean of 3 indicates that counselors reported an average of no changes in inappropriate duties since EEDA implementation.

No significant themes emerged between the community poverty index and the reported changes among the guidance counselors' 2009 and 2012 involvement with inappropriate duties. There was no consistent match between schools with a higher poverty index and school counselors' increased or decreased involvement with the inappropriate duties.

Table VI.D.10

Comparison of LOI and POV to the 2009 and 2012 Mean Reports of School Counselors' Involvement in Inappropriate Duties

School	LOI	POV (Higher Indicates Greater Poverty)	2009 Mean Reports of Inappropriate Duties	2012 Mean Reports of Inappropriate Duties
Poplar	66.9	2	3.5	3.4
Laurel	75.2	2	3.4	3.0
Azalea	72.2	5	3.5	3.3
Orchid	84.6	7	4.5	3.3
Redwood	85.2	8	3.1	3.3
Elm	64.2	10	3.2	3.9
Apple	76.3	11	3.5	2.9
Iris	74.4	12	4.0	3.5
Average Across Schools			3.6	3.3

Note. The inappropriate duties included chairing individualized education program (IEP) meetings; chairing Section 504 of the Rehabilitation Act of 1974 meetings; coordinating special services referrals; administering standardized tests; registering and scheduling students for classes; developing the master class schedule; maintaining/completing educational records/reports; handling discipline of students; and substitute teaching and/or covering classes for teachers at your school.

To help explain guidance counselors' reporting of involvement in required duties, we examined the mean scores in 2009 and 2012 for involvement in required duties. We also compared the means of these responses to other school-level variables. Similar to the findings with the inappropriate duties, there were no trends revolving around POV to help explain differences in the 2009 and 2012 reports of guidance counselors' involvement in the required duties. A higher poverty index did not consistently coincide with more or less increased involvement in guidance counselors' required duties (see Table VI.D.11).

Table VI.D.11

Comparison of LOI and the Community Poverty Index to the 2009 and 2012 Mean Reports of School Counselors' Involvement in Required Duties

School	LOI	POV (Higher Indicates Greater Poverty)	2009 Mean Reports of Required Duties	2012 Mean Reports of Required Duties
Poplar	66.9	2	3.7	3.2
Laurel	75.2	2	3.5	3.2
Azalea	72.2	5	3.9	4.1
Orchid	84.6	7	4.0	3.5
Redwood	85.2	8	4.2	4.8
Elm	64.2	10	4.9	4.5
Apple	76.3	11	3.8	4.0
Iris	74.4	12	3.4	3.0
Average Across Schools			3.9	3.8

Note. The required duties included classroom guidance on career issues; curriculum development on career issues; counseling students on career issues; assisting students with the development of their career plans and IGPs; consulting with teachers and administrators about career issues; assisting with exceptional students on career issues; meeting with parents about career issues; coordinating special events/programs for the school regarding career issues; conducting professional development workshops in career development and guidance for teachers and guidance counselors; identifying and coordinating work based/extended learning opportunities for students.

Early site visits to sample schools revealed that the state policy's requirements regarding guidance had increased the number and types of career-focused activities at these high schools. Guidance personnel reported challenges to their schedules, particularly finding ways to meet with each student one-on-one for the IGP meetings. However, they also were enthusiastic about the opportunity to be able to discuss career planning in such depth with students. Some also appreciated the opportunity to get to know more about the various program offerings at their schools. This was noted, in particular, at one small school that utilized a career center off campus. The guidance personnel had not had the opportunity to really learn about the offerings of the career center prior to EEDA's requirement that students select majors/programs of study and meet with guidance to discuss them. Variation in this or other types of responses concerning guidance and career specialists' duties did not appear to be related to a school's poverty index score (POV).

But that is not to say that resources were not mentioned as a stumbling block to full implementation of the policy. Although the structure and content of the state policy has helped to streamline guidance roles and responsibilities, some schools reported that it will be difficult to implement EEDA fully without additional resources. Only some facets of the legislation received state funding, which made it difficult for most schools, particularly those in high-poverty communities, to fully implement some aspects of the policy. In some of the more

remotely located schools, which coincide with higher poverty areas of the state, offering real work-based learning experiences and setting up business partnerships are challenges. During site visit interviews, the state was credited with providing good virtual job shadowing and other general resources. And some of our sample schools are showing great ingenuity in finding such opportunities for their students.

Severe budget cuts across the state that occurred mid-way through our study put schools in the tenuous position of having to cut staff, while still complying with the 300:1 guidance ratio requirements of the law and providing each student the services of a career specialist. Even though some high schools shared the career specialist with a middle school feeder school, and counselors were obviously doing more duties than those they were supposedly limited to, it may have been hard to explain cuts in other key staff over guidance personnel.

POV and LOI. The concepts of LOI and POS have already been introduced and discussed. The study team plotted POV against LOI and POS variables to see if any relationships were obvious. A discussion of relationships between the level of local economic resources in each school's community (POV) and the levels of policy (LOI) will be presented first, and in the next section relationships between POV and POS measures at each school are discussed.

As shown in Figure VI.D.3, there appears to be no clear relationship between the level of community economic resources (POV) and the level of EEDA implementation (LOI) at the schools.
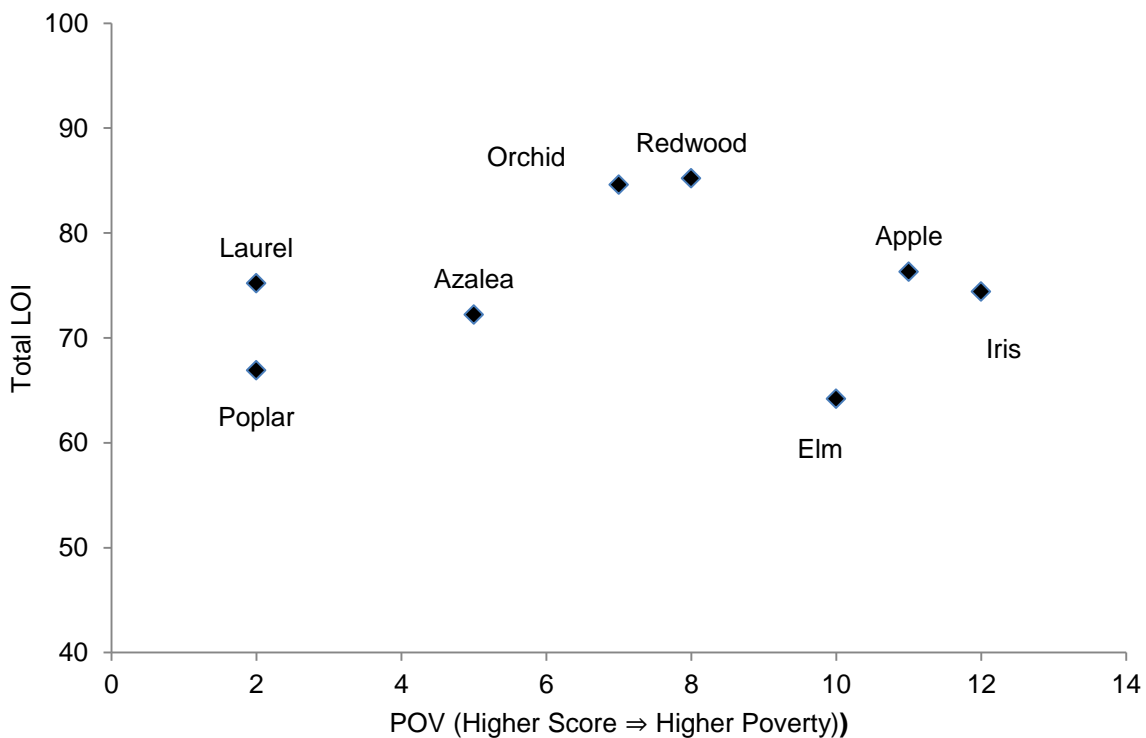
Figure VI.D.3. School community poverty index (POV) by school EEDA policy implementation level (LOI)

To investigate the association of specific facets of the EEDA with community economic conditions, we created six scatter plots, each with an LOI (level of policy implementation) facet score as a dependent variable and the POV variable (community economic index) as the independent variable. The results from these analyses were simply exploratory, to see if any trends surfaced. Again, no strong relationships appear between POV and the facets of LOI; however, there are a few interesting notes related to POV. Most of the slight relationships noted were positive (indicating higher poverty associated with higher implementation), which, although contrary to the expected relationship between the lack of resources and the ability to implement a reform policy, could indicate more perceived need for college and career-readiness reform in the higher poverty schools. There were, however, slightly negative relationships noted between POV and two facets (Facet 1 and Facet 5). That could indicate that for those facets, community poverty could have slightly more of a negative impact on the ability to implement those parts of the policy. Facet 5 was defined as the facilitation of education/business relationships and dissemination of information. The relationship between Facet 5 and POV was very slightly negative. Facet 1 states that all schools are required to identify students at risk of dropping out of school using the criteria defined by the State Board of Education, and to adopt one or more of the evidence-based strategies identified by the Board to assist identified students. Again the relationship between Facet 1 and POV was very slightly negative and not significant. However, if these two portions of the policy are more of a challenge in the higher poverty schools, it could indicate that these are areas that need addressing. Figure VI.D.4 shows the scatter plot of POV and LOI facet 1.
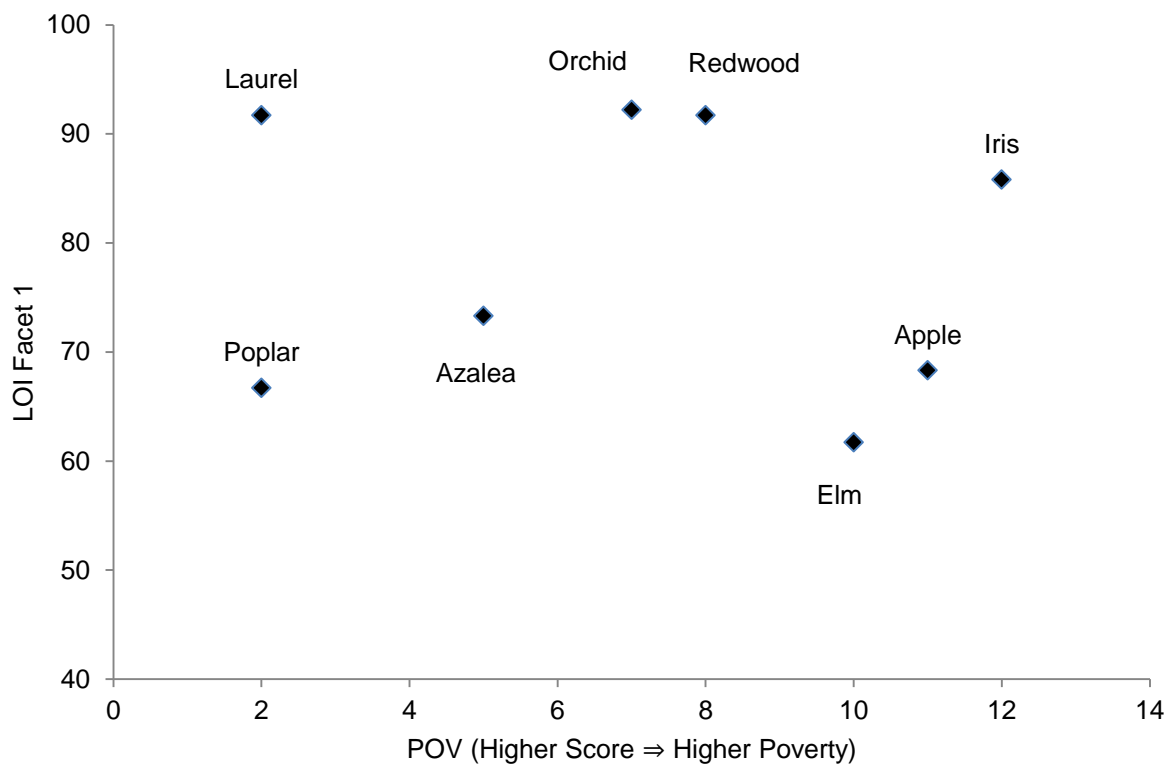
Figure VI.D.4. School community poverty index (POV) versus facet 1 of the EEDA policy implementation level (LOI). Facet 1: Assist high-risk students.

Facet 2 of LOI measures integration of rigorous academic and career-focused curricula, organized into career clusters and majors. High schools must implement at least three career clusters (which may be chosen from the 16 federally defined career clusters), organize curricula around these three clusters, and create majors within them. All students are required to take 17 core academic courses. Students should meet these requirements with courses that best fit their selected major/career cluster. School districts must provide work exploration guidance activities and career awareness programs that combine counseling on career options and experiential learning with academic planning to assist students throughout their high school years in fulfilling their IGPs. Every eighth grader will design an Individual Graduation Plan (IGP) that will serve as a guide for academic, career, and postgraduation transition planning. The IGP is to be developed with input from guidance personnel, parents, and students.

Facet 2 (see Figure VI.D.5) is the most strongly associated with POV, of the six facets, though there is still not a significant relationship. It was more strongly related to POV than total LOI was. As with total LOI, there was a slightly positive relationship noted between facet 2 and LOI, meaning that the higher the level of community poverty, the greater the implementation of this facet. The fact that there is a stronger relationship between facet 2 and POV, as compared to other facets and total LOI, could indicate that the elements of this facet do not require many resources, but that is not a likely explanation. Providing experiential learning and work exploration would require resources as would the other elements of facet 2. And while the guidance requirements are one part of the state policy actually funded by the state, these guidance elements are more covered in facet 3, i.e., not captured as much in facet 2. That leaves one more likely explanation to the fact that facet 2 is positively associated with community poverty and that is that the elements of facet 2 may be deemed by the schools and the districts themselves to be more needed in high poverty areas and thus resources (both monetary and non-monetary) are funneled into these activities.

POV and POS1, POS2 and POS3. Looking at student-level longitudinal data from the SLDS state data warehouse and computing the percentage of POS1 students (those completing 4 course sequences in a CTE program), the relationship between CTE completers and poverty also appears to be quite strong, though POV is not a significant predictor of the percentage of POS1 students. Figure VI.D.6 of POV and the percentage of POS1 students in the 2011 cohort (students who are 12th graders in 2010-2011 and who have been at one of the sample schools for three consecutive years – 10th, 11th, and 12th grades).[16] More disadvantaged schools have the greatest proportion of students completing POS1s, while less disadvantaged schools have fewer POS1 students.

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[16] See the Study Design section for more detailed definitions of all measures of POS students.
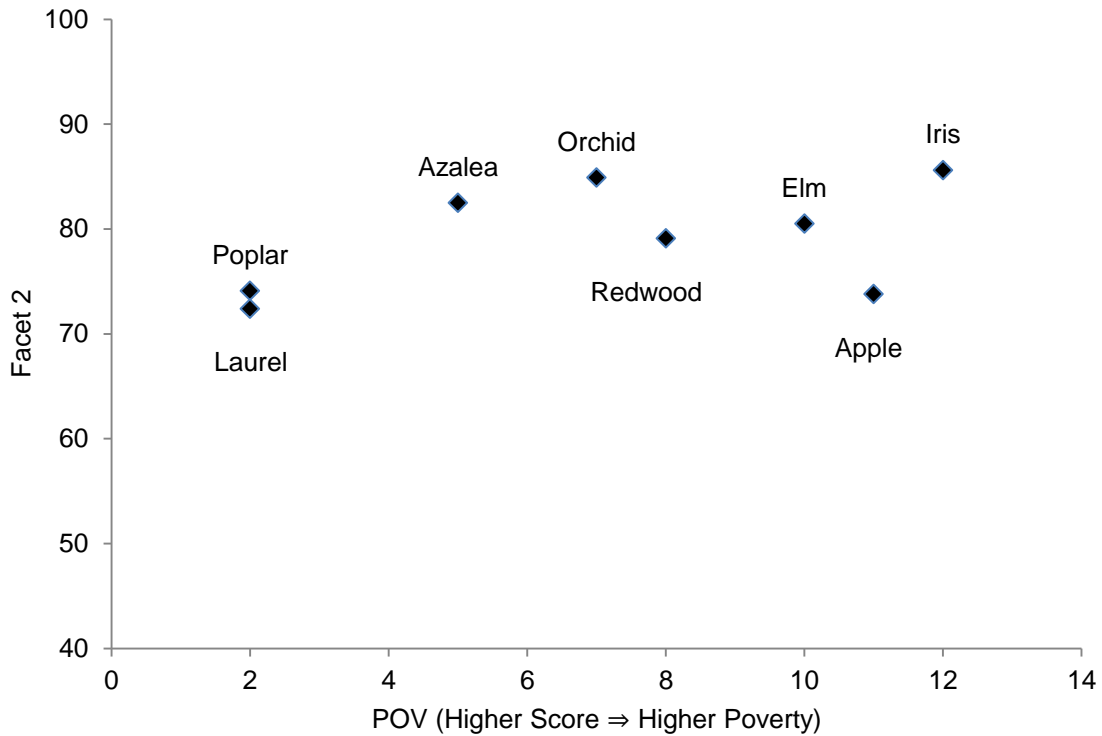
Figure VI.D.5. School community poverty index (POV) by facet 2 of the EEDA policy implementation level (LOI). Facet 2: Career-focused curricula integration.
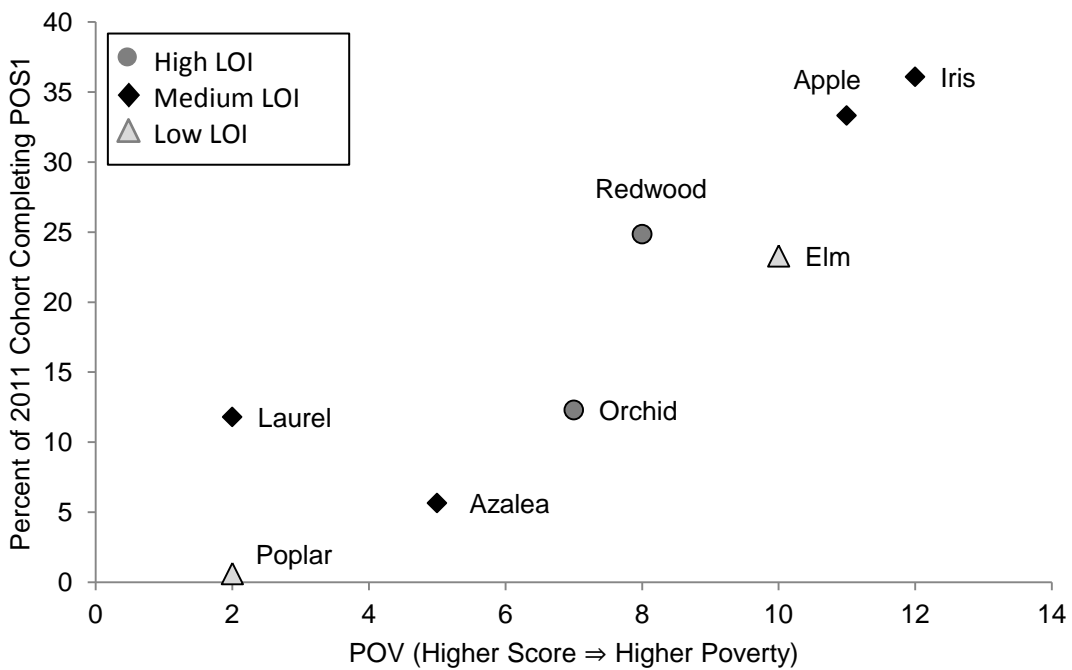
Figure VI.D.6. SLDS Cohort 2011 POS1 completion by community poverty index, with LOI noted.

Similarly, looking at data from the state CATE office on number of CTE completers by year (POS2 numbers),[17] there tends to be a positive trend between POV and the percentage of POS2 completers (number of completers as a percentage of 11th and 12th grade enrollment). The higher the community poverty index (a higher index indicates greater poverty), the greater the percentage of POS2 completers. By the 12th grade for the Class of 2011 (school year 2010-2011), students in this cohort would have had the opportunity to have been identified by the state CATE office as completers. A CTE completer is defined by the state as a secondary student with an assigned CIP (Classification of Instructional Programs) code who has earned all of the required units of a state-recognized CATE program. A state-recognized CATE program must be comprised of a sequence of career and technology education courses leading to a career goal and must include a minimum of four Carnegie units of credit. For our percentage of POS2 students figures, the number of CTE completers at each school for the school year 2010-2011 was divided by the 11th and 12th grade enrollment at each school to control for school size.
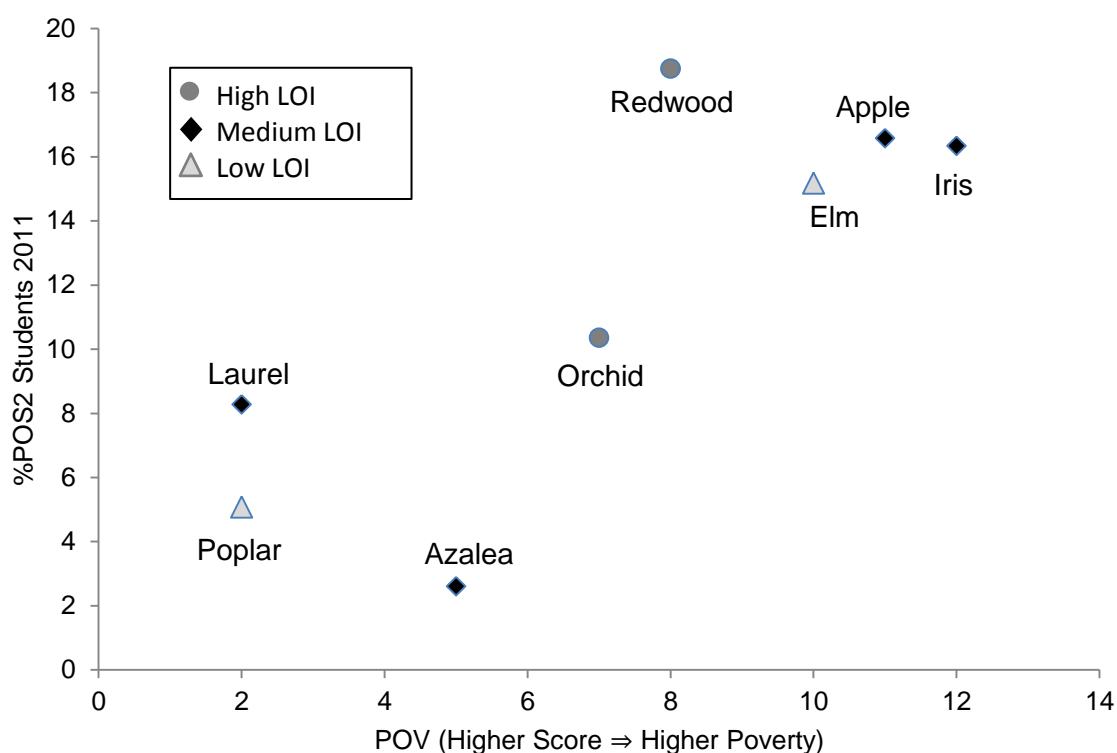
Figure VI.D.7. Percentage of POS2 completers by school, by POV, 2010-2011 school year, with LOI noted

In order to illustrate three variables, Figure VI.D.7 above not only illustrates the relationship between the percentages of POS2 completers and POV, but also includes markers indicating LOI scores of schools. The lack of obvious relationship between LOI and CTE completion is discussed in the first report section under Observations, which focuses on EEDA

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[17] See the Study Design section for more detailed definitions of all of the POS student measures.

LOI. It is interesting to note, however, that when POV levels are similar, such as for Laurel and Poplar; Azalea, Orchid and Redwood;[18] or Apple, Elm and Iris, LOI does seem to be related to CTE program completion.

When looking at POS2 from the number of programs point of view (Figure VI.D.8), the relationship to poverty is not as clear. In general, there is a negative relationship between the POS2 programs ratio and POV, i.e., the higher the POV, the lower the ratio of enrollment to programs, but this is very inconsistent across schools. Recall that a lower POS2 ratio indicates more programs per enrollment, so a Low POS2 programs ratio indicates more program options for students. Iris, Redwood, Orchid and Azalea are the schools with the lowest POS2 program ratios and thus the most program offerings per student. Poverty varies for these schools (POV = 12, 8, 7, and 5 respectively), although none of these schools is a Low POV school. It is, nevertheless, difficult to see a clear connection between POV and the number of POS2 programs at schools. As a note, LOI might be expected to be related to number of programs since program availability was a small part of LOI calculation. The two schools with the highest LOI (Redwood and Orchid) do indeed fall low in regards to the y-axis, or POS2 ratio axis, indicating that POS2 program offerings are greater compared to enrollment at these two schools. However Azalea and Iris are Medium LOI schools and their POS2 ratios are also low.
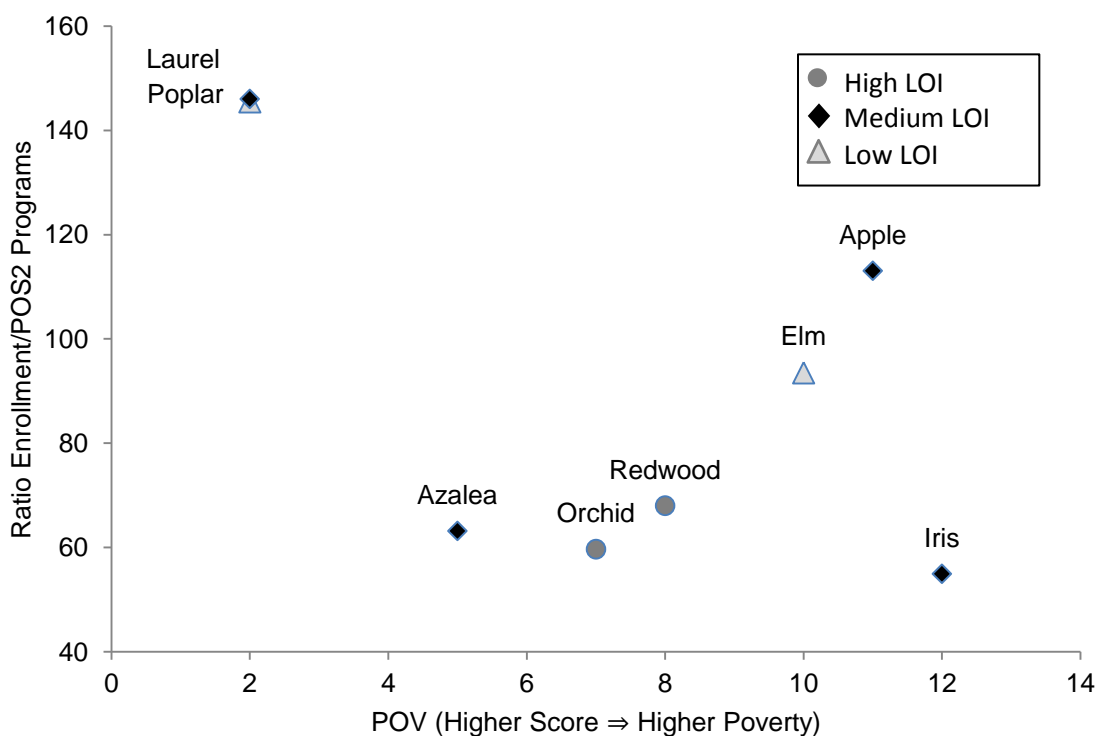
Figure VI.D.8. Ratio of school enrollment to POS2 programs, 2009-2011, by POV, with LOI noted

[18] Note that Redwood, though grouped in the same LOI level as Orchid, had a higher LOI score than Orchid and indeed had the highest LOI score of the eight sample schools.

As illustrated in Figure VI.D.9, the schools located in less economically disadvantaged communities (Laurel and Poplar) not only have a higher ratio of school enrollment to POS2 programs available, but also have smaller percentages of POS2 completers than other schools. It should be noted however that Laurel had the highest average yearly growth in number of POS2 programs at their school (nearly doubling their numbers of programs with concentrators each year between 2009 and 2011). The lower figures in the earlier years of the POS2 programs ratio average penalize Laurel in terms of *average* numbers of programs over the time period.
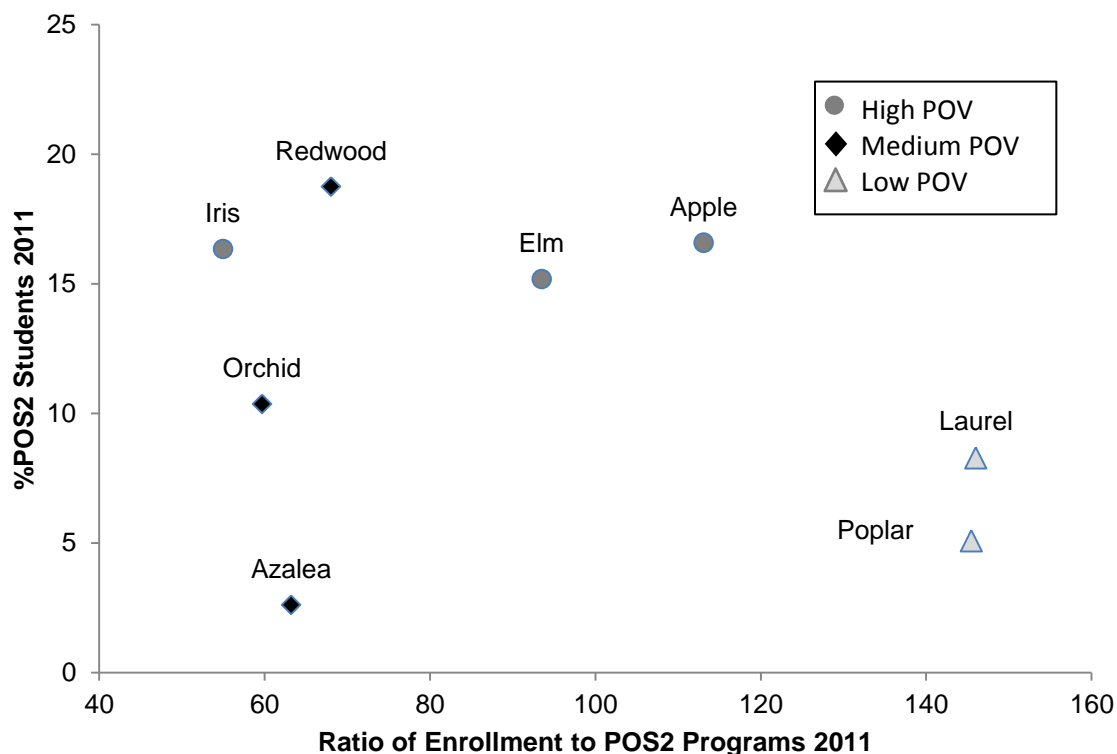
Figure VI.D.9. 2010-2011 percentage of POS2 completers by the ratio of average school enrollment to POS2 programs, with community poverty index (POV) noted

Again, Figure VI.D.9 illustrates that the highest poverty schools (Iris, Elm, and Apple--and Redwood would be 4th in order of POV) have similar percentages of POS2 completers, but the POS2 program offerings ratios vary, with Apple having the fewest programs related to school enrollment (120 students are enrolled at Apple High for each POS2 program offered) in that group. One explanation for this is that Apple High is the most remotely located school in our sample. It is extremely difficult for the students at Apple High to make arrangements to go off campus for CTE programs. The school is also small and so the capacity to offer programs is limited.

The Moderate-POV schools (Azalea and Orchid--and Redwood would be on the low end of Moderate) appear to offer a similar percentage of POS2 programs compared to their enrollment, but the percentage of POS2 completers varies. If we bring LOI into this equation, we note that Redwood's LOI is 85.2; Orchid's is 84.6 (the two highest policy implementers) and

Azalea's is 72.2. Thus, there could be some positive relationship between LOI and POS2 completers, when program offerings are controlled for. Interesting also is the fact that Redwood heavily utilizes a career center, while Orchid students have access to a career center, but few students use it. However, Azalea High also has a career center associated with it, but the percentages of POS2 students and programs ware lower for that school. The guidance director at Azalea indicated to us when we first visited the school that he was thrilled to be learning more about what was offered at the career center and to be able to present those pathways to students with more knowledge about career options and appropriate curriculum. Apparently, in previous years guidance counselors at that school had not had as much opportunity to learn about the curriculum at the career center and that may have been the case for students as well.

Using students' responses on The *Student Engagement/POS Experiences Survey* to a question about the number of CTE courses taken, students were categorized into two POS3 categories: those who reported having taken three or more CTE courses and those who reported having taken none or one to two CTE courses. Those taking three or more CTE courses were identified as POS3 students. Only the surveys of the seniors (Class of 2009 and Class of 2011) are relevant for this analysis since sophomores at most schools, and for the most part, would have not had a chance yet in high school to have taken three or more CTE courses. Looking at the POS3 percentages at schools, we see that POV is also a factor related to percentages of students who self-report that they have taken three or more CTE courses by last semester of their senior year. Figure VI.D.10 shows a slightly positive relationship between POV and the percentage of POS3 students in the Class of 2011 as seniors student survey cohort.
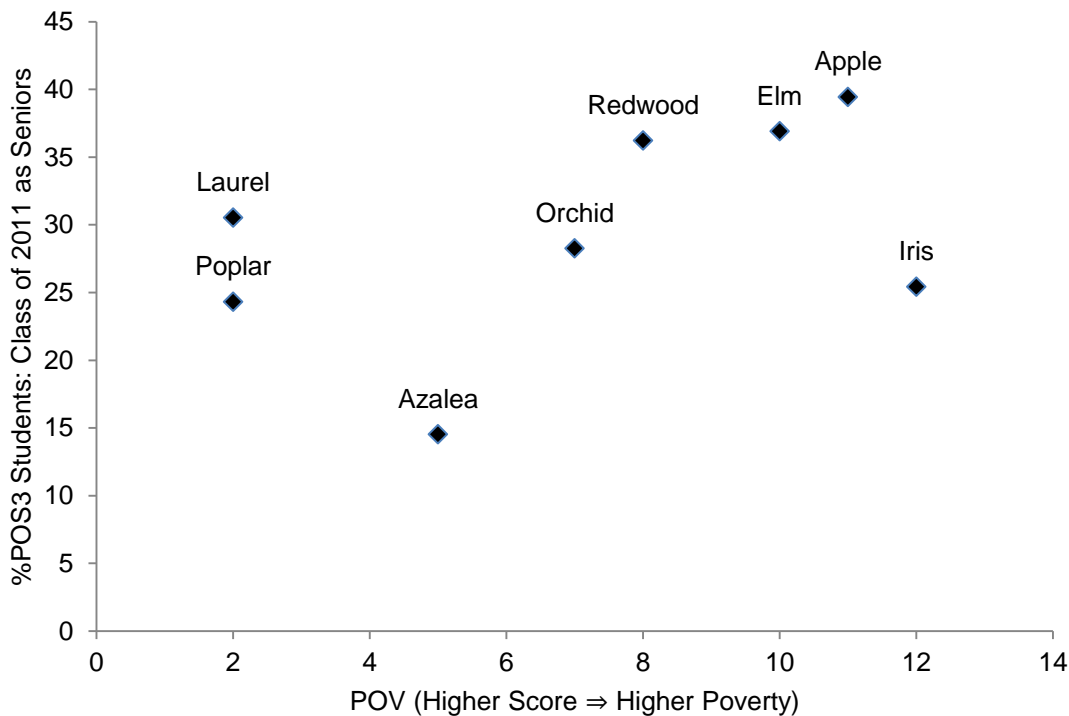
Figure VI.D.10. Percentages of students who self-reported that they had been in three or more vocational/career/technical courses (POS3 students)—seniors from the Class of 2011, by school, by POV.

Considering differences between the *Student Engagement/POS Experiences Survey* responses to the question about the number of vocational/career/technical courses taken, for the two senior cohorts (Class of 2009 and Class of 2011 as seniors), we can examine the relationship between POV and changes in students' CTE courses taking. As seen in Figure VI.D.11, the schools in the least disadvantaged communities (Poplar and Laurel) showed increases in the percentages of high school 12th graders who were surveyed that reported having taken three of more CTE classes (POS3 students). Including Iris as the other school with fairly large increases in percentages of POS3 students, those three schools had the lowest percentages in 2009, so perhaps the fact that they were lower to begin with accounts for some of the increase between the years. Also, note that both Azalea and Redwood have students who take classes off campus at career centers. The *Student Engagement/POS Experiences Survey* for either or both administrations could have undersampled or oversampled CTE students, depending on whether CTE students were more likely to be on the main campuses or away at the career centers when the surveys were given at these two schools. Also, another factor that could have affected the student cohorts is that although waiting to survey seniors was considered the best solution to give students enough time to have taken more CTE classes or completed POS, often 12th graders are not on campus as much during their final year of school. This, too, could have contributed to under or oversampling of certain students.
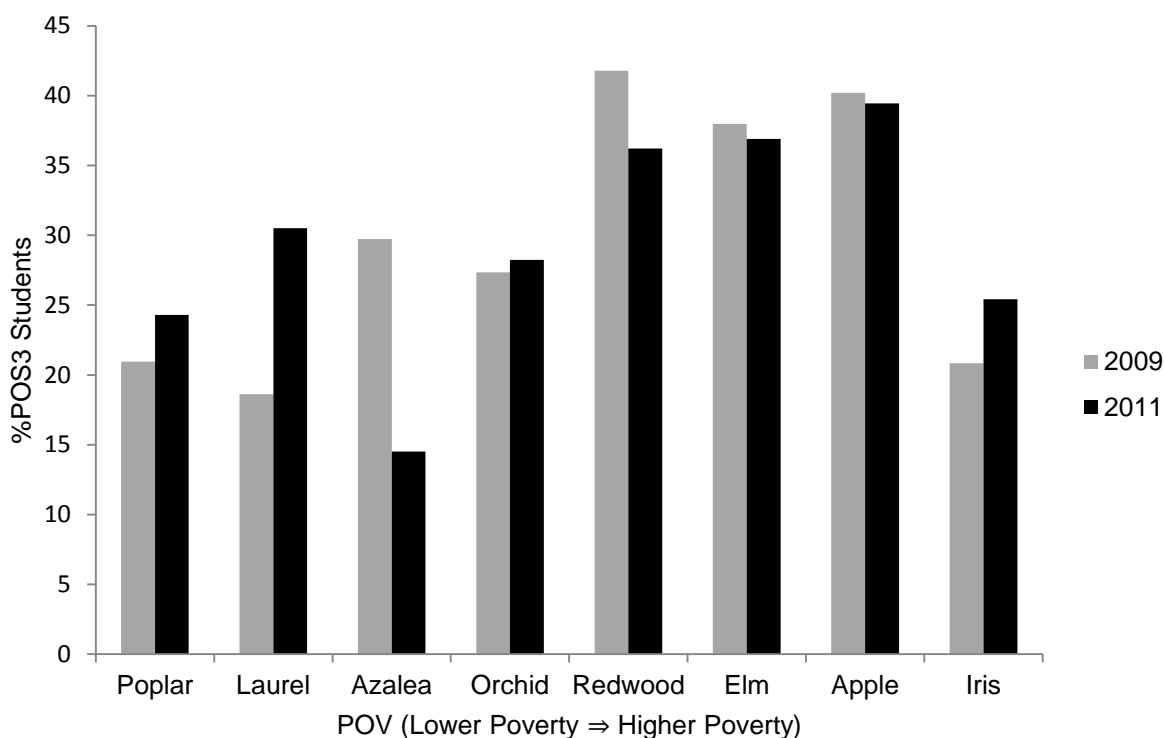
Figure VI.D.11. Percentages of students who self-reported that they had been in three or more vocational/career/technical courses (POS3 students)--classes of 2009 and 2011 seniors, by school. (Schools arranged on chart, left to right, less POV to higher POV)

The response rates for the student surveys of the classes of 2009 and 2011 as seniors are shown in Table VI.D.12. Redwood had a much lower response rate for 2009 compared to 2011.

Azalea's was more consistent between the two years, but since it is a smaller school, the drop from 76% in 2009 to 63% in 2011 is noteworthy. Both Poplar and Laurel had low response rates for both years; however, those schools do not have career centers so the students missed were possibly more mixed regarding CTE concentration.

Table VI.D.12.

Response Rates From the Student Engagement/POS Experiences Survey of the Classes of 2009 and 2011 as Seniors

School	Senior Class of 2009 Response Rate[a,b,c]	Senior Class of 2011 Response Rate[a,b,c]
Redwood	0.38	0.65
Azalea	0.76	0.63
Apple	1.07[d]	1.17[d]
Elm	0.72	0.72
Iris	0.62	0.79
Laurel	0.24	0.25
Orchid	0.99	0.72
Poplar	0.42	0.25
TOTAL	0.57	0.51

[a] The response rate was determined by a ratio of the number of surveys returned where respondents reported they were in the grade level appropriate for their class compared to the student headcount of enrollment in that class for the time period closest to survey administration (e.g., 135-day headcount for the spring survey administrations and 45-day headcount for the fall administration). [b] Sources of headcount data: 135-day headcount of 12th graders, March 2009, SC Department of Education; 45-day headcount of 11th graders, November 2009, SC Department of Education; 135 day headcount of 12th graders, March 2011, SC Department of Education. [c] Student surveys that appeared patterned were not included. [d] The response rates for Apple High senior classes was greater than one for both years because in 2009, 11 of those graduating were registered that year as 11th graders and were included in survey administration. Although these students were instructed to report their grade as 11th and not 12th, a number of them reported 12th as their grade level. And in 2011, 10% of respondents were 11th, 10th, and 9th graders.

       Other Student Outcomes and POV. Research question four asks "What impact do POS as defined in Perkins IV have on: Student high school outcomes and student postgraduation preparation and plans?" The SLDS data and the *Student Engagement/POS Experiences Survey* were analyzed in light of this question. Major findings related to research question four are presented in the POS section and summarized later in the report, but some observations related to POV are presented here.

       Community economic conditions seem to be significant when students were asked three questions regarding having a high school major and career cluster. The *Student Engagement/POS Experiences Survey* asked if having a high school major and career cluster

"made me more likely to want to come to school." Across all three groups of survey respondents (Class of 2009 as seniors, Class of 2011 as sophomores, and Class of 2009 as seniors), greater percentages of students in higher poverty schools agreed or strongly agreed with that statement and more students in lower poverty schools disagreed or strongly disagreed.

When asked if having a high school major and career cluster "made me less likely to want to drop out of school," more students at high poverty schools both strongly agreed and strongly disagreed with that statement (though more strongly agreed than strongly disagreed, and more agreed than disagreed). Greater percentages of students at moderate poverty schools agreed, but fewer strongly agreed. Greater percentages of students at Low poverty schools disagreed, but didn't indicate that they strongly disagreed.

Table VI.D.13.

Student Survey Question: "How Much Do you Agree or Disagree with the Following Statement: Having a High School Major and Career Cluster has Made me Less Likely to Want to Drop out of High School"

		Senior Class of 2009 (*N*=577) % (*N*)	Sophomore Class of 2011 (*N*=960) % (*N*)	Senior Class of 2011 (*N*=561) % (*N*)
	Percentage of respondents			
High Poverty (*N*=676)	Strongly Agree	29.3 (60)	33.0 (86)	26.2 (55)
	Agree	34.6 (71)	32.6 (85)	40.0 (84)
	Disagree	17.6 (36)	14.6 (38)	12.9 (27)
	Strongly Disagree	18.5 (38)	19.9 (52)	21.0 (44)
	Total	100.0 (205)	100.00 (261)	100.0 (210)
Moderate Poverty (*N*=708)	Strongly Agree	30.4 (66)	33.0 (90)	25.2 (55)
	Agree	39.2 (85)	40.7 (111)	47.7 (104)
	Disagree	14.3 (31)	14.7 (40)	8.3 (18)
	Strongly Disagree	16.1 (35)	11.7 (32)	18.8 (41)
	Total	100.0 (217)	100.0 (273)	100.0 (218)
Low Poverty (*N*=714)	Strongly Agree	15.5 (24)	25.1 (107)	21.1 (28)
	Agree	34.8 (54)	40.4 (172)	40.6 (54)
	Disagree	34.8 (54)	19.7 (84)	24.1 (32)
	Strongly Disagree	14.8 (23)	14.8 (63)	14.3 (19)
	Total	100.0 (155)	100.0 (426)	100.0 (133)

Note. Does not include multiple responses, missing responses, or not applicable responses.

When asked if having a high school major and career cluster "helped me get better grades," the higher the community poverty, the more students agreed or strongly agreed with that statement (Table VI.D.14).

Table VI.D.14.

Student Survey Question: "How Much Do you Agree or Disagree with the Following Statement: Having a High School Major and Career Cluster has Helped me get Better Grades"

	Percentage of respondents	Senior Class of 2009 (*N*=574) % (*N*)	Sophomore Class of 2011 (*N*=954) % (*N*)	Senior Class of 2011 (*N*=559) % (*N*)
High Poverty (*N*=675)	Strongly Agree	16.7 (34)	15.7 (41)	17.1 (36)
	Agree	60.8 (124)	60.5 (158)	58.1 (122)
	Disagree	17.7 (36)	21.1 (55)	19.5 (41)
	Strongly Disagree	4.9 (10)	2.7 (7)	5.2 (11)
	Total	100.0 (204)	100.0 (261)	100.0 (210)
Moderate Poverty (*N*=703)	Strongly Agree	21.5 (46)	18.5 (50)	12.8 (28)
	Agree	57.0 (122)	53.5 (145)	61.9 (135)
	Disagree	15.9 (34)	26.2 (71)	19.7 (43)
	Strongly Disagree	5.6 (12)	1.9 (5)	5.5 (12)
	Total	100.0 (214)	100.0 (271)	100.0 (218)
Low Poverty (*N*=709)	Strongly Agree	3.2 (5)	11.4 (48)	6.9 (9)
	Agree	42.3 (66)	48.8 (206)	52.7 (69)
	Disagree	39.7 (62)	32.7 (138)	29.0 (38)
	Strongly Disagree	14.7 (23)	7.1 (30)	11.5 (15)
	Total	100.0 (156)	100.0 (422)	100.0 (131)

Note. Does not include multiple responses, missing responses, or not applicable responses.

More specifically, for Class of 2011 survey respondents, significant differences in the level of agreement among seniors who reported having a high school major and career cluster in the Class of 2011 at High, Moderate, and Low poverty schools existed for four of the six statements regarding the impact of having a high school major or career cluster. Fewer seniors in the Class of 2011 reporting that they had a high school major and career cluster in the Low poverty schools agreed that they were more likely to want to come to school (54.9%) than seniors in the Moderate poverty schools (72.9%) and High poverty schools (73.0%; $p = 0.004$). Approximately 72.9% of seniors in the Class of 2011 from Moderate poverty schools agreed that they were less likely to want to drop out of school, compared to 66.2% from High Poverty schools and 61.7% from Low poverty schools ($p = 0.003$). A majority of seniors in the Class of 2011 from High, Moderate, and Low poverty schools agreed that having a high school major and career cluster helped them to get better grades (75.2%, 74.8%, and 59.5%, respectively; $p = 0.008$). Similar proportions of seniors in the Class of 2011 from High, Moderate, and Low Poverty schools agreed that having a high school major helped to make connections between

what is studied and the type of career students want (86.0%, 89.9%, and 80.3%, respectively) and made it more likely that they would take courses needed for the future (90.0%, 89.9%, 82.0%, respectively). Fewer seniors in the Class of 2011 from Low poverty schools (51.9%) agreed that having a high school major and career cluster made it more likely that their parents got involved in the selection of courses than High and Moderate poverty schools (71.4% and 64.7%, respectively; $p = 0.029$). Seniors in the Class of 2011 from High, Moderate, and Low poverty schools did not have significantly different agreement about teachers making the subject matter interesting and useful (71.2%, 69.6%, and 71.7%, respectively) or about teachers making connections between what they are teaching and how it applies in the real world (73.8%, 71.6%, and 70.1%, respectively).

With regard to the SLDS data, data on Cohort 2011 students who had completed four-course CTE sequences (Cohort 2011 POS1 students) were analyzed to see if these students were enrolling in and completing AP, IB or dual credit courses. POS1 students were less likely to take any AP/IB courses, and for students who do take at least one advanced academics course, POS1 students earn fewer than half as many credits in these courses as non-POS1 students.

Cohort 2011 POS1 students were, however, much more likely to take dual credit courses. Among students who took dual credit courses, the average number of credits earned were approximately the same for POS1 and non-POS1 students.

The eight sample schools provide a great deal of variation in AP/IB taking patterns among Cohort 2011 POS1 students, but not so much for non-POS1 students. For non-POS1 students, the schools are fairly similar, with 25 to 35 percent earning at least one credit in an AP or IB course. The exception is Iris High (the school in our sample with the highest community poverty level), where there are no students (POS1 or non-POS1) who are reported to have taken an AP or IB course. With regard to POS1 students, there is greater variation across schools. Four of the sample schools have no POS1 students who completed a credit in an AP or IB course, while three of the schools have more than 15% of POS1 students taking AP or IB courses. The percentage of POS1 students (middle column of data in Table VI.D.15) taking AP/IB courses does not appear to be related to poverty level, as the schools with more than 15% of POS1 students in AP/IB include one High-poverty school (Apple), one Low-poverty school (Laurel), and one school with Moderate poverty levels (Orchid). As a reminder, for POS1 calculations, the student cohorts were defined as students who had been at the school three consecutive years (10th, 11th, and 12th grades) at least ten days per year. POS1 students were identified as having earned 4 CTE credits in a logical sequence of at least 3 courses within a single career cluster.

Table VI.D.15

Percentage of Cohort 2011 POS1 and Non-POS1 Students Taking AP/IB, by School, ordered
from Less POV to More POV (POV is equal for Poplar and Laurel)

	Non-POS1 Students (Percent)	POS1 Students (Percent)	Percent Difference
Laurel	29.7	18.6	-11.1*
Poplar	35.4	0.0	-35.4**
Azalea	26.5	0.0	-26.5**
Orchid	25.0	23.3	-1.7
Redwood	26.3	4.5	-21.8**
Elm	28.0	0.0	-28.0**
Apple	32.7	15.4	-17.3*
Iris	NA	NA	NA
Total	27.6	8.6	-19.0**

Note. The numbers of POS1 students at Poplar and Azalea are fewer than 10 each.
* $p < 0.05$. ** $p < 0.01$.

Table VI.D.16 provides the school-level data for dual credit course taking by POS1 and non-POS1 students, again ordered from lowest POV to highest POV. At three of the eight schools, fewer than 1% of students enrolled in dual credit. Among the four schools with more substantial dual credit enrollment (Laurel, Redwood, Elm and Iris), there is significant variation; the percentage of students taking dual credit ranges from about 5% to 40%. Dual credit course-taking, however, does not appear to differ by poverty level or economic resources. The four schools with most dual credit course-taking have High, Moderate, and Low poverty levels. The three schools with less than 1% SLDS Cohort 2011 students taking dual credit are Low, Moderate and High POV schools.

Table VI.D.16.

Percentage of SLDS Cohort 2011 POS1 and Non-POS1 Students Taking Dual Credit, by School, ordered from Less POV to More POV (POV is equal for Poplar and Laurel)

	Non-POS1 Students (Percent)	POS1 Students (Percent)	Percent Difference
Laurel	8.9	11.6	2.8
Poplar	0.6	0.0	-0.6
Azalea	4.1	0.0	-4.1*
Orchid	0.5	0.0	-0.5
Redwood	39.8	40.9	1.1
Elm	17.8	5.4	-12.3*
Apple	0.0	0.0	0.0
Iris	11.2	25.0	13.8*
Total	8.9	16.0	7.1**

Note. The numbers of POS1 students at Poplar and Azalea are fewer than 10 each.
* $p < 0.05$. ** $p < 0.01$.

Students' perceptions of the relationship between having a major and career cluster in high school and parental involvement in the selection of courses seem to be correlated to some degree with community poverty conditions. Students were asked on the *Student Engagement/POS Experiences Survey* if having a high school major or career cluster "made it more likely that my parents got involved in my selection of courses." A greater percentage of students at higher poverty schools agreed or strongly agreed with that statement. Site visit interviews with counselors indicated that this might have been the case for some of their students. The schools in some of the most economically challenged areas were seeing more parental participation due in particular to IGP conferences. However, some did mention economic hardships for parents in attending meetings (transportation, taking off work, etc.).

Senior respondents to the Student Engagement/POS Experiences Survey, Class of 2011, from High and Moderate poverty schools had higher agreement with the statement that most of the information learned in school is useful in everyday life (69.1% and 56.5%, respectively) than in seniors in the Class of 2011 from Low poverty schools (46.1%; $p < 0.001$). Agreement to the statement that most of the information learned in school will be useful for college or further training among seniors in the Class of 2011 from High, Moderate, and Low poverty schools did

not significantly differ with a majority agreeing or strongly agreeing (85.7%, 81.8%, and 81.5%, respectively; $p = 0.460$). Seniors in the Class of 2011 from High poverty schools had higher agreement with the statement that most of the information learned in school will be useful for a career (78.0%) than in seniors in the Class of 2011 from Moderate and Low poverty schools (61.1% and 56.6%, respectively; $p < 0.001$). The distribution of responses from seniors in the Class of 2011 regarding the number of times they were late for school significantly differed, with fewer seniors from High and Moderate poverty schools indicating they had never been late for school (20.9% and 18.6%, respectively) than seniors in the Class of 2011 from Low poverty schools (27.5%; $p = 0.015$). The distribution of responses from seniors in the Class of 2011 regarding the number of times they cut or skipped classes also significantly differed, with more seniors from High poverty schools indicating they had never cut or skipped classes (64.2%) than seniors in the Class of 2011 from Moderate and Low poverty schools (55.3% and 46.9%, respectively; $p < 0.001$). Slightly more seniors in the Class of 2011 from High and Moderate poverty schools reported that they were never absent from school (10.5%) than seniors in the Class of 2011 from Low poverty schools (6.6%, respectively; $p = 0.053$). The distribution of responses from seniors in the Class of 2011 regarding the number of times they went to class without homework significantly differed, with fewer seniors from Low poverty schools indicating they never went to class without homework finished (14.0%) than seniors in the Class of 2011 from High and Moderate poverty schools (26.4% and 18.7%, respectively; $p < 0.001$). A majority of seniors in the Class of 2011 from High, Moderate, and Low poverty schools indicated they had gone to class without a pencil, paper, book, or other necessary supplies one or more times (55.9%, 58.8%, and 58.1%, respectively).

Several questions in the survey were geared toward discovering more details about student participation in activities to help them identify jobs or careers that may interest them. As outlined in Table VI.D.17, a majority of seniors in the Class of 2011 from High, Moderate, and Low poverty schools reported answering job- and career-related questions on a computer or filling out a questionnaire, researching different jobs and careers, researching different colleges, universities, or military branches, speaking with or visiting someone in a career that interests them, and being in a class where someone from a local business talked about working at their company or in their career. More seniors in the Class of 201 from Moderate and Low poverty schools reported researching different colleges, universities, military branches or technical/community colleges (91.1% and 89.8%, respectively) than seniors in the Class of 2011 from High poverty schools (83.9%; $p = 0.011$). Higher percentages of seniors in the Class of 2011 from Moderate poverty schools reported being in a class where someone from a local business talked about working at their company or in their career (76.4%) than from High and Low poverty schools (66.3% and 59.4%, respectively; $p < 0.001$). More seniors in the Class of 2011 from High and Moderate poverty reported touring a local business with a group from school (40.8% and 43.0%) than from Low poverty schools (25.6%; $p < 0.001$).

Table VI.D.17.

Percentage of Seniors in the Class of 2011 Reporting Participation in Job or Career Identification Activities

Job or /Career Identification Activities	High Poverty Yes (%)	Moderate Poverty Yes (%)	Low Poverty Yes (%)
Answered questions related to jobs and careers on a computer or filled out a questionnaire.	82.6	83.0	86.6
Researched different jobs or careers.	86.0	86.8	88.0
Researched different colleges, universities, military branches or technical/community colleges.*	83.9	91.1	89.8
Spoke with or visited someone in a career that interests me.	65.9	71.0	70.4
Been in a class where someone from a local business talked about working at their company or in their career.**	66.3	76.4	59.4
Toured a local business with a group from my school.**	40.8	43.0	25.6

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011 at the eight sample schools in the spring of 2011. *$p < .05$, **$p < .01$ (based on Chi-square analysis).

Students were asked about how much thinking and planning they had done for job-related activities. The students classified how much thinking and planning they had done into four categories: (1) I have not thought about or done this; (2) I have thought about doing this; (3) I have made plans to do this; and (4) I have already done this. There were not significant differences in the responses of seniors in the Class of 2011 from High, Moderate, and Low poverty school regarding their thinking and planning on gathering information about jobs of interest, taking classes to help decide what kind of job they want, participating in school or out-of-school activities that will help in the decision about the kind of job wanted, and volunteering, interning, or working on a job to help find out the kind of job wanted in the future.

Students also reported whether or not they participated in work-based learning (WBL) experiences. The most reported work-based learning experiences were job shadowing or work-site visits and community service and the least reported experiences were co-ops and school-based enterprise. Table VI.D.18 summarizes the work-based learning experiences of seniors in the Class of 2011 from High, Moderate, and Low poverty schools. More seniors in the Class of 2011 from Low poverty schools indicated they had participated in an internship (29.0%) than seniors in the Class of 2011 from High and Moderate poverty schools (19.9% and 17.9%, respectively; $p = 0.004$). Fewer seniors in the Class of 2011 from Moderate poverty schools indicated they had participated in mentoring (12.2%) than seniors in the Class of 2011 from High and Low poverty schools (24.2% and 17.9%, respectively; $p = 0.002$). There were not significant differences in the proportions of seniors in the Class of 2011 from High, Moderate, and Low poverty schools who participated in co-ops, job shadowing or work-site visits,

community service, or school-based enterprise. Similar percentages of seniors in the Class of 2011 from High, Moderate, and Low poverty schools indicated they had not participated in any of the work-based learning experiences provided (19.9%, 20.5%, and 23.2%, respectively).

Table VI.D.18.

Percentage of Seniors in the Class of 2011 Reporting Participation in Work-Based Learning Experiences

Work-Based Learning Experiences	High poverty Yes (%)	Moderate poverty Yes (%)	Low poverty Yes (%)
Internship (work experience, but not necessarily part of a vocational, career, or technical class)**	19.9	17.9	29.0
Co-op (work experience at a local business in your high school major or career cluster)	11.0	9.2	8.0
Job shadowing or work-site visits (visits to work places to observe one worker or many workers)*	58.2	51.7	50.5
Mentoring (a match with an adult in your career area for advice and support)**	11.0	28.6	17.9
Community service (volunteer work to support your local community)	35.1	38.1	43.3
School-based enterprise (working in a business run by students or teachers from your school)	13.8	11.8	8.5
None of these	19.9	20.5	23.2

Note. Responses are from the *Student Engagement/POS Experiences Survey* administered to members of the Class of 2011 at the eight sample schools in the spring of 2011. *$p < .05$, **$p < .01$ (based on Chi-square analysis).

Seniors in the Class of 2011 from High, Moderate, and Low poverty schools significantly differed in their responses to the number of courses they plan to take that will earn college credit by the time they graduate from high school, with more seniors in the Class of 2011 from Low poverty schools indicating they would take none of these courses (28.0%) than seniors in the Class of 2011 from High and Moderate poverty schools (11.7% and 17.5%, respectively; $p < 0.001$). More seniors in the Class of 2011 from High and Low poverty schools indicated they had never taken an Advanced Placement course (49.3% and 53.2%, respectively) compared to seniors in the Class of 2011 from Moderate poverty schools (40.6%; $p = 0.016$). There were not significantly different responses among seniors in the Class of 2011 from High, Moderate, and Low poverty schools regarding the number of times they had taken vocational, career, or technical courses with a majority indicating they had taken one or more of these courses, as well as special education courses with a majority indicating they had never taken these courses. Seniors in the Class of 2011 were also asked how many vocational, career, or technical units they

would have earned in their primary vocational, career, and technical program area; the distribution of responses to the number of units earned did not significantly differ among seniors in the Class of 2011 from High, Moderate, and Low poverty schools, with a majority in each level of poverty indicating they would take at least one unit or credit by the time they graduate from high school.

Seniors in the Class of 2011 from High, Moderate, and Low poverty schools significantly differed in their responses regarding the highest level of education they expect to complete with more seniors from Low poverty schools indicating they expected to complete at least a bachelor's degree (84.5%) than seniors from High and Moderate poverty schools (57.7% and 64.7%, respectively; $p < 0.001$). A majority of seniors in the Class of 2011 from High, Moderate, and Low poverty schools indicated their intention to enroll in a 4-year college or university, enroll in a 2-year community college, or transfer to a 4-year college or university the year after graduation (75.5%, 77%, and 83.3%, respectively), although the responses did not significantly differ. Seniors in the Class of 2011 from High, Moderate, and Low poverty schools regarding their plan to have a job at age 30 had similar responses, with a majority indicating they planned to have a job at age 30 and providing a legitimate job name (68.6%, 70.0%, and 70.1%, respectively).[19]

E. Graduation Rates

In 2004, lacking a common measure to compare high school graduation rates across the country, Balfanz and Legters (2004) used a calculation called "promoting power" as an indirect measure of graduation rate. The formula was simply a comparison of the first year enrollment (either 9th or 10th grade, depending on the grade span of the high school) to the senior class enrollment. Balfanz and Legters found that more than two thirds of all of the high schools in the nation with the lowest promoting power (50% or less) were located in just 11 states. South Carolina was one of those 11 states. Five states led the nation in both total number and level of concentration of high schools with weak promoting power. South Carolina was one of those five states.

The Balfanz and Legters' 2004 report looked at the Class of 2002 seniors. In the most recent annual update to that 2004 report, data from the Class of 2009 was available. In the more recent report, Balfanz, Bridgeland, Bruce and Fox (2012) list South Carolina as a state leader in improving high school graduation rates. Between 2002 and 2009, slightly more than half of the states across the United States made limited or no progress or even experienced declines in their graduation rates. Twelve states accounted for most of the gains in the national graduation rate. South Carolina was one of them. South Carolina was listed as the state making the third largest increase in graduation rates between 2002 and 2009 (8.1 percentage points, from 57.9% to 66%). The term Adjusted Cohort Graduation Rate (ACGR) was used in this 2012 report as well as "promoting power." While South Carolina has been using the 2008 federal ACGR formula for

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[19] Chi-square analysis comparing the distribution of responses between seniors in the Class of 2011 from High, Medium, and Low POS2 implementation schools not conducted due to small cell counts.

graduation rate for several years, ACGRs were not available for all states for the 2012 report, so both figures were used, as appropriate. The 66% figure for 2009 was reported to be the ACGR for South Carolina for that year's cohort.

South Carolina's statewide report card for 2009 reports the statewide graduation rate to be 73.7%. As of 2007-2008, South Carolina's graduation rate formula did not match the federal formula because of an exception for students with disabilities (Alliance for Excellent Education, 2008). For 2009, even if the formula complied with the federal ACGR formula, the data going in to the formula could have been different due to the treatment of transfers in and out of schools and true dropouts within the formulas. Great caution should be taken when comparing graduation rates from year to year as not only formulas but also data collection methods and sophistication of definitions and metrics have changed. Regardless of the method used, however, both Balfanz et al. (2012) and the state report cards indicate that there has been much improvement in promoting power or graduation rates in South Carolina over the last decade.

EdCounts publishes a national comparison of graduate rates called Cumulative Promotion Index (CPI). Currently data is available only through 2009. As shown in Figure VI.E.1, South Carolina has consistently been below the national average in graduate rates, although the increases since 2002 are obvious.
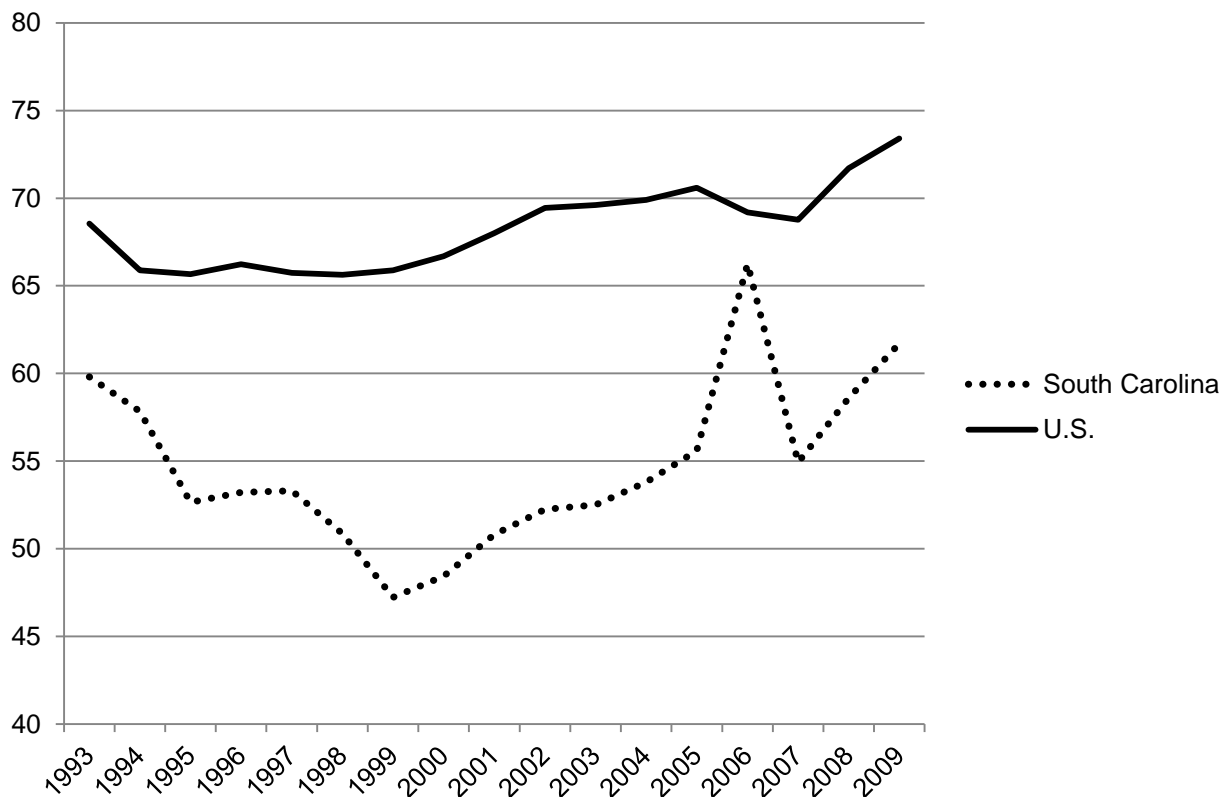
Figure VI.E.1. United States and South Carolina (statewide) graduation rate, cumulative promotion index (CPI). Source: http://www.edcounts.org/createtable/viewtable.php. Note that the spike in SC's data for 2006 may have been due to the fact that the state did not submit graduation data to the USDOE for 2006 and therefore estimates had to be used.

Starting with rates in 2009 from state report card data, comparisons can be made between averages of the eight sample schools to the statewide averages for four-year graduation rates. The data presented in Figure VI.E.2 averages the four-year graduation rates reported in the report cards over three years: 2009, 2010, and 2011. On average, the sample schools have slightly higher graduation rates when compared to the state's 73%, but some schools are lower than the state average and some are much higher. In all, our schools represent a spectrum of success with graduation rates and are representative of the state as a whole.
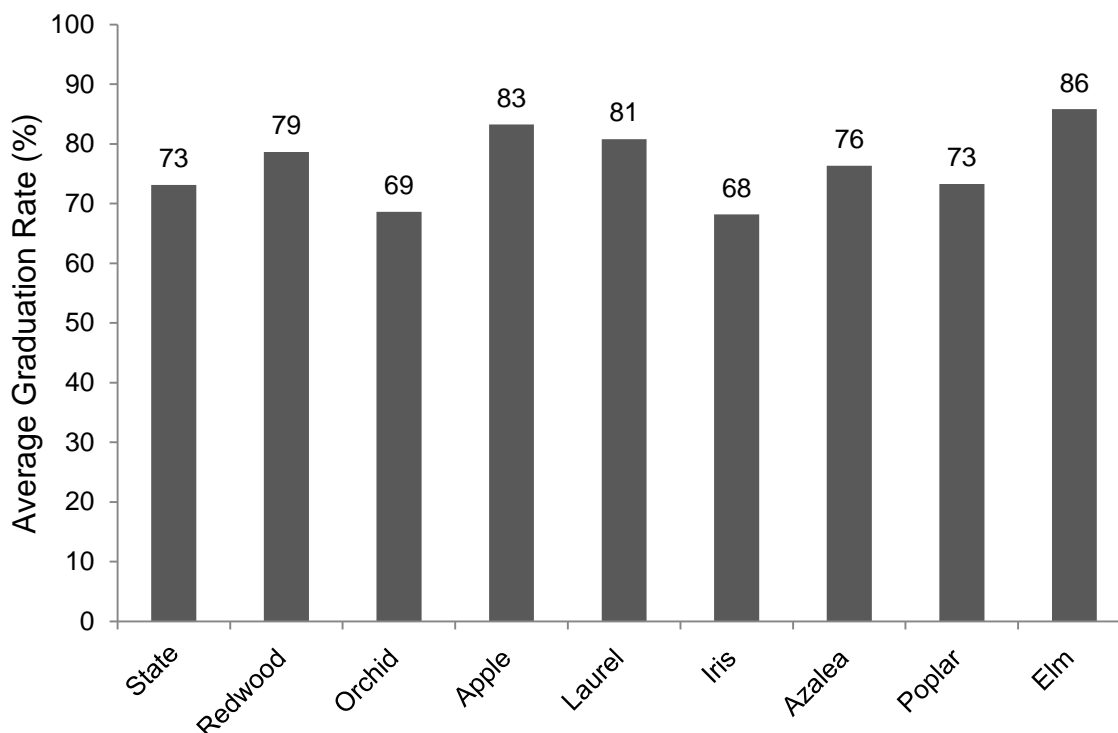
Figure VI.E.2. Average four-year graduation rates, averaged over three years (2009, 2010, and 2011), state and eight sample schools. *Source: South Carolina Report Cards, 2009, 2010, and 2011.*

For the remainder of this section, state report card data presenting four-year graduation rates will be used for consistency.

School level annual graduation rates fluctuate a great deal from year to year. All schools do not experience improvement or decline to the same degree or even in the same direction from year to year. Presenting the data through smoothed trend lines presents a simpler and clearer view of change over time, but the fact that there are dramatic fluctuations from year to year should not be lost. In other words, caution should be exercised when looking at a short timeframe since a large increase or decrease in one year, for whatever reason, can lead to misinterpretations of trends.

Figure VI.E.3 presents the trends in four-year graduation rates between the classes of 2006 through 2011 for each sample school. Vertical bars have been added to show the first year that 8th graders were required by the EEDA policy to have IGPs and IGP meetings and the year in which these "EEDA babies" (term used by some state data staff to refer to Class of 2009 students) would have been expected to graduate if they took the four years. Overall downward trends in four-year graduation rates were found at four of the eight schools over this time period (Redwood, Iris, Azalea, and Poplar). Four schools (Orchid, Apple, Laurel, and Elm) showed overall slightly positive trends in four-year graduation rates, with Elm and Laurel experiencing the largest increases. As mentioned, a particularly high or particularly low graduation rate in any one year can make the interpretation of trends misleading. For example, Azalea experienced an outstanding graduation rate of 90% in one of the earlier years plotted. Over the time period considered, Azalea's average graduation rate of 81% (which is still above the average of 77% for the eight sample schools) would present as a declining graduation rate from that high of 90%.
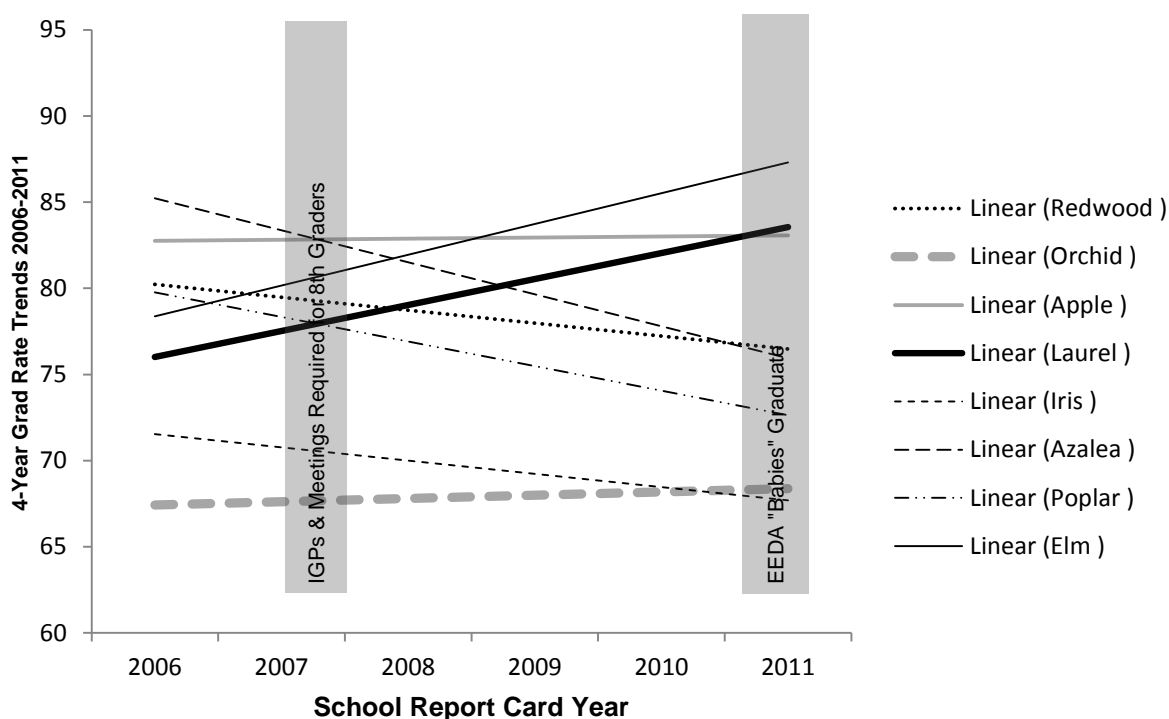
Figure VI.E.3. Trends in graduation rates, by school, by year, 2006-2011. Note that data have been smoothed over the 2006-2011 time period and yearly fluctuations are not apparent.

Figure VI.E.4 highlights the trends for the most recent three years, which correspond to our study period (2009-2011). This time period includes graduation rates for the Class of 2009 (our control group with little to no exposure to the EEDA policy) and the Class of 2011 (our cohort with exposure to the policy since 8th grade, since 2006-2007). The trends in graduation rates between these years are for the most part positive. Only two schools (Redwood and Orchid) show negative trends over this period. However, even for those two schools, their average graduation rates were each one percentage point higher for the time period 2009-2011 compared to the entire period from 2006 to 2011. (Both of these schools experienced a high point in graduation rates in 2009 and thus show a negative trend from that point.)
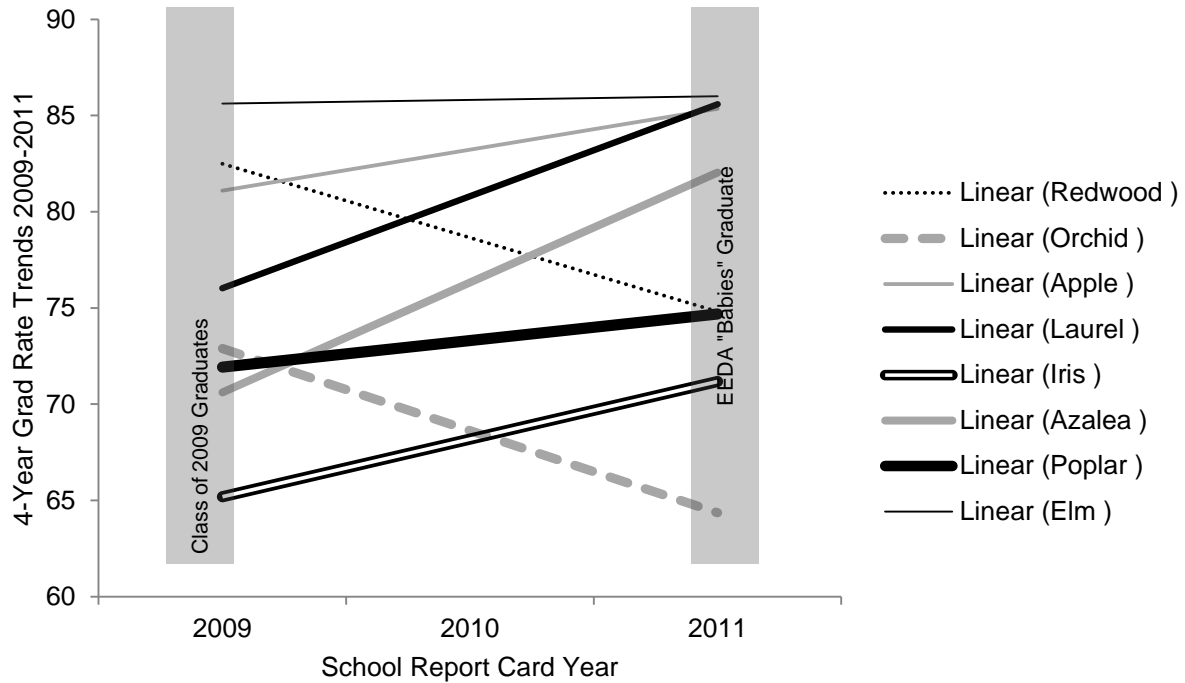
Figure VI.E.4. Trends in graduation rates, by school, by year, 2009-2011.

While the graduation rates are trending upwards among the eight sample schools, the relationships between graduation rates and measures of policy implementation and POS are not so clear and may even be contrary to expectations. For example, looking at the average yearly difference between graduation rates at our schools between 2009 and 2011, compared to 2009 policy implementation at each school (LOI), there is a slightly negative relationship, indicating that, on average, higher LOI scores are associated with more negative change in graduation rates between 2009 and 2011. Figure VI.E.5 illustrates this. However the slightly negative relationship exists because of the two schools with the highest LOI (Redwood and Orchid). Recall that Redwood and Orchid both had a high point in graduation rates in 2009 and this accounts for most of the negative average change between 2009 and 2011 shown in the graph. Interestingly, without Redwood and Orchid, the graph would show a positive relationship between change in graduation rate and LOI. This illustrates the danger in looking at trends at the school level with an N of only eight. Therefore, the data will be presented in scatter plots and any slight relationships will be noted, but cause and effect should not be assumed.

Looking just at the graduation rates for the Class of 2011 by school compared to LOI, the relationship is also slightly negative as shown in Figure VI.E.6. However, again, caution is advised when interpreting these figures. A particularly high, or particularly low, graduation rate on either end of the time period, can result in a negative or positive change over time that can be misleading, and looking at only one year's data can also be misleading. The LOI score, too, is composed of many elements that may affect different populations in different ways.
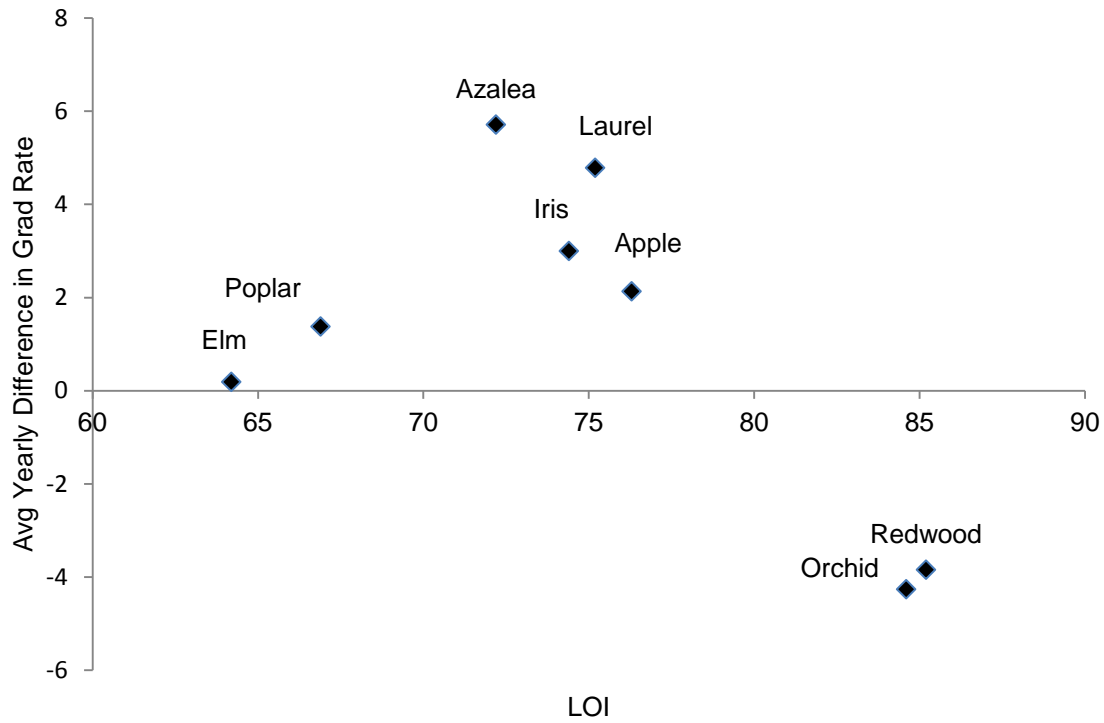
Figure VI.E.5. Average yearly difference in graduation rates 2009-2011 by school, compared to LOI by school.
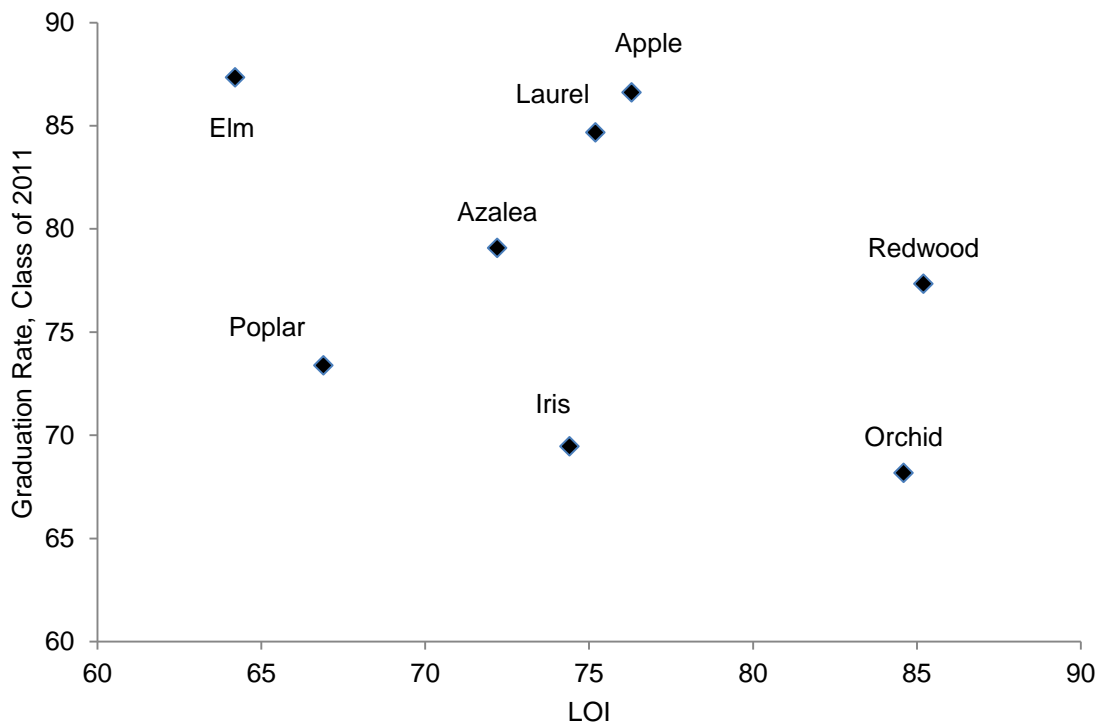
Figure VI.E.6. Graduation rates 2011 compared to LOI, by school.

The following four charts (Figures VI.E.7, VI.E.8, VI.E.9, and VI.E.10) present data plotting the average yearly difference in graduation rates, 2009-2011, compared to our three most useful measures of CTE concentration: POS1 (from the SLDS data set), POS2 (from state reports of CTE concentrators at schools), and POS3 (from our *Student Engagement/POS Experiences Survey*). In reference to any POS students in these charts, the 2011 SLDS cohort, the Class of 2011 as seniors, and the 2010-2011 school year only are included. In each of the four charts that follow, there is a slightly negative relationship between higher percentages of POS students and programs at schools and decreases in graduation rates. However, as can be seen, this varies widely from school to school.
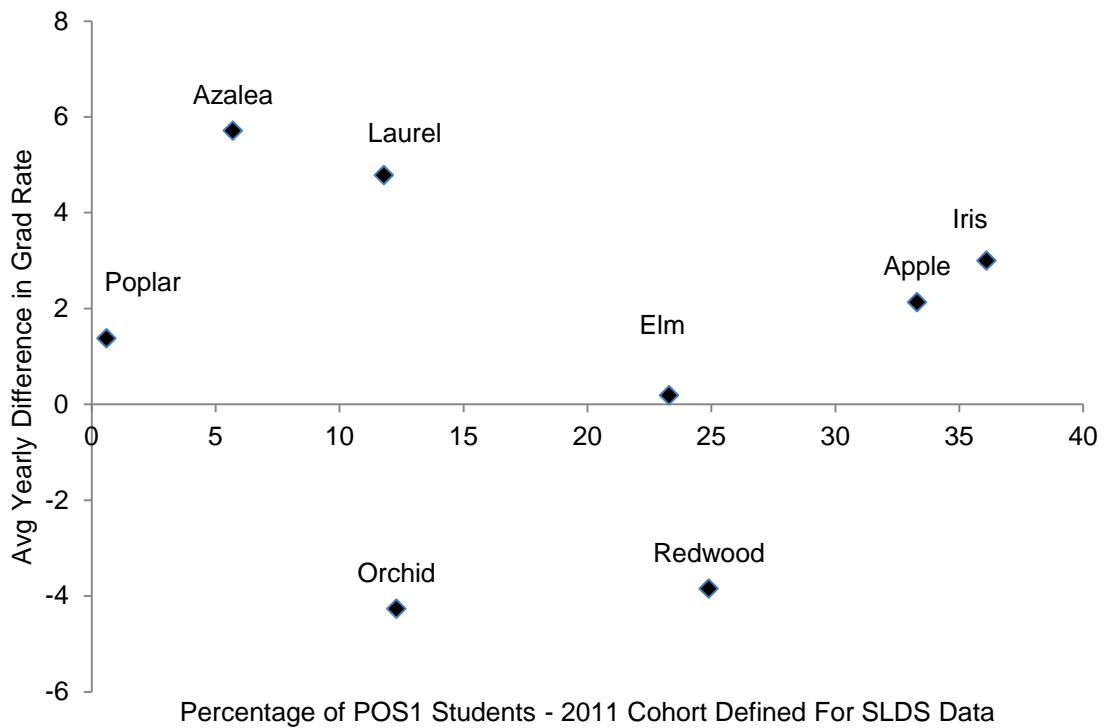
Figure VI.E.7. Average yearly difference in graduation rates 2009-2011 compared to percentage POS1 students in SLDS 2011 cohort.
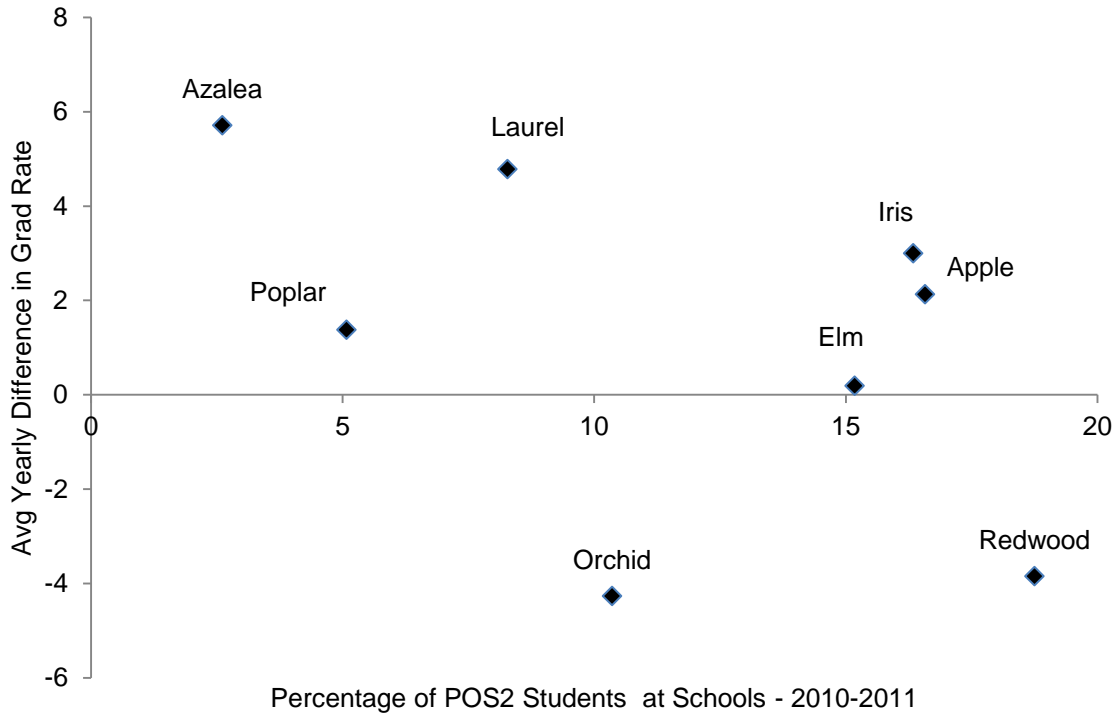
Figure VI.E.8. Average yearly difference in graduation rates 2009-2011 compared to percentage POS2 students, school year 2010-2011.
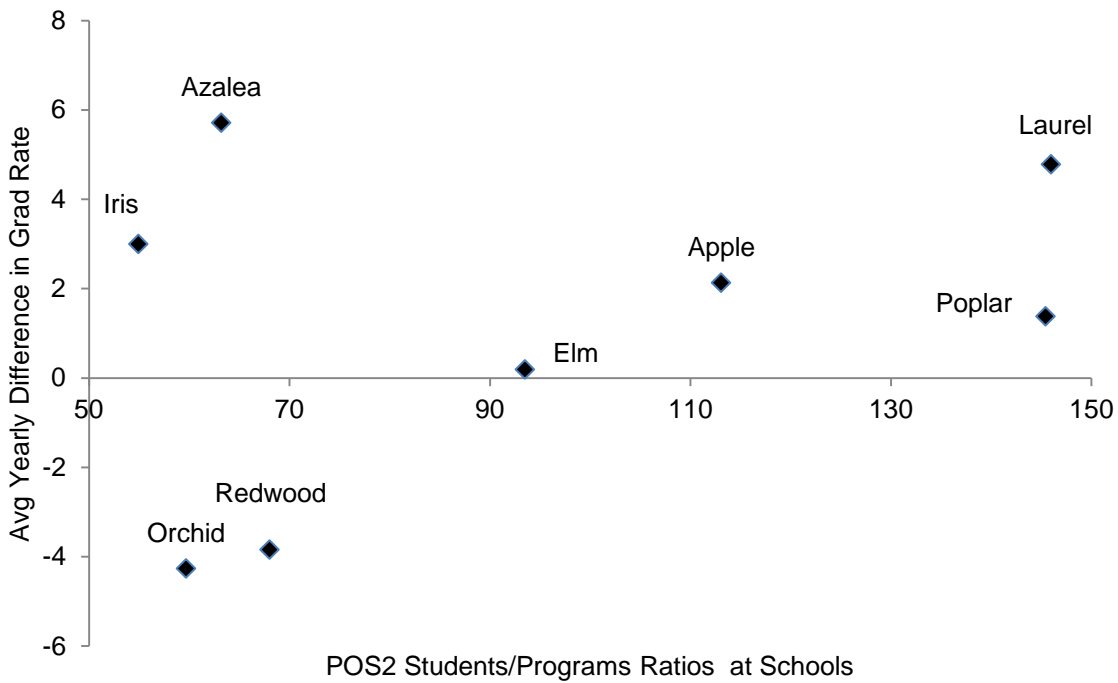
Figure VI.E.9. Average yearly difference in graduation rates 2009-2011 compared to POS2 students/programs ratios 2009-2011.
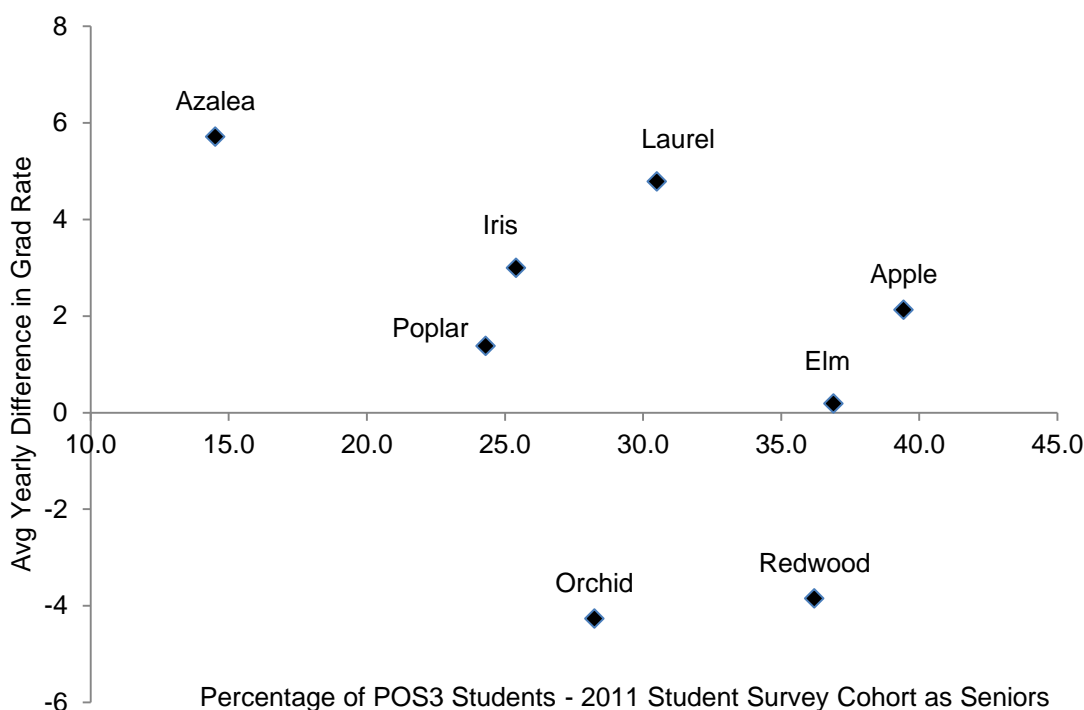
Figure VI.E.10. Average yearly difference in graduation rates 2009-2011 compared to POS3 students in the class of 2011 as seniors survey cohort.

The following four charts (Figures VI.E.11, VI.E.12, VI.E.13, and VI.E.14) each present a one year snapshot of data plotting the Class of 2011 four-year graduation rates at the eight sample schools, compared to our three most useful measures of CTE concentration: POS1 (from the SLDS data set), POS2 (from state reports of CTE concentrators at schools), and POS3 (from our *Student Engagement/POS Experiences Survey*). Again, in reference to any POS students in these charts, the 2011 SLDS cohort, the Class of 2011 as seniors, and the 2010-2011 school year only are included. In each of these four charts there is a slightly positive relationship between the data on the x and y axes. This could be interpreted to mean that there could be a positive relationship between increased POS at a school and higher graduation rates (as of 2011). The third chart (Figure VI.E.13), however, contradicts this trend with its slightly positive relationship. Since a higher ratio of enrollment to POS2 programs would indicate less CTE program offerings, the positive relationship illustrated in that figure would indicate that less CTE program offerings is related to higher graduation rates. Again, these relationships are just slight and with an N or only 8, the main point is that there is variation among schools and some possible slight trends.

Change in graduation rates between 2009-2011 appears to be loosely associated as we might expect with local poverty; however, for our sample schools, more poverty is not always associated with a decrease in graduation rate as shown in Figure VI.E.15.
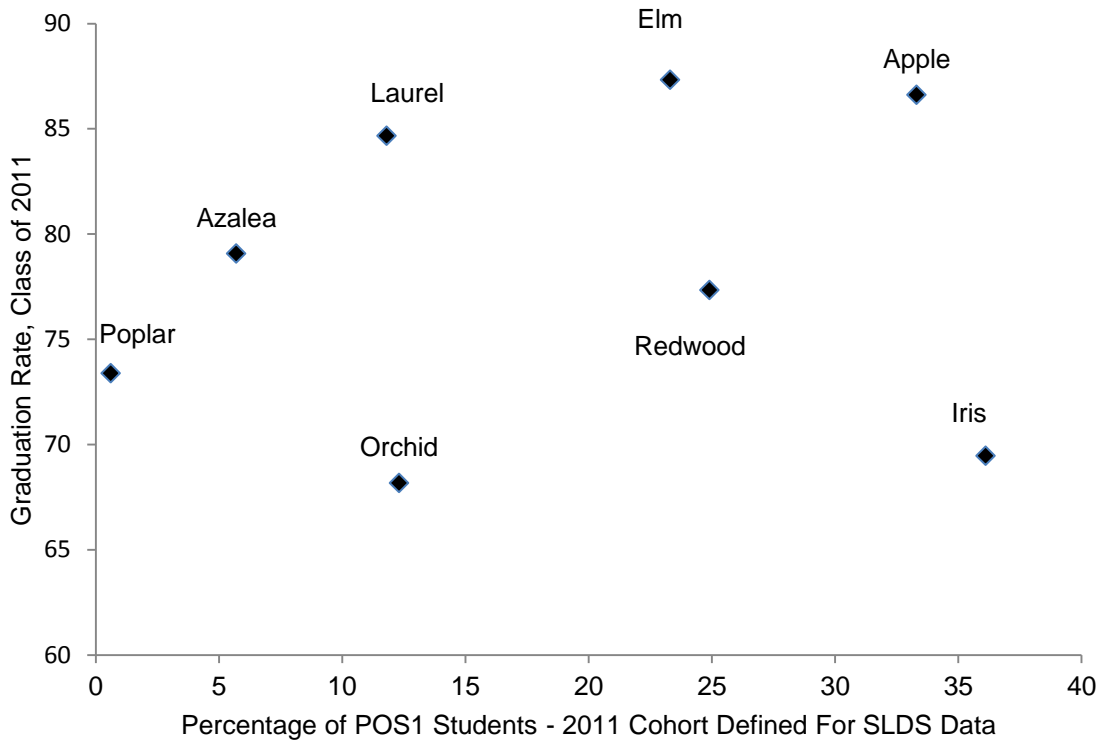
Figure VI.E.11. Four-year graduation rates, Class of 2011, compared to percentage POS1 students in SLDS cohort 2011.
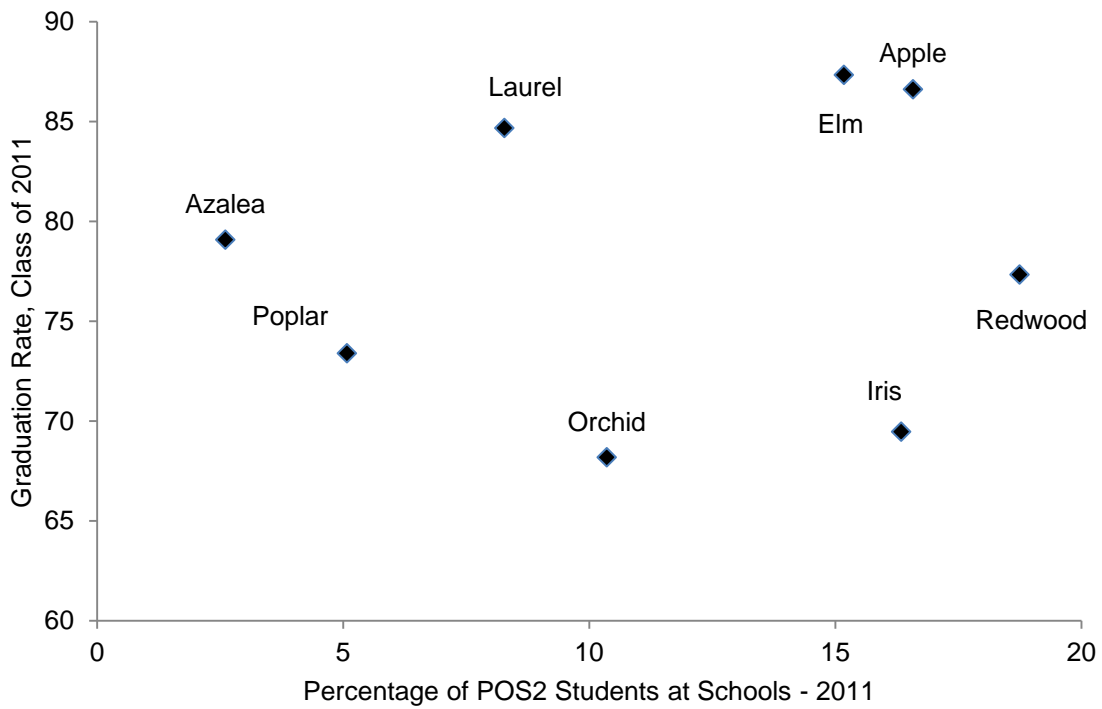
Figure VI.E.12. Four-year graduation rates, Class of 2011, compared to percentage of POS2 students.
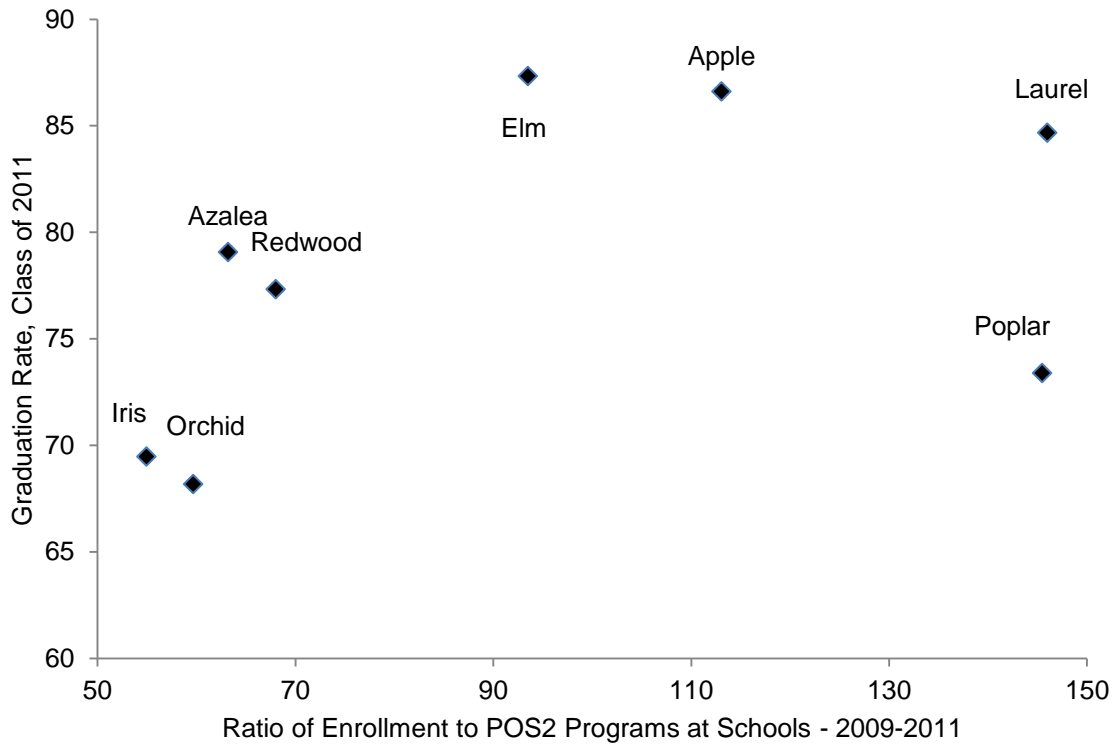
Figure VI.E.13. Four-year graduation rates, Class of 2011, compared to the ratio of enrollment to POS2 programs, 2011.
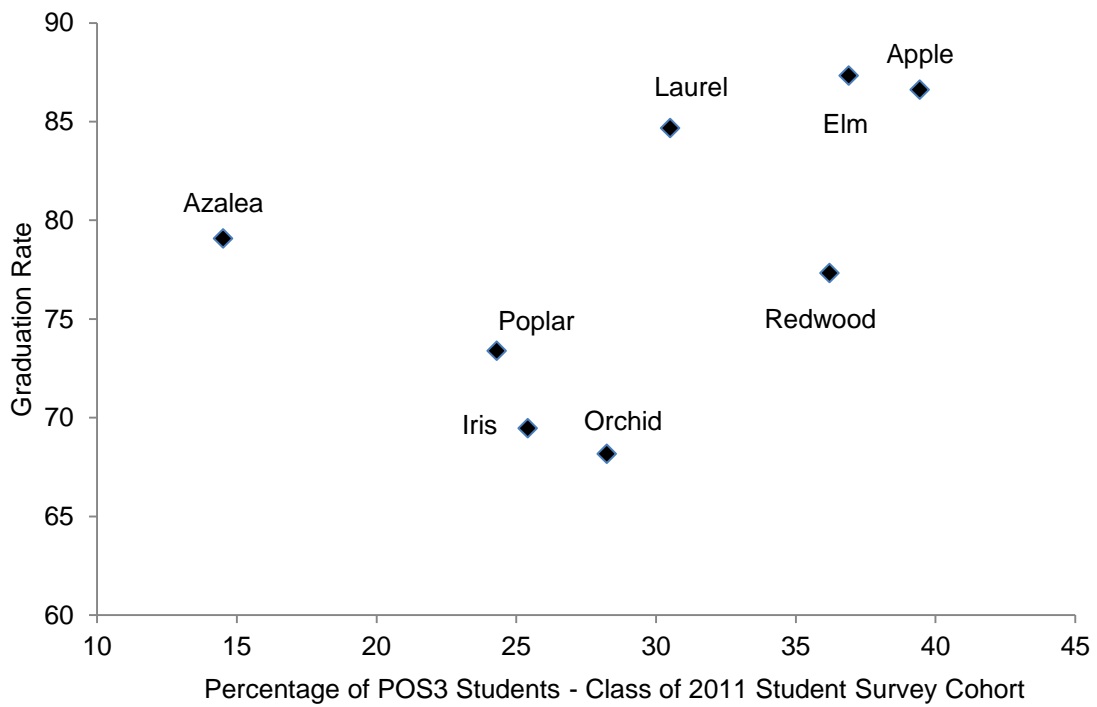
Figure VI.E.14. Four-year graduation rates, Class of 2011, compared to percentage of POS3 students.
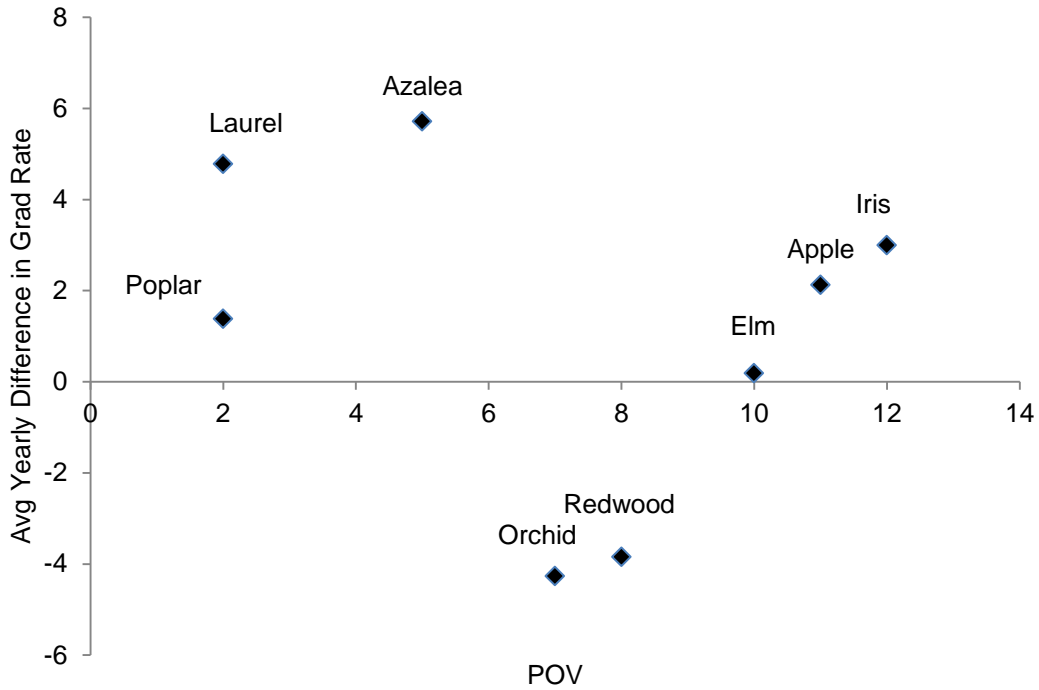
Figure VI.E.15. Average yearly difference in graduation rates 2009-2011 compared to POV.

Looking at the yearly snapshot of graduation rates at the schools for the Class of 2011 (Figure VI.E.16), there appears to be no relationship between local community poverty (POV) and graduation rates.
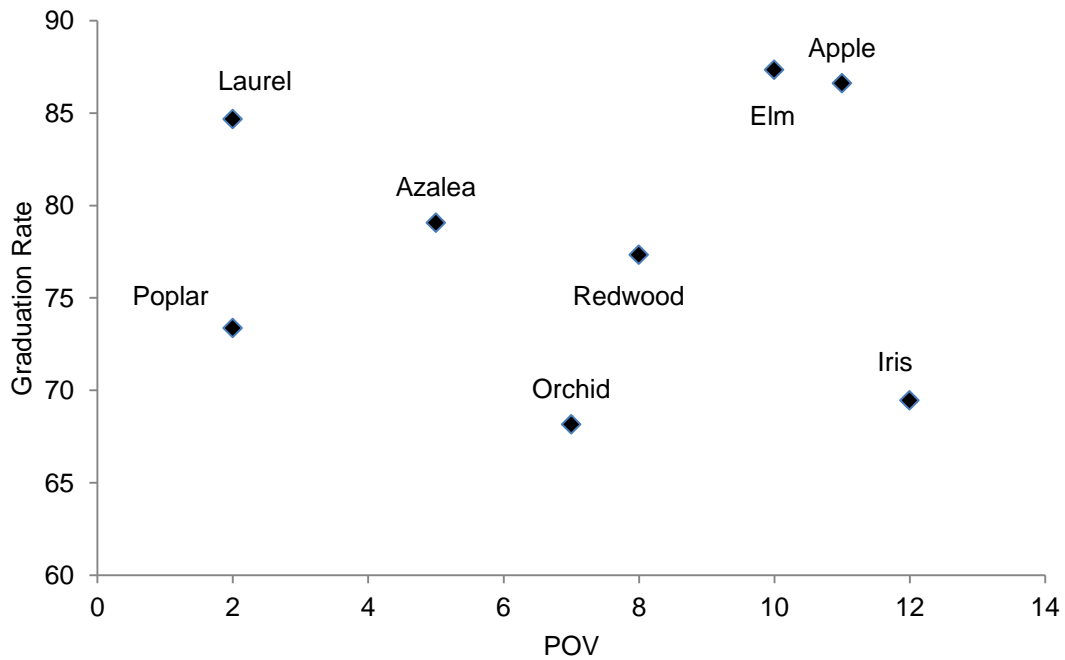
Figure VI.E.16. Four-year graduation rates, Class of 2011, compared to POV.

VII. Challenges of Defining and Counting Perkins IV-defined Programs of Study

As we have briefly addressed in other parts of this report, we faced a number of challenges in trying to define and "count" the number of Perkins-IV and Perkins IV-like programs of study in our sample schools. In this section, we discuss some of the primary challenges with identifying majors to review and problems encountered during attempts to review the elements of these majors. Two of these primary challenges combined to produce a host of issues. One of these challenges was the fact that at the time of site visit interviews, many schools and districts were in the early stages of development of clusters and career majors. The other major challenge was the fact that the state policy we were studying encompasses more than just CTE courses and programs and requires the development of programs of study across the curriculum in all subject areas.

The goal of the EEDA was to have high schools completely reorganize their curricula around at least three career clusters, each offering several career majors. This was to take place across the curriculum, merging both CTE and academic courses into seamless pathways. Districts were to identify career clusters and majors that they wanted to offer students and then develop curriculum templates for each to outline core academic courses as well as courses required for each major. These templates were then to appear in course catalogs and registration materials to inform students (and their parents) about career major options and to be used for planning in IGP meetings. These templates were to reflect the standardized IGP format online so that they could be used each year for review and updating and also for aggregating enrollment and other data at the state level.

The timing of our study was fortuitous as we could observe schools during the beginning of development of this reorganization. At the same time, coming in at the beginning of the implementation of a reform such as this presented a number of challenges to the study team. The reorganization was to have been put into place in high schools by the 2007-2008 school year, one year prior to our first site visits. Although some schools and districts had begun program development prior to the 2007-2008 school year, many schools were in their first year of implementing the clusters and career majors during that school year. Data collected for analysis of baseline career majors was collected the following year, 2008-2009. This meant that many schools and districts were still in the early stages of developing and implementing their clusters, majors, and pathways at the time of our first site visits.

Not only was the system still evolving, but since choice was left to schools and districts to identify and develop the particular majors and programs that would be offered to students at each school, there was wide variation across schools in clusters and majors offered. Schools and districts decided which career majors, programs and Programs of Study (POS) to implement based on a number of factors: (1) what was already in place, (2) local labor market needs, (3) input from business partners, (4) skill/expertise needs of particular local company, (5) availability of expertise and classes at local technical and community colleges, (6) availability/affordability of "ready-made" programs like Project Lead The Way and ROTC, and (7) surveys of student interests.

Perkins IV POS could have already existed through CTE, or could develop from new majors created under EEDA, or could develop from existing CTE programs already in place but not fully developed. Therefore, we had to evaluate all programs, both traditional CTE programs and new EEDA majors with CTE components.

Allowing schools and districts to identify and develop their own clusters and majors meant that they could be locally relevant, a crucial element to POS. However, this also meant that there was no consistent naming system used across schools nor were particular majors always placed in the same career cluster. This presented a challenge not only to the study team but also to staff at the SDE when they tried to aggregate the data to report statewide enrollment in career clusters and career majors. To establish some uniformity for statewide reporting purposes, the SDE asked districts to assign CIP codes to each major during the 2008-2009 school year and to enter these into the eIGP system in the 2009-2010 school year. A curriculum manager at each district office determined the CIP codes for majors and determined which cluster they went in for all majors offered at the schools in their district. Districts were asked to look through the national CIP codes list and "pick the one that best describes the 'intent' of their major – what career path they are preparing a student. Except for CATE [CTE] which have specific courses and CIP codes, the districts are free to build and code as they see fit" (D. Moran, personal correspondence, June 4 and June 7, 2010).

Having districts assign CIP codes based on the "intent" of the major meant that there were not consistent CIP codes given to the same majors; Horticulture might have been given one CIP code by one district and another one in another district. Often districts would assign the same CIP code to two different majors, such as a Commercial Graphics major and a Video major. And across districts, the same major name and CIP code might not include the same courses or have the same emphasis. As a state contact explained to us:

As an example, one district may prepare a group of students to go into nursing by only offering a group of advanced science classes, another district may be able to offer a Medical Terminology course in their mixture, while a third district may offer a pre-med type of course. All have the same intent so all would (should) choose nursing as the major and CIP (D. Moran, personal correspondence, June 4 and June 7, 2010).

It was also often difficult to identify the courses that were required for particular majors or programs – one list of courses may have appeared on the curriculum template in the school's catalog, but those course names were not necessarily used in the course listing in the catalog nor were courses necessarily listed as being offered during a particular school year. In addition, when CTE programs and courses were listed in separate parts of the catalog and not included on a curriculum template, than it was difficult to find the courses and follow the course sequences for certain CTE programs.

Another element also complicated major identification. Schools and districts assigned CIP codes and major names similar to those on the national list to be used for inclusion on the electronic IGP system but did not necessarily use those same names in the career major curriculum templates in the course catalog or registration materials.

In addition, because the career majors were to be across all curricula, not just CTE, it meant that CTE programs were to be integrated into the overall career major system. In reality what it meant was often a parallel system with career majors as one system and CTE programs as another. Program names and CIP codes had already been developed by the state CTE office for reporting for Perkins IV and at least at the time of our early visits, these were often not integrated into the career majors and may have appeared in separate sections of the course catalog or in only a career center catalog.

Since OVAE was primarily interested in the development and implementation of those programs of study that were CTE-focused and not those majors/programs being developed in non-CTE areas. Since EEDA required career majors across the curriculum, in addition to majors such as welding, culinary arts, and accounting (more "traditional" CTE majors), there were career majors also being developed in areas such as English, journalism, the performing arts, math, and military services. To limit the majors/programs studied to just those that were strictly CTE, the study team had to develop a means of identifying the relevant career majors that were primarily CTE-focused.

In addition, in determining whether a POS existed at a school, we felt it was important to note for any major whether it was actually treated as a distinct major at the school and was identified in some materials as a major available to students with details disseminated on what the major entailed.

Finally, once we identified majors/programs to review, we found that the elements of Perkins IV POS, as outlined in the law and supporting implementation materials provided by OVAE, were not sufficiently defined to allow for easy translation into direct measures for each element. This required the operationalization of the four core elements by the study team for the purposes of this analysis, as described earlier in the Study Design section and supplemented in Appendix L.

In order to identify CTE majors and analyze them for evidence of elements of the four core elements, as defined by the study team, and to determine if the programs existed at the schools, we reviewed a variety of data sources and materials. These sources included information gleaned from on-site interviews and focus groups conducted during the site visits in 2008-2009 and the fall of 2009 with guidance personnel, teachers, principals, and assistant principals; from content analysis of school archival and web materials on available courses, majors, and career clusters, and on career development and planning; from analysis of school responses to the Clusters & Majors checklist; and from information compiled from SDE CATE annual reports.

VIII. Summary of Observations and Emergent Themes

A. Summary of Observations

In the above sections, we described in detail our findings from data collection and analysis of a variety of qualitative and quantitative data collected from our eight sample schools over the five-year study period. These data were collected to explore various aspects of our four research questions. These questions include:

1. To what extent does South Carolina's Education and Economic Development Act facilitate the development of Programs of Study (POS)?
2. What impact does the level of local economic resources have on the implementation of EEDA and the development and implementation of POS?
3. What impact does the implementation of EEDA have on:
   - student high school outcomes, and
   - student postgraduation preparation and plans?
4. What impact do POS as defined in Perkins IV have on:
   - student high school outcomes, and
   - student postgraduation preparation and plans?

In this section, we summarize the major findings that emerged from this analysis and how they help to address our research questions. Discussion is organized around the four questions. In addition, as we discussed and analyzed various data sources, a number of overarching themes emerged that help to encapsulate the major findings from this study.

Before addressing the research questions, however, it is important to briefly summarize the level of EEDA implementation statewide as well as that which we observed in sample schools during the study period. The following is an outline of the key findings, which are then discussed in more detail in the remainder of this section.

Statewide EEDA policy implementation.

- EEDA contains nearly all of the basic requirements of Perkins IV plus additional supporting elements.

Policy implementation levels statewide.

- Despite economic conditions, the EEDA oversight committee reported that key components of the EEDA had been successfully implemented statewide.

EEDA policy implementation levels at sample high schools.

- Career-focused activities increased at all sample schools.

- Guidance counselors played a key role in policy implementation.

- The Individual Graduation Plan emerged as an essential component of policy implementation and the promotion of programs of study.

- Demands of IGPs and continuing involvement in inappropriate duties often increased workloads of school counselors.

- Students were benefitting in a variety of ways from policy implementation.

Budget cuts and policy implementation.

- Budgets cuts have impacted schools across the state and slowed progress in policy implementation and forced schools to make difficult choices relative to setting priorities for allocating scarce resources.

Statewide EEDA policy implementation.

South Carolina's Education and Economic Development Act (EEDA) was developed and passed in 2005 with the strong backing of the state's business community to help address the changing demands of the workplace. It is a career-focused school reform model intended to improve student achievement and graduation rates and preparedness for postsecondary education and high-skill, high-wage, and high demand jobs. EEDA was designed to achieve these results through a focus on high academic standards, career awareness and exploration at all school levels, and the creation of locally relevant career pathways and programs of study in high schools.

EEDA contains nearly all of the basic requirements of Perkins IV plus additional supporting elements. Both EEDA and Perkins IV initiatives focus on the integration of academic and career and technical content and an emphasis on academic rigor across all coursework. EEDA and Perkins IV emphasize the development of programs of study for students to help them plan for their future careers and to assist with making seamless transitions between secondary and postsecondary education. To assist with this transition, both require an alignment between secondary and postsecondary elements.

EEDA, however, is a much broader, more all-encompassing reform of high school curricula than Perkins IV, because it goes beyond traditional CTE courses and programs. Additional elements not contained in Perkins IV that make the EEDA policy more comprehensive in many ways include extra assistance for high-risk students, the organization of high school curricula around at least three career clusters per school, an enhanced role for school counselors, evidence-based high school reform, regional education centers charged with facilitating business-education partnerships, and greater articulation between secondary and postsecondary education.

Policy implementation levels statewide.

Despite economic conditions, the EEDA oversight committee reported that key components of the EEDA had been successfully implemented statewide. The EEDA was designed to be implemented in several stages beginning in 2006-2007 and ending in 2010-2011. But during this period, economic conditions required reducing funding for this legislation.

However, according to the 2010 annual report to the legislature by the EEDA Coordinating Council overseeing EEDA implementation (EEDACC, 2010), in spite of continuing reductions in funding and staffing, "each major component of the EEDA has been successfully implemented as legislated" (EEDACC, 2010, inside cover page). They describe the progress as follows:

> Since the passage of the Education and Economic Development Act (EEDA) of 2005, many public schools throughout South Carolina have been transformed: comprehensive school reform models organized around career clusters have been implemented, increasing numbers of students have been receiving individual attention from guidance personnel annually, an increased number of parents are involved in their children's decisions regarding college and/or career, and the transition between secondary and postsecondary education has become more seamless. (EEDACC, 2010, inside cover page)

These efforts are continuing, as reported by the EEDACC in their 2011 annual report (EEDACC, 2011), where it was stated that the "state's public schools have continued to sustain key components of the Act" (p.ii). Sabrina Moore, the SDE EEDA administrator, highlighted some of the major accomplishments from recent data (Moore, 2012). She reported that all state high schools are offering at least 3 of the 16 career clusters; funds have been provided to assist schools to meet the 300:1 student-to-guidance ratio with progress being made on achieving that across schools; annual Individual Graduation Plan (IGP) meetings are being held (in 2011-2012, 99% of students in grades 8 through 12 completed an IGP); and all high schools have implemented evidence-based programs to address the needs of high-risk students, with successes reported in the majority of state funded efforts.

EEDA policy implementation levels at sample high schools.
Career-focused activities increased at all sample schools. Observations and data collected from schools indicate that the policy increased the amount and variety of career-focused activities and guidance at sample high schools, with school counselors playing key roles in providing these activities. Results also indicate that EEDA has facilitated school reform, enhanced career guidance and counseling, and strengthened postsecondary ties. However, the study data also reveal that these outcomes vary across our study sites and that some elements of the legislation were not as fully implemented as planned. The nature of the events and the types of career experiences sample schools provided for students also varied. All schools had developed career clusters and majors and required students to select career clusters and develop Individual Graduation Plans. Schools reported being more focused on career planning for their students, working to provide students work-related experiences, and trying to offer more real-world examples in classrooms. Schools were in various stages of implementing the High Schools That Work reform model. All eight of the schools participating in our study reported either dual enrollment or dual credit arrangements, or both, with local postsecondary institutions.

Guidance counselors played a key role in policy implementation. From the beginning of EEDA implementation, guidance counselors were viewed as a lynchpin of policy success. Initial funding for this component and the addition of additional guidance staff helped not only to facilitate putting mandated guidance initiatives in place at schools but also helped launch the state policy's implementation. Various sources of data revealed that this EEDA focus on

guidance had affected the role of counselors and the depth and breadth of information that students were receiving about their educational and career opportunities in career and technical fields. EEDA emphasizes students' need to engage in career development activities such as exploration, interest assessments, and talking about career issues and career options with knowledgeable adults, thus making school counseling an essential service. This emphasis in EEDA and the requirements of the IGP process increased the amount of time counselors spent with students engaging in one-on-one career-based counseling, with an increased effort to meet with every student on an annual basis. Through the IGP process, there has been a greater effort to promote CTE programs to students and engage parents in the course and career planning of their children. In addition, counselors were conducting career development and guidance workshops for teachers, guidance personnel, and work-based constituents.

The Individual Graduation Plan emerged as an essential component of policy implementation and the promotion of programs of study. The development and maintenance of students' four-year Individual Graduation Plans (IGPs) emerged as an essential component of EEDA policy implementation and the promotion of programs of study in general. Guidance personnel, teachers, as well as students all pointed to IGP development as a valuable tool for career counseling and planning and that it had facilitated increased counselor interactions with students on career and course-related issues.

Demands of IGPs and continuing involvement in inappropriate duties often increased workloads of school counselors. The EEDA was quite specific in its delineation of appropriate and inappropriate duties for guidance counselors. Both the guidance counselor surveys and phone interviews revealed that guidance personnel were involved in more appropriate duties, while at the same time continued their involvement with inappropriate duties. Although the IGP process was seen as beneficial by counselors and students, it was also reported by counselors to be very time intensive. Because of the demands of IGP-related tasks and the fact that they were still assigned a variety of other policy-mandated duties as well as still being assigned "inappropriate duties," the IGP process was often cited as a primary reason for work overloads for counselors.

Students were benefitting in a variety of ways from policy implementation. From surveys and focus groups with students and discussions with school staff, it was obvious across schools that students in the Class of 2011 were benefitting in a variety of ways from implementation of the EEDA policy. Particularly through the Individual Graduation Plan (IGP) process, students were given opportunities to explore diverse careers and identify their interests, gain important skills in planning for careers and post-high school life, and link their interests and skills with the courses they were taking.

Components of the EEDA policy were helping to build some of the foundation for programs of study. Although we did not find at sample schools many Programs of Study (POS) that met all of the study-defined criteria for the Perkins IV core elements, our qualitative data revealed that components of EEDA were helping to build some of the foundational elements and framework necessary for the development and successful implementation of Perkins IV type programs of study. Various foundational elements were being put into place across our sample

schools leading to the potential for the development of more programs of study in schools over time.

Budget cuts and policy implementation.

Budgets cuts have affected schools across the state and slowed progress in policy implementation and forced schools to make difficult choices relative to setting priorities for allocating scarce resources. Although schools were actively implementing a variety of career-focused activities, changing economic conditions forced schools to make some difficult choices about how to balance policy mandates with other requirements and initiatives. The timing of the implementation of the policy was unfortunate in that it occurred at the same time the state and nation were experiencing the beginning of a long recessionary period. State funding reports showed that funding was not kept up to the degree necessary to fully fund the policy's successful implementation. Schools also reported that teachers' jobs were on the cutting block, making the newly met low student to guidance ratios more difficult to justify as a priority. Professional development related to the policy, while strongly noted in our initial site visits, undoubtedly suffered later with inadequate funding.

Research Question 1. *To what extent does South Carolina's EEDA facilitate the development of POS?*

We have discussed the challenges the study team faced in developing measures to be able to examine the presence of Perkins-IV defined POS programs at our sample schools. We described the quantitative proxy measures (POS1 And POS2) and the one qualitative, and more direct, POS measure that allowed us to examine trends in both student- and school-level data across schools to assess the presence and participation in possible POS. It is important to remember as we review major findings that EEDA is a much broader initiative than Perkins IV and that fact will impact patterns that were discovered. It was often hard to discern whether the presence of any POS in schools and trends across programs and student participation was a result of the EEDA policy, other factors, or some combination of factors. Although we began our study in the early stages of EEDA, some schools had already been implementing aspects prior to passage of the policy. In addition, during our study, there were many complex influences on the schools, including a deep economic recession, which had a major impact on the resources available at some of our sample schools. It is likely that POS development in schools was the result of a combination of the policy with a variety of other factors and circumstances at each of the sample schools, making it difficult to discern key factors.

We offer some observations about what we saw in schools relative to CTE programs and their alignment with Perkins IV elements, their possible influence on student outcomes and how these may have been influenced by the EEDA policy. The following is an outline of the key findings, which are then discussed in more detail in the remainder of this section.

Mixed findings on evidence of the development of POS in our sample schools.

- We found evidence of potential Programs of Study (POS) and varying levels of student involvement across sample schools and over the study period. However, the evidence was mixed and inconsistent across measures.

- There was variation across schools in the percentage of students completing CTE course sequences and slight to moderate decreases in percentages between the 2009 and 2011 cohorts.

- At five of the eight sample schools there was an overall increase in the number and percentage of state-defined CTE program completers over the study period, with large increases at two schools and moderate increases at the other three.

- At least half of all students in sample schools took at least one state-defined CTE program course but overall CTE participation dropped at the sample high schools over the study period.

- Only two schools were found to have POS that met the study team's criteria for substantial evidence of the four Perkins IV core elements but progress was being made across schools in putting core elements into place.

- Most schools did not show consistent trends across our various POS variables over the study period.

- Findings at several of the schools help to illustrate trends and contributing factors to POS.

Evidence of foundational elements for POS development being put into place.

- The policy is helping to facilitate the development of some of the foundational elements considered necessary for POS development in sample schools.

- Even though there were strides being made at the state level, our study offers mixed findings regarding the influence of EEDA on opportunities for dual credit at our sample schools.

- The development and maintenance of students' four-year Individual Graduation Plans (IGPs) emerged as an essential component of EEDA policy implementation and the promotion of programs of study in general.

- Structured guidance for career planning and academic advisement is a critical underlying element for participation in POS.

- Policy implementation facilitated more appropriate placement of students into CTE courses in some sample schools.

- One of the factors dissuading students from taking CTE courses was the "course tradeoff" experienced by students deciding between these courses and taking Advanced Placement, required core academic, honors, and dual credit courses.

- CTE teachers and school counselors expressed concern about the emphasis on postsecondary education or training as a requirement for a CTE program to be considered a Perkins IV POS.

Mixed evidence of POS development based on EEDA policy

- Although the state policy may be helping to lay some of the foundational elements for the development of POS, our study offers mixed evidence as to whether the level of EEDA implementation influenced the development of POS at our study schools.

Mixed findings on evidence of the development of POS in our sample schools.
We found evidence of potential Programs of Study (POS) and varying levels of student involvement across sample schools and over the study period. However, the evidence was mixed and inconsistent across measures. The student- and school-level data collected and examined across a variety of data sources and approaches produced a mixed picture of the development of POS and student involvement in these across sample schools during our study period. There was evidence of the development of at least some aspects of Perkins IV-like POS in all sample schools and evidence that at least some portion of students at each of the sample schools were completing coursework in these POS.

- There was variation across schools in the percentage of students completing CTE course sequences and slight to moderate decreases in percentages between the 2009 and 2011 cohorts. There were students found to be completing CTE course sequences across all schools, with an average of 15% of students in the 2011 cohort (previously defined as POS1 students) completing these sequences. But percentages varied widely across schools, ranging from less than 1% at one school to 36% at another. Given the emphasis in EEDA on the development of career majors and pathways, we expected at least a slight increase in the percentage of CTE course sequence completers between the 2009 (pre-policy) and 2011 (early-policy) cohorts at most schools. However, there was a definitive increase in completion between the two cohorts at only one of the sample schools (Laurel). The other schools experienced various degrees of decline in CTE course sequence completion between the 2009 and 2011 cohorts.

- At five of the eight sample schools there was an overall increase in the number and percentage of state-defined CTE program completers over the study period, with large increases at two schools and moderate increases at the other three. In contrast to findings from the student-level cohort data, a majority of sample schools experienced an increase in the number of students completing state-defined CTE programs between the 2008-2009 and 2010-2011 school years. Only three of the sample schools experienced declines in CTE program completers over that period. The average percentage of state-defined program completers as a percentage of 11th and 12th grade enrollment across schools was around 12% in 2010-2011 school years, with a range from 3% at one school to 19% at another.

- At least half of all students in sample schools took at least one state-defined CTE program course but overall CTE participation dropped at the sample high schools over

the study period. By the 2010-2011 school year, at least half of the students enrolled at each sample school had taken at least one CTE program course over the study period. However, overall participation (both number of students taking at least one CTE course and overall enrollment in CTE courses) in state-defined CTE programs declined across seven of the eight sample high schools over the study period. Participation rates varied widely across schools, with some schools showing steady declines, some with fluctuations up and down, and others showing little change over the study period.

One of the reasons for an overall downward trend in CTE course taking at the high schools could be a result of increased opportunities for students to take introductory CTE courses in middle school. For example, all South Carolina students must take keyboarding as a requirement for high school graduation. Keyboarding is a ½ credit class that was once offered exclusively in high school. Many school districts now offer keyboarding in middle school. Being a required course, if more students opt to take keyboarding in middle school, the average number of CTE courses taken by students in high school will subsequently be affected. Other introductory CTE courses may also be migrating to the middle school. This is a school by school situation that varies across the state, but could explain some or even all of the decline in CTE participation across seven of the eight sample schools.

The downward trend in CTE enrollment also contradicts reports of students and staff during site visits, where there was a perception at a number of schools that not only had awareness of CTE increased, but also that CTE course-taking by students had changed and/or increased during the study period. It may be the case that *some* teachers *were* seeing more students in their classes, even if overall enrollment wasn't increasing, if IGPs were in fact channeling students to more, and perhaps more diverse, CTE courses. In addition, teachers at a number of schools reported more appropriate placement of students in their courses and in state-defined CTE programs in general and that may have influenced their perception of an increase in participation rates.

- Only two schools were found to have POS that met the study team's criteria for substantial evidence of the four Perkins IV core elements but progress was being made across schools in putting core elements into place**.** Evidence from the school-level variables on POS that explore trends in state-recognized CTE programs and participation in these by students over the study period also provide mixed results as to the existence and/or participation in POS-like programs over the study period. There was only a substantial increase in the number of these CTE programs at two of the eight sample high schools. In addition, at only two schools (Redwood and Iris) did the study team find CTE programs that met the team's criteria for the four Perkins IV core elements. Two other schools (Azalea and Apple), however, had at least half of their state-defined CTE programs that met criteria for three of the four Perkins IV core elements. In addition, there was evidence at all schools that one or more of the core elements were in place across a number of types of programs and reports by staff that efforts to further develop these elements was ongoing.

▪ <u>Most schools did not show consistent trends across our various POS variables over the study period</u>. Some schools showed increases in some measures, while showing declines in others. For example, Orchid had a large percentage increase in the number of state-defined CTE programs and a moderate increase in percentage of completers of those programs over the period, but a large drop in CTE participation over the period. Azalea had an increase in the number of state-defined CTE programs offered but had large decreases in both the number of completers of these programs and the overall number of students participating in state-defined CTE programs. Redwood, one of the two schools found to have study-defined Perkins IV POS, had a slight increase in percentage of state-defined CTE program completers but added no state-defined CTE programs during that period and experienced the largest decrease in overall CTE participation of any school.

These mixed trends in POS program development and student CTE course-taking and completion of state-defined CTE programs may reflect the early stage of policy implementation. At the time of our first site visits to schools in 2009, many schools were still developing majors and combining them with CTE programs and/or dropping program offerings to adjust to the policy during the study period and declines may just reflect this adjustment period. EEDA requires putting into place courses and programs of study across the curriculum and not just in CTE, and thus, courses offered for state-defined CTE programs may have been reduced temporarily while courses for other career majors/pathways were being put into place. Data showing schools that had an increase in the number of state-defined CTE programs but not a comparable increase in number of completers, such as at Orchid, may indicate that during this period there was a lag in access to programs and courses as new programs were being established, but enough courses were not yet in place to allow students to be able to complete a program before they graduated. It is also possible that the programs were not adequately promoted to students or students faced difficulties in accessing and/or scheduling courses needed to complete state-defined CTE programs. The loss of faculty and resources due to the economic recession also impacted a number of our schools.

We also knew that at least one third of the schools, due to sample selection, that progress had already been made on implementation of POS-like reforms prior to the study's start. This would have given both cohorts at some sample schools similar access to CTE programs and the courses allowing them to complete them. Some of the early implementation activities may have been due to policy passage but others due to factors, such as implementation of other reform measures that encouraged pathways development such as High Schools That Work or Smaller Learning Communities.

<u>Findings at several of the schools help to illustrate trends and contributing factors to POS</u>. Trends at five of the schools warrant comment here as illustrations of possible trends and contributing factors to POS development, or lack thereof, over the study period.

The school with the largest positive trends across POS variables was Laurel. During that three-year period, the number of state-defined CTE program completers increased substantially as did the number of state-defined CTE programs, making programs more available to students. This school had the largest increases in the number of state-defined CTE programs and the number of completers of these programs of any sample school. Laurel was established around

the time that EEDA legislation was being developed and the school was designed to meet the demands of the new policy and the curriculum was designed to be centered around career majors and clusters through High Schools That Work and Smaller Learning Communities. During interviews, the principal and staff reported having a high level of commitment to the EEDA policy and the development of career pathways. Given the school's focus and the short amount of time it had been operating, the steady increase in programs might be expected, as the high school had become more established and had time to develop more programs. Although the EEDA may have been the originating factor in the interest in development of POS, it is not clear if the policy continues to be the driving factor.

Orchid had the second largest increase in the number of state-defined CTE programs over the study period. The increase in programs over the period seems to be the convergence of several factors at the school. Orchid has had a long-term commitment to offering CTE programs on its campus. We were told by staff that this commitment developed because a large portion of their student body is poor and unlikely to be able to afford to go on to college. The school wanted to make sure that their students are prepared for work after high school graduation. Due to this commitment, the structure for career pathways had already been put into place at the school prior to EEDA through implementation of High Schools That Work. The passage of EEDA only strengthened this orientation. But the stronger impetus for the increase in their efforts on career pathways and curriculum integration, as reported by staff during interviews, came from the receipt of funding for Smaller Learning Communities. Staff reported that the school redesigned the curriculum around clusters and organized their small learning communities around clusters of related pathways. Each Smaller Learning Community contained relevant CTE content teachers for the clusters, such as for business and marketing, and core academic teachers who were co-located for better coordination. Development of state-defined CTE programs was one product of this effort, which was then reportedly strengthened through the policies put in place by EEDA, but the policy is only one contributing factor to the continued commitment to POS-type programs at this school.

At Iris, even in the face of a number of challenges, the school continued to have a low ratio of students to state-defined CTE programs, making these more available to students. These challenges, as described earlier, included the loss of school resources and one-third of its faculty combined with the redirection of efforts to improve basic test scores. The development of state-defined CTE programs at Iris pre-dated the study and possibly EEDA. Similar to the situation at Orchid, staff and faculty were highly committed to the pathways approach and the development of POS-type programs for reasons similar to those at Orchid. They are a high poverty school and many of their students do not go on to college and need to be career-ready upon graduation. They felt that the Pathways approach, along with the reforms of High Schools That Work, were important for the futures of their students.

In addition, Iris was one of the two schools that was found to have CTE programs that met study-defined criteria for the four Perkins IV core elements. Three of these study-defined Perkins IV POS were identified as offered to students at the school. The school is in a unique situation, with a community college located very close to the high school campus, making it easier for cooperation and sharing of faculty/courses and the college serves in many ways as a career center for the high school. In fact, courses for the three majors/programs that were

identified as study-defined Perkins IV POS are taught by faculty from the community college who develop programs based on local industry needs and South Carolina standards and students can do apprenticeships while taking courses and earn college credit for all three programs. All three programs prepare students for industry certifications as well as to go on in two or four- year degree programs.

The other school with CTE programs that met study-defined criteria for the four Perkins IV core elements, Redwood, had the largest number of the programs with six study-defined Perkins IV POS. These POS, however, were available through the school's partner career center and were strong due to the close ties between the center and a local community college, ties between the faculty of this college and the teachers teaching the courses for these programs, and strong advisory groups that helped to promote the progression from the high school to the college programs. The fact that this school was also one of the early implementers of High Schools That Work (HSTW) and considered HSTW as "part of the fabric of their school" may also have contributed to school support of these POS.

It is doubtful whether either of these two schools with study-defined Perkins IV POS would have had them without their partnerships with career centers and/or community colleges. However, while having a partner career center or ties with a local community college may help boost the efforts to develop a POS, neither are the sole contributing factor to their development. Other schools in the study had ties to local community colleges and yet had not developed study-defined Perkins IV POS as identified through our criteria and review. In addition, at the other school with a career center, Azalea, no programs met all of the criteria for a study-defined Perkins IV POS, although it had the largest percentage of programs (57%) that met the criteria for three of the four elements. However, staff at Azalea did not have the same close ties to either the career center or the local community college as did staff at Redwood. The difference in results for Redwood and Iris appeared to be the quality and depth of the collaboration they had with their partners. Partnerships are necessary to the development of POS but the real key seems to be the nature and strength of the partnership.

Finally, regarding the least POS-focused of the sample schools, Poplar, didn't add any new state-defined CTE programs over the period; yet it experienced the second highest increase in number of completers of these programs and was the only school that experienced an increase in overall CTE program participation during the study period. Even with these increases, the school still had a relatively low percentage of state-defined CTE programs and completers of these programs. But these small increases are important to note here, because of all of the overall culture we found at Poplar. The school seemed more focused on four-year college preparation as opposed to expansion of CTE program options for students. It was noted during site visits in 2009 that there seemed to be stigma attached to taking CTE at this school. College-bound students were encouraged to take as many Advanced Placement (AP) courses as possible, rather than CTE courses, since few, if any, of the CTE courses carried AP credit.

Evidence of foundational elements for POS development being put into place.
The policy is helping to facilitate the development of some of the foundational elements considered necessary for POS development in sample schools. Although we did not find many Programs of Study (POS) at sample schools that met study-defined criteria for the Perkins IV

core elements, our qualitative data revealed that components of EEDA are helping to build some of the foundational elements and framework considered necessary for the development and successful implementation of these types of POS. Various foundational elements were being put into place across our sample schools leading to the potential for the development of more POS in schools over time.

EEDA offered some support for the alignment of secondary and postsecondary elements. The EEDA led to the development of several key initiatives that promoted such alignment statewide: the South Carolina Course Articulation and Transfer System and the South Carolina Course Alignment Project. However, our study results showed that such integration and alignment was more common at study schools with strong CTE programs. Strong relationships between high school career centers and local community colleges were also instrumental in creating strong course alignment. This was particularly the case when the local community college partner valued the links between the high school and college's programs and coursework and were active partners in developing the high school curriculum and programs and in recruiting students. Schools with established advisory groups and partnerships with local businesses strengthened secondary and postsecondary alignment.

Although integration of academic and CTE content was occurring in some instances in some sample schools, other developments discussed above often influence the academic-CTE integration process. To increase integration, academic teachers and school counselors guiding students in the development of their course schedules and Individual Graduation Plans (IGPs) need to become more knowledgeable about CTE courses and programs. The IGP process has become a viable way in many of the sample schools to facilitate these discussions, reduce the stigma of taking CTE courses, and increase school staff's knowledge of CTE.

The successful integration of academic and CTE course content often relied on individual teachers to "champion" and implement such integration. That is, such integration tended to reflect individual preferences rather than institutional culture at most of our sample schools. These efforts were also more likely to occur in CTE than in non-CTE courses. Policies to encourage cross-curriculum integration succeeded with simple practices, such as providing common planning periods for CTE and academic teachers, having CTE and academic teachers physically located in close proximity to one another (i.e., in the section of the building) and encouraging cross-discipline projects. Such arrangements allowed for more formal cross-curricular planning to occur and promoted synchronicities that would not have happened otherwise. At some schools, the cross-teaching of core courses and the sharing of faculty contributed to stronger alignment. Smaller Learning Communities also facilitated academic and CTE integration, especially in those schools where the communities were organized around particular career clusters.

A key barrier to developing rigorous programs of study in sample schools was the requirement that students must pass college-prep level core academic courses in order to meet South Carolina academic standards. Several staff and teachers at our sample schools described the inordinate amount of time and resources spent ensuring that low performing students pass these courses in order to graduate, regardless of whether or not they were CTE students. CTE teachers also reported that many students were inadequately prepared for the knowledge and skill

levels required to be successful in their CTE courses. Students were particularly lacking math and reading comprehension skills. This lack of appropriate skills was noted across schools and across program areas and was not just an issue for low performing students but also for "average" students. One contributing factor was that some schools were still using CTE classes as "dumping grounds" for low performing and/or "problem" students. In addition, a number of CTE teachers attributed the presence of so many unprepared students in their courses to a lack of understanding of their school administration about the level of skills necessary to successfully complete these courses.

While EEDA does not require a direct link between a career major and a postsecondary credential, there were still a number of career majors at every school that were reported to have a postsecondary component culminating in a credential, certificate, or degree at the postsecondary level. Overall, a little over half of the CTE school majors reviewed in sample schools were found to lead to and/or prepare students for postsecondary training, education and/or degrees in that area. In addition, all of the sample high schools or their partner career centers offered opportunities for students to earn industry-recognized credentials while in high school in at least one of their state-defined CTE programs, which gave students the possibility for a direct link to employment after graduation.

Even though there were strides being made at the state level, our study offers mixed findings regarding the influence of EEDA on opportunities for dual credit at our sample schools. There was wide variation across sample schools in the availability and taking of dual credit courses by all students, regardless of whether they completed CTE course sequences or not. All eight of our sample schools reported having at least a few dual enrollment agreements and credit transfer options with local postsecondary institutions in place during the time of our first site visits in 2008-2009 and all planned to continue to develop these options across a number of subject areas in the future. Even though dual credit options were available, students at all schools were not taking advantage of these options. At four of our sample schools, students completing CTE course sequences in either the 2009 or 2011 cohort did not take any dual credit courses. There were increases in the numbers of CTE course sequence completers taking dual credit courses between the 2009 and 2011 cohorts at only two schools. The two schools with the highest percentages of CTE course sequence completers taking dual credit courses in the 2011 cohort were the schools that were found to have study-defined Perkins IV POS. The percentage of non-CTE course sequence completers taking dual credit courses also varied widely across schools and the percentages taking these courses remained relatively stable between the 2009 and 2011 cohort except at one of the schools. At several of the sample schools that were four-year college oriented, there was more emphasis on offering Advanced Placement courses than dual credit courses.

The development and maintenance of students' four-year Individual Graduation Plans (IGPs) emerged as an essential component of EEDA policy implementation and the promotion of programs of study in general. Through the IGP process, various sources indicated that students gained important skills in planning for careers and post-high school life. The process provided students an opportunity to think about their career goals and the types of courses and programs needed to achieve those goals. Guidance personnel, teachers as well as students all pointed to IGP development as a valuable tool for career counseling and planning. The IGP process helped

to make it more likely that courses were related to students' interests and courses of study and encouraged students to begin planning for their post-high school careers, whether that involved postsecondary education or not. Counselors reported seeing a steady growth in students' knowledge of career pathways and majors over the period as a result of these efforts. Most students interviewed liked the fact that there was a process in place to help them think about and develop future career goals and that they could then select courses based on these goals. Many of these students reported that being able to select courses based on their interests made them more motivated to come to school and do well in their courses.

From comparisons to findings in the other NRCCTE POS studies, it appears that when emphasis on these types of plans increases, as under EEDA, students are likely to receive more academic and career guidance services. In addition, students in our sample schools most frequently identified school guidance counselors as the most helpful in the development of their IGPs, as compared to students in the other NRCCTE POS studies, who indicated that they found their parents most helpful in plan development. The higher percentages of students naming counselors in our sample schools suggest that state policy specifically targeting the role of counselors can enhance their influence on career choices and possibly provide a more systematic process for career planning.

Structured guidance for career planning and academic advisement is a critical underlying element for participation in POS. The strong emphasis on combining both career-focused guidance and academic advisement in EEDA and the requirements of the IGP process assisted guidance personnel to focus on students' need to engage in career development activities such as exploration, interest assessments, and opportunities to talk about career issues and career options with knowledgeable adults. It was seen by staff and students as an essential service and increased the amount of time counselors in our sample schools spent with students engaging in one-on-one career-based counseling. There was an increased effort to meet with every student on an annual basis. It has increased the depth and breadth of information that students receive about their educational and career opportunities in career and technical fields and was an essential channel for dissemination of information to students on available programs of study. Further, there has been a greater effort to promote CTE programs to students and engage parents in the course and career planning of their children.

Policy implementation facilitated more appropriate placement of students into CTE courses in some sample schools. Some CTE teachers felt that more students were being directed into their courses than previously and that there was more appropriate placement of students in CTE courses; the students "want to be there" and "want to do the work." This has the potential to strengthen POS and student commitment to complete programs of study. Teachers felt that this was a result of improved knowledge of CTE courses and programs of students, parents, and counselors, due in large part to the IGP process. In addition, it is clear at several schools that any stigma associated with taking CTE courses or attending a career center has been reduced in recent years, although stigma remains present at some study schools. Although there was an overall decline in CTE participation in our sample schools, it appears that aspects of the policy have helped to facilitate a better awareness of CTE courses and their importance to career pathways, perhaps attracted a wider range of students to these courses, and facilitated more appropriate placement of students in CTE courses.

One of the factors dissuading students from taking CTE courses was the "course tradeoff" experienced by students deciding between these courses and Advanced Placement, required core academic, honors, and dual credit courses. Students have to balance conflicting demands and face tradeoffs when considering whether to take CTE, core academic, Advanced Placement (AP), and dual credit courses. There is often limited space for students in CTE courses and limited time offerings for these courses, making it difficult to schedule CTE courses around the required core academic courses and sometimes impossible to get into certain CTE courses. In addition, as mentioned earlier, some students may not take CTE courses because these courses rarely carry honors, AP credit, or dual credit, which are more heavily weighted than most CTE courses in calculations of GPAs. College-bound students interested in CTE courses have to balance CTE with other courses to maintain their GPAs. These challenges appeared to have hampered efforts to integrate CTE and academic programs into seamless POS pathways.

CTE teachers and school counselors expressed concern about the emphasis on postsecondary education or training as a requirement for a CTE program to be considered a Perkins IV POS. An emphasis on postsecondary education and training without also including industry-recognized credentials or certificates that may not require postsecondary education may actually lead to an underestimate of student and POS success. This emphasis also does not take into account local economic patterns and labor force needs, and several of the realities in high poverty communities. CTE pathways that need little to no training after high school but lead more directly to employment, such as manufacturing, transportation and logistics (automotive), culinary arts, cosmetology and horticulture, may be argued to be more important programs for high poverty schools to develop and more likely to lead to "success" for their students. Staff argued that alternative measures of success, including internship experiences, co-ops, and obtaining secure employment after graduation, should also be considered.

Mixed evidence of POS development based on EEDA policy.
Although the state policy may be helping to lay some of the foundational elements for the development of POS, our study offers mixed evidence as to whether the level of EEDA implementation influenced the development of POS at our study schools. By design, schools were at various levels of implementation at the start of our study and we wanted to track change over time to explore whether the policy may be influencing the development of POS. Some of the data did offer evidence that higher policy implementation levels were associated with the existence and/or increase in either POS programs or participation of students in POS, but findings were inconsistent across schools and POS measures.

There was some relationship between policy implementation level and the number of study-defined Perkins IV POS identified at schools and percentages of state-defined CTE programs that met the study-defined criteria for at least three of the four Perkins IV core elements. But the relationship was inconsistent. The school found to have the highest number of study-defined Perkins IV POS, Redwood, was a high implementation school, while the other school found to have study-defined Perkins IV POS was a medium implementation school. The two schools with approximately half of their eligible state-defined CTE programs that met criteria for at least three of the four Perkins IV core elements were medium implementation

schools. On the other hand, the other high implementation school had the lowest percentage of eligible programs that met three of the four criteria while one of the lowest implementation schools had the third highest percentage of eligible programs meeting three criteria.

In terms of student involvement in POS, again, there was mixed evidence. There was a small overall positive association between the percentage of students who had completed a CTE course sequence and the level of implementation, but the relationship across schools was inconsistent. There were large percentages of these CTE course sequence completers at low, medium as well as high implementation level schools. There was a stronger positive and more consistent association between the numbers of state-defined CTE program completers and a school's level of implementation. As the level of policy implementation at a school increased so did the average percentage of state-defined CTE program completers, particularly for the 2010-2011 school year. However, there did not seem to be a pattern in the relationship between level of policy implementation and changes in the percentage of these types of completers between the Class of 2009 and the Class of 2011. The two high implementation schools had virtually no increase in completers of state-recognized CTE programs between the two cohorts. The largest increases occurred at half of the medium implementation schools while the largest decreases occurred at the other half of the medium implementation schools.

There were no discernible patterns across policy implementation levels for several other POS-related outcomes, such as the changes in the overall percentage of students who took courses in state-defined CTE programs, with all but one school experiencing a decline in enrollment in these courses over the study period. The only school with an increase was a low implementation school. Schools with the largest decline in overall CTE enrollment were medium implementation schools.

These mixed findings could be the result of a number of factors. First, it is important to emphasize that the policy was relatively new during these years and majors/programs and career pathways across the curriculum were still being developed for CTE as well as other types of majors/programs. POS2 programs are limited to only those majors/programs that are SDE recognized CTE programs. Changes may have been occurring at sample schools in non-CTE programs, such as journalism or performing arts, and these changes would not be identified in this analysis. Also, state budget cuts and various local contextual factors (e.g., businesses closing and other impacts of the recession on the school's community, declining enrollment, etc.) could have influenced the study results.

Research Question 2. *What impact does the level of local economic resources have on the implementation of EEDA and the development and implementation of POS?*

In terms of both staff time and fiscal resources, a state policy as comprehensive as EEDA is expensive to implement. The levels of implementation among the eight sites have been affected by a variety of variables, such as resources available within the school districts and communities, declining state funding for EEDA and other educational services, and increased demands placed on school personnel. Schools that had access to staff with prior knowledge of and experience with various policy areas, and schools in communities that included diverse local businesses that were willing to provide a variety of resources, clearly benefitted from such

additional resources. On the other hand, challenging economic conditions may be related to a high perceived need for programs of study, and thus serve as a motivator for prioritizing POS development. Research question 2 relates to local economic resources at the sample schools. Key findings related to this research question are listed below and described in this section.

State and other funding sources.

- Support beyond the local level is crucial for policy implementation.

Access to facilities dedicated to career education and commitment to career-focused reform.

- Access to a career center or technical college may be related to more highly developed programs of study.

- Commitment to the policy can produce positive results.

Local economic conditions as motivation toward POS development.

- Schools' selection of majors/programs to offer was often based on local economic conditions and resources.

- More challenging community economics may be related to more highly developed POS under EEDA, perhaps due to increased motivation to develop clearer avenues toward careers and employment.

- Students from schools in higher poverty communities reported more intentions to complete majors/programs, had more program completion, and switched career clusters less in high school.

- High school seniors' plans to continue formal education after high school and have a job at age 30 did not differ significantly by local economic condition for the Class of 2011 but specific postsecondary degree plans did differ. Differences were noted between the Class of 2009 and the Class of 2011 both overall and by poverty.

State and other funding sources.
Support beyond the local level is crucial for policy implementation. Research question 2 relates to local economic resources at the sample schools, but a brief discussion of district, state, and federal resources to support such a policy is important as well. Support of the policy can come in the form of direct funding to a school (resources within the school and school system), or in the form of support resources developed and paid for beyond the local school and school system level. We will touch on some of the indirect support issues (educational products developed at the state level, district emphasis on the policy, the RECs, program template development, access to career centers and technical colleges, etc.) later in this section. For now we turn to direct economic resources available to the schools from state funding sources.

Since state funding has been available for only some portions of the policy, in many ways the EEDA policy could easily be considered an underfunded mandate. The policy requires major resources to reorganize curriculum and hire enough staff to meet the state mandates. For example, the EEDA law mandates lower student-to-guidance personnel ratios, and districts have been hard pressed to hire and retain the needed school counselors and/or career specialists (or any other personnel) in the midst of freezes and cuts to a range of other positions. This has become particularly difficult with the recent, and continuing, economic situation, resulting in repeated state budget cuts to education. Any state desiring to successfully implement such a state mandate would be well advised to use caution when mandating the implementation of an ambitious, high-cost reform in the absence of sufficient financial support for schools.

In the years that EEDA was first being implemented, the U.S. and other nations across the globe experienced a lengthy recessionary period. The first class required to have the 8th grade IGPs was just entering high school (9th grade) in 2008, the year most economists point to as the beginning of the recession. The Regional Education Centers were in place, but just being developed. Templates for programs of study were being developed; however, in the plans to develop the pathways and programs of study, support from local businesses and institutions of higher learning was to be crucial. In 2012 there are indications that South Carolina is recovering from the recession that began in 2007-2008, but the recovery is slow.

Oliff & Leachman (2011) found that of 46 states that publish education budget data in a way that allows historic comparisons,
- 30 states were providing less education funding than they had four years previous to 2011;
- 17 states had cut per-student funding by more than 10% from pre-recession (pre 2008, inflation adjusted) levels; and
- 4 states—South Carolina, Arizona, California, and Hawaii—each had reduced per student funding to K-12 schools by more than 20%.

In fact, South Carolina cut its per pupil education budget more than any other state during the recessionary period between 2008 and 2011 (see Figure VII.1).[20] For FY12, there was a 4.6% (inflation-adjusted) increase budgeted but it may prove too late for some of the EEDA elements, as local district budgets may include other priorities.

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[20] South Carolina, additionally, cut funding for higher education between 2008 and 2011 by more than 30%, more than any other state in the nation (Sumeta & Kinne, 2011).

-24.1%	South Carolina
-24.0%	Arizona
-23.0%	California
-22.2%	Hawaii
-18.7%	Oklahoma
-18.1%	Florida
-17.9%	Alabama
-17.6%	Georgia
-14.7%	North Carolina
-12.4%	Kansas
-12.4%	New Mexico
-12.3%	Oregon
-12.2%	Mississippi
-12.0%	Texas
-11.9%	Wisconsin
-11.5%	Virginia
-11.3%	Utah
-8.5%	Kentucky
-7.7%	Minnesota
-7.6%	South Dakota
-5.0%	Arkansas
-4.6%	Illinois
-4.4%	Rhode Island
-4.2%	Colorado
-2.6%	Maine
-2.6%	Nevada
-2.2%	Ohio
-0.6%	Michigan
-0.6%	New York
-0.3%	Vermont
Missouri	0.4%
New Jersey	1.1%
Montana	1.4%
Connecticut	1.7%
Tennessee	2.1%
Louisiana	2.5%
New Hampshire	4.3%
Pennsylvania	4.6%
West Virginia	5.4%
Nebraska	7.5%
Wyoming	7.7%
Massachusetts	7.9%
Maryland	10.1%
Alaska	14.6%
Iowa	17.1%
North Dakota	24.2%

Figure VII.1. Percent change in spending per student, inflation-adjusted, fiscal year 2008 to fiscal year 2012 (Oliff & Leachman, 2011). Data based CBPP budget analysis and NCES enrollment statistics

Federal employment data show that school districts began reducing the overall number of teachers and other employees in September 2008, when the first round of budget cuts began taking effect. By September 2011, local school districts had cut 278,000 jobs nationally compared with 2008. At a time when the nation was pushing to produce workers with the skills to master new technologies and adapt to the complexities of a global economy, large cuts in funding for basic education could have undermined crucial school reform efforts aimed at better preparing children for the future. And local school districts typically have little ability to replace

lost state aid on their own due to the dwindling tax bases that usually occur during recessionary periods (Oliff & Leachman, 2011).

The issue was not simply cuts in state funding. Levels of EEDA implementation at the eight high school sites were reported to have been affected by a variety of factors including the presence or absence of jobs and job shadowing opportunities in the specific communities, resources available within the school districts, and increased demands placed on remaining school personnel. A few schools lacked some of the basic resources necessary to design and implement POS. Such resources include the knowledge and background to train teachers and staff, the in-school human and fiscal resources to implement reforms, or local businesses to provide mentoring, internships, and work-based learning opportunities.

Not surprisingly, however, implementation was observed and reported to have been facilitated by access to certain resources, such as staff with prior knowledge of and experience with various policy areas or location in a community with diverse local businesses willing to provide resources and educational opportunities for students, even in challenging economic times. And some of our sample schools were demonstrating great ingenuity in finding such opportunities for their students. During site visit interviews, the state was credited with providing good virtual job shadowing and other general resources.

In terms of both time and fiscal resources, a state policy as comprehensive as EEDA is expensive to implement. Staff in all of the schools visited, whether they were located in high- or low-poverty communities, mentioned struggling to carry out the policy without being able to hire more staff. Even the school with the most staff and district resources to implement the policy was struggling.

Access to facilities dedicated to career education and commitment to career-focused reform.
Access to a career center or technical college may be related to more highly developed programs of study. Azalea High did not have any programs that completely qualified as having all the elements of a Perkins IV POS as defined in our study, but had over half of their CTE programs meeting 3 of the 4 study-defined requirements. Azalea is one of the two schools in the study with career centers located off campus yet close enough so that students could get there easily.

The school with the most programs fully qualifying as Perkins IV POS by our definitions was Redwood, the other school with an off-campus career center fairly close by. Redwood was one of only two schools where we found study-defined Perkins IV POS (6 of the 9 total such POS found across the sample schools) existing at the time of our site visits in 2008-2009. The other school with study-defined Perkins IV POS (3 of the 9 such POS) existing in 2008-2009 was Iris High. Iris did not have access to a career center, but could benefit from something similar. The local technical college is very near (geographically) to Iris. Iris and the technical college work closely together to give students access to POS.

We noted early, in our initial site visits, that career centers were important resources and seen as vital to successful policy implementation for schools that used them. One principal told

us that her school wouldn't be able to implement EEDA without their district's career center. With the courses and programs available at the district career center, the school was able to offer about a dozen career clusters as compared to five or less without the career center. A community college or technical college could serve that purpose as well. The focus on career training seemed important to the development of POS. Often the more comprehensive schools were either not able, or not motivated for one reason or another, to fully focus on career pathways and POS. We observed that some schools had a culture of broad and general college preparation rather than career focus and they were not likely to change that culture without substantial financial support or other motivation. The priorities for the schools in less economically disadvantaged areas may be different that those in more economically disadvantaged areas.

Commitment to the policy can produce results. As mentioned, some of the sample schools in lower poverty areas appeared to have a culture of broad and general college preparation rather than a career focus. This translated to the lower poverty (more affluent) schools not having as many POS-related successes overall. The one exception to this was Laurel, which was a low poverty, newer school, that was built and opened at about the same time as EEDA came about. Laurel organized around smaller learning communities and appeared to be focusing on at-risk students especially well. While many of their students could certainly broadly be defined as college prep students, and none of Laurel's programs were found to completely qualify as highly developed study-defined POS, Laurel was one of two schools that had a substantial increase in CTE program completers between 2009 and 2011. Laurel was also the school with the highest ratio of CTE program offerings to student enrollment. During the initial site visit to Laurel, staff were asked about their awareness of EEDA policy. Laurel staff indicated that their school was "built around EEDA."

The other school that was somewhat of an anomaly to the other schools in our sample, possibly due to high commitment to the policy, was Apple. Apple had neither a career center close by, nor a technical college. Apple was a comprehensive school, but compared to Laurel (one of the lowest poverty schools in our sample), Apple is one of the highest poverty schools. Yet Apple was the other school with substantial increases in CTE program completers between 2009 and 2011. And Apple was the highest of the high poverty schools in terms of the ratio of CTE program offerings to student enrollment. During site interviews, Apple staff were optimistic about the state policy. Both Laurel and Apple staff indicated a commitment to the policy and a desire to be able to offer to their students the opportunities the policy was created to produce.

Local economic conditions as motivation toward POS development.
Schools' selection of majors/programs to offer was often based on local economic conditions and resources**.** Under EEDA, schools are to develop and offer locally relevant majors/programs. Which majors and programs to offer students is being left up to individual schools, with assistance from school districts and the state. We found that schools and districts decided which career majors, programs and POS to implement based on a number of factors: (1) what was already in place; (2) local labor market needs; (3) input from business partners; (4) skill/expertise needs of particular local company; (5) availability of expertise and classes at local technical and community colleges; (6) availability/affordability of "ready-made" programs like Project Lead The Way and ROTC; and (7) surveys of student interests. Obviously, all of these

(except item #6) can be tied to local economic conditions. The environment in which the students live as well as the resources available to the school can impact the demand for certain programs as well as the ability of the school to offer certain programs. State and federal resources can play a large role in this by developing templates and ready-made programs that can be implemented in schools regardless of the local resources. Online resources can play a role. Businesses can be encouraged in various ways to see the benefits of working with local schools. The EEDA legislation laid out a major role for businesses in educating the future workforce, but the roles businesses actually play in schools varied widely across our sample schools. Factors for business participation included the needs of the local labor force, location of businesses relative to the school, the type of businesses available for job shadowing and internships, how aggressive schools and/or districts try to recruit businesses, and interest level of business in partnering with schools.

More challenging community economics may be related to more highly developed POS under EEDA, perhaps due to increased motivation to develop clearer avenues toward careers and employment. At the local sample school level, some sites were located in communities with diverse local businesses that were willing to partner with the schools and provide a variety of resources, such as guest speakers, internships, and other work-based learning experiences for students. In other contexts, communities lacked local businesses to provide mentoring, internships, and work-based learning opportunities.

The presence of local resources to facilitate career-focused education was clearly beneficial to our sample schools; therefore, it may seem obvious that more community resources would translate to more highly developed POS and pathways. However, the contrary seemed to be true in several cases. For example, one of the highest poverty sample schools, Apple High, was in such a remote rural location that there was no cellular phone service available in the immediate school area and a long drive was necessary to reach communities offering diverse types of employment. The best jobs and opportunities for job shadowing or internships were over 20 miles from this school. Although there was access to a career center, it was difficult for students to arrange schedules to try to make classes at such a distant location. However, the remoteness of this school appears to have been a motivator toward the development of POS. Staff at Apple High indicated enthusiasm for the career development elements of EEDA. Although Apple High, also one of our smallest schools, had not developed as many CTE majors/programs as the other sample schools, half of their CTE programs met 3 out of the 4 requirements for our strictest interpretation of a Perkins IV POS (a POS4), indicating a deep commitment to what EEDA might be able to do for their students and a commitment to beginning to develop highly evolved programs of study.

We also found a slightly positive relationship between poverty and the portion of our measurement of policy implementation relating to integration of rigorous academic and career-focused curricula organized into career clusters and majors. In general, the higher the school poverty level, the more we found evidence of implementation of this portion of the policy.

Students from schools in higher poverty communities reported more intentions to complete majors/programs, had more program completion, and switched career clusters less in high school. For whatever reason, the trend for higher poverty schools was that their students

were more likely to choose a major or program and stick to that major/program through completion. This data is based on the analysis of cohorts of students who had been at each school for three consecutive years. Looking at students that way aided interpretations at the school-level, as those students had more direct exposure to the programs and activities at the particular schools they attended, i.e., transfers in and short-termers were not included. Note that this data is quite different to what is usually reported in school report cards and other publications because these are the students who have not dropped out; these are the students who are not extremely mobile. In some ways, these students are not the most at-risk students. However, the fact that the high poverty schools tended to have more students who chose a program and stuck to it can be an indicator of the real value of programs of study for students from high poverty communities. The percentage of the Class of 2011 cohort defined this way and completing a sequence of CTE courses within one career cluster was strongly related to community poverty, with students in the higher poverty schools completing more CTE sequences than students in low poverty schools.

High school seniors' plans to continue formal education after high school and have a job at age 30 did not differ significantly by local economic condition for the Class of 2011 but specific postsecondary degree plans did differ. Differences were noted between the Class of 2009 and the Class of 2011 both overall and by poverty. Across all three community economic levels (low poverty, medium poverty and high poverty), a majority of high school seniors from our sample schools in the Class of 2011 planned to continue formal education immediately after high school. The only economic group, however, to actually show an increase between the Class of 2009 (not exposed to EEDA) and the Class of 2011 (exposed since 8th grade to the policy) in plans to immediately after high school "enroll in a 4-year college or university, enroll in a 2-year community college, or enroll in a 2-year community college and then transfer to a 4-year college/university" were the students from the high poverty schools.

A majority of students across all three community economic levels also planned to have a job at age 30 and could provide a legitimate job name. There were no significant differences across poverty levels on that question, but the percentages of students responding positively to that question increased between the Class of 2009 and the Class of 2011. And the percentages of students reporting that they did not plan to have a job at age 30 went down between the Class of 2009 and Class of 2011, particularly for the students in high poverty schools.

Significantly more Class of 2011 seniors from low poverty (more affluent) schools planned to complete a bachelor's degree or higher, compared to Class of 2011 seniors from moderate or high poverty schools. However, between the Class of 2009 and the Class of 2011, an increased percentage of students from both high and low poverty schools planned to complete a bachelor's or master's degree.

Research Question 3. *What impact does the implementation of EEDA and POS have on student high school outcomes?*

The expectations for EEDA and for career pathways reform models in general were that an early focus on career planning and goal-setting, coupled with focusing on a clear career pathway that mixed high quality academic and career-related courses relevant to that pathway,

would not only help students be more engaged in high school and improve outcomes at that level but also would better prepare students for their future careers and improve their postgraduation outcomes. Data collected from our eight sample schools offer some insights into whether this type of policy may be helping to achieve these types of outcomes.

Research Question 3 relates to the influence of the implementation of the EEDA policy and the existence of and participation in Programs of Study (POS) on career-focused activities and other student outcomes. The following findings are discussed in more detail in the text below.

EEDA, LOI, and career-focused activities.

- Students' participation in career planning activities increased under EEDA.

- There were decreased reports of co-op experiences, increased reports of job shadowing and visiting businesses, and less students participating in no work-based learning experiences.

- Students were meeting more with guidance, and guidance counselors were found to be most helpful in career planning.

- There were no significant differences in survey responses by the Classes of 2009 and 2011 concerning certain types of career planning activities.

EEDA, LOI, and student engagement.

- Attendance and tardiness are about the same for members of the Class of 2011 as for the Class of 2009.

- Recorded disciplinary incident rates were slightly higher for the 2011 cohort than for the 2009 cohort.

- Seniors in the Class of 2011 report that having a major or cluster made it less likely that they would want to drop out of high school.

- Higher policy implementation schools had fewer students going to class without homework and although the majority of seniors in both 2009 and 2011 reported going to class one or more times without necessary supplies, more from the Class of 2011 reported never going unprepared compared to those from the Class of 2009.

- More students from the Class of 2009 agreed that information learned in school is useful in everyday life, and that information learned in school would be useful in college, training or career but Medium LOI schools in 2011 had higher percentages of seniors agreeing to those statements.

POS and career-focused activities

- There was evidence that all of the Class of 2011 were receiving assistance with career exploration and planning, regardless of the number of CTE programs offered or the levels of CTE completers in those programs by school.

- There were some additional benefits, however, to students attending schools with more CTE programs or more CTE completers, in terms of access to some types of career-related information and experiences.

- Having taken three or more CTE courses by the end of twelfth grade also seemed to increase exposure to certain types of career exploration, planning and work-based learning experiences as compared to students who had not taken as many CTE courses.

POS and student engagement

- Evidence suggests little association between being in a POS and attendance and a slightly negative association with discipline incident rates for our 2011 POS1 cohort.

- Taking three or more CTE courses by the end of twelfth grade was associated with some positive and some negative student engagement outcomes involving relevance of coursework and attendance.

- There were some indications that being in a higher CTE program implementation school also improved some aspects of student engagement.

EEDA, LOI, and career-focused activities.

Students' participation in career planning activities increased under EEDA. No matter which groups of students were analyzed, we found that across all eight sample schools, between the Class of 2009 (little to no exposure to EEDA) and the Class of 2011 (exposed to EEDA since 8th grade), there were great increases in the percentages of students who either had evidence of having an Individual Graduation Plan (IGP) or reported that they had had "put together a "career plan" or 4-year "Individual Graduation Plan (IGP)…" In fact, the analyses of students who were at each school for at least three years showed that 100% of those students had IGPs. Focus groups of Class of 2011 students in spring 2011 found that nearly all students interviewed said that they had IGP plans and that the IGP process was generally viewed positively, although it was not clear that students made the connection between the IGP and the selection of major or program of study, selection of courses, and planning work-based learning experiences.

Interviews with guidance counselors pointed to the fact that between 2009 and 2012, sample schools had increased opportunities for students in the areas of career development and exploration, such as increased engagement in career assessments, more opportunities for engagement with community-based industry through speakers, career fairs, work-based learning opportunities, etc., even though some schools lack community resources for these activities.

Two activities presented significant differences in responses from the classes of 2009 and 2011 on the *Student Engagement/POS Experiences Survey*. Students were asked if they had ever (1) answered questions related to jobs and careers on a computer or on a questionnaire or (2) been in a class where someone from a local business talked about working at their company or in their career. The percentages of "Yes" responses from the seniors in the Class of 2011 were higher for both of those questions compared to seniors in the Class of 2009. There were no significant differences between the responses of seniors in the classes of 2009 and 2011 in the following activities: researching jobs or careers; researching colleges, universities, or military; speaking with or visiting someone in a career of interest; or touring a local business with a group from school. Only one of these six job or career identification activities elicited significantly different responses from seniors in the Class of 2011 when considering our measurements of policy implementation (LOI), and that was being "in a class where someone from a local business talked about working at their company or in their career." Not only did seniors in the Class of 2011 respond yes to having been in a such a class more often than seniors in the Class of 2009, but seniors in the Class of 2011 in the higher LOI schools responded yes to that question more often as well.

There were decreased reports of co-op experiences, increased reports of job shadowing and visiting businesses, and less students participating in no work-based learning experiences. The *Student Engagement/POS Experiences Survey* also queried seniors in the classes of 2009 and 2011 about work-based learning experiences. Seniors in the Class of 2009 responded "Yes" to having participated in co-op (defined on the survey as work experience at a local business in your high school major or career cluster) more than seniors in the Class of 2011. Seniors in the Class of 2011 responded "Yes" to having participated in job shadowing or work-site visits (defined on the survey as visits to work places to observe one worker or many workers) more than seniors in the Class of 2009. Of the six work-based learning experiences listed on the survey, seniors from the Class of 2011 reported less often that they had participated in "none of these" than seniors from the Class of 2009. Counselors reported in 2012 that they had increased since 2009 the opportunities for career development and exploration, such as increased engagement in career assessments, more opportunities for engagement with community-based industry through speakers, career fairs, work-based learning opportunities, etc. The surveys of guidance duties in 2009 and 2012 show about the same perception of increased duties since EEDA in the area of "identifying and coordinating work-based/extended learning opportunities for students." It was the fourth in magnitude of increased mandated duties reported in 2011-2012, just behind "meeting with parents about career issues." Obviously, identifying and coordinating work-based learning opportunities for students is still being emphasized and it still elicits a notable perception of increase in duties in this area since EEDA.

Students were meeting more with guidance, and guidance counselors were found to be most helpful in career planning. During student focus groups, counselors were seen as helpful and caring. Some students were, as to be expected, more enthusiastic and talkative than others about their counselors. But in general, their sentiments echoed the responses from the senior Class of 2011 on the *Student Engagement/POS Experiences Survey*. Of the seniors from the Class of 2011 (exposed to EEDA elements since 8th grade) ($N = 601$) and seniors from the class of 2009 (little to no exposure to EEDA) ($N = 486$) who said that they had put together 4-year career plans, almost 22% more from the Class of 2011 than the Class of 2009 found that

guidance counselors were the most helpful among 5 groups (parents/step-parents/guardians, a teacher, a guidance counselor, friends, or no one) in developing career plans in high school. Of the seniors in the Class of 2009 who reported putting together a four-year plan, over 12% reported that no one helped them put together their plan. Just over 4% of the seniors in the Class of 2011 reported that no one helped them. These changes between the Class of 2009 and the Class of 2011 regarding finding guidance helpful and reduced reports of no one helping with career plans held true for both students who reported taking 3 or more Career and Technical Education (CTE) courses by the time they were seniors and for those taking less CTE courses.

There were no significant differences in survey responses by the Classes of 2009 and 2011 concerning certain types of career planning activities. Students were asked on the *Student Engagement/POS Experiences Survey*, how much thinking and planning they had done for job-related activities. There were no significant differences in the responses of seniors in the Class of 2011 and seniors in the Class of 2009 regarding their thinking and planning on the following activities: gathering information about jobs of interest; taking classes to help decide what kind of job they want; participating in school or out-of-school activities that will help in the decision about the kind of job wanted; or in volunteering, interning, or working on a job to help find out what kind of job they want to have in the future.

EEDA policy implementation (LOI) did not seem to be related to differences among the ways groups of students answered these "thinking and planning" questions either, with one exception. A larger percentage of seniors in the Class of 2011 from Medium LOI schools reported having made plans to participate or had already participated in volunteering, interning, or working on a job to help them find out the kind of job they want to have in the future (62.0%) than from High or Low EEDA LOI schools (51.8% and 52.2%, respectively; p=0.023). Overall only 56.4% of all seniors in the Class of 2009 at our sample schools had made plans to or had already done these activities.

As a note, when asked, the great majority of students in the spring 2011 focus groups reported that they believed that they had received and benefitted from substantially more career-focused guidance, information, and coursework than students in previous years. They felt fortunate to have such guidance and opportunities.

EEDA, LOI, and student engagement.
Attendance and tardiness are about the same for members of the Class of 2011 as for the Class of 2009. The *Student Engagement/POS Experiences Survey* queried students on tardies and absences. The distribution of responses for seniors in the Class of 2009 and in the Class of 2011 did not significantly differ for the number of times they were late for school, the number of times they cut or skipped classes, or the number of times they were absent from school.

Policy implementation levels at schools did not seem to have any effect on attendance or tardies. There was only one instance where the distribution of responses from seniors in the Class of 2011 varied significantly by level of policy implementation and it is contrary to expectations. Regarding the number of times students self-reported being late for school, fewer seniors from high policy implementation schools indicated they had never been late for school

(17.3%) than seniors in the Class of 2011 from of low policy implementation schools (23.9% and 24.1%, respectively; p=0.026).

Attendance data on the cohorts of students who were at the sample schools 3 consecutive years were also analyzed for 2009 and 2011 cohorts. Similar to students' self-reports of absences on the student survey, there appears to have been little substantial change in average attendance rates between the two cohort years. The average attendance rate for the 2009 cohort was 96.5 and that of 2011 was 96.4. Average attendance rates for the cohorts did decrease a couple of percentage points between 2009 and 2011 for Azalea and Apple.

Recorded disciplinary incident rates were slightly higher for the 2011 cohort than for the 2009 cohort. Comparing the 2009 to the 2011 cohorts of students who were at the sample schools 3 consecutive years, the average discipline rates (a constructed student-level variable, determined to be the number of incidents per 100 days of enrollment) increased for some schools. Redwood, the highest policy implementation school, was the only school where average discipline rates decreased for both CTE course sequence takers and non-CTE course sequence takers between the 2009 and 2011 cohorts.

Seniors in the Class of 2011 report that having a major or cluster made it less likely that they would want to drop out of high school. Over the entire state of South Carolina, graduation rates have generally improved over the last decade. Many factors may be involved. Looking at school report cards for the eight sample schools, six of the eight schools either maintained or increased their graduation rates between 2009 and 2011. The two schools, Redwood and Orchid, whose graduation rates decreased over the time period, were the two highest initial level of policy implementation schools. However, again, caution should be taken as these are snapshots of performance measures.

On the *Student Engagement/POS Experiences Survey*, students were asked to indicate their level of agreement with the statement that having a high school major or career cluster has "made me less likely to want to drop out of school." The distribution of responses from seniors in the Class of 2009 and seniors in the Class of 2011 differed significantly on this question. More seniors in the Class of 2011 agreed or strongly agreed that having a high school major and career cluster made it less likely they would want to drop out of school, as compared to seniors in the Class of 2009. The percentages agreeing with this statement increased for both CTE (having taken three or more CTE courses) and non-CTE (having taken less than 3 CTE courses) survey respondents between 2009 and 2011.

As for any relationship with policy implementation, approximately 71% of seniors in the Class of 2011 from high policy implementation schools agreed that having a major or cluster made them less likely to want to drop out of school, compared to 67% from medium policy implementation schools and 64% from low policy implementation schools. Note that a majority of seniors in the Class of 2011 across all three policy implementation levels agreed that having a high school major and career cluster helped them to get better grades (75.1%, 71.5%, and 65.3%, respectively).

Higher policy implementation schools had fewer students going to class without homework and although the majority of seniors in both 2009 and 2011 reported going to class one or more times without necessary supplies, more from the Class of 2011 reported never going unprepared compared to those from the Class of 2009. A few outcome measurements with significant findings were related to being prepared for class. The distribution of responses for seniors in the Class of 2009 and in the Class of 2011 did not significantly differ for the number of times they went to class without finishing their homework. However, across policy implementation levels, the distribution of responses from seniors in the Class of 2011 regarding the number of times they went to class without homework significantly differed, with fewer seniors from high policy implementation schools indicating they went to class without homework finished than seniors in the Class of 2011 from lower policy implementation schools.

The distribution of responses for seniors in the Class of 2009 and in the Class of 2011 did significantly differ for the number of times students went to class without a pencil, paper, book, or other necessary supplies, with more seniors in the Class of 2011 indicating they had never done this compared to seniors in the Class of 2009. A majority of seniors in both years, across policy implementation levels, indicated that they had gone to class without a pencil, paper, book, or other necessary supplies one or more times.

More students from the Class of 2009 agreed that information learned in school is useful in everyday life, and that information learned in school would be useful in college, training or career but medium policy implementation schools in 2011 had higher percentages of seniors agreeing to those statements. Students were asked on the *Student Engagement/POS Experiences Survey* about their agreement with statements about the usefulness of information learned in school in everyday life, for college or further training, and for their career. Seniors in the Class of 2009 and in the Class of 2011 differed in their responses to all three statements. Specifically, more seniors in the Class of 2009 (64.5%) agreed that the information learned in school is useful in everyday life than seniors in the Class of 2011 (58.0%). Similarly, more seniors in the Class of 2009 agreed that the information learned in school would be useful for college or further training (86.7%) and useful for a career (71.1%) than seniors in the Class of 2011 (83.3% and 65.5%, respectively). Again, 2011 seniors in medium policy implementation schools had greater agreement with the statement that most of the information learned in school is useful in everyday life (68.4%) than did seniors in the Class of 2011 from either high or low policy implementation schools (55.1% and 44.7%, respectively; $p<0.001$). This 68.4% can also be compared to the 64.2% response from seniors at all sample schools from the Class of 2009.

Similarly, seniors in the Class of 2011 from policy implementation schools had higher agreement with the statement that most of the information learned in school will be useful for a career (74.9%) compared to seniors from either high or low policy implementation schools (59.8% and 57.7%, respectively; $p<0.001$). This 74.9% can also be compared to the 71.1% response from seniors at all sample schools from the Class of 2009.

Agreement to the statement that most of the information learned in school will be useful for college or further training among seniors in the Class of 2011 from High, Medium, and Low EEDA LOI schools did not significantly differ with a majority agreeing or strongly agreeing

(80.2%, 87.7%, and 80.4%, respectively; p=0.076). These percentages are mostly lower than that of the Class of 2009 as seniors at all sample schools (86.7%).

This sometimes observed phenomenon of the medium policy implementation schools having responses more aligned with what would be expected in high policy implementation schools may indicate that with such comprehensive policies, focusing on just a few aspects and doing them well, at least at first, may produce better results than trying to cover all aspects but not covering any with much depth.

POS and career-focused activities.
There was evidence that all of the Class of 2011 were receiving assistance with career exploration and planning, regardless of the number of CTE programs offered or the levels of CTE completers in those programs by school. Before exploring change in student outcomes, it is important to assess how much and which aspects of the policy intervention students at different schools were receiving and if these variables were related to the number of CTE programs offered or the levels of enrollment in those programs at each school. From several sources, we determined that by the time they graduated, all members of the Class of 2011, if they had been at a school long enough, had developed an Individual Graduation Plan (IGP) that involved the selection of a career cluster to plan for. Across all schools, at least half of the Class of 2011 seniors self-reported on surveys that they had met with counselors on the development of their IGP plan and reported that their counselor was the most helpful in developing this career plan. In addition, the majority of 2011 seniors across all schools reported involvement in several types of career exploration activities, such as researching different careers and filling out career-related questionnaires, and reported having done some level of thinking and planning about careers through such things as taking classes or volunteering or interning in a job of interest. A majority of the Class of 2011 by their senior year, across all schools, reported being involved in at least one type of work-based learning experience. This indicates that at least at a minimum, all schools were implementing some of the basics of the EEDA for this early policy cohort and attempting to give students career exploration and work-based learning experiences.

There were some additional benefits, however, to students attending schools with more CTE programs or more CTE completers, in terms of access to some types of career-related information and experiences. According to student reports, some aspects of career planning appeared to be implemented at higher levels at schools with more CTE program offerings or that had more CTE completers. At these schools there was more evidence that students were aware of and involved in the IGP process and larger percentages were talking with counselors about finding a job after graduation as well as talking with counselors about the steps necessary to pursue a career. Larger percentages of students at schools with more CTE programs or completers also reported being in a class where someone from a local business talked about working at their company or taking a school-sponsored tour of a local business. This pattern across schools with varying CTE program implementation levels continued with reports of work-based experiences, with one exception. Much larger percentages of students at high CTE program implementation schools reported having at least one work-based learning experience and more of the students reported job shadowing or mentoring experiences. The one exception was internships, where higher percentages of students reported having internships at the low CTE program implementation schools than at the high CTE program implementation schools.

This may be due to the fact that for internships, students were instructed on our survey to include any work experiences that were not necessarily tied to a class and many of the students may have considered any part-time jobs they may have had as internships.

These differences found between higher and lower CTE program implementation level schools suggest some differences in the level of development of the career planning processes at those schools. At least based on student reports, schools with more CTE programs or more CTE completers appeared to be giving students more in-depth assistance on career-planning as well as potentially more meaningful and relevant work-based learning experiences. Bringing in speakers or touring local businesses require more resources and strong partnerships to accomplish these and this may be due to more established partnerships at these high CTE implementation schools. Two of the high CTE program implementation schools (called high POS2 schools earlier in this report), Redwood and Azalea, were partnered with career centers that both had long-standing advisory committees for each of their programs and strong community and business partnerships to assist with offering these types of experiences for students. A third high CTE program implementation school, Iris, had the benefit of close ties with a local community college that also had built partnerships with local businesses to make these types of experiences possible.

Having taken three or more CTE courses by the end of twelfth grade also seemed to increase exposure to certain types of career exploration, planning and work-based learning experiences as compared to students who had not taken as many CTE courses. Although EEDA seems to have spread career planning and exploration experiences to more students, according to our surveys of twelfth graders, being in CTE courses still offered students more opportunities for career exploration, planning, and more work-based experiences. Larger percentages of seniors who reported taking three or more CTE courses by the time they were in the last semester of their senior year also reported thinking and planning about careers and being involved in job and career identification activities (including speaking with someone in a career of interest, being in a class with a local business person coming to talk, or taking a school-sponsored tour of a local business) than seniors who had taken less than three CTE courses.

We consistently found across sample schools that CTE teachers who were interviewed in early site visits were more likely to be familiar with clusters and majors, have more in-depth information on relevant careers in their areas, have partnerships with relevant businesses and were able to offer various related work-based learning opportunities for students in their courses.

One interesting note is that when asked about a list of work-based experiences, seniors who had taken three or more CTE classes reported participating in only one work-based experience (co-op) at higher rates than non-CTE seniors. In addition, contrary to assumptions that counselors may pay less attention to CTE seniors or channel them away from college, similar proportions of CTE and non-CTE seniors reported meeting with counselors more than three times and talking to counselors about a range of topics, including college.

POS and student engagement.
Evidence suggests little association between being in a POS and attendance and a slightly negative association with discipline incident rates for our 2011 POS1 cohort. Data from attendance records for the groups of students identified as being at our sample schools for three

or more consecutive years indicate that attendance rates for the 2009 and 2011 cohorts were not substantially different between the 2009 and 2011 cohorts, between CTE course sequence takers and those who did not take a sequence of CTE courses, or across schools. Much change would not be expected, however, given the already high attendance rates for these students who had been at the schools consistently for three or more years. If there were any trend it was more toward a decrease in attendance rates between the 2009 and 2011 cohorts.

Changes in discipline incidents varied slightly across schools for members of the two cohorts so defined, with half of the sample schools experiencing a slight increase in incidents between the 2009 and 2011 cohorts and the other half experiencing a slight decrease in incidents between 2009 and 2011. Discipline incidents for CTE course sequence takers at three schools remained essentially unchanged between the 2009 and 2011 cohorts; however, for the other five sample schools CTE course sequence takers experienced an increase in discipline incident rates. And, these rate increases were generally larger than for those who were not identified as course sequence takers.

Taking three or more CTE courses by the end of twelfth grade was associated with some positive and some negative student engagement outcomes involving relevance of coursework and attendance. Larger percentages of CTE students (students who reported having taken three or more CTE courses by the end of twelfth grade) than their non-CTE peers saw that having a cluster and major made what they were learning more useful in life, more relevant to their future careers, and helped them get better grades. On the negative outcomes side, even though large percentages agreed that what they were learning was relevant, a higher percentage of 2011 CTE course taking students surveyed reported being absent from school five or more times than did non-CTE course taking (taking less than 3 CTE courses) seniors. This may indicate that acknowledgement of relevance of school material is not necessarily enough of a factor to counteract absenteeism, at least not completely.

There were some indications that being in a higher CTE program implementation school also improved some aspects of student engagement. There were also some interesting differences found in student reports across CTE program levels measurements (levels of CTE programs and CTE completers) of the ways that having a major and career cluster impacted a student's engagement with school. While differences in responses between students who reported having taken three or more CTE courses and those having taken less than three CTE courses revolved around the relevance of schoolwork, differences in student responses across CTE program implementation measurements (programs and completers by school) revolved more around making students want to come to school and/or making them less likely to want to drop out of school. At higher CTE program implementation schools, higher percentages of Class of 2011 seniors reported that having clusters and majors made them more likely to want to come to school and less likely to want to drop out. And larger percentages of students at higher CTE program implementation schools reported that having a career cluster and major helped them to get better grades than students at low CTE program implementation schools. Interestingly, in contrast to the data that looked at only groups of students who had been at sample schools for three consecutive years, self-reports of attendance by the Class of 2011 on the student survey were associated with the CTE program implementation level at their school. Larger percentages of Class of 2011 seniors in higher CTE program implementation schools reported better

attendance (not being late, skipping classes or being absent) than seniors in the Class of 2011 in low CTE program implementation schools. Again, by CTE program implementation, we mean the level or amount of CTE programs at the school as well as the level of CTE program completers compared to enrollment at a school.

These results do suggest that taking a number of CTE courses and being at a school with a high level of CTE program implementation may have had some influence on improving student attitudes toward school. There was, however, mixed evidence on the influence of these on improving attendance and discipline.

Research Question 4. *What impact does the implementation of EEDA and POS have on student postgraduation preparation and plans?*

The success of a Program of Study (POS) is tied to the seamless movement of a student from a clear pathway in high school directly into postsecondary training and/or education in the same pathway. This would mean that from the student's point of view, in order to complete a POS, there would at least be the potential for the student to choose one POS and concentrate in it through high school and then continue (or at least make plans to continue) in that same POS postgraduation, either through further education or training or employment. We collected data from two different sources on the postgraduation preparation and plans our student groups (Classes of 2009 and 2011) in our sample schools: archival IGP data from the state longitudinal dataset and data reported by students on our student survey. From the state longitudinal dataset, we could see from Individual Graduation Plan (IGP) data students' intentions to complete their majors in high school (as opposed to simply declaring a major without intentions to complete); their patterns in switching majors from year to year; their patterns of course taking throughout high school; and their postgraduation plans if reported on the IGP. IGP data, of course, was only available for the Class of 2011. We analyzed course data for both the Class of 2009 and the Class of 2011 from the state longitudinal dataset to determine the frequency of taking advance placement (AP) and dual credit or dual enrollment courses. From the student survey, we had self-reported data for both the Class of 2009 and the Class of 2011 related to taking courses in high school that carried college credit or had the potential to earn college credit; other preparation for postsecondary options; and self-reported plans for postsecondary. Comparing the Class of 2009 (little to no exposure to the EEDA policy) to the Class of 2011 (exposure to the policy since 8th grade) from schools with varying levels of policy implementation allowed us to make some broad conclusions as to the effect of the EEDA policy on students postgraduation preparation and plans. Comparing groups of students based on CTE concentration (and participating in sequences of CTE courses with postsecondary elements) allowed us to make some broad conclusions as to the effect of POS on postgraduation preparation and plans.

The following is an outline of the key findings related to research question 4. These findings are then discussed in more detail in the remainder of this section.

EEDA and postgraduation preparation.

- There was little difference as a whole between the Class of 2009 and the Class of 2011 in our sample schools regarding reported college credit taking patterns, indicating overall and on average little change in this area.

- There were significant differences in college credit taking patterns among individual sample schools between the Class of 2009 and Class of 2011, and significant differences in patterns among schools in 2011, indicating that the policy and policy implementation levels could have had an impact on college credit taking patterns.

- There was little difference as a whole or for individual schools between the Class of 2009 and the Class of 2011 in our sample schools regarding reported number of vocational courses taken.

- There was an increase in CTE programs, CTE program completers, and sequence takers between 2009 and 2011 and a slightly positive relationship with EEDA policy implementation levels at sample schools, indicating that the policy and policy implementation could have had an impact on CTE sequence taking patterns.

- Level of EEDA policy implementation (LOI) had mixed impact on dual credit course-taking patterns.

EEDA and plans for postgraduation education.

- The Class of 2009 and Class of 2011 differed significantly in reported plans for postsecondary education, but the findings are mixed.

EEDA and plans for postgraduation work and careers.

- The EEDA policy may be resulting in more student awareness and identification of specific career goals for the future.

POS and postgraduation preparation.

- Stating an intent to complete a high school major increased the likelihood that a student would complete a CTE course sequence, but still only a minority of those intending to complete a major ended up completing a CTE course sequence

- A sizable portion of CTE course sequence completers switched IGP career clusters between 10th and 12th grades but many still completed a CTE course sequence by graduation.

- CTE students and non-CTE students identified in the state longitudinal dataset in both the 2009 and 2011 cohorts had different patterns in college credit course-taking, with significantly larger percentages of CTE students taking dual credit courses and significantly larger percentages of non-CTE students taking AB/IB courses.

> ➢ Overall, for both the 2009 and 2011 cohorts, non-CTE students were much more likely to have taken AP/IB courses than CTE students, and among those students in either group who took AP/IB, non-CTE students earned more AP/IB credits than CTE students.
> ➢ Patterns of taking AP/IB by CTE students were somewhat associated with more CTE program offerings and more CTE completers being at a school, but not associated with the school having a four-year college focus.
> ➢ Patterns of taking AP/IB by CTE students were also somewhat associated with levels of EEDA policy implementation.
> ➢ There was a significant increase in the percentage of CTE students who took dual credit courses between the 2009 and 2011 cohorts. Also, for the 2011 cohort, significantly more CTE students took dual credit courses than non-CTE students. This is in contrast to the 2009 cohort, where slightly more non-CTE students than CTE students took dual credit courses.
> ➢ The significant increase in the percentage of CTE students who took dual credit courses between the 2009 and 2011 cohorts was mainly due to increases at two of the sample schools. Both of these schools were ranked high in terms of the number of CTE program offerings and CTE completer status.
> ➢ One of the schools that ranked low in terms of CTE program offerings and CTE program completion rates had some of the highest percentages of CTE students (and non-CTE students) who took dual credit courses.
> ➢ There were fewer schools with students taking dual credit courses and wide variation across schools in the percentages of students taking these courses.

POS and plans for postgraduation.

- The majority of the Class of 2011 planned to attend college.

- Trends in expectations for college varied by CTE course sequence taker status, Programs of Study (POS) career cluster, and school.

- Plans to enroll in college appeared to be associated with the career cluster of a student's POS.

EEDA and postsecondary preparation.
There was little difference as a whole between the Class of 2009 and the Class of 2011 in our sample schools regarding reported college credit taking patterns, indicating overall and on average little change in this area. From the *Student Engagement/POS Experiences Survey*, the distribution of responses for the number of courses planned to take that will earn college credit by the time of high school graduation for seniors in the Class of 2009 and seniors in the Class of 2011 did not significantly differ with a majority in both classes indicating they would take one or more courses (56.3% and 54.4%, respectively). Seniors in the Class of 2009 and seniors in the Class of 2011 did not significantly differ in their responses to the number of times they took Advanced Placement courses, with approximately 45.0% of seniors in the Class of 2009 and 46.6% of seniors in the Class of 2011 indicating they had never taken these types of courses.

There were significant differences in college credit taking patterns among individual sample schools between the Class of 2009 and Class of 2011, and significant differences in patterns among schools in 2011, indicating that the policy and policy implementation levels could have had an impact on college credit taking patterns. Looking at the cohorts of students who were at each of our sample schools for at least three consecutive years, we found several instances where there were significant changes in AP course taking between the 2009 and 2011 cohorts. At the third and fourth highest policy implementation schools (Apple and Laurel), significantly more (15% and 11%, respectively) Class of 2011 students took AP courses compared to students in the Class of 2009. Contrarily, however, at the second highest policy implementation school, Orchid, there was a fairly large, but not as significant decrease in the percentage of students taking AP courses between the 2009 and 2011 cohorts. It should be noted however, that Orchid had the highest percentage of students taking AP courses in 2009 and actually had a small increase between the 2009 and 2011 cohorts on average credits taken or attempted per AP student. Elm, the lowest policy implementation school had a significant decrease in average AP credits taken or attempted per student between the 2009 and 2011 cohorts.

As for dual credit, the highest policy implementation school, Redwood, had a significant increase between the 2009 and 2011 cohorts regarding the percentage of students taking courses for dual credit (11%). There were no significant differences at any school between the two cohorts concerning average dual credit credits earned per student. There was a significant decrease in the percentage of students taking dual credit between 2009 and 2011 at Laurel (a mid-policy implementer, the fourth highest implementer), but as mentioned earlier, Laurel had a very significant increase in the percentage of students taking AP courses. Laurel was also had fairly high percentages of students already taking dual credit prior to EEDA (in their Class of 2009), so increasing that would have been challenging. The challenge, however, was met by Redwood (already mentioned). Redwood, the highest policy implementation school, had the highest percentage, among our sample schools, of students taking dual credit in the 2009 cohort (29%), yet still managed to increase that to 40% of the 2011 cohort taking dual credit courses.

The findings from the surveys of students confirm a relationship between early EEDA policy implementation and college-credit course taking in high school. Seniors in the Class of 2011 from high, medium, and low EEDA policy implementation schools significantly differed in their responses to the number of courses they planned to take that would earn college credit by the time they graduate from high school, with more seniors in the Class of 2011 from low policy implementation schools indicating that they would take none of these courses (28.5%) compared to seniors in the Class of 2011 from high and medium policy implementation schools (16.5% and 13.9%, respectively; p=0.003). Similarly, more seniors in the Class of 2011 from medium and low EEDA policy implementation schools reported they had never taken an Advanced Placement course (47.9% and 53.9%, respectively) compared to seniors in the Class of 2011 from the high policy implementation schools (40.2%; p=0.030).

There was little difference as a whole or for individual schools between the Class of 2009 and the Class of 2011 in our sample schools regarding reported number of vocational courses taken. Responses of seniors in the Class of 2009 and seniors in the Class of 2011 did not

significantly differ in terms of the number of times they had taken vocational, career, or technical courses, with approximately 27% of both classes indicating they had never taken these types of courses.

        There was an increase in CTE programs, CTE program completers, and sequence takers between 2009 and 2011 and a slightly positive relationship with EEDA policy implementation levels at sample schools, indicating that the policy and policy implementation could have had an impact on CTE sequence taking patterns. Four findings are related to evidence of increased course sequence taking between 2009 and 2011. Three involve CTE programs with concentrators at the sample schools. CTE programs were available to students at all sample schools in 2009 and students could participate, concentrate, or complete the programs. Both the number of CTE program completers and the ratio of CTE program completers to enrollment increased between 2009 and 2011 for the majority of the sample schools. The third variable related to CTE program offerings compared to enrollment at our sample schools. The ratio of CTE programs offered compared to school enrollment also increased between 2009 and 2011 for the majority of the sample schools. Overall, there was a positive relationship between policy implementation and increased CTE program completion and program offerings, although the relationship was not consistent for every school. The school with the most significant increases in both CTE program completion and program offerings between 2009 and 2011 was Laurel. Laurel was the school where staff told us that it was "built around EEDA."

        The increase in sequence taking between 2009 and 2011 was supported by our Class of 2009 and Class of 2011 cohorts through state longitudinal data. The majority of sample schools had increases (though not statistically significant) in the percentages of students identified as having completed 4 or more credits in a logical CTE course sequence within a single career cluster with a postsecondary component. There was also a slightly positive relationship between the increases in this measurement of course-sequence taking and policy implementation levels at schools.

        Level of policy implementation (LOI) had mixed impact on dual credit course-taking patterns. One of the high LOI schools, Redwood, did have the most similar percentages of POS1 and non-POS1 between cohorts as well as the highest percentages of both groups that took these types of courses. This school was also a high POS2 school and that may have been a result of elements put in place by implementation of the reform policy. However, at the other high LOI school, Orchid, essentially no POS1 or non-POS1 students took dual credit courses in either cohort. The other two schools with the highest percentage of POS1 students who took dual credit courses were medium LOI schools. One of these, Iris, was also a high POS2 school and that may indicate that the school focused on certain aspects of policy implementation, particularly those that helped to develop POS and dual credit options. The two low LOI schools had different patterns in dual course-taking. At one of the schools, Elm, students in both cohorts took dual credit courses, but there were significantly fewer POS1 students who took these courses than non-POS1 students. At the other low LOI school, Poplar, few to no students from either cohort or POS1 groups took dual credit courses. It was not surprising to see these mixed results for LOI on dual credit or AB/IB course-taking patterns, since emphasis on development of these types of courses is only one part of the comprehensive EEDA reform policy.

It is important to keep in mind that the patterns found in course-taking between POS1 and non-POS1 students and changes across the cohorts may reflect changes in choices that these students had to make about what route to go in high school. As was discussed earlier, students, parents, and counselors often had to weigh the tradeoffs for students in choosing the types of courses they would take and also take into account course availability and scheduling. With so many core requirements and just seven elective credits, students in our two cohorts were limited as to how many dual credit courses they could take, deal with the lack of availability of courses, scheduling conflicts, limited options at schools for TAP options in CTE courses similar to AP options for core academic courses, and having to meet academic requirements to be enrolled in AP and IB courses. Many POS1 students (as well as non-POS1 students) may have been faced with the choice of either taking the CTE courses required to complete a POS2 program or completing advanced college-prep or honors academic courses to be able to get into more selective colleges. We understood from several schools that they were trying to increase TAP and dual credit options for a variety of CTE programs. Since we were unable to collect data on these options at the end of the study period, we were not able to explore any changes that may have occurred at schools in the availability of these courses across majors/programs.

EEDA and plans for postgraduation education.
The Class of 2009 and Class of 2011 differed significantly in reported plans for postsecondary education, but the findings are mixed. Seniors in the Class of 2009 and seniors in the Class of 2011 significantly differed regarding the highest level of education they expected to complete. Even though seniors in the class of 2011 reported significantly more that having a high school major made them less likely to want to drop out of high school, and even though we surveyed seniors in their last semester of high schools, more seniors in the Class of 2011 indicated that they would not finish high school (4.7%) compared to seniors in the Class of 2009 (2.2%; p=0.008). On the other hand, more seniors in the Class of 2011 expected to complete a bachelor's, master's or doctoral degree (67.2%) compared to the Class of 2009 (65.4%), and fewer in the Class of 2011 said the highest level of education they planned to complete was a high school diploma or GED (9.2% compared to 12.3% for the Class of 2009). A majority of seniors in both the Class of 2009 and Class of 2011 indicated they would enroll in a 4-year college or university, enroll in a 2-year community college, or enroll in a 2-year college and then transfer to a 4-year college/university the year after graduating from high school (79.2% and 78.1%, respectively)[21]. These findings of less students expecting to finish high school and more expecting to get bachelor's and advanced degrees could mean that there are different opportunities obvious for the Class of 2011 or it could be a sign of the economy. In a poor economy, some families may not be able to afford having a child go an extra year to high school to get a diploma. On the other hand, scarce jobs for some mean "stay in school until the job market gets better."

Seniors in the Class of 2011 from high, medium, and low EEDA policy implementation schools significantly differed in their responses regarding the highest level of education they

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[21] Chi-square analysis comparing the distribution of responses between seniors in the Class of 2009 and seniors in the Class of 2011 not conducted due to small cell counts.

expected to complete. More seniors from low policy implementation schools indicated that they expected to complete at least a bachelor's degree (75.8%) than seniors from high and medium EEDA policy implementation schools (64.5% and 64.9%, respectively; p=0.049). This is consistent with some of our findings related to college preparation emphasis over traditional CTE and career preparation emphasis at some of the lower policy implementation schools.

EEDA and plans for postgraduation work and careers.
The EEDA policy may be resulting in more student awareness and identification of specific career goals for the future. More seniors in the Class of 2011 indicated they plan to have a job at age 30 years and provided a legitimate job name (69.6%) than seniors in the Class of 2009 (52.7%). Less seniors in the Class of 2011 (21.7%) indicated that they plan to have a job but didn't know what type of job they would have compared to the Class of 2009 (39.1%) indicating the same. The distribution of responses between seniors in the Class of 2009 and seniors in the Class of 2011 indicating they plan to have a job at age 30 significantly differed (p<0.001). The differences appeared to be the ability to predict the type of job they might have.

Regarding plans to have a job at age 30, seniors in the Class of 2011 from high, medium, and low EEDA policy implementation schools had similar responses, with a majority indicating that they planned to have a job at age 30 and could provide a legitimate job name (69.8%, 68.8%, and 70.7%, respectively).[22] The high policy implementation schools had the greatest percentage point gain (21.2%) between 2009 and 2011 on this response; the medium policy implementation schools had the next highest percentage point gain (18.2%) on that response; and the low policy implementation schools had the lowest, though still large, gain (10.5%). These data tend to point to the policy as helping students to identify specific career goals for their futures.

POS and postgraduation preparation.
Stating an intent to complete a high school major increased the likelihood that a student would complete a CTE course sequence, but still only a minority of those intending to complete a major ended up completing a CTE course sequence. Reporting the intent to complete a high school major on at least one IGP in three years at a high school did increase the likelihood that a student would complete a CTE course sequence at that school, but still only a minority of these students completed a CTE course sequence. (Recall that for student-level course taking analysis, we did not have official CTE program information and had to rely on identifying logical CTE course sequences with postsecondary linkages.) In addition, having larger percentages of students reporting the intent to complete a major at a school did not consistently lead to having larger percentages of CTE course sequence completers at that school. In fact, the opposite pattern was more often the case; schools with the highest percentages of students reporting the intent to complete a major had lower, if not the lowest percentages of CTE course sequence completers. At only two schools, Iris and Redwood, were the percentages of students reporting the intent to complete majors similar to the percentages completing CTE course sequences. These two schools ranked high in CTE program offerings and numbers of CTE program

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[22] Chi-square analysis comparing the distribution of responses between seniors in the Class of 2011 from High, Medium, and Low EEDA LOI not conducted due to small cell counts.

completers at the school, and that may have had some influence on the consistency between IGP intentions and actual outcomes related to CTE course sequence taking. This pattern was not found at two other schools that ranked high in CTE program offerings and numbers of CTE program completers, where there were much higher percentages of students reporting on their IGPs the intent to complete a major than those actually able to complete a CTE course sequence. Since students in South Carolina are not required to complete a major in order to graduate, this is not necessarily a surprising finding. This lack of association at most schools between intent and completion may reflect the fact that at many sample schools this element on the IGP was merely presented as an option or suggestion and not as a critical part of the IGP, as was evidenced in the large percentages of students at many sample schools who didn't even designate whether they intended to complete or just declare a major.

A sizable portion of CTE course sequence completers switched IGP career clusters between 10th and 12th grades but many still completed a CTE course sequence by graduation. The students in our state longitudinal dataset who were identified as CTE course sequence completers (POS1 students) were less likely than non-POS1 students to have switched career clusters between 10th and 12th grades. This is not surprising since staying in the same cluster over the three years would mean that a student would be more likely to have the chance to take the sequence of courses necessary to complete the sequence. However, approximately 40% of CTE course sequence completers (POS1 students) completed a CTE course sequence outside of the career cluster noted on their 10th grade IGP. So, even though this 40% switched clusters, they still managed to complete a CTE course sequence.

The percentage of students completing a CTE course sequence in a cluster different from that on their 10th grade IGP varied widely across sample schools. And these patterns were not consistently linked to the level of number of CTE program offerings or the number of CTE program completers at schools. One of the high ranking schools in regards to CTE program implementation, Orchid, had the largest percentage of students completing CTE course sequences in career clusters different from the ones on their 10th grade IGP. The other three high ranking schools in regards to CTE program implementation, however, did have lower percentages switching than many of the other sample schools. On the other hand, the school with the next to the lowest percentage of students switching majors was not very advanced in CTE program offerings or CTE program completion rates.

It is important to note here also that that some of the appearance of switching of clusters may reflect the fact that the CTE course sequence taking (POS1) data is based on a progression of courses that the study team identified as a logical progression from a single career cluster. The actual career major and cluster and courses that were considered a part of this major on a student's IGP may differ from those identified by researchers and thus students may appear to have switched clusters when in fact they did not.

The issue of switching of clusters during high school is an important one because it reflects different philosophies of the role of the selection of a career cluster and major/POS for students while they are in high school. For OVAE, one of the measures of success of a POS is that students get in one POS and stay in the same one throughout high school and continue in it into postsecondary education and training. Some of our students may do this and it would be

interesting and informative to follow cohorts out past graduation to see if they remain in the pathway through further education, training and employment.

But another philosophy advocates allowing students to "try out" areas early, while in high school, so that they do not waste time and money later to find out where their interests lie. The switching of clusters on IGPs indicates that students are being given some flexibility that would allow them to try out different areas and change areas when they find out that they may not be interested in or suited for a particular area, or move to another focus area for other reasons, such as changing into a POS when more courses are available. Staff at a number of our sample schools were glad that students could start thinking about future careers earlier and have the opportunity to try out areas that might be of interest. At some schools, there was more pressure than at others to pick a major/cluster and stick with it throughout high school, to complete the requirements for the major. At these schools, many of the staff and students interviewed mentioned that students felt pressured and often felt "trapped" in areas they no longer were interested in. Staff at these schools often mentioned that parents complained about this as well. Students interviewed across sample schools seemed to prefer to be able to "try out" different areas and be able to change rather than be forced to stick with an area in which they were no longer interested. Other schools were more flexible and focused on making sure students could test out areas and be able to rule out areas in high school before wasting time and money on them in college.

CTE students [referring to POS1 students] and non-CTE students [non-POS1 students] identified in the state longitudinal dataset in both the 2009 and 2011 cohorts had different patterns in college credit course-taking, with significantly larger percentages of CTE students taking dual credit courses and significantly larger percentages of non-CTE students taking AB/IB courses. Although this was the general pattern, some important differences were found in course-taking patterns of CTE and non-CTE students by cohort across schools and by CTE program levels and EEDA policy implementation levels as well.

Overall, for both the 2009 and 2011 cohorts, non-CTE students were much more likely to have taken AP/IB courses than CTE students, and among those students in either group who took AP/IB, non-CTE students earned more AP/IB credits than CTE students. CTE students (earlier referred to as course sequence takers or POS1 students – see earlier text for the specific definition) from both the 2009 and 2011 cohorts were less likely to take AP/IB courses than non-CTE students and at all but one school, CTE students in the 2011 cohort were less likely to take AP/IB courses than CTE students in the 2009 cohort. On the other hand, non-CTE students in both cohorts took AP/IB courses in all seven schools where these courses were available and there was a decrease in percentage of non-POS1 who had taken these courses at only three schools between the two cohorts and a significant increase at two schools. These changes between cohorts meant that there was a greater gap in AP/IB course-taking between CTE and non-CTE students by 2011.

Patterns of taking AP/IB by CTE students were mixed at schools with more CTE program offerings and more CTE completers being at a school and not associated with the school having a four-year college focus. The two schools with the highest percentages of CTE students identified in the state longitudinal dataset (POS1 students) who had taken AP/IB courses were

Orchid and Laurel. Orchid ranked high in CTE program offerings and CTE program completers at the school and Laurel ranked relatively low in those areas. Orchid was the only school where a similar percentage of 2011 CTE and non-CTE students took AP/IB courses. At the two other schools ranking high in CTE program implementation (Azalea and Redwood), very low to no 2011 CTE cohort students took AP/IB courses. At Redwood, there were lower percentages of CTE students than non-CTE students who took AP/IB in both the 2009 and 2011 cohorts. In addition, at this school the percentage of CTE students who took AP/IB courses between the 2009 and 2011 cohorts decreased while the percentage remained relatively stable for non-CTE students.

It is not clear what would produce the differences between these schools that ranked high in CTE program offerings and CTE completer numbers. There were not only traditional AP courses available at these schools but also Technical AP (TAP) course options. It is possible that these TAP courses were not counted and/or identified in the same way on course files as other AP or dual credit courses and that could be a partial explanation for these large differences between the CTE students and non-CTE students in AP/IB course-taking at some of these schools and at other schools.

There are several unique aspects of Orchid, however, that may help to explain their higher percentages of CTE students participating in AP/IB courses at that school. First, the school offered not only AP but IB courses during the study period. (Orchid was the only school in our sample that offered IB courses.) Second, we heard during interviews with staff that AP courses were being promoted to all students by counselors during course enrollment and by AP teachers. Finally, TAP, AP and IB courses at Orchid were available on campus or at the nearby community college while the TAP courses for the other two schools were primarily available through their partner career centers that were located further from the high school campuses.

The school with the second highest percentage of CTE students who had taken AP/IB courses was Laurel. This school was ranked low on the number of CTE program offerings and CTE program completers at the school. This school also was a four-year college-oriented school that emphasized AP/IB courses for students. This focus may have influenced the course-taking of all students, including CTE students; however, this did not hold true at the other school that was highly four-year college oriented.

There was also another school, Apple, that had the third largest percentage of 2011 CTE students identified in the state longitudinal dataset who took AP/IB courses. The school was a high poverty school. This school is interesting in that none of the members of the 2009 cohort that were identified as CTE students for our study took any AP/IB courses, although non-CTE members of this cohort took these courses. But there was a relatively large percentage of CTE students in the 2011 cohort who took AP/IB courses at Apple. There was also a significant increase between the 2009 and 2011 cohorts in the percentage of non-CTE students who took AP/IB courses. The end result was that, even with the increase in 2011 CTE students taking these courses, there were still about twice as many non-CTE students as CTE students in this 2011 cohort who took AP/IB courses at Apple. It is not clear what changed at this school to produce the significant increases in AP/IB course-taking for both CTE and non-CTE students. It is possible the AP/IB options may have increased at this school between 2009 and 2011 or it may

have been that more information was being disseminated about these courses to students, possibly through the IGP process.

Patterns of taking AP/IB by CTE students were also somewhat associated with levels of EEDA policy implementation. One of the high EEDA policy implementation schools, Orchid, was the only school where there were similar percentages of 2011 CTE (POS1) and non-CTE students who took AP/IB courses, almost one-quarter of students in both groups. However, at the other high EEDA policy implementation level school, Redwood, almost five times as many 2011 non-CTE students took these courses as did the 2011 CTE students. The other schools with the highest percentages of CTE students taking AP/IB courses were both medium EEDA policy implementation schools.

On the other hand, trends were consistent at the two low policy implementation schools. At neither of these schools (Elm and Poplar), did CTE students in the 2011 cohort (POS1 students) take any AP/IB courses, while one-fourth to one-third of non-CTE students from that cohort took them. However, both schools did have CTE students from the 2009 cohort who took AP/IB courses. It is difficult to discern why this drop in participation for 2011 CTE students in these courses occurred.

There was a significant increase in the percentage of CTE students who took dual credit courses between the 2009 and 2011 cohorts. Also, for the 2011 cohort, significantly more CTE students took dual credit courses than non-CTE students. This is in contrast to the 2009 cohort, where slightly more non-CTE students than CTE students took dual credit courses. There was a large increase in dual credit course-taking for CTE students (POS1 students) between the 2009 and 2011 cohorts identified in the state longitudinal dataset. The same was not true for the non-CTE students. Also, among students in the 2009 cohort, slightly more non-CTE students took dual credit than CTE students. However, the percentage of CTE students who took dual credit courses almost doubled between 2009 and 2011, while the percentages of non-CTE students taking dual credit stayed about the same. This meant that for the overall 2011 cohort, a significantly larger percentage of CTE students took dual credit courses than did non-CTE students. Still, for both the 2009 and 2011 cohorts, among students taking dual credit courses, CTE and non-CTE students earned similar numbers of credits.

The significant increase in the percentage of CTE students who took dual credit courses between the 2009 and 2011 cohorts was mainly due to increases at two of the sample schools. Both of these schools were ranked high in terms of the number of CTE program offerings and CTE completer status. The two schools that contributed the most to the increases in CTE dual credit course taking were Iris and Redwood. Iris and Redwood had by far the highest percentages of 2011 cohort CTE students (POS1 students) who took dual credit courses. Both Iris and Redwood ranked high in terms of CTE program offerings and CTE program completion. Also, both were schools where the team identified study-defined Perkins IV Programs of Study that met all of our definitional requirements for Programs of Study.

At Iris, twice as many CTE course sequence takers (POS1 students) as non-CTE students took dual credit courses. The percentage of CTE students who took dual credit almost tripled between the 2009 and 2011 cohorts, while the percentage for non-CTE students remained about

the same. Note that Iris was found to have three of the nine programs that met all of our definitional elements to be called Perkins IV Programs of Study. At the other school, Redwood, percentages of CTE and non-CTE students who took dual credit courses increased between the 2009 and 2011 cohorts. Around 40% of both CTE and non-CTE students in the 2011 cohort took dual credit courses. Note that Redwood was the school with strong ties to a partner career center and local community college and the one where the team identified six of the nine programs that met all of our definitional elements to be called Perkins IV Programs of Study. Redwood was also the highest EEDA policy implementation school.

On the other hand, at both of the other two schools that ranked high in terms of CTE program offerings and CTE program completers, no CTE students (as defined in the state dataset as course sequence takers or POS1 students) took dual credit courses in either the 2009 or 2011 cohort. The other school with a slight increase in dual credit taking by CTE students between the 2009 and 2011 cohorts was a medium CTE program offerings and completer rate school, Elm. At this school, however, even though there was an increase in percentage of CTE students who took dual credit courses, there were still three times as many non-CTE (non-POS1) students taking dual credit at this school as CTE students.

One of the schools that ranked low in terms of CTE program offerings and CTE program completion rates had some of the highest percentages of CTE students (and non-CTE students) who took dual credit courses. Laurel was the school that was "built around EEDA" and reported being focused on building Programs of Study at the school. Dual credit appeared to be a part of this development. However, between the 2009 and 2011 state dataset cohorts, the percentages of both the CTE and non-CTE students who took dual credit courses declined.

There were fewer schools with students taking dual credit courses and wide variation across schools in the percentages of students taking these courses. Counselors at all of our schools told us that during the 2008-2009 school year, that their schools offered some dual credit/dual enrollment options across different majors and CTE programs. There were a variety of articulation agreements in place and schools and districts were working to update old agreements and draw up new ones. Schools told us they were working on improving dual credit options for students and also hoped to benefit more from the statewide articulation agreements that were being developed. As of 2008-2009, there were 86 universally transferable courses, either already developed or nearly developed, that would easily allow the transfer of credits for those courses among all two- and four-year public institutions of higher learning across the state, including all technical colleges.

Although there seemed to be at least discussion about dual credit options at all sample schools and efforts to update and/or increase the number of agreements, only four sample schools had any substantial number of students who took dual credit courses in either the 2009 or the 2011 cohort among both the CTE and non-CTE students. At three of these four schools (Iris, Laurel, and Redwood), larger percentages of 2011 CTE students took dual credit courses than non-CTE students but larger percentages of non-CTE students took dual credit courses in the 2009 cohort. At the fourth school (Elm), much larger percentages of non-CTE students took dual credit courses than did CTE students in both cohorts. At three of these four schools, the percentages of CTE students taking dual credit courses did increase between the 2009 and 2011

cohorts. (Again, with these discussions of actual course taking patterns, we are referring to our POS1 cohorts, as identified in the state dataset. Students in the cohorts from that dataset would have been at a sample school for at least three consecutive years. POS1 students were identified as those having completed four or more CTE courses in a logical sequence leading to a postsecondary option within one career cluster.)

At three other sample schools, Apple, Orchid, and Poplar, few to no CTE (POS1) or non-CTE (non-POS1) students were taking dual credit courses in either the 2009 or 2011 cohort, although we were told at least a few options were available at all three schools. At one of these schools, Apple, neither CTE nor non-CTE students took dual credit courses. Even though it was considered medium in rank concerning CTE program offerings and CTE program completers, there were few dual credit options for students at this school. At the other two schools, Orchid and Poplar, there were options available to students. But again, given the small number of students identified as having been at Poplar for three consecutive years and having completed a 4 or more logical course sequence in one career cluster (a POS1 student), discerning patterns at that school would be misleading.

And at the final school, Azalea, a small percentage of non-CTE students from both the 2009 and 2011 cohorts took dual credit courses while none of the CTE students in either cohort took these courses. But it is difficult to say if this is a trend at this school given the fact that fewer than 10 CTE course sequence takers, as defined by this study, were identified in the 2009 and 2011 state dataset cohorts at this school.

POS and postgraduation plans.
The majority of the Class of 2011 planned to attend college. At first glance, CTE students defined as being in some sort of CTE course sequence or taking more CTE courses than other students and non-CTE students had similar expectations for further education after high school graduation. Whether we looked at reports on IGPs or responses to survey questions from the Class of 2011 as seniors, overall, the vast majority of members of the Class of 2011 across the sample schools planned to attend college. Low percentages of both CTE (POS1) and non-CTE (non-POS1) students reported on IGPs that they had no plans to attend college or were either going to go directly into the military or find a job after high school graduation. In addition, overall student survey reports of expectations for the highest level of education that they expected to complete were similar for CTE students (reporting having taken three or more CTE courses by their senior year) and non-CTE students.

Trends in expectations for college varied by CTE course sequence taker status, Programs of Study (POS) career cluster, and school. Although survey responses reported similar expectations for the eventual level of education students wanted to achieve, CTE course sequence takers identified in the state dataset (POS1 students) were more likely to plan to enroll at a two-year college after graduation while those found not to be in a CTE course sequence were more likely to plan to enroll at a four-year college. Trends also varied widely across schools for the students identified as being in a CTE course sequence (a POS-like measurement). At only one school, Poplar, were all students, regardless of CTE sequence status, planning to go on to either a two- or four-year college. At the other schools, percentages varied, with the lowest percentage expecting to go on to four-year college at Elm and the highest percentage at Orchid.

Azalea had the highest percentage of students not planning to go to college, followed by Apple. Apple is a high poverty schools and that may have influenced students' expectations. The reason for the low percentage at Azalea isn't as clear. It ranked on the high side in terms of CTE program offerings and CTE completer status and was in a moderate poverty community. It is located in a rural area, however, and that may have influenced student expectations.

These trends in college aspirations were not consistently associated with the levels of CTE program offerings and CTE completers at the schools. Three of the four schools with the highest percentages of students planning to enroll in a four-year college were high CTE program implementation schools (Orchid, Iris, and Redwood). However, the school with second highest percentage of students planning to enroll in a four-year college, Laurel, was a low CTE program implementation school. In addition, the second lowest percentage of students planning to enroll in a four-year college was at a high CTE program implementation school, Azalea.

One clear pattern, however, at the two schools ranking low in terms of CTE program (as compared to either the medium or high ranking CTE program schools), was that a significantly larger percentage of students at these schools planned on attending a four-year college. These two schools were our most four-year college-oriented schools. But one was oriented toward career clusters and trying to build CTE programs (Laurel), while at the other school (Poplar), CTE was reported to carry a stigma. Regardless, it appears that the orientation of these schools toward college attendance influenced all students. It also could be the case that, given the pressure at these schools to attend college, that some students felt compelled to report a plan to enroll in college to their counselor but did not actually intend to enroll or there could be other valid reasons for the differences in plans for postgraduation at these schools.

Plans to enroll in college appeared to be associated with the career cluster of a student's POS. Almost 90% of the Business, Management, & Administration CTE course sequence takers reported plans to enroll in a four-year college. Less reported plans to enroll in a two-year college or at no college compared to all other clusters with enough students to discern patterns. The Business, Management, & Administration cluster also had the most diverse CTE programs of any cluster in our sample schools, but these CTE programs were not always tied directly to postsecondary programs, according to staff reports. High percentages of 2011 cohort Health Sciences course sequence takers identified in the state database also reported plans to enroll in a four-year college but also a sizable number of these students were also planning to enroll in a two-year college. During interviews and from reports on the study-created Programs of Study checklists, it was apparent that students in the Health Sciences cluster had a number of certificate and degree options at both two and four-year colleges. It is also interesting to note that this cluster offered at least one certificate option (CNA) at the high school level that could lead directly to employment after graduation and often offered a second option, preparation for the Pharmacy Technician certificate, for which a student could become eligible to take the certification exam after he graduated. Yet these students still planned to enroll in college. These two clusters (Business, Management, & Administration and Health Sciences) also had the lowest percentages of students not planning to enroll in college. Interestingly, all of the Art, AV Tech, & Communications course sequence takers planned to enroll in college. This was the only cluster where all of the students planned to enroll in college. The most popular CTE program in this cluster was Graphic Communications.

Transportation, Distribution, & Logistics course sequence takers were some of the least likely course sequence taker groups identified in the state dataset to plan to enroll in a four-year college; however, slightly over half planned to enroll in a two-year college. This pattern seems consistent with the fact that the cluster offered a number of certificate options, such as Automotive Technology and Automotive Collision Repair Technology, for students who continued this high school pathway into two-year programs. Agriculture, Food, & Natural Resources course sequence takers were least likely to plan to enroll in college; one-third did not plan to enroll in college. The most popular CTE program in this cluster was Horticulture and only one of our sample schools offered a certificate at the high school level in this area (golf course management). The Agriculture, Food, & Natural Resources cluster had CTE concentrators at four of our sample schools during the study period and included rural and suburban schools with options for two-year programs near all of the schools. Two of the four schools with a CTE program in this cluster were high poverty schools, one was a medium poverty school, and the other was a low poverty school.

B. Emergent Themes

As we observed at schools over the five-year study period and collected and analyzed qualitative and quantitative data from a variety of sources, a number of overarching themes emerged that help to sum up the major findings from this study. These are first listed below and then discussed in more detail in the remainder of this section.

1. Career-focused activities at all sample schools increased over the period of EEDA policy implementation.

2. Initial increased funding and the addition of staff for the enhanced guidance model at schools helped launch implementation of the EEDA reform policy. Subsequent cuts in funding were reported to have slowed the program's progress and caused schools to make difficult choices relative to setting priorities for allocating scarce resources.

3. A broad range of resources is required for successful implementation of such a comprehensive reform policy.

4. Exposure to the EEDA policy benefitted students across our sample schools, even at schools with lower levels of policy implementation.

5. The EEDA policy increased awareness and knowledge of CTE at sample schools.

6. Components of the EEDA policy were helping to build some of the foundational elements and framework for the development and successful implementation of Perkins IV-defined programs of study.

7. The expanded Perkins IV model of programs of study is relevant across the curriculum, not just for CTE programs.

8. Building on existing programs and whole-school reform efforts helped to facilitate development and implementation of programs of study.

9. Structured guidance for career planning and academic advisement was a critical underlying element for policy implementation and student participation in career planning and programs of study.

10. The Individual Graduation Plan and development process emerged as an essential component of policy implementation and the promotion of programs of study.

11. School administration and staff buy-in was a key factor related to successful policy and programs of study implementation.

12. Quality, long-term partnerships and collaboration were keys to policy and programs of study implementation.

Career-focused activities at all sample schools increased over the period of EEDA policy implementation.

Observations and data collected from schools indicate that the policy increased the amount and variety of career-focused activities and guidance sample high schools, with school counselors playing key roles in providing these activities. The amount, nature of the events, and the types of career experiences they provided for students varied across sample schools. All schools had developed career clusters and majors and required students to select a career cluster and develop an Individual Graduation Plan. Schools reported being more focused on career planning for their students, working to provide students work-related experiences, and trying to offer more real-world examples in classrooms. School counselors reported in increase in one-on-one counseling sessions with students about career exploration and planning, with a goal of meeting with each student each year to either develop or revise Individual Graduation Plans and were increasing efforts to engage and inform parents in their child's career and educational planning. Counselors were conducting career development and guidance workshops for teachers, guidance personnel, and work-based constituents. Schools were in various stages of implementing the High Schools That Work reform model. All eight of the schools participating in our study reported either dual enrollment or dual credit arrangements, or both, with local postsecondary institutions.

Initial increased funding and the addition of staff for the enhanced guidance model at schools helped launch the state policy's implementation. Subsequent cuts in funding were reported to have slowed the program's progress and caused schools to make difficult choices relative to setting priorities for allocating scarce resources.

Initial site visits to schools provided data on myriad new activities being implemented and information being disseminated relative to the EEDA policy and its potential to benefit students, industry, the community, and beyond. The timing of the implementation of the policy was unfortunate in that it occurred at the same time the state and nation were experiencing the beginning of a long recessionary period. State funding reports showed that funding was not kept

up to the degree necessary to fully fund the policy's successful implementation. Schools also reported that teachers' jobs were on the cutting block, making the newly met low student to guidance ratios more difficult to justify as a priority. Professional development related to the policy, while strongly noted in our initial site visits, undoubtedly suffered later with inadequate funding. Still local educators who were enthusiastic to make career-focused education work for their students were able to sustain great portions of the policy at their schools and, indeed, we did see positive indications of the policy's effects in the 2011 cohort data.

A broad range of resources is required for successful implementation of such a comprehensive reform policy.

To ensure success of such an ambitious and high-cost reform, there needs to be sufficient financial support for schools and consideration of economic realities. For example, major resources are required to reorganize curriculum and implement the time-consuming, staff intensive guidance component. Not surprisingly, schools that had access to a wide variety of resources facilitated policy implementation, such as having staff with prior knowledge of and experience with various policy areas or being located in a community with diverse local businesses willing to provide resources and educational opportunities for students. Most districts, however, were hard pressed to hire additional staff to handle the newly mandated duties and several schools lacked some of the basic resources necessary to design and implement programs of study. Full implementation of the EEDA model requires a commitment to the provision of adequate funds to fully staff the initiative.

Exposure to the EEDA policy benefitted students across our sample schools, even at schools with lower levels of policy implementation.

From surveys and focus groups with students and discussions with school staff, it was obvious across schools that students in the Class of 2011 were benefitting in a variety of ways from implementation of the EEDA policy. Through the Individual Graduation Plan (IGP) process, students gained important skills in planning for careers and post-high school life. Most students interviewed felt fortunate that there was a process in place to help them think about and develop future career goals and that they could then select courses based on these goals. Some students noted that they appreciated getting realistic feedback on requirements of different careers and how these fit with their skills and interests. Some commented that they appreciated being able to meet one-on-one with counselors and on surveys reported counselors as the most helpful in developing their IGP. Many of 2011 seniors interviewed reported that being able to select courses based on their interests made them more motivated to come to school and do well in their courses. During focus groups, some of these seniors also commented that having the opportunity to be exposed to different majors and to find out about different occupations available within those majors was very helpful in assisting them to sharpen their focus toward their career goals.

Student survey responses were similar, where a majority of students surveyed reported that having a career major and cluster to plan for made them more likely to want to come to school, less likely to drop out, helped them get better grades, and helped them make connections

between what they were studying and the type of career they wanted. The majority of students surveyed also had participated in at least one work-based learning experience during high school.

Overall, from survey data (supported by focus group interviews), students indicated increased awareness of connections being made between what they were being taught in high school and what their postgraduation options might be, and increased engagement to school as well. As one 2011 senior noted in a focus group interview when asked about the IGP process and selecting a career cluster or major in high school, "I think it made me more motivated to like the classes that I was in. This is going to help you in the long run, for when you're in college and stuff." Another 2011 senior explained, "I know that my grades have been really, really good in this particular program, because it's something I'm actually interested in, and I like doing. It's kind of easy to do, because you're interested."

The EEDA policy increased awareness and knowledge of CTE at sample schools.

The state policy increased school personnel and student awareness and knowledge of CTE programs and their importance to programs of study. Counselors reported that the Individual Graduation Plan process had increased their awareness and knowledge of CTE courses and programs, particularly for those whose schools were partnered with career centers and/or local technical colleges to offer these types of courses. The policy also resulted in wider dissemination of information on CTE programs to students, parents, and other educators. CTE teachers interviewed in some sample schools reported not only an increase in numbers of students being directed into their courses but also more appropriate placement of students in their courses and programs. These teachers credited these changes to the increase in knowledge of CTE by counselors and the IGP process that was facilitating more appropriate placement of students in courses based on interest and ability levels. At several sample schools it was also reported that any stigma associated with taking CTE courses or attending a career center had been reduced and attributed this reduction to policy efforts, although stigma persisted at other study schools. Some schools reported increased interactions between CTE and non-CTE teachers as a result of the policy implementation, but particularly among those implementing the High Schools That Work and/or Smaller Learning Communities reform models.

Components of the EEDA policy were helping to build some of the foundational elements and framework for the development and successful implementation of Perkins IV-defined programs of study.

Although we did not find many Programs of Study (POS) at sample schools that met all of the study-defined criteria for the Perkins IV core elements, our qualitative data revealed that components of EEDA were helping to build some of the foundational elements and framework considered necessary for the development and successful implementation of Perkins IV type programs of study. Various foundational elements were being put into place across our sample schools leading to the potential for the development of more programs of study in schools over time. EEDA encourages alignment of secondary and postsecondary elements and this was happening to some degree at sample schools, particularly in schools with strong CTE programs and close ties to career centers and/or local two-year colleges. The identification of and development of career majors and the mandate to increase work-based learning experiences for

students were facilitating collaboration between schools and local businesses. EEDA, the High Schools That Work model, and the Smaller Learning Communities reform model were facilitating academic and CTE integration. Some integration of CTE and academic content was occurring through individual teachers' efforts as well. While EEDA does not require a direct link between a career major and a postsecondary credential, there were still a number of career majors at every school that were reported to have postsecondary components culminating in credentials, certificates, or degrees at the postsecondary level. All eight of our sample schools reported having at least a few dual enrollment agreements and credit transfer options with local postsecondary institutions in place during the time of our first site visits and all planned to continue to develop these options across a number of subject areas in the future.

The expanded Perkins IV model of programs of study is relevant across the curriculum, not just for CTE programs.

CTE program elements and the expanded Perkins IV model can direct career-focused education for all students, regardless of subject area. Linking secondary and postsecondary programs, providing contextual learning, building business and community partnerships to build programs of study and provide students work-based learning experiences, and emphasizing integration of rigorous academic and technical content are critical to all subject areas. In addition, CTE and non-CTE students and students at all performance levels need the benefits of career guidance and goal setting and being able to connect what happens in school to what comes after high school graduation.

In student focus groups, we interviewed a number of students who were not involved in CTE courses. Some of the students likely to go to college often reported obtaining more realistic feedback about the pros and cons of different careers and subject areas and felt they were going to be able to make more informed choices because of going through the Individual Graduation Plan process. This often meant that a student found through this process that they were not suited for the area that they had planned to pursue in college and were able to explore other options prior to graduation. Other students were able to home in more on which aspects of a subject area they would pursue in college, such as which aspect of the law they wanted to study or what area of engineering.

Building on existing programs and whole-school reform efforts helped to facilitate development and implementation of programs of study.

Having the ability to build on existing programs seemed to be particularly important to successful early policy implementation in sample schools of the policy and in the development of programs of study. We found evidence that schools with stronger CTE programs pre-EEDA were more likely to have Perkins-defined programs of study in place. Groups of teachers at several schools mentioned that the development of their school's career clusters and majors was primarily accomplished by the school's CTE faculty, because they had experience with these due to Perkins policies. Teachers with CTE backgrounds seemed to possess the necessary knowledge and confidence to take leadership roles in developing quality courses for programs of study. One of the schools that was found to have study-defined Perkins IV programs of study

had been developing and implementing quality CTE programs in conjunction with the local technical college for a number of years prior to EEDA.

Policy and program of study implementation was also facilitated when accomplished in conjunction with other initiatives that shared complementary goals and/or established the structure and culture for success. Many schools found elements of HSTW to be highly compatible with different facets of the state policy. Some primary elements noted by staff and teachers included the modules developed to help implement the 10 HSTW key practices, the technical assistance and professional development provided by the Southern Regional Education Board (SREB) to assist with HSTW implementation, the advisor-advisee program, and the assistance the model provided in developing career pathways and ways to integrate career content into coursework. One principal told us that a key reason for electing to implement HSTW was that it would help make a "seamless transition with EEDA."

The two schools with the highest levels of both policy and programs of study implementation both had high levels of implementation of the High Schools That Work reform. One of these schools had also incorporated Smaller Learning Communities in with EEDA and HSTW and had organized their learning communities around career clusters. In addition, one of the schools that had the most steady growth in programs of study implementation over the study period had also placed emphasis on incorporating both the High Schools That Work and Smaller Learning Communities models into their policy implementation. Finally, the other school that was found to have study-defined Perkins IV programs of study was one of the earliest implementers of High Schools That Work and had had the model in place for such a long time that they considered it as part of the fabric of their school.

Structured guidance for career planning and academic advisement was a critical underlying element for policy implementation and student participation in career planning and programs of study.

The strong emphasis on combining both career-focused guidance and academic advisement in EEDA and the requirements of the Individual Graduation Plan (IGP) process was fundamental to policy implementation. The EEDA policy required a major shift in the focus of guidance counselors from testing and scheduling courses to assisting students with identifying their career interests and helping them to plan their courses and future work and education around these interests. Counselors offered students career development activities such as exploration and interest assessments, as well as opportunities to talk about career issues and career options with knowledgeable adults. The IGP process was seen by staff and students as an essential service and increased the amount of time counselors in our sample schools spent with students engaging in one-on-one career-based counseling. There was an increased effort to meet with every student on an annual basis. This career-focused guidance approach increased the depth and breadth of information that students received about their educational and career opportunities in career and technical fields and was an essential channel for dissemination of information to students on available programs of study. Further, there was a greater effort to promote CTE programs to students and engage parents in the course and career planning of their children.

Several counselors indicated that the students may not have a clear idea as to what they want to do for their long-term career, but that the process helped students to consider postsecondary options and "to have a goal when they graduate from high school…I may not know for sure what it is right this second [what I want to do], but I know what I want to do as far as the education that I want to get" (e.g., 2-year, 4-year degree).

Another counselor stated, when speaking of her school's career development efforts with students, "We want to know where you [students] want to go, what you [students] want to do, what your [students'] career goals are, and we try to put as many resources in their [students'] hands…"

When asked to describe what students sought from career guidance, one counselor commented, "…I think they need us more. There are so many choices out there. I think it can be overwhelming and confusing to them. Just to jump off into the world--'What am I doing? Where am I going? I just don't know! Help me!' I think that what we do is vital and very important and I feel like we are doing more with EEDA and it's very needed and beneficial" (Counselor 5, fall 2009).

Further, it is evident to the counselors that the students may not persist with certain goals at this stage in their development, but that the process of setting goals is important to the career exploration and development process. One counselor stated, "We're trying to help these kids form a goal whether it's a goal that's going to last throughout their entire lifetime we can't say, the process of making a goal and following through on it, however, is a good thing to learn."

The Individual Graduation Plan and development process emerged as an essential component of policy implementation and the promotion of programs of study.

The development and maintenance of students' four-year Individual Graduation Plans (IGPs) emerged as an essential component of EEDA policy implementation and the promotion of programs of study in general. Guidance personnel, teachers as well as students all pointed to IGP development as a valuable tool for career counseling and planning and that it had facilitated increased counselor interactions with students on career and course-related issues. The IGP process provided students an opportunity to identify their interests, think about their career goals and the types of courses and programs needed to achieve those goals. It also was teaching students ways of thinking about career planning. The IGP process helped to make it more likely that courses were related to students' interests and courses of study and encouraged students to begin planning for their post-high school careers, whether or not that involved postsecondary education.

Focus group interview quotations from seniors in the Class of 2011 relative to their IGPs included the following:
It helped me realize the classes that I needed to take in order to graduate, but other than that, it's just kind of just been exploring for me, seeing what I like and don't like.

It gives you kind of like a plan. You're not just taking random classes.

You get to see the other people in the different career clusters, the other stuff that they do, to see if it interests you. But then sometimes you look and know that's not what I want to do.

Without the IGP, I would have no idea what I wanted to do. I would be taking classes for no reason.

One 2011 senior reported that she thought that having an IGP showed her that the school really cared about her and her future:

At first, when I got to high school, I was like they just want to get you to graduate. They don't care anything about your future, and all kind of stuff. But when they started doing this, I'm like, yes they do, because they're asking me what I want to be when I graduate, what I plan to do, and how I plan to get there, and they're giving me classes to help me get there and prepare myself, so they do care.

Counselors reported seeing a steady growth in students' knowledge of career pathways and majors over the period as a result of these efforts. They also reported that, due to the IGP process, more efforts had been made to engage and inform parents in their children's careers and educational planning, producing a steady increase in parental engagement over the study period.

One counselor stated it this way:

We share with them what their options are if they want to go directly into the workforce, if they want to go and get a technical degree or 2-year degree or 4-year degree. And, we make sure they understand what the requirements are on admissions in higher [education] so they could be accepted into those programs. (Counselor 12, fall 2009)

Although the process was seen as beneficial by counselors and students, it was also reported by counselors to be very time intensive. Because of the demands of IGP-related tasks and the fact that they were still assigned a variety of other policy-mandated duties as well as still being assigned "inappropriate duties," the IGP process often resulted in work reported overloads for counselors.

School administration and staff buy-in was a key factor related to successful policy and programs of study implementation.

There was substantial variance in initial school response to the EEDA career pathways model. Some schools immediately embraced the career pathways model introduced by the state policy. Other schools seemed overwhelmed by the policy demands, whereas others appeared to be waiting (and hoping) for the "trend to pass." In the lowest performing school in our sample (based on the state's NCLB school rating), also a high poverty school, the principal, guidance personnel and many teachers spoke of this policy as a means of helping their students improve not only academically, but also to be less likely to dropout and more likely to succeed after graduation. This school was one of only two schools where the study team identified study-defined Perkins IV programs of study. There was also buy-in on the EEDA model at the other

school where the study team identified Perkins IV programs of study, where school administrators spoke of EEDA as the "vision" for their school.

Not all schools, however, shared a positive opinion of the policy. Staff interviewed at a number of the schools talked about being overwhelmed by all of the requirements. "We are too busy to do everything" and "there are so many things required that it's hard to implement them all" were refrains repeated in several schools, whether we were talking to guidance counselors, teachers, or administrators. One group told us that their focus was to "strive to survive one day at a time." This was particularly apparent at one of the large, more college-focused schools. School staff were not convinced of the need for this policy and did not seem convinced that developing career majors and programs of study were relevant for all subject areas in the curriculum or that the IGP process was necessarily a valuable tool for four-year college bound students. Many teachers and staff at the school perceived these policy elements as mostly geared toward CTE and non-college bound students. This school scored among the lowest levels of both EEDA policy and program of study implementation.

Quality, long-term partnerships and collaboration were keys to policy and programs of study implementation.

Partnerships appeared to be necessary to the development of POS but the key was the nature and strength of the partnership. The level of policy implementation at sample schools that were located in communities with diverse local businesses that were willing to partner with the school and provide a variety of resources, such as guest speakers, internships, and other work-based learning experiences for students was often higher than at schools without access to these partners. Schools with established advisory groups and partnerships with local businesses strengthened secondary and postsecondary alignment of programs of study coursework. In other contexts, communities lacked local businesses to provide mentoring, internships, and work-based learning opportunities. For one sample school in a remote rural location, the best jobs and opportunities for job shadowing or internships were over 20 miles from the school. Although there was access to a career center, it was difficult for this school to garner sufficient resources and partnership options to develop a significant number of POS for students.

Strong relationships between high school career centers and local community colleges were also critical to program of study development. These partnerships were instrumental in creating strong course alignment and smooth pathways into postsecondary training and education. This was particularly the case when the local community college partner valued the links between the high school's and college's programs and coursework and were active partners in developing the high school curriculum and programs. It was important also for all parties to be involved in recruiting students. The two schools where study-defined Perkins IV programs of study were found had close ties to either a career center or a two-year technical/community college. At one of the schools, the program of study courses were all taught at their partner career center, which in turn had a close relationship with a local two-year college. The other school had a close relationship with a two-year college that was located close to the high school, and faculty from the college taught courses for the programs of study at both the high school and the college. Without these partnerships, it is doubtful whether these programs of study would have been as fully developed.

IX. Implications of Findings

Study findings suggest a number of implications for further research, for practitioners as well as for policymakers. These implications are described below.

A. For Further Research

- Conduct similar research in other states with similar comprehensive pathways reform policies, such as in Georgia, to compare results and trends.

- Follow students for two to four years after graduation or after dropping out, to assess the long-term influence of programs of study on postgraduation outcomes.

- Examine student data via a high risk assessment mechanism to measure the influence of programs of study on keeping students in school.

- Examine student data with more precise CTE program participant, concentrator, and completer status identified, to make connections between specific CTE programs, student levels of completion, and student outcomes.

- Explore the extent to which certain groups of students benefit more than others from these types of policies. We saw our high poverty schools focus on specific types of programs of study to help their students succeed as soon as possible after graduation. Did that result in better outcomes for those students? As compared to students from other schools? In addition, do students in certain types of programs of study have better outcomes?

- For any future research efforts, collect both quantitative and qualitative data to give a more comprehensive picture of implementation and influence of programs of study, as was done in this study.

- Research how work-based learning activities influence program completion, satisfaction, achievement, etc.

- Conduct further research on necessary professional development needed for counselors, teachers and administrators to be able to implement such a complex policy. Consider the High Schools That Work-type model that combines continuous professional development, data collection and review, and yearly advisement.

- Examine how effectively schools can implement programs of study with varying levels of financial support.

- Explore what specific institutional arrangements facilitate strong partnerships and what dimensions of those partnerships are associated with seamless secondary-postsecondary course alignment.

- Examine the extent to which a focus on programs of study can maintain NCLB's goals of providing students with increasing rigorous curricula and preparation for postsecondary education.

B. For Practitioners

- Conduct standardized professional development on all aspects of the policy for all school personnel involved in overseeing and implementing the policy prior to and throughout policy implementation when implementing a complex reform like EEDA.

- Emphasize the importance of work-based learning activities for students' exposure to varied work environments and careers and making contacts for future jobs. Assign a coordinator to identify these opportunities for students.

- Encourage teachers to use real-world examples and relate subject content to real world jobs and experiences. This probably requires shared planning time among "academic" and "career and technical education" faculty members. The NRCCTE has one model for this, perhaps there are others.

- Implement an Individual Graduation Plan process and use the process to teach students planning skills and how to develop goals for their future.

- Establish a comprehensive guidance component to successfully implement quality career-focused programs of study. For most schools, this will require a re-allocation of resources.

- When developing programs of study across the curriculum, integrate CTE programs with other majors and programs into one shared system, use common names and CIP Code numbers, clearly outline the courses needed for the major/program of study, make sure that courses appear in the registration catalog and are clearly associated with specific POS, so that students, parents and counselors have sufficient information to develop IGPs for a particularly POS.

- Encourage cross-curriculum integration through simple practices, such as common planning periods for CTE and academic teachers and allowing teachers to teach in close proximity to one another (i.e., in the section of the building). Co-teaching and joint projects help both CTE and subject teachers with skill development and relevance of course material. Such arrangements would allow for more formal cross-curricular planning to occur, as well as promote synchronicities that would not happen otherwise.

- View the IGP process as a viable way to facilitate discussions among staff related to programs of study and career majors. To increase integration, academic teachers and school counselors guiding students in the development of their course schedules and IGPs need to become more knowledgeable about CTE courses and programs. The IGP process can be a viable way to facilitate these discussions and increase school staff's knowledge of CTE.

- View the IGP process and career majors as a way to help students explore potential careers. Give students the opportunity to explore various careers of interest by allowing them to "try out" different majors. This means giving students the opportunity to switch majors and take courses across majors to identify what careers might be of interest to them or at least help them to eliminate areas not of interest to them.

C. For Policymakers

- Develop clear metrics and definitions for implementation and assessment of outcomes. The Perkins IV policy identified four core elements, and then ten supporting components for programs of study, but did not operationally define them. Although it is important to provide flexibility for policy implementation, policies need to be specific enough and provide common, detailed descriptions of key policy facets so that practitioners have a clear idea of what to implement and how to assess whether implementation has been successful.

- Provide adequate funding to implement and continue the policy as planned. It is important for any state that is considering implementation of such a comprehensive reform to do a careful analysis of available resources prior to attempting implementation. If adequate resources cannot be directed toward implementation throughout the period of time that the policy will be in place, then such a comprehensive policy should not be attempted. While no one can predict economic downturns with absolute certainty, without adequate funding and support for all aspects of the policy, it is unlikely that a policy such as the EEDA can result in consistent, positive results across schools. If a guidance component that includes an Individual Graduation Plan (IGP) process will be implemented as a part of a Programs of Study model, it is essential that adequate resources be made available to hire additional staff to handle administrative and other duties so that school guidance personnel can concentrate their efforts on career-focused activities and IGP development.

- Require career guidance education for teachers and guidance counselors. EEDA requires that students in teacher education programs at state colleges and universities be trained to some degree in career guidance. This includes the training of school counselors in preparing the full range of students for career opportunities. We did not measure this part of the EEDA policy since it was occurring at the postsecondary level and we focused on policies playing out in high schools. However, we believe that this career guidance training requirement will have a ripple effect in secondary schools over time. The lack of this training by counselors and teachers was evident in our early site visits. Many teachers and counselors too were taking on the responsibilities of training themselves to some degree as they could see the need to possess skills and information in this area. This element would be important for policymakers to consider.

- Implement the policy in stages. Given the findings at our schools, it is important to consider implementation of such a comprehensive policy one step at a time and ensure that all of the following are a part of policy implementation:

1. Get buy-in of major stakeholders during the development of the policy and prior to implementation;
2. Focus the first year on planning for implementation and continuing to get buy-in from stakeholders;
3. Provide adequate guidelines, materials, and curricula necessary to implement the program to school staff and teachers;
4. Make sure to offer adequate, quality training in the first year for all involved, including district and school administrators, guidance personnel, teachers, and parents,
5. Remembering that turnover in the administration, guidance, and teaching corps are inevitable, and that ever deeper training is invaluable, continue to support professional development over subsequent years;
6. Provide ongoing training and technical assistance throughout policy implementation directly to schools to ensure fidelity to guidelines and quality implementation;
7. Provide sufficient funding and resources for ALL aspects of the policy, not just some aspects, throughout the implementation period; and
8. Build in annual assessment and evaluation that can provide feedback to schools about areas where implementation is going well and areas that need improvement.

- Ensure that all relevant state, district and/or local administrative levels are working cooperatively to develop, plan, and implement the policy, so that all aspects of policy implementation are coordinated and integrated. Develop a statewide coordinating council that includes all stakeholders to oversee policy development and implementation. Administrative offices that need to develop and oversee aspects of the policy also need to coordinate their efforts. For policies similar to EEDA, this would include state and district administrators in CTE, curriculum, and guidance personnel divisions at both the K-12 and higher education levels.

- Reevaluate the weighting of courses for GPA and class ranking calculations. Implementation of programs of study across the curriculum will require reconsideration of the types of credits CTE courses earn so that college-bound students aren't penalized for taking CTE courses. Although CTE courses may require high level skills and contain advanced content/college prep level content, CTE courses are less likely to earn honors or Advanced placement credit or to be dual credit courses. Schools and districts may also want to encourage both Advanced Placement courses and dual credit courses.

- Improve the quality of student-level data to better study the influence of these types of reform. This requires that districts and/or states merge databases of core academic and CTE courses and outcomes to allow tracking of students across districts and states, and across academic levels and relevant agencies, to adequately evaluate progress on programs of study and any impact these may have on student dropout and other outcomes. Mobility of students and lack of coordination among relevant agencies can make the participation of students in majors and programs of study difficult to track.

New Blueprint for Transforming Career and Technical Education. As a final note, in April of this year (2012), the Obama Administration laid out a new blueprint to strengthen the American economy as being "built on American manufacturing, American energy, skills for American workers, and a renewal of American values" (U.S. Department of Education, 2012, p. 1). Prerequisites to the development of this new strengthened economy are quality postsecondary education and training systems that address the need to "ensure that more of our nation's young people and adults can afford, access, and complete postsecondary education and training to earn an industry certification or licensure and a postsecondary certificate or a degree" (U.S. Department of Education, 2012. p. 1) to be prepared to participate in this economy. A key to this system is a transformation of career and technical education (CTE), going beyond the changes introduced by Perkins IV to a broader vision and reform of CTE. This transformation of CTE is centered on four core principles:

1. **Alignment.** Effective alignment between high-quality CTE programs and labor market needs to equip students with 21st-century skills and prepare them for in-demand occupations in high-growth industry sectors;
2. **Collaboration**. Strong collaborations among secondary and postsecondary institutions, employers, and industry partners to improve the quality of CTE programs;
3. **Accountability.** Meaningful accountability for improving academic outcomes and building technical and employability skills in CTE programs for all students, based upon common definitions and clear metrics for performance; and
4. **Innovation.** Increased emphasis on innovation supported by systemic reform of state policies and practices to support CTE implementation of effective practices at the local level. (U.S. Department of Education, 2012. p. 2)

The EEDA policy in South Carolina is highly compatible with these principles and we believe that research such as ours has contributed to some portions of the refinement of Perkins IV that this blueprint represents.

Through collaboration with local businesses and local technical colleges, through a variety of avenues, such as CTE program advisory councils for various CTE programs and Regional Education Centers, we found that a number of programs at our eight sample schools were being developed to align with local labor force needs, from input from business partners, and to meet the skill and expertise needs of particular local companies. Many of these businesses were working with teachers to ensure that curriculum developed met industry standards. Emerging high skills and high demand occupations, whether there were local employment opportunities at present or not, were also receiving focus for program development. To improve accountability, the state has been implementing Core Standards for all CTE courses, and Common Core State Standards are being adopted for all core academic courses for all students. All of this is being attempted through systemic reform of state policies and practices.

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Appendix A: Acronyms

The following is a list of acronyms mentioned in this final report.

AED	Academy for Educational Development
AP	Advanced Placement
ASCA	American School Counseling Association
CATE	Career and Technology Education
CCTI	College and Career Transitions Initiative
CDF	Career Development Facilitator
CHE	Commission on Higher Education
CS	Career Specialist
CTE	Career and Technical Education
EEDA	Education and Economic Development Act
EEDACC	EEDA Coordinating Council
EOC	Education Oversight Committee (South Carolina)
eIGP	Electronic Individual Graduation Plan
GC	Guidance Counselor
GCDF	Global Career Development Facilitator
HSAP	High School Assessment Program (South Carolina)
HSTW	High Schools That Work
IB	International Baccalaureate
ICP	Individual Career Plan
IEP	Individualized Education Program
IGP	Individual Graduation Plan
JAG-SC	Jobs for America's Graduates – South Carolina
LHSAP	Longitudinal HSAP (SC high school exit exam) variable
LOI	EEDA Level of Implementation
NASDCTEc	National Association of State Directors of Career and Technical Education Consortium
NCD	National Career Development, from National Career Development Association
NCES	National Center for Education Statistics

NDPC	National Dropout Prevention Center
NRCCTE	National Research Center for Career and Technical Education
OVAE	Office of Vocational and Adult Education
PACT	Palmetto Achievement Challenge Test (South Carolina)
POS	Programs of Study
POS1	Programs of Study, Concept 1, for analysis of student-level data from the statewide longitudinal data system (SLDS)
POS2	Programs of Study, Concept 2, for analysis of numbers and participation in state-defined CTE programs
POS3	Programs of Study, Concept 3, for analysis of POS Student Engagement Survey, CTE and non-CTE student groupings for student-level analyses
POS4	Programs of Study, Concept 4, study-defined, Perkins IV Program of Study
POS5	Programs of Study, Concept 5, study-defined, District Perkins IV Program of Study
POS6	Programs of Study, Concept 6, sample school identified programs with the strongest secondary-postsecondary linkages
POV	Research Variable: Level of Community Poverty
PSLOI	Preliminary Selection Level of Implementation
REC	Regional Education Center
RECAP	Regional Education Center Advisory Panel
SC CAP	South Carolina Course Alignment Project
SCOIS	South Carolina Occupational Information System
SC TRAC	South Carolina Transfer and Articulation Center
SDE	South Carolina Department of Education
SEI	Socioeconomic Indicator Flag, SLDS
SLDS	Statewide Longitudinal Data System
SLICE	South Carolina Longitudinal Information Center for Education
SLOI	Site Selection Level of [EEDA] Implementation
STEM	Science, Technology, Engineering and Mathematics
WBL	Work-based Learning

Appendix B: OVAE Career and Technical Programs of Study: A Design Framework

The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) calls for states to offer "career and technical programs of study," which may be adopted by local educational agencies and postsecondary institutions, as an option to students (and their parents as appropriate) when planning for and completing future coursework. These programs, at a minimum, must:

- Incorporate and align secondary and postsecondary education elements,
- Include academic and CTE content in a coordinated, non-duplicative progression of courses,
- Offer the opportunity, where appropriate, for secondary students to acquire postsecondary credits, and
- Lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree.

Each local recipient of Perkins funds must offer at least one career and technical program of study. To help states and local recipients meet these requirements, the Office of Vocational and Adult Education (OVAE), in collaboration with major national associations, organizations, and states, have formulated a "career and technical programs of study design framework (framework)." The framework identifies a system of 10 components that, taken together, support the development and implementation of effective programs of study. Although all 10 components are important, they are neither independent nor of equal priority: State and local program developers must identify the most pressing components for state or local adoption, taking into consideration their relative need within their educational context.

PROGRAM OF STUDY (POS) COMPONENTS AND SUBCOMPONENTS

1. LEGISLATION AND POLICIES

Federal, state, and local legislation or administrative policies promote POS development and implementation.

Effective legislation and policies should:
- Provide for state and/or local funding and other resources, such as professional development and dedicated staff time, for POS development.
- Establish formal procedures for the design, implementation, and continuous improvement of POS.
- Ensure opportunities for any secondary student to participate in a POS.
- Require secondary students to develop an individual graduation or career plan.
- Provide resources for long term sustainability of POS.

2. PARTNERSHIPS

Ongoing relationships among education, business, and other community stakeholders are central to POS design, implementation, and maintenance.

Collaborative partnerships should:
- Create written memoranda of understanding that elaborate the roles and responsibilities of partnership members.

- Conduct ongoing analyses of economic and workforce trends to identify statewide (or regional) POS to be created, expanded, or discontinued.
- Link into existing initiatives that promote workforce and economic development, such as sector strategies and other activities supported by the Workforce Investment Act.
- Identify, validate, and keep current the technical and workforce readiness skills that should be taught within a POS.

3. PROFESSIONAL DEVELOPMENT

Sustained, intensive, and focused opportunities for administrators, teachers, and faculty foster POS design, implementation, and maintenance.

Effective professional development should:
- Support the alignment of curriculum from grade to grade (9-12) and from secondary to postsecondary education (vertical curriculum alignment).
- Support the development of integrated academic and career and technical curriculum and instruction (horizontal curriculum alignment).
- Ensure that teachers and faculty have the content knowledge to align and integrate curriculum and instruction.
- Foster innovative teaching and learning strategies (see #9 below).

4. ACCOUNTABILITY AND EVALUATION SYSTEMS

Systems and strategies to gather quantitative and qualitative data on both POS components and student outcomes are crucial for ongoing efforts to development and implement POS.

Well-designed accountability and evaluation systems should:
- Include the "10 Essential Elements of A State Longitudinal Data System" identified by the Data Quality Campaign.[23]
- Provide for administrative record matching of student education and employment data (i.e., Unemployment Insurance (UI) wage records).
- Yield valid and reliable data on key student outcomes (indicators) referenced in Perkins and other relevant federal and state legislation.
- Provide timely data to evaluate and improve the effectiveness of POS.

5. COLLEGE AND CAREER READINESS STANDARDS

Content standards that define what students are expected to know and be able to do to enter and advance in college and/or their careers comprise the foundation of a POS.

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[23] The 10 elements are: (1) statewide student identifier; (2) student-level enrollment data; (3) student-level test data; (4) information on untested students; (5) statewide teacher identifier with a teacher-student match; (6) student-level course completion (transcript) data; (7) student-level SAT, ACT, and Advanced Placement exam data; (8) student-level graduation and dropout data; (9) ability to match student-level P-12 and higher education data; and (10) a state data audit system.

Rigorous college and career readiness standards should:
- Be developed and continually validated in collaboration with secondary, postsecondary, and industry partners.
- Incorporate essential knowledge and skills (i.e., academic skills, communication, and problem-solving), which students must master regardless of their chosen career area or POS.
- Provide the same rigorous knowledge and skills in English and mathematics that employers and colleges expect of high school graduates.
- Incorporate industry-recognized technical standards that are valued in the workplace.
- To the extent practicable, be internationally benchmarked so that all students are prepared to succeed in a global economy.

6. COURSE SEQUENCES

Non-duplicative sequences of secondary and postsecondary courses within a POS ensure that students transition to postsecondary education without duplicating classes or requiring remedial coursework.

Well-developed course sequences should:
- Map out the recommended academic and career and technical courses in each POS.
- Begin with introductory courses at the secondary level that teach broad foundational knowledge and skills that are common across all POS.
- Progress to more occupationally-specific courses at the postsecondary level that provide knowledge and skills required for entry into and advancement in a chosen POS.
- Offer opportunities for students to earn postsecondary credit for coursework taken during high school.

7. CREDIT TRANSFER AGREEMENTS

Credit transfer agreements provide opportunities for secondary students to be awarded transcripted postsecondary credit, supported with formal agreements among secondary and postsecondary education systems.

Well-development agreements:
- Provide a systematic, seamless process for students to earn college credit for postsecondary courses taken in high school, transfer high school credit to any two- and four-year institution in the state that offers the POS, and transfer credit earned at a two-year college to any other two- or four-year institution in the state that offers the POS.
- College credit should be automatically transcripted at the college for high school students so that they can transfer seamlessly into the postsecondary portion of a POS without the need for additional paperwork or petitioning for credit.
- Describe the expectations and requirements for, at a minimum, teacher and faculty qualifications, course prerequisites, postsecondary entry requirements, location of courses, tuition reimbursement, and credit transfer process.

8. GUIDANCE COUNSELING AND ACADEMIC ADVISEMENT

Guidance counseling and academic advisement help students to make informed decisions about which POS to pursue.

Comprehensive guidance counseling and academic advisement systems:

- Are based on state and/or local guidance and counseling standards, such as the National Career Development Guidelines.[24]
- Ensure that guidance, counseling, and advisement professionals have access to up-to-date information about POS offerings to aid students in their decision making.
- Offer information and tools to help students learn about postsecondary education and career options, including prerequisites for particular POS.
- Offer resources for students to identify their career interests and aptitudes and to select appropriate POS.
- Provide information and resources for parents to help their children prepare for college and careers, including workshops on college and financial aid applications.
- Offer Web-based resources and tools for obtaining student financial assistance.

9. TEACHING AND LEARNING STRATEGIES

Innovative and creative instructional approaches enable teachers to integrate academic and technical instruction and students to apply academic and technical learning in their POS coursework.

Effective teaching and learning strategies should:
- Be jointly led by interdisciplinary teaching teams of academic and career and technical teachers or faculty.
- Employ contextualized work-based, project-based, and problem-based learning approaches.
- Incorporate team-building, critical thinking, problem-solving, communication skills, such as through the use of career and technical student organization (CTSO) activities.

10. TECHNICAL SKILLS ASSESSMENTS

National, state, and/or local assessments provide ongoing information on the extent to which students are attaining the necessary knowledge and skills for entry into and advancement in postsecondary education and careers in their chosen POS.

Well-developed technical skills assessments:
- Measure student attainment of technical skill proficiencies at multiple points during a POS.
- Employ industry-approved technical skill assessments based on industry standards, where available and appropriate.
- Employ State-developed and/or approved assessments, particularly where industry-approved assessments do not exist.
- Result in the awarding of secondary credit, postsecondary credit, or a special designation on a student's high school diploma.
- Incorporate performance-based assessment items, to the greatest extent possible, where students must demonstrate the application of their knowledge and skills.

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[24] See http://cte.ed.gov/acrn/ncdg/ncdg_what.htm.

Appendix C: Resulting Papers and Presentations on Study Findings

Articles

Withington, C., Hammond, C., Mobley, C., Stipanovic, N., Sharp, J. L., Stringfield, S., et al. (2012). "Implementing a statewide mandated career pathways/programs of study school reform model: Select findings from a multi-site case study." *International Journal of Educational Reform* 21(2):138-158

Mobley, C., Hammond, C., Withington, C., Stringfield, S., Stipanovic, N., Sharp, J. L., et al. (2012). "Developing programs of study via a statewide career-focused reform policy." *Techniques* (January): 24-27.

Sharp, J. L., Mobley, C., Hammond, C., Withington, C., Drew, S., Stringfield, S., et al. (2011). "A mixed methods sampling methodology for a multisite case study." *Journal of Mixed Methods Research*. Advance online publication. doi:10.1177/1558689811417133

Technical Reports

Hammond, C., Drew, S., Withington, C, Mobley, C., Sharp, J. L., Stringfield, S. C., et al. (2011). *Programs of study as a state policy mandate: A longitudinal study of the South Carolina Personal Pathways to Success initiative—Year 3 technical report*. Louisville, KY: National Research Center for Career and Technical Education.

Programs of Study Joint Technical Working Group. (2011). *Programs of study: Year 3 joint technical report*. Louisville, KY: University of Louisville, National Research Center for Career and Technical Education.

Smink, J., Drew, S., Hammond, C., Withington, C., Mobley, C., Sharp, J., et al. (2010, January). *A longitudinal study of the South Carolina Personal Pathways to Success initiative—Year 2 technical report*. Louisville, KY: National Research Center for Career and Technical Education. Retrieved from http://136.165.122.102/UserFiles/File/Tech_Reports/Personal_Pathways_Yr2_Technical_Report.pdf

Programs of Study Joint Technical Working Group. (2010). *Programs of study: Year 2 joint technical report*. Louisville, KY: University of Louisville, National Research Center for Career and Technical Education. Retrieved from http://136.165.122.102/UserFiles/File/Tech_Reports/POS_Joint_Technical_Report_Jan_2010.pdf

Conference Presentations and Podcasts

Hammond, C., Withington, C., Drew, S., Mobley, C., Sharp, J., Stringfield, S., & Stipanovic, N. (2012, April). Changes in Career and Technical Education Awareness and Participation in a Mandated Programs of Study School Reform Environment: Third Year Results. In *Programs of Study (POS) as Locally Adaptable High School Reforms*. Symposium conducted at the Annual Meeting of the American Educational Research Association, Vancouver, BC, Canada.

Hammond, C., Stipanovic, N., Sharp, J., Withington, C., Mobley, C., Drew, S., & Stringfield, S. (2011, April). A longitudinal study of the South Carolina Personal Pathways to Success Initiative. In M.V. Lewis, (Chair), *Programs of study: Multiple approaches examining the implementation of a federal policy on career preparation*. Symposium conducted at the Annual Meeting of the American Educational Research Association in New Orleans, LA.

Westray, L., Swiger, C., Sharp, J. L., Mobley, C., Hammond, C., Withington, C., et al. (2011, April). *Career and technical education (CTE) participants vs. non-CTE participants: A comparison of student survey findings*. Poster presented at the Clemson University HEHD Research Forum, Clemson, SC.

Stone, J., Drew, S., Castellano, M., Alfeld, C., Hammond, C., Withington, C., Mobley, C., Sharp, J., Stringfield, S., & Kosine, N. (2010, December). *Programs of study: Early lessons from three field-based studies*. Presentation made at the 2010 ACTE Convention in Las Vegas, NV.

Hammond, C., Withington, C., Mobley, C., Sharp, J. L., & Drew, S. (2010, April). *South Carolina Personal Pathways to Success initiative and Programs of Study: Early findings from a 5-year longitudinal mixed-methods Study*. Roundtable Presentation at the Clemson University HEHD Research Forum, Clemson University, Clemson, SC.

Stone, J., Alfeld, C., Sundell, K., & Hammond, C. (2010, March). *National Research Center for Career and Technical Education Programs of Study Seminar* presented at the ACTE 2010 National Policy Seminar, Washington, DC. http://www.nrccte.org

Castellano, M., Sundell, K., & Withington, C. (2010, February). *ACTE post-convention update: A podcast with Marisa Castellano, Kirsten Sundell, & Cairen Withington*. NRCCTE audio podcast of interview with Catherine Imperatore, Association for Career and Technical Education. http://nrccte.podbean.com/2010/02/15/acte-post-convention-update-a-podcast-with-marisa-castellano-kirsten-sundell-cairen-withington/

Stone, J., Alfeld, C., Castellano, M., Sundell, K., & Withington, C. (2009, November). *Programs of study: Early lessons from three field-based studies*. Presentation made at the 2009 ACTE Convention in Nashville, TN.

Hammond, C. (2009, July). *A longitudinal study of the South Carolina Personal Pathways to Success Initiative*. NRCCTE audio podcast of interview with Catherine Imperatore, Association for Career and Technical Education. http://www.nrccte.org

Smink, J., Drew S., Hammond, C., Withington, C., McMillan, R., Mobley, C., et al. (2009, April). *A sampling design for a longitudinal study of the South Carolina Personal Pathways Initiative*. Poster presented at the Clemson University HEHD Research Forum, Clemson University, Clemson, SC.

Appendix D: EEDA Policy Implementation and Study Timelines

EEDA Policy Implementation and Study Timelines

8 Sample Schools					
		Baseline POS stage Baseline EEDA stage			End EEDA stage End POS stage
Archival school data	Archival school data	Archival school data Site visits	Archival school data Site visits Guidance surveys & interviews	Archival school data	Archival school data Guidance surveys & interviews
Cohort 1 – control group					
10th grade	11th grade	12th grade			
Archival student data	Archival student data	Archival student data Survey			
Cohort 2 – treatment group					
8th grade	9th grade	10th grade	11th grade	12th grade	
Archival student data	Archival student data	Archival student data Survey	Archival student data	Archival student data Survey Focus groups	
Pre-Study 2006-07	Study Year 1 2007-08	Study Year 2 2008-09	Study Year 3 2009-10	Study Year 4 2010-11	Study Year 5 2011-2012
Statewide EEDA Implementation Requirements					
Career awareness for 1-5th grades

8th graders develop IGP

HS org curricula on 3 + career clusters

HS criteria to ID high-risk students | All MS & HS have 300:1 student-to guidance ratio

HS implement programs for ID of high-risk students | 10th graders declare major | All HS implement principles of HSTW | EEDA fully implemented 7-1-11 | EEDA continued implementation |

Appendix E: Spring 2009 Site Visit Protocols

SC Personal Pathways Study Site Visits
Validation of Baseline EEDA Implementation Level

School/District/WIA: _____

Researchers conducting visit: _____

Date of visit: _____

School contact person: _____

School contact information: _____

1. **These first items are about the Education and Economic Development Act (EEDA)/Personal Pathways Initiative in general and how it is being implemented at your school.**

General questions for principal, assistant principal(s) and guidance director:
a. What do you see as the primary purpose of the EEDA/Personal Pathways Initiative?

b. How would you rate your school's overall level of implementation of EEDA requirements on a 5 point scale, where 1=planning stage and 5=fully implemented?

1	2	3	4	5
Planning stage				Fully implemented

Please, briefly explain your rating /why do you rate your school's implementation at that level?

c. What area or areas of EEDA implementation are the strongest at your school?
[PROMPTS: If doesn't know specific areas, could list the following: career clusters, majors, and career-focused content; whole-school reform; Individual Graduation Plans]

d. What area or areas of EEDA implementation need the most improvement at your school?

2. **The following items are about the school's whole-school reform model**

Questions for principal, assistant principal(s) and teachers:
a. Has your school selected a whole-school reform model?
    Yes   No   Don't Know

b. If a whole-school reform model has been selected/adopted, which model was it?
    America's Choice
    First Things First
    High Schools That Work
    School Development Program
    Talent Development High School

Model designed by school/district
Other: _____

c. If a whole-school reform model has been selected/adopted, what year did implementation begin or when do you expect it to begin?
Prior to 2005-2006 school year
2005-2006 school year
2006-2007 school year
2007-2008 school year
2008-2009 school year
2009-2010 school year

Questions for principal and assistant principal(s):
d. What led to your choice of this whole-school reform model?

e. What has been done to implement this model?

f. How would you rate the level of implementation of this model on a scale from 1 to 5, with 1 being "planning stage" and 5 being "fully implemented"? (Circle one number)

1	2	3	4	5
Planning stage				Fully implemented

Questions for the principal:
g. If the model is not High Schools That Work, why did you choose another model?

h. If you haven't selected a whole-school reform model, why not? What models are you considering?

Questions for teachers:
i. How would you describe this whole-school reform model?

j. Have you been trained on how to implement this model?

3. The following items are about programs being implemented for high-risk students at your school that have been put into place to meet EEDA requirements.
[EEDA requirement: high schools must identify high-risk students and implement evidence-based strategies to assist identified students.]

Questions for principal, assistant principal(s) and guidance director:
a. What are the 2 or 3 **primary** strategies or programs that your school has adopted to provide identified high-risk students with special assistance, as specified in the EEDA requirements?

Strategy/Program 1: _____
Could you briefly describe this strategy or program?

Strategy/Program 2: _____
Could you briefly describe this strategy or program?

Strategy/Program 3: _____
Could you briefly describe this strategy or program?

b. Which, if any, of the Tier 1 models identified in the Pathways to Success *At-Risk Student Intervention Implementation Guide*,* is your school implementing to support high-risk students? *[Give list to Interviewee to review]*

_____ Advancement Via Individual Determination (AVID)
_____ Big Brothers Big Sisters
_____ Boys & Girls Clubs of America
_____ Check & Connect
_____ Coca-Cola Valued Youth Program
_____ High Schools That Work (HSTW)
_____ keepin' it R.E.A.L. (Refuse, Explain, Avoid, Leave)
_____ Project Graduation Really Achieves Dreams (Project GRAD)
_____ Project Toward No Drug Abuse (Project TND)
_____ Quantum Opportunities Program
_____ School Transitional Environment Program (STEP)—(now HiPlaces School Improvement Model)
_____ Teen Outreach Program (TOP)
_____ Too Good for Drugs and Violence (TGFD)

c. Which, if any, of the Tier 2 models identified in the Pathways to Success *At-Risk Student Intervention Implementation Guide*,* is your school implementing to support high-risk students? *[Give list to Interviewee to review]*

_____ ACT EXPLORE
_____ Academic Alternatives
_____ Career Education Options Program (CEO)
_____ Complete High School Maize (CHSM)
_____ Computer-Based Instruction: Example: Educational Options, Inc.; NOVEL/STARS™
_____ Computer-Based Instruction: Example: Pearson Digital Learning/NovaNET
_____ Computer-Based Instruction: Example: PLATO Learning, Inc.
_____ Consistency Management & Cooperative Discipline® (CMCD®)
_____ Creating Lasting Family Connections (CLFC)
_____ Early College High School Initiatives: Gateway to College Tri-County Technical College, Richland One Middle College
_____ Fast Forward Center
_____ GEARUP
_____ Jefferson County Public Schools (Louisville, Kentucky)
_____ Jobs for America's Graduates (JAG)
_____ Leadership and Resiliency (LRP)
_____ Moss Point High School Entrepreneurship Program
_____ National Foundation for Teaching Entrepreneurship (NFTE): YEScarolina (Youth Entrepreneurship South Carolina)
_____ Phoenix Academy
_____ Pickens County Star Academy
_____ Positive Action
_____ Project Respect

_____ Reconnecting Youth

_____ School for Integrated Academies and Technologies (SIATech)

_____ South Carolina Advanced Technological Education (SCATE)

_____ South Carolina Virtual School

_____ Truant Recovery Program

_____ Union Alternative School

_____ Upward Bound, Federal TRIO Program

_____ WorkKeys/KeyTrain

_____ YouthBuild

_____ National Dropout Prevention Center's Program Assessment Review (PAR)

_____ Other, please specify: _____

*[This Guide is online and was provided to each school by the SC Department of Education.]

d. What impact do you think implementation of EEDA at your school will have on high-risk students? On your school's dropout rate?

Question for guidance director:

e. What method are you using to identify the group of high-risk students at your school who will receive additional assistance funded through the EEDA? What characteristics are being used for student identification?

Questions for teachers:

f. What are the primary strategies or programs that your school has adopted to identify and assist students at high risk for failing and/or dropping out?

4. The following questions are about implementation of career clusters at your school, the reorganization of your school's curricula around these clusters, and Individual Graduation Plans (IGPs).
[EEDA requirement: high schools must implement at least three of 16 career clusters and integrate academic and career-focused content in courses.]

Questions for principal, assistant principal(s), guidance personnel and guidance director:

a. How many career clusters are available to students at your school? _____
Which ones do you offer?

b. Are 10th graders notified of the requirement that they must declare a major within a career cluster? [Not specifically asked of guidance personnel other than guidance director.]

Yes No Don't Know

If "yes," how are they notified?

c. Are your 9th graders coming to high school with completed IGPs? [Not specifically asked of guidance personnel other than guidance director.]

Yes No Don't Know

d. Are IGPs reviewed regularly?
Yes No Don't Know

If yes, who reviews them and how often are they reviewed?

Questions for principal and guidance director:

   e.   How does the IGP process work at your school? Who is involved and how are they developed? How are students informed of the IGP requirements?

   f.   How far along is your school in implementing the electronic IGP system?

Questions for guidance personnel:

   g.   How does the IGP process work at your school? Who is involved and how are they developed?

   h.   How are students informed of the IGP requirements and how to develop one? How are parents informed about IGPs and the IGP process?

   i.   Are there any other comments you would like to make about your school's implementation of career clusters?

Questions for principal:

   j.   What materials are available to students and parents about career clusters? How are these materials made available to them?

Questions for guidance director:

   k. We would like to get a copy of the report that you submitted to the South Carolina Department of Education that reports on your last year's (2007-08) EEDA-related activities implemented by guidance personnel at your school. It is a report called the *Career Specialists/Guidance Personnel Accountability Report* and was submitted by someone in your guidance office online some time in June.

      It covers items like the following: During the last school year (2007-08):

	Num	Activity
1)		How many 9th graders were assisted in identifying and accessing career information and resource materials pertaining to various career clusters?
2)		How many 9th graders completed at least one career inventory?
3)		How many 9th graders <u>completed</u> an individual graduation plan (IGP)?

Questions for teachers:

   l. What is your general knowledge of career clusters/pathways/majors?

   m. How are these clusters reflected in your teaching? Can you give us some examples? Examples: Has it required changes in technology you use? Materials you use? Used guest speakers?

   n. Have you received any training related to career clusters and career-related content?
      Yes   No   Don't Know

      If yes, when did the training take place and who trained you?

      Was the training helpful?

o. Do you feel prepared to incorporate career-related and major-specific content into your classes?
Yes   No   Don't Know

If yes, what has helped you be prepared? If no, why don't you feel prepared?

p. Are students given opportunities for extended learning/work-based learning experiences? What types of opportunities are available and who provides them? How do students learn about these?

5. The following items are about the role of guidance personnel in career-focused planning and education for students

Questions for guidance director:
a. How many guidance counselors and career specialists did your school have last year (2007-08)?

Certified Guidance Counselors: _____

Career specialists who are not Guidance Counselors: _____

b. What types of career planning information is available to students and parents? How is it made available to them?

c. Are career skills or interest assessments available to students? Do students take them? If so, how often?

Questions for guidance director and guidance personnel:
d. During the last school year (2007-08), how many career events, career classes, and career programming activities were coordinated by career specialists and/or guidance counselors? _____

e. During the last school year, how many career development and guidance <u>workshops</u> were presented for teachers, school counselors, and work-based constituents? _____workshops

f. During the last school year, how many <u>participated</u> in career development and guidance workshops presented for <u>teachers</u>, <u>school counselors</u>, and <u>work-based constituents</u>? _____ participants

g. Are students given opportunities for extended learning/work-based learning experiences? What types of opportunities are available and who provides them? How do students learn about these?

h. Has your level of effort in any of the following areas changed since the implementation of EEDA? Would you say that you now spend more time, less time, or the same amount of time on each of the following areas now as compared to before EEDA? *[Hand them the chart and ask them to mark the appropriate box for each area]*

		Spend less time	Spend same amount of time	Spend more time
1)	Course scheduling			
2)	Counseling students about misbehavior			
3)	Counseling students about personal problems			
4)	Assisting with career preparation			
5)	Assisting with college planning and applications			

6)	Testing or planning and preparation for testing, such as for the SAT or ACT			
7)	Crisis intervention			
8)	Consultation			
9)	Classroom guidance			
10)	Other, please specify:			

Questions for guidance personnel:
    i. b. What guidance personnel are involved in career planning and development at your school?

    j. How are each of these guidance personnel at your school involved in career development and planning for **students**?

    k. How are each of these guidance personnel at your school involved in career development **professional development activities/inservice for teachers and other staff**?

    l. Have you received professional development or inservice on *[Mark responses for each participant]*

        1) student career development?   Yes   No   Don't Know

        2) your school's career clusters?   Yes   No   Don't Know

Questions for teachers:
    m. During last school year (2007-08) how many career development and guidance workshops/professional development/inservice activities were given for teachers? What types of activities were offered?

    n. How many/which ones did you attend?

    o. Were these workshops professional development/inservice activities helpful? Why or why not? In what ways were they helpful? For example, did they help you change your lesson plans?

6. The following items are about the school's coordination with local 2- and 4-year colleges
    [EEDA requirement: high schools must coordinate with local 2- and 4-year colleges and to offer opportunities for students to earn college credits.]

    Questions for principals and guidance director:
    Which of the following options are available to students at your school: *[Circle one response for each question.]*

        a1) Dual enrollment?   Yes No
        a2) Dual credit?   Yes No
        Which local colleges are involved? _____

        b1) Advanced Placement courses?   Yes No
        b2) Technical Advanced Placement courses?   Yes No
        c) CTE/Tech Prep courses?   Yes No
        d) International Baccalaureate program?   Yes No
        e) Other college credit earning programs?   Yes No
          Which ones? _____

        f) National or industry certifications?   Yes No

7. The following items are about the level of awareness of EEDA in the school, district, and community

Questions for principal, assistant principal(s), guidance personnel, guidance director and teachers:

a. What would you say is the level of awareness and understanding among the following groups about **EEDA** on a scale from 1 to 5, with 1 being "low to no awareness" and 5 being "high awareness"? What would you say is the level of awareness for each group on "**career clusters**"?

[Mark responses for each participant for each item]

	Level of Awareness									
	EEDA					**Career Clusters**				
	Low/No			**High**		**Low/No**			**High**	
Among teachers in your school?	1	2	3	4	5	1	2	3	4	5
Among administrators in your school?	1	2	3	4	5	1	2	3	4	5
Among counselors in your school?	1	2	3	4	5	1	2	3	4	5
Among students in your school?	1	2	3	4	5	1	2	3	4	5
Among parents of your students?	1	2	3	4	5	1	2	3	4	5
Among district staff?	1	2	3	4	5	1	2	3	4	5
Among district administrators?	1	2	3	4	5	1	2	3	4	5
Among your business partners?	1	2	3	4	5	1	2	3	4	5
Among the larger community in your district?	1	2	3	4	5	1	2	3	4	5

b. How has information on the EEDA been distributed to teachers at your school? To students? To parents?

c. How has information on career clusters been distributed to teachers at your school? To students? To parents?

[Note: The last two items (7b and 7c) were not asked specifically of guidance personnel except the guidance director.]

8. The following questions are about the REC in your region. [*IF THEY SAY THEY DON'T KNOW, MAKE A NOTE AND SKIP TO QUESTION 11.*]
[EEDA requirement: Regional Education Centers (REC) be developed in each of 12 geographic regions in South Carolina. These are being developed in all 12 EEDA geographic regions and will be virtual centers through Web sites. These Centers are to be designed to be focal points for regional training and education resources, provide help in facilitation of business-education partnerships, and promote community involvement.]

Questions for principal and guidance director:
a. How developed is the Regional Education Center (REC) in your region? How would you rate the level of implementation of your REC on a scale from 1 to 5, with 1 being "planning stage" and 5 being "fully implemented"? (Circle one number)

1	2	3	4	5
Planning stage				Fully implemented

  b. Have you coordinated with your Regional Education Center in any way or used resources from it? If so, in what way(s)?

9. The following questions were asked as concluding questions of the principal, assistant principal(s), guidance director, guidance personnel and teachers.

  a. Are there any other comments you would like to make about your school's EEDA implementation?

  b. Are there any aspects of EEDA that we missed and should ask questions about?

Questions for Review of School Site Selection Visits
School Site Visit Team Summary

1. Where is the school on each of the following sections of EEDA?

  a. Whole-school reform

1	2	3	4	5
Planning stage				Fully implemented

  b. Programs for high-risk students

1	2	3	4	5
Planning stage				Fully implemented

  c. School's implementation of career clusters and integration of career-related content into core academic courses?

1	2	3	4	5
Planning stage				Fully implemented

  d. Opportunities for students to get college credit? LOW/ MEDIUM/ HIGH

  e. Level of awareness of EEDA in school and larger community? LOW/ MEDIUM/ HIGH

  f. Knowledge of and coordination with their Regional Education Center?
    LOW/ MEDIUM/ HIGH

2. Based on today's discussion and rankings from above, at what level is EEDA being implemented at this school? [Take a count from the group, marking with hatch marks the number of people who chose the various scores.]

1	2	3	4	5
Planning stage				Fully implemented

  a. Why would you give it this rating?

3. What would be the strengths of this school as a sample site?

4. What would be the drawbacks/weaknesses of this school as a sample site?

5. How does this site compare to other schools visited in this region? In other regions?

6. How cooperative would they be? How efficient in getting back with us?

7. How far do you think they will progress in implementing all aspects of the EEDA?

8. What is the school's vision of where they will go with EEDA? Does it appear that the school is doing this because they share the vision or are they doing it because they have to?

9. How would you characterize the style of leadership of the principal?

Appendix F: Fall 2009 POS Protocols and Measurement Tools

Table F.

Example of 2008-2009 Clusters and Majors/Programs of Study/Completer Programs Checklist

Checklist Example School Clusters & Majors/Programs of Study/Completer Programs 2008-2009	Alignment with 2- and 4- year postsecondary education programs						Alignment with industry standards						Alignment with postsecondary apprenticeships, internships, training					Credential											
	Major-specific curriculum is linked between secondary & postsecondary levels			Has a major-specific written articulation agreement spelling out alignment			Institution agreement is with (Please list the institution(s))	Specific partner/ contact person that worked with on alignment	Major-specific required courses aligned with industry standards			Program completion prepares student to pass industry exam			Has written articulation agreement spelling out alignment			Business/ organization agreement is with	Specific partner/ contact person that worked with on alignment	Results in industry-recognized or sponsored credential -- at secondary level			Results in industry-recognized or sponsored credential -- at postsecondary level			Results in 2-year degree			Results in 4-year degree		
	Yes	No	N/A	Yes	No	N/A	Institution(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Organization(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
Agriculture, Food & Natural Resources																															
Horticulture																															
Architecture & Construction																															
Building Construction																															
Electricity																															
Arts, AV Technology, & Communication																															
English																															
Commercial Graphics																															
Performing Arts																															

Checklist Example School Clusters & Majors/Programs of Study/Completer Programs 2008-2009	Alignment with 2- and 4- year postsecondary education programs						Alignment with industry standards						Alignment with postsecondary apprenticeships, internships, training					Credential											
	Major-specific curriculum is linked between secondary & postsecondary levels			Has a major-specific written articulation agreement spelling out alignment			Institution agreement is with (Please list the institution(s))	Specific partner/ contact person that worked with on alignment	Major-specific required courses aligned with industry standards			Program completion prepares student to pass industry exam			Has written articulation agreement spelling out alignment			Business/ organization agreement is with	Specific partner/ contact person that worked with on alignment	Results in industry-recognized or sponsored credential -- at secondary level			Results in industry-recognized or sponsored credential -- at postsecondary level			Results in 2-year degree			Results in 4-year degree		
	Yes	No	N/A	Yes	No	N/A	Institution(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Organization(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
Business, Mgmt & Admin																															
Administration & Info Support																															
Financial Management & Accounting																															
Education & Training																															
Teaching & Training																															
Foreign Languages																															
Government & Public Administration																															
Social Studies																															
Health Science																															
Health Technology																															
Sports Medicine																															

Guidance Provided to Schools on POS Measurement Tool

1. Which of the majors/programs of study/completer programs offered at your school are formally aligned or sequenced with <u>local technical college or other postsecondary programs</u>?

   <u>For each major/program of study/completer program aligned or sequenced with 2 or 4-year postsecondary programs</u>:
   a. Does the curriculum link secondary and postsecondary levels? (Yes/No)
   b. Is there a written articulation agreement that details the alignment of the high school courses with the courses at the postsecondary level? (Yes/No)
   c. What postsecondary institution(s) is this agreement with? (Name of Institution)
   d. Is there a specific contact person at this postsecondary institution that you or someone in your school or district has worked with on developing the written articulation agreement? (Yes/No) If yes, who is it and how can we contact them? (Name_____ phone_____ email _____)

2. Which of the majors/programs of study/completer programs offered at your school are formally aligned or sequenced with <u>business/industry standards for certification</u> in this area or <u>with postsecondary apprenticeships, internships, or further training</u> in this area?

   <u>For each major/program of study/completer program aligned or sequenced for certification purposes</u>:
   a. Are the required courses aligned with the state standards or national industry standards required for certification in this area? (Yes/No)
   b. If a student completes the required courses for this major/program of study/completer program while in high school, will it prepare them to pass the industry exam for certification in this area? (Yes/No)

   <u>For each major/program of study/completer program aligned or sequenced to move into postsecondary apprenticeships, internships, or further training</u>:
   a. Is there a written articulation agreement that details the alignment of the high school courses with the requirements of an apprenticeship, internship, or further training in that area? (Yes/No)
   b. What business(es) or organization(s) is this agreement with? (Name of Business/Organization)
   c. Is there a specific contact person at this business or organization that works with apprenticeships, internships, or further training in this major/program of study/completer program that you or someone in your school or district has worked with to develop the written articulation agreement? (Yes/No) If yes, who is it and how can we contact them? (Name_____ phone_____ email _____)

3. Which of the majors/programs of study/completer programs offered at your school lead to an industry-recognized or sponsored credential or certificate at the high school or postsecondary level, or to an associate or baccalaureate degree? (Please mark all credentials that apply for each major/program of study/completer program.)

Fall 2009 POS Site Visit Protocol

Introduction for Interviews

Topic for today's discussion
Thank you for agreeing to talk with us today.
Things to emphasize:
- We are studying the implementation of EEDA in a number of schools across SC
- Interested in how policy impacts school, programs and student outcomes
- Not here to evaluate what you are doing or monitor your school in any way
- What we are asking about is not necessarily mandated in the EEDA or in Perkins
- Just interested in how this policy is being implemented at your school and how it's playing out in the majors that you offer
- Visiting with different staff in the next few days to find out more about particular majors offered at your school that seem to have strongest ties to postsecondary certificates, further training, and degrees.
- During our discussion, we will be asking you a number of questions about this major(s) or program(s).

Permission to audio-tape interview [PLEASE TALK ABOUT THIS TO PARTICIPANTS]
We would like to audio-tape this interview to make sure that we accurately portray your interview in our notes.

To ensure confidentiality and anonymity, we will:
- Use all responses recorded for research purposes only
- Will summarize your responses and not release your identity
- Will not associate your name with your responses.
- Secure the audiotape in our research facility at Clemson University for access by research team members only
- After completion of the study or three years from the date of the interview, whichever is first, the audiotape will be destroyed

Your participation in the interview is voluntary and if you do not wish to be recorded, you have the option to deny permission at any time.

Any questions before we begin?

Introductory Meetings to Go Over the Major/Cluster Matrix
(Interviews with guidance director, curriculum coordinator and/or
career center director)

1. **Finalize the Majors/Clusters matrix**

   What we want to do first is to go over the majors/clusters matrix that you and others filled out and make sure that we haven't missed anything and have correctly captured the links between your majors and postsecondary education and training.

   For each major, make sure all columns are filled in where appropriate and establish whether:

   - The major is smaller than a cluster and is narrow enough to be a potential POS and considered an independent major at the school

   - (1) Is formally aligned or sequenced with business/industry standards for certification purposes or
     (2) Is formally aligned or sequenced with business/industry standards for future internship/apprenticeship purposes with <u>written articulation agreement</u> or
     (3) Is formally aligned or sequenced with a postsecondary education program and has a <u>written articulation agreement</u> describing the link [*find out how many courses are covered – all for major? Only some courses?*]

   - Leads to credential in high school or can lead to a postsecondary apprenticeship, further training, or 2- or 4-year degree program

2. **Decide which majors we will want to follow-up on and identify who we need to talk to to address questions on all four key POS elements. Get contact information.**

   Some general questions:
   1. **Have their programs changed in the past three years? What changed and why?**
   2. **Have the courses they offer changed during that time? What changed and why?**
   3. **Has implementing EEDA changed any programs and/or courses? How?**
   4. **Has implementing HSTW changed any programs and/or courses? How?**
   5. **Have they seen any impact of EEDA on staying in school? On graduation rate?**
   6. **Which has had more impact on majors and clusters – EEDA or HSTW?**

Other Majors not Meeting Minimal Criteria for POS
               (interviews with guidance personnel or curriculum coordinator)

1. **We are interested in the types of linkages that there are in your majors that do not have articulation agreements with 2- or 4-year institutions or result in a credential at the high school level only. In what ways are the courses in these majors linked to education and training after high school graduation?**

   a. Does one particular major have stronger linkages than others?

   b. What types of AP courses are available?

   c. What types of dual credit courses are available in these majors?

   d. What about postsecondary links through honors courses?

   e. Are students informed about any linkages? If so, how and what do you tell them?

2. **Are any of the courses in these majors formally aligned or sequenced with <u>business/industry standards?</u>**

▪▪▪

Majors Meeting Minimal Criteria for Programs of Study (POS)
(interviews with those knowledgeable about these POS at high school)

1st Interview

Some general questions:
   1. **Have their programs changed in the past three years? What changed and why?**
   2. **Have the courses they offer changed during that time? What changed and why?**
   3. **Has implementing EEDA changed any programs and/or courses? How?**
   4. **Has implementing HSTW changed any programs and/or courses? How?**
   5. **Have they seen any impact of EEDA on staying in school? On graduation rate?**
   6. **Which has had more impact on majors and clusters – EEDA or HSTW?**

1. **Incorporation of secondary and postsecondary elements**

   The first aspect of this major that we want to talk about is how the curriculum for this major may be aligned with curriculum at the postsecondary level.

   Is the curriculum of this major linked in any way to the postsecondary curriculum in this same major? If yes, how?

   a. Is the curriculum for this major aligned or sequenced with a postsecondary program, where the curriculum reflects a progression from secondary courses to postsecondary courses? How are the two levels linked?

b. Is the sequence non-duplicated across levels so that students don't have to repeat any courses when they get to college or postsecondary training?

c. Is there an articulation agreement for this major/program?

Is it with a 2-year postsecondary institution?

Is it with a 4-year postsecondary institution?

Is it for a postsecondary apprenticeship, internship or other training

d. In what year was the agreement originally developed? Is it renewed on a regular basis – how often?

e. What does this articulation agreement cover? For example, does it identify specific courses and the necessary content, or what teachers/faculty will teach the courses, and the necessary teacher qualifications?
Who is the agreement with?

How often do you meet with them?

Can we see a copy of the agreement?

2. Credit transfer options and agreements

We would like to know about any opportunities in this major for students to earn postsecondary education credits.

What dual/concurrent enrollment options are available to students in this major?

a. Are both academic and CATE courses specific to this major available for dual credit?

b. Are these courses included in the articulation agreements that we talked about earlier?

c. What <u>kinds</u> of credit are available through these options (i.e., postsecondary online courses, dual credit/enrollment, concurrent credit/enrollment, transcripted credit, or other methods to earn postsecondary credit in high school)?
   - How/when is the credit awarded?
   - How is credit tracked/transferred? Who tracks it – the high school or the postsecondary institution or both?

3. Industry-recognized credentials, certificates or degrees

We are interested in finding out for this major the credential/certificates students can earn while in high school and the options they have to continue training or education in this major after high school graduation.

a. First, can students earn an industry-recognized credential or certificate specific to this major while in high school? If so, what would that be?

b. Can students earn an industry-recognized credential or certificate in specific to this major **after** high school graduation if completing training or an apprenticeship? If so, what would that be?

c. If students continue in this same area in postsecondary education, what certifications or degrees could they earn? Is it a 2-year or 4-year degree?

d. How do students learn about these options?

- -

Majors Meeting Minimal Criteria for Programs of Study (POS)
(interviews with those knowledgeable about these POS at high school)

2nd Interview

1. **Overview**
   a. Please tell us a little bit about your program. How long have you offered it here at the school?

   b. Has the curriculum for this program area changed in past three years? If so, how? Why did it change?

   c. Has there been any impact of EEDA implementation on your program/courses?

   d. has there been any impact of HSTW implementation on your program/courses?

   e. Are students prepared in the basics to take your courses? Meet all prerequisites and equipped with necessary skills?

   f. Have you seen any changes in the focus of students on careers/goals after high school?

2. **Rigorous Academic and Technical Standards and Assessments**

   We want to get some information on the standards that are incorporated in both the academic and technical courses for this major and the types of assessments used.

   First, for the academic courses for this major . . .
   a. Are there specific academic core courses just for this major? Or do students in this major take the same core courses that students in other majors take?

   b. Do you incorporate state academic standards in the academic courses for this major? Would you consider all courses to be college prep? Are honors courses available in this major?

   Are these standards aligned with those at the postsecondary level for this major?

c. How are students assessed in the academic courses for this major?

Also, for the technical/CATE courses for this major . . .
d. Are there specific career and technical education (CATE) courses just for this major?

e. Do you incorporate state CATE standards in the CATE courses for this major? Are any of these courses TAP?

   Are these standards aligned with those at the postsecondary level for this major?

f. How are students assessed in the CATE courses in this major? Are the assessments aligned with industry standards?

Academic and technical content integration
g. How have you integrated both academic and CATE content and skills into curricula for this major? Has the curriculum been modified in any way since fall 2007 (after EEDA)? If yes, please describe what has been modified.

h. Do academic and CATE teachers: [*If "yes," can you give an example of each?*]
   - Have any common planning time?
   - Make joint assignments?
   - Co-teach courses?
   - Plan joint field trips?
   - Provide real-life applications in all courses?
   - Provide opportunities to use academic and technical skills across courses?

i. Do major-specific courses prepare students for postsecondary education without the need for academic or technical remediation?

j. Does completing major-specific courses give students the ability to test out of or skip introductory courses if they continue on in this major after high school?

k. Does completing major-specific courses make students better prepared to continue into postsecondary education to a greater degree than someone who did not complete the required courses for this major??

••

Majors Meeting Minimal Criteria for Programs of Study (POS)
(Interviews with postsecondary personnel)

1. **General questions**

   a. Has your relationship with local high schools changed in any way over the past three years? What about with _____ high school? If yes, how? Why the change?

b. Has the number of students taking dual credit courses at your institution from _____ high school changed in the past three years? How has it changed? Why do you think it has changed?

c. Has EEDA implementation had any impact on your relationship with high schools and dual credit options?

d. Are students coming ready for your programs without need for remediation? If needing remediation – in what areas – reading, math, science or specific program areas?

e. Are certain programs stronger at _____ high school than others in terms of their preparation for postsecondary education?

f. What types of articulation agreements do you have with _____ high school?

g. What types of dual credit options are available to those students?

h. How often do you meet with staff at that school about these articulation agreements? About curriculum or other aspects of the program?

i. Are you tracking the number of students coming in with dual credit into your institution?

2. **Incorporation of secondary and postsecondary elements**

   We are interested in finding out the level to which the curriculum for certain high school majors/programs are linked and aligned with the same area of study in postsecondary institutions. We are interested in these particular majors [*provide list*] at this high school _____.

   a. Is the curriculum for this major linked in any way to the postsecondary curriculum in this same major/program area?

   b. Are courses aligned or sequenced with a postsecondary major/program, where the curriculum reflects a progression from secondary courses to postsecondary courses? How are the two levels linked?

   c. Is the sequence non-duplicated across levels so that students don't have to repeat any courses when they get to college or postsecondary training?

   d. Do you have an articulation agreement for this major/program area?

   e. In what year was the agreement originally developed? Is it renewed on a regular basis – how often?

   f. What does this articulation agreement cover? For example, does it identify specific courses and the necessary content, or what teachers/faculty will teach the courses, and the necessary teacher qualifications?
   Who is the agreement with?

How often do you meet with them?

Can we see a copy of the agreement?

3. **Curriculum standards and rigor in the major at the secondary and postsecondary levels**

   We want to get some information on the standards that are incorporated in both the academic and technical courses for this major at the high school and postsecondary levels.

   a. Are the academic standards aligned between the secondary and postsecondary curriculum in this major/program area?

   b. Are the technical standards aligned between the secondary and postsecondary curriculum in this major/program area?

   c. Do high school courses in this major/program area prepare students for postsecondary education without the need for academic or technical remediation at your institution? What about at other institutions?

4. **Credit transfer options and agreements**

   We would like to know about any opportunities in this major for students to earn postsecondary education credits. What dual/concurrent enrollment options are available to students in this major/program area? Are these for specific courses?

   a. Are these courses included in the articulation agreements that we talked about earlier?

   b. What <u>kinds</u> of credit are available through these options (i.e., postsecondary online courses, dual credit/enrollment, concurrent credit/enrollment, transcripted credit, or other methods to earn postsecondary credit in high school)?
      - How is credit tracked/transferred?
      - How/when is the credit awarded?

5. **Industry-recognized credentials, certificates or degrees**

   We are interested in finding out for this major/program area the options students have to continue training or education in this major or program area after high school graduation.

   a. Can students earn an industry-recognized credential or certificate in specific to this major **after** high school graduation if they complete additional training or an apprenticeship? If so, what credential could they earn?

   b. If students continue in this same area in postsecondary education, what certifications or degrees could they earn? A 2-year degree? A 4-year degree?

Appendix G: School Guidance Personnel Surveys

School Identifier: _____

Survey for Career Specialists

Directions: Read each of the school counseling/guidance duties listed in the first column of the table below. Then, tell us whether this is one of your assigned duties as a career specialist at your school by checking either "YES" or "NO" in columns 2 or 3.

School Counseling/Guidance Duties	YES	NO
1a. Classroom guidance on personal/social issues		
1b. Classroom guidance on career issues		
1c. Classroom guidance on academic issues		
2a. Curriculum development on personal/social issues		
2b. Curriculum development on career issues		
2c. Curriculum development on academic issues		
3a. Counseling students on personal/social issues		
3b. Counseling students on career issues		
3c. Counseling students on academic issues		
3d. Assisting students with the development of their career plans and IGPs		
3e. Assisting students with college planning and applications		
4a. Consulting with teachers and administrators about personal/social issues		
4b. Consulting with teachers and administrators about career issues		
4c. Consulting with teachers and administrators about academic issues		
5a. Assisting with exceptional students on personal/social issues		
5b. Assisting with exceptional students on career issues		

School Counseling/Guidance Duties	YES	NO
5c. Assisting with exceptional students on academic issues		
5d. Chairing individualized education (IEP) program meetings		
5e. Chairing Section 504 of the Rehabilitation Act of 1974 meetings		
5f. Coordinating special services referrals		
6a. Meeting with parents about personal/social issues		
6b. Meeting with parents about career issues		
6c. Meeting with parents about academic issues		
7a. Coordinating special events/programs for the school regarding personal/social issues		
7b. Coordinating special events/programs for the school regarding career issues		
7c. Coordinating special events/programs for the school regarding academic issues		
7d. Conducting professional development workshops in career development and guidance for teachers and guidance counselors		
8. Identifying and coordinating work-based/extended learning opportunities for students		
9. Crisis management		
10. Participating on committees within the school		
11a. Coordinating the standardized testing program		
11b. Administering standardized tests		
12. Organizing outreach to low income families (i.e., Thanksgiving dinners, Holiday families)		
13. Responding to health issues (e.g., check for lice, eye screening, 504 coordination)		
14. Performing hall, bus/car pick-up, cafeteria duty		
15a. Registering and scheduling students for classes		

School Counseling/Guidance Duties	YES	NO
15b. Developing the master class schedule		
16. Enrolling students in and/or withdrawing students from school		
17. Maintaining/Completing educational records/reports (cumulative files, test scores, attendance reports, drop-out reports)		
18. Handling discipline of students		
19. Substitute teaching and/or covering classes for teachers at your school		
In the spaces below, indicate any other duties that have not been covered in this survey that are part of your responsibilities at your school.		

We would appreciate getting some background information on you:

Number of years as a career specialist: _____

Number of years <u>at this school</u> as a career specialist: _____

Have you completed the Global Career Development Facilitation certification?
____ yes   ____no   ____ in process

Are you also a school guidance counselor? ____ yes   ____no

Please either return the survey to the researchers while they are at your school or mail it back in the stamped, addressed envelope provided. We appreciate your taking the time to take our survey!!

Survey for School Guidance Counselors   School Identifier: _____

Directions: Read each of the school counseling duties listed in the first column of the table below. Then, circle the number that best represents how your participation in these duties has or has not changed **since the beginning of implementation of the EEDA at your school**. The scale ranges from 5 (duties have increased greatly) to 1 (duties have decreased greatly). If there is a duty that does not apply to your position, circle 0 (not applicable, this has never been a part of my duties).

School Counseling Duties	Duties have **increased greatly**	Duties have **increased somewhat**	Duties **have not changed** in this area	Duties have **decreased somewhat**	Duties have **decreased greatly**	**Not applicable**, this has **never** been a part of my duties
1a. Classroom guidance on personal/social issues	5	4	3	2	1	0
1b. Classroom guidance on career issues	5	4	3	2	1	0
1c. Classroom guidance on academic issues	5	4	3	2	1	0
2a. Curriculum development on personal/social issues	5	4	3	2	1	0
2b. Curriculum development on career issues	5	4	3	2	1	0
2c. Curriculum development on academic issues	5	4	3	2	1	0
3a. Counseling students on personal/social issues	5	4	3	2	1	0
3b. Counseling students on career issues	5	4	3	2	1	0
3c. Counseling students on academic issues	5	4	3	2	1	0

School Counseling Duties	Duties have **increased greatly**	Duties have **increased somewhat**	Duties **have not changed** in this area	Duties have **decreased somewhat**	Duties have **decreased greatly**	**Not applicable**, this has **never** been a part of my duties
3d. Assisting students with the development of their career plans and IGPs	5	4	3	2	1	0
3e. Assisting students with college planning and applications	5	4	3	2	1	0
4a. Consulting with teachers and administrators about personal/social issues	5	4	3	2	1	0
4b. Consulting with teachers and administrators about career issues	5	4	3	2	1	0
4c. Consulting with teachers and administrators about academic issues	5	4	3	2	1	0
5a. Assisting with exceptional students on personal/social issues	5	4	3	2	1	0
5b. Assisting with exceptional students on career issues	5	4	3	2	1	0

School Counseling Duties	Duties have **increased greatly**	Duties have **increased somewhat**	Duties **have not changed** in this area	Duties have **decreased somewhat**	Duties have **decreased greatly**	**Not applicable**, this has **never** been a part of my duties
5c. Assisting with exceptional students on academic issues	5	4	3	2	1	0
5d. Chairing individualized education (IEP) program meetings	5	4	3	2	1	0
5e. Chairing Section 504 of the Rehabilitation Act of 1974 meetings	5	4	3	2	1	0
5f. Coordinating special services referrals	5	4	3	2	1	0
6a. Meeting with parents about personal/social issues	5	4	3	2	1	0
6b. Meeting with parents about career issues	5	4	3	2	1	0
6c. Meeting with parents about academic issues	5	4	3	2	1	0
7a. Coordinating special events/programs for the school regarding personal/social issues	5	4	3	2	1	0

School Counseling Duties	Duties have **increased greatly**	Duties have **increased somewhat**	Duties **have not changed** in this area	Duties have **decreased somewhat**	Duties have **decreased greatly**	**Not applicable**, this has **never** been a part of my duties
7b. Coordinating special events/programs for the school regarding career issues	5	4	3	2	1	0
7c. Coordinating special events/programs for the school regarding academic issues	5	4	3	2	1	0
7d. Conducting professional development workshops in career development and guidance for teachers and guidance counselors	5	4	3	2	1	0
8. Identifying and coordinating work-based/extended learning opportunities for students	5	4	3	2	1	0
9. Crisis management	5	4	3	2	1	0
10. Participating on committees within the school	5	4	3	2	1	0

School Counseling Duties	Duties have **increased greatly**	Duties have **increased somewhat**	Duties **have not changed** in this area	Duties have **decreased somewhat**	Duties have **decreased greatly**	**Not applicable**, this has **never** been a part of my duties
11a. Coordinating the standardized testing program	5	4	3	2	1	0
11b. Administering standardized tests	5	4	3	2	1	0
12. Organizing outreach to low income families (i.e., Thanksgiving dinners, Holiday families)	5	4	3	2	1	0
13. Responding to health issues (e.g., check for lice, eye screening, 504 coordination)	5	4	3	2	1	0
14. Performing hall, bus/car pick-up, cafeteria duty	5	4	3	2	1	0
15a. Registering and scheduling students for classes	5	4	3	2	1	0
15b. Developing the master class schedule	5	4	3	2	1	0

School Counseling Duties	Duties have **increased greatly**	Duties have **increased somewhat**	Duties **have not changed** in this area	Duties have **decreased somewhat**	Duties have **decreased greatly**	**Not applicable**, this has **never** been a part of my duties
16. Enrolling students in and/or withdrawing students from school	5	4	3	2	1	0
17. Maintaining/ Completing educational records/reports (cumulative files, test scores, attendance reports, drop-out reports)	5	4	3	2	1	0
18. Handling discipline of students	5	4	3	2	1	0
19. Substitute teaching and/or covering classes for teachers at your school	5	4	3	2	1	0
In the spaces below, indicate any other duties that have not been covered in this survey that have either increased or decreased since the implementation of EEDA in your school.						
	5	4	3	2	1	0
	5	4	3	2	1	0
	5	4	3	2	1	0
	5	4	3	2	1	0

We would appreciate getting some background information on you:

Position at the school: ____ Guidance director   ____ Guidance counselor   Other, please specify: _____

Number of years as school counselor: _____

Number of years <u>at this school</u> as a school counselor: _____

Have you completed the Global Career Development Facilitation certification? ____ yes   ____no ____ in process

Please either return the survey to the researchers while they are at your school or mail it back in the stamped, addressed envelope provided. We appreciate your taking the time to take our survey!!

Appendix H: School Counselor In-Depth Follow-Up Phone Interview Protocol

School Counselor/Career Specialists Phone Interview
Spring 2010

Date:_____

Interviewer:_____

School Name:_____

Name of
Interviewee:_____

Position/Title:_____

I. Job duties since EEDA
1. Please explain how the implementation of EEDA has changed your duties:

2. How has EEDA affected your caseload (check)?
    ____Increased caseload   ____Decreased caseload   ____No change to caseload

3. What was your approximate caseload before EEDA?

4. What is your approximate caseload now?

5. How have changes in your caseload affected your job duties?

6. When EEDA was initiated, were new counselors and/or career specialists hired?

7. Do you currently hold or have ever held a Career Development Facilitator certification.
    ___Yes, currently certified as a Career Development Facilitator.
    ___No, I am not certified as a Career Development Facilitator.
    ___I have been certified as a Career Development Facilitator in the past, but not
       currently.
    ___I am currently pursuing a certification as a Career Development Facilitator.

8. How are the duties of school counselors and career specialists defined and divided up?
    a. How are duties coordinated between counselors and specialists?

9. Do you feel that your school has the resources needed to provide students with effective career
    guidance services in accordance with EEDA guidelines? Explain.

10. If you do **not** have sufficient resources, what do you believe is needed to improve career guidance
    services to students?

WHAT ABOUT STUDENTS WHO ARE UNABLE TO GET INTO COURSES THEY
WANT/NEED OR IF THE SCHOOL DOES NOT HAVE THE DESIRED MAJOR? WHAT IS
DONE IN ADVISING THESE STUDENTS?
II. Advising students on career pathways/majors

11. Please explain the ways in which you incorporate career pathways-focused-language when advising students (e.g., program of study, career clusters, career majors, etc.).

12. How would you characterize the level of knowledge of students transitioning into high school regarding career pathways and/or career majors?
    a. Do students generally have *sufficient* knowledge of the 16 career pathways to make an informed decision about declaring a major upon entering high school?
    b. Do they seem uninformed about career pathways?

13. Describe the amount of effort/time you expend in explaining career pathways/career majors to students.
    a. Are there occasions when more time is spent discussing career pathways/career majors?
    b. Are there certain groups that you work with more than others in explaining career pathways/career majors?

14. Upon their entrance into high school, what role do you play in helping students define their career goals? What exactly do you do to help?

15. Upon their entrance into the 10th grade, what role do you play in helping students declare their career major? What exactly do you do to help?

16. What role do you play in helping students develop and update their **individual graduation plan** (IGP)? What exactly do you do to help?

17. Explain your role in providing **work exploration guidance activities and career awareness programs** to students.

    a. Explain the types of work exploration guidance activities and career awareness programs you provide for students.
    b. How often do you provide these types of activities?
    c. Are these provided on an individual, school-wide, program-wide, etc. basis?
    d. Explain how you go about providing these services.

18. Explain your role in providing students with a variety of **work-exploration experiences**.

    a. Explain the types of work-exploration experiences you provide for students.
    b. How often do you provide these types of experiences?
    c. Are these established on an individual, school-wide, program-wide, etc. basis?
    d. Explain how you go about providing these activities.

19. How has the amount of time you interact with students' parents changed since the implementation of EEDA?
    ____**Some increase** in the amount of time interacting with parents
    ____A **significant increase** in the amount of time interacting with parents
    ____**No change** in amount of time interacting with parents
    ____**Some decrease** in the amount of time interacting with parents
    ____A **significant decrease** in the amount of time interacting with parents
    ____Not applicable, why? _____

20. How has the amount of time you spent interacting with students changed since the implementation of EEDA?

____**Some increase** in the amount of time interacting with students
____A **significant increase** in the amount of time interacting with students
____**No change** in amount of time interacting with students
____**Some decrease** in the amount of time interacting with students
____A **significant decrease** in the amount of time interacting with students
____Not applicable, why? _____

21. What type of information do you provide <u>parents</u> regarding the career pathways and/or career majors available to students?

III. <u>Confidence level in guidance on career pathways and majors</u>
The intention of the following items is to get a picture of your confidence level in providing students with career guidance in relation to career pathways and career majors.

22. Please describe the type of training you received in providing career guidance to students (e.g., training through formal schooling, training through yearly or one-time workshops, self-taught, etc.).

23. Please describe the level of confidence you have in your ability to provide students with career guidance in relation to the career pathways and the career majors in your school.

24. Please describe the level of confidence you have in your ability to inform students about the careers or degree programs they can pursue once they have completed a career major, upon graduation (e.g., types of programs available to them post-high school, types of careers available to them post high school, etc.).

25. Please describe the level of confidence you have in your ability to answer students' questions about specific careers (e.g., type of training needed, job demand, pay rate, etc.).

26. Since the implementation of EEDA, have you noticed a change in students' interest in their career and/or postsecondary plans or changes in engagement (e.g., increased career focus; increased academic/career motivation; improvements in grades, attendance, etc.)? Please explain.

27. Please describe students' level of responsiveness to your career guidance efforts (For example, are students showing a stronger interest in CATE courses and careers? Are students seeking out more information on CATE courses and careers? Or other courses and careers?).

IV. <u>ASCA and EEDA? Or just leave ASCA?</u>
The purpose of the following items is to get a sense of how your school counseling program aligns with the ASCA National Model standards.

28. ____Our district has formally adopted the ASCA National Model.
____Our district has not formally adopted the ASCA National Model, but we are aligned with the model's guidelines.

____Our district is not currently following the ASCA National Model guidelines.
____I am unaware of the implementation of the ASCA National Model in our district.

29. What effect, if any, has the implementation of EEDA had on your school counseling programs ability to implement/follow ASCA guidelines?

30. Are there any particular ways that EEDA has positively affected your counseling program's ability to follow the ASCA standards?

31. Are there any particular ways that EEDA has negatively affected your counseling program's ability to follow the ASCA standards?

ADDITIONAL QUESTIONS:
What do your testing duties consists of?

Can you briefly describe support from administration?

SC Personal Pathways Study School Counselor Phone Interview Protocol
Spring 2012

Date: _____   Interviewer: _____

School Name: _____

Name of
Interviewee: _____

Position/Title: _____

Years as a Guidance
Counselor: _____   # Years as a Counselor at this School: _____

School Counselor Role

1. In what ways has EEDA affected your duties as a school counselor since 2008?
2. What effect has EEDA had on the level and types of contact you have with students? Has it affected the amount of time you interact with students?
3. What effect has EEDA had on the level and types of contact you have with parents? Has it affected the amount of time you interact with parents?
4. Please describe the types of IGP development and career development activities conducted by guidance personnel at your school each year (e.g., individual counseling, group counseling, classroom guidance, career fairs, etc.).
5. What effect has EEDA had on your caseload?
   a. What is your approximate caseload now?
6. Please address any changes to the Career Development Facilitator certification within your school since 2008. For example, are more people certified than before? Are there any structural changes in the ways that career counseling services are offered? Please explain how you coordinate activities with the career specialists in your building or district.
   a. How are roles defined between school counselors and career specialists?
7. How would you characterize the level of knowledge of students transitioning into high school regarding career pathways and/or career majors (e.g., Do students generally have *sufficient* knowledge of the 16 career pathways to make an informed decision in declaring a major upon entering high school?)?
   a. Specifically, what notable changes have you seen in student knowledge of career pathways and/or career majors since the initiation of EEDA?
8. How would you characterize the majors/career pathways available to students at your schools? Do you view your school's majors as well-developed programs of study that students can follow into a career after graduation?
9. How much time do you spend with students individually, who are on your caseload, engaging in career guidance? Such as, developing IGP, defining career goals, discussing training and postsecondary options, discussing appropriate courses to meet goals, etc. What types of career guidance are you mainly engaging in with students?

10. What role do you play in helping students develop and update their **individual graduation plan** (IGP)?

11. Overall, what do you believe is the most significant role of the school counselors in providing services related to EEDA? What are the most important EEDA-related services that counselors provide? Is it to help with development of career goals? To develop a plan for a program of study?

12. Explain your role in providing **work exploration guidance activities and career awareness programs** to students.

The Individual Graduation Plan (IGP)

13. How would you characterize the importance of IGPs and the IGP process in helping students prepare for their future and careers?

14. How are you using IGPs and the IGP process? Which of the following would best characterize how you view IGPs and the IGP process at your school:

    (1) As a means of registering students for classes to make sure they meet core requirements to graduate? (2) As a means of developing your school's master schedule?
    (3) To help students with selection of high school courses relevant to their major and/or career interests?
    (4) To help students develop and/or clarify career goals?
    (5) To help students develop a plan to meet their career goals?
    (6) Some other purpose? Please explain: _____

15. How has the IGP process changed since the 2008-2009 school year? What materials are you providing students prior to IGP meetings that they can take home and look at/discuss with their parents to be able to prepare for the IGP meeting? Are these the same materials that you provided to students during the 2008-2009 school year prior to IGP meetings?

16. What types of materials does your school counseling program provide students regarding majors and careers each year? How, where and when do they access these materials? How frequently?

17. Have there been any changes in the types of materials that your school counseling program provides students now in comparison to when EEDA initially began? If so, please explain.

18. Are you providing materials on all possible majors to students? Or are you only providing materials on selected majors/programs, based on the student's interests? If the latter, what is your rationale for doing so?

19. Are parents provided with materials on all possible majors or are they provided with materials based on their child's career interests only? How, where and when do they access these materials? How frequently?

Training/Professional Development

20. Please describe the type(s) of training you have received in providing career guidance to students (e.g., training through formal schooling, training through workshops, self-taught, etc.). Who provided this training? How frequently?

21. How much of the training/professional development that you have received has been directly related to EEDA (e.g., provided by the state, includes EEDA goals/components, etc.)? Who

provided EEDA-related training? How frequently? How much training have you had on career pathways and guiding students through programs of study?

22. Describe your level of satisfaction with the professional development you've received in relation to EEDA and in providing students with career and academic guidance.

23. What effects do you believe EEDA has had on students' interest in their career and/or postsecondary plans (e.g., increased career focus; increased academic/career motivation; improvements in grades, attendance, etc.)? Please explain.

ASCA National Model and EEDA

24. How well do you feel that the counseling-related components of EEDA align with the services that counselors should provide, according to the ASCA National Model?

25. Are there areas of the National Model that you feel are not addressed/ignored by EEDA? If so, explain.

26. How do the duties required by EEDA affect your school counseling program's ability to address the personal/social needs of students?

27. How do the duties required by EEDA affect your school counseling program's ability to address the academic development of students?

28. Overall, what **benefits** has EEDA provided to your school counseling program that affect both your duties as a counselor and the services you are able to provide students?

29. Overall, what **drawbacks** or obstacles has EEDA created in your school counseling programs that affects both your duties as a counselor and the services you are able to provide students?

Appendix I: Student Engagement/POS Experiences Survey, with Frequencies

Student High School Survey

All Schools Class of 2011 survey responses after completion of 10th grade: Total Sample Size = 1,455

Student Engagement/POS Experiences Survey

Part I: Course and Career Planning

1. Have you selected a career cluster to plan for? (**See a sample list of career clusters and high school majors on page 11**)
N = 1442; Missing=3

85.16%	Yes
6.17%	No
8.67%	Don't Know

2. Have you selected a high school major within that career cluster?
N = 1409; Missing=46

15.47%	No	**Go to Question 6, p.2**
21.58%	Don't Know	**Go to Question 6, p.2**
62.95%	Yes	
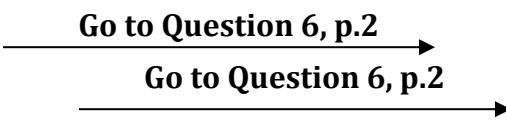
An explanation of how failed skip patterns were coded for analysis follows the survey.

> **If you answered "yes" to question 2, please continue below. If you did NOT answer "yes," go to question 6 on page 2.**

2a. Please write the high school major that you selected on the line below. If you have <u>two or more majors</u>, write in your primary major (the one for which you will take the most courses).
N = 1374; Missing= 81

High School Major

0.07%	AV Tech
0.07%	Accountant
0.51%	Accounting
0.51%	Agriculture
0.07%	Agriculture and Health Science
0.15%	Agriculture, Food, and Natural Resou
0.07%	Agriculture/Science
0.07%	Anatomy
0.07%	Anesthesiology
0.07%	Animal System
0.07%	Animal Systems
0.29%	Architecture
0.07%	Architecture (Architect) Entrepreneu

0.29%	Architecture and Construction
0.07%	Architecture, Construction
0.07%	Army
0.15%	Art
0.22%	Arts
0.07%	Arts and Humanities
0.15%	Arts, Audio and Video Technology, Co
0.07%	Arts, Audio/Video
0.07%	Arts, Audio/Video Tech and Communica
0.22%	Arts, Audio/Video Technology and Com
0.07%	Arts/Graphics Design
0.07%	Audio and Film
0.07%	Audio and Video Technology and Film
0.07%	Audio-Video, Technology and Film
0.07%	Auto Class
0.07%	Auto Collision
0.15%	Auto Mechanic
0.22%	Auto Tech
0.07%	Auto Tech/Business
0.07%	Automechanics at career center
0.07%	Automotive
0.07%	Automotive Industry
0.07%	Automotive Tech
0.15%	Automotive Technology
0.07%	Basketball and Engineering
0.44%	Biology
0.07%	Biology/Chemistry
0.07%	Biology/Medical
0.07%	Biology/Sports Medicine
0.15%	Biotechnology Research and Developme
0.07%	Broadcast Journalism
0.44%	Building Construction
0.07%	Building and Construction
0.07%	Business and Management
1.60%	Business
0.07%	Business Accountant/Cook
0.07%	Business Admin. Accounting
0.07%	Business Finance
0.07%	Business Financial Management
0.29%	Business Financial Management and Ac
0.07%	Business Law
0.95%	Business Management
0.44%	Business Management and Administrati
0.07%	Business Management/Construction
0.07%	Business Mgt
0.07%	Business and Administration

0.51%	Business and Engineering
0.07%	Business and Finance
0.07%	Business and Law
0.36%	Business and Management
0.07%	Business and Mathematics
0.07%	Business and Sales
0.07%	Business, Art and Design
0.07%	Business, Management and Adm
0.29%	Business, Management and Administrat
0.07%	Business/Law
0.07%	Business/Management
0.07%	Business/Music
0.07%	Business/Sports Management and Admin
0.07%	C
0.07%	Can't remember
0.07%	Carpentry/Construction
0.29%	Chemistry
0.07%	Civil Engineering
0.07%	Civil or Mechanical Engineering
0.29%	Commercial Graphics
0.07%	Communication
0.07%	Communications, Journalism and Broad
0.07%	Computer Design
0.07%	Computer Engineer
0.22%	Computer Engineering
0.07%	Computer Graphics
0.07%	Computer Programming
0.15%	Computer Science
0.07%	Computer Tech
0.07%	Computer Technician
0.15%	Computer Technology
0.07%	Computer and Technology
0.07%	Computers
0.36%	Construction
0.07%	Construction (Welding)
0.07%	Corporate Lawyer
1.31%	Cosmetology
0.07%	Cosmetology/Health and Human Service
0.44%	Counseling and Mental Health Service
0.36%	Criminal Justice
0.07%	Criminal Justice (Law and Law Enforc
0.44%	Culinary
0.29%	Culinary Arts
0.07%	Culinary Arts (Primary) Education
0.07%	Culinary Chef
0.07%	Culinary and Business

0.07%	Current Events
0.07%	D5 (Marketing)
0.15%	Dance
0.07%	Dance (Performing Arts)
0.07%	Dance and Acting
0.07%	Dental Hygienists
0.07%	Dental hygiene
0.07%	Design
0.07%	Diagnostic Health Science
0.07%	Diagnostic Services
0.73%	Diagnostic Services (H2)
0.07%	Dietician
0.07%	Doctor
0.07%	Don't Know
0.29%	Don't have one yet
0.07%	EMS
0.22%	Early Childhood Development
0.15%	Early Childhood Education
0.07%	Early Childhood and Development Serv
0.73%	Education
0.07%	Education Teaching/Training
0.07%	Education and Music
0.36%	Education and Training
0.07%	Education/Psychology
0.07%	Education/Training
0.07%	Education/Training (Teaching/Trainin
0.07%	Electrical Engineering
0.07%	Electricity
0.07%	Electronic Technician
0.07%	Elementary Education
0.07%	Elementary Teacher
0.07%	Emergency Fire Services
0.29%	Engineer
2.33%	Engineering
0.29%	Engineering Graphics
0.07%	Engineering Technology
1.89%	Engineering and Technology
0.07%	Engineering or Graphics
0.07%	Engineering, Military
0.07%	Engineering/Manufacturing
0.07%	Engineering/Psychology
0.07%	English
0.07%	Entrepreneurship
0.07%	Family Life
0.07%	Family and Community Services
0.07%	Fashion Design

0.07%	Fashion Marketing
0.15%	Fashion and Construction
0.07%	Finance
0.07%	Fine Arts
0.07%	Fire and Emergency
0.07%	Firefighting
0.07%	Firefighting
0.29%	Foreign Language
0.07%	Foreign Service
0.07%	Forensic Science
0.07%	Forensics
0.07%	Forestry Production
0.07%	Graph (illegible)
0.07%	Graphic
007%	Graphic Arts
0.15%	Graphic Communications
0.22%	Graphic Deisgn
0.07%	Graphic Design
0.29%	Graphic Design – Business Application
0.07%	Graphics
0.07%	Hair
0.07%	Health
0.07%	Health Informatics
0.80%	Health Informatics (H3)
0.07%	Health Informatics/Therapeutic Servi
6.33%	Health Science
0.07%	Health Science (Science Major)
0.07%	Health Science Diagnostic Services
0.07%	Health Science Tech
0.07%	Health Science Tech/Nursing
0.07%	Health Science Technology
0.07%	Health Science and Human Services
0.07%	Health Science – Diagnostic Services
0.07%	Health Science/ Business and Engineer
0.07%	Health Service
0.07%	Health Studies
0.07%	Health Tech I
0.29%	Health and Human Services
0.07%	Health, Safety, and Environmental Aw
0.07%	Healthcare
0.15%	History
0.07%	History Teacher/Strength
0.07%	History and English
0.15%	Horticulture
0.15%	Hospitality
0.44%	Hospitality and Tourism

0.44%	Human Health Services, Banking and R
0.07%	Human Resources
0.15%	Human Services
0.80%	Human Services (Cosmetology)
0.07%	Human Services, Early Childhood Deve
0.07%	IDK
0.07%	IT
0.07%	Info Tech
0.22%	Information Technology
0.07%	International Business/Fashion
0.07%	Intro HS and EMS
0.22%	JROTC
0.07%	JROTC (Pilot)
0.07%	JROTC and Chemistry
0.07%	Journalism
0.66%	Journalism and Broadcasting
0.29%	Journalism and Broadcasting (C5)
0.07%	Junior ROTC
0.07%	Language (Spanish)
1.38%	Law
0.07%	Law Criminal Justice
0.07%	Law Education
0.15%	Law Enforcement
0.07%	Law Enforcement Service
0.58%	Law Enforcement Services
0.07%	Law Enforcement Services (L4)
0.07%	Law Public Safety/Law Enforcement Se
0.07%	Law Services
0.07%	Law and Governance
0.07%	Law and Legal Studies
0.07%	Law, Human Services
0.29%	Law, Public Safety, Corrections and
0.07%	Law – Real Estate and Divorce
0.07%	Law/Public Safety
0.07%	Lawyer
0.87%	Legal Services
0.07%	Legal Services, Teaching
0.07%	Legal Services/Law
0.07%	Local college
0.29%	Management
0.07%	Management (D1)
0.07%	Management and Entrepreneurship
0.07%	Manufacturing
0.22%	Manufacturing Production Process Dev
0.07%	Marine Biology
0.44%	Marketing

0.07%	Marketing Communications and Promoti
0.07%	Marketing Sale Service
0.07%	Marketing and Education
0.07%	Marketing and Entrepreneurship
0.07%	Mass Communications/Journalism
0.22%	Mass Communications
0.80%	Math
0.07%	Math and Science
0.07%	Math and Science, Engineering and Te
0.07%	Mathematics
0.07%	Mathematics – Teacher
0.07%	Mechanic
0.07%	Mechanical Engineer
0.15%	Mechanical Engineering
0.07%	Mechanical Engineering and Machining
0.07%	Medical
0.36%	Medical Diagnostics
0.07%	Medical Health
0.07%	Medical Science
0.07%	Medical and English
0.22%	Medicine
0.07%	Meteorology
0.36%	Military
0.07%	Military Science
0.15%	Military Services
0.07%	Music
0.15%	Music Education
0.07%	Music Management
34.13%	NA
0.07%	Nails
0.07%	National Security
0.07%	National Service
0.07%	Nurse
0.87%	Nursing
0.07%	Nursing – Health Care
0.07%	O and D (Science, Technology, Engine
0.07%	Occupational Therapist/OBN
0.07%	Orthopedic Surgeon
0.29%	Pediatrician
0.07%	Pediatrician/Health Science
0.07%	Pediatrician/Veterinarian
0.95%	Performing Arts
0.07%	Performing Arts (Band)
0.07%	Performing Arts (Theater)
0.07%	Performing Arts Dance
0.07%	Performing Arts – Drama

0.07%	Performing Arts/Music Education
0.07%	Performing Arts: Dance
0.07%	Personal Care Services
0.15%	Pharmacist
0.22%	Pharmacy
0.07%	Photography and Sports Medicine
0.07%	Physical Education
0.07%	Physical Therapist
0.07%	Pre-Law and Political Science
0.07%	Pre-Med
0.07%	Pre-medicine
0.15%	Programming
1.02%	Psychology
0.07%	Public Management and Administration
0.07%	Public Relations
0.07%	RN
0.15%	RN in Trauma
0.07%	ROTC
0.07%	ROTC, Engineering
0.07%	Radiology
0.22%	Restaurants and Food/Beverage Servic
0.07%	School of Bioengineering and Constru
1.09%	Science
0.07%	Science Health Science
0.15%	Science and Math
0.07%	Science, Health
0.29%	Science, Technology, Engineering and
0.07%	Sciences (Nursing)
0.07%	Secondary School Teacher
0.07%	Security and Protective Services
0.07%	Soccer
0.22%	Sociology
0.07%	Spanish
0.07%	Sports Analysis
0.07%	Sports Marketing
0.07%	Sports Medicine
0.87%	Teacher and Training
0.07%	Teaching
0.07%	Teaching and Education
0.29%	Teaching and Training
0.07%	Teaching and Training (E3)
0.29%	Teaching/Training
0.07%	Teaching/Training (E3)
0.07%	Technician
0.07%	Technology
0.51%	Therapeutic Services

0.07%	Therapist
0.07%	Transportation Operations
0.07%	Turf and Lawn
0.07%	Veterinarian
0.07%	Veterinary Assistant
0.07%	Video Game Designer
0.07%	Video Game Programming
0.07%	Video Production
0.07%	Visual Arts
0.80%	Visual Arts
0.07%	Visual Arts (C3)
0.58%	Welding
0.07%	Welding/Manufacturing
0.07%	Wildlife Biology
0.07%	World Languages

3. Is the high school major you gave above in Question 2a. the one you are most interested in?

$N = 1421$; Missing=34

55.24 %	Yes
5.49%	No
9.92%	Don't Know
23.22%	NA
6.12%	Created Not Applicable

4. Was the high school major you were most interested in available at your school?

$N = 1419$; Missing=36

49.33%	Yes
5.00%	No
16.21%	Don't Know
23.26%	NA
6.13%	Created Not Applicable
0.07%	Multiple Response

4a. No, the major I was most interested in was:

$N = 1405$; Missing=50

0.07%	Agricultur
0.07%	Animal Hea
0.07%	Army not M
0.07%	Artilery E
0.07%	At the career center
0.07%	Available
0.07%	Barbershop
0.07%	Building C
0.07%	Business E
0.07%	Business M

0.07%	Childcare/
0.07%	Civil Engi
0.07%	Commerical
0.07%	Computer S
0.07%	Constructi
0.43%	Cosmetology
0.07%	Culinary A
0.07%	Dance Educ
0.07%	At the career center
0.07%	Dentist
0.07%	Dentistry
0.07%	Don't Know
0.07%	Early Chil
0.14%	Education
0.28%	Engineerin
0.07%	English or
0.07%	Full
0.07%	Graphic De
0.07%	Health Car
0.21%	Health Sci
0.07%	Human Serv
0.07%	Journalism
0.07%	Law Educat
0.07%	Law/Public
0.07%	Masonry
0.07%	Mechanical
0.07%	Medical As
0.07%	Medical, D
0.07%	Merchandis
94.38%	NA
0.07%	Nails
0.14%	No
0.21%	Performing
0.07%	Police Off
0.07%	Police fie
0.07%	Political
0.07%	Pre-Med/Ph
0.07%	Pre-Medica
0.07%	Programming
0.14%	Psychology
0.07%	RN
0.07%	Rapping, S
0.07%	Real Estat
0.07%	Science an
0.07%	Sound Engi
0.07%	Sports Man

0.07%	Sports Med
0.14%	Teacher Ca
0.07%	Teaching/T
0.07%	Theatrical
0.07%	Three-Dime
0.07%	Veterinary
0.07%	Zoology
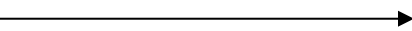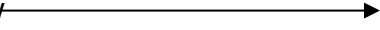
5. How much do you agree or disagree with the following statements?

Having a high school major and career cluster has (Mark **ONE** RESPONSE FOR EACH ITEM):

	Strongly Disagree	Disagree	Agree	Strongly Agree	NA	N (Missing)
a. Made me more likely to want to come to school.	4.05%	18.31%	37.95%	6.92%	23.06%	1431 (24)
b. Made me less likely to want to drop out of school.	10.28%	11.33%	25.73%	19.79%	23.15%	1430 (25)
c. Helped me get better grades.	2.95%	18.55%	35.77%	9.77%	23.19%	1423 (32)
d. Helped me make connections between what I study and what type of career I want.	2.03%	7.22%	36.82%	21.04%	23.14%	1426 (29)
e. Made it more likely that I would take courses that I need for the future.	2.10%	4.69%	32.66%	27.69%	23.08%	1430 (25)
f. Made it more likely that my parents got involved in my selection of courses.	5.25 %	19.82%	30.74%	11.34%	23.11%	1428 (27)

6. Have you put together a "career plan" or 4-year "Individual Graduation Plan (IGP)," that outlines a series of activities and courses that you will take throughout high school? (Mark **ONE** RESPONSE)

N = 1391; Missing=64

18.69%   No ⟶ **Go to Question 9, p.4**

16.53%   Don't Know ⟶ **Go to Question 9, p.4**

64.56% Yes

0.22% Multiple Responses

If you answered "yes" to question 6, please continue below. If you did NOT answer "yes," go to question 9 on page 4.

7. When you put together your career plan or 4-year Individual Graduation Plan, how often did you:

	Never	1-2 Times	3 or More Times	NA	Multiple responses	N (Missing)
a. Talk with your parents, step-parents, or other adults that you live with	4.90%	27.91%	32.32%	23.72%	0.00	1408 (47)
b. Talk with your teachers	17.43%	35.49%	12.09%	23.76%	0.07%	1406 (49)
c. Talk with your guidance counselor	9.92%	31.98%	22.84%	23.84%	0.21%	1401 (54)
d. Talk with your friends	10.17%	23.77%	30.07%	24.43%	0.07%	1367 (88)
e. Take part in a meeting at school with your parents (step-parents or guardians) and guidance counselor to talk about plans for after high school	25.23%	28.67%	10.90%	23.94%	0.00%	1395 (60)
f. Review the sequence of courses you planned to take throughout high school	6.83%	31.72%	26.53%	23.76%	0.00%	1406 (49)

8. When you put together your career plan or 4-year Individual Graduation Plan, who was the most helpful in developing your plan? (Mark **ONE** RESPONSE)

N = 1403; Missing=52

21.38% Parents, step-parents or other adults with whom you live
3.48% A teacher
31.93% A guidance counselor
2.57% Friends
4.70% No one helped me to put together my career plan/4-year Individual Graduation Plan.
23.81% NA
0.93% Multiple responses

9. In **high school**, have you ever done any of the following activities to help you identify jobs or careers that you might be interested in pursuing? (Mark **ONE** RESPONSE FOR EACH ITEM)

	Yes	No	Multiple responses	N (Missing)
a. Answered questions related to jobs and careers on a computer or filled out a questionnaire.	78.82%	21.18%	0.00%	1407 (48)
b. Researched different jobs or careers.	83.75%	16.25%	0.00%	1403 (52)
c. Researched different colleges, universities, military branches or technical/community colleges.	77.92%	22.08%	0.00%	1404 (51)
d. Spoke with or visited someone in a career that interests me.	54.29%	45.71%	0.00%	1400 (55)
e. Been in a class where someone from a local business talked about working at their company or in their career.	55.84%	44.16%	0.00%	1404 (51)
f. Toured a local business with a group from my school.	22.61%	77.39%	0.00%	1402 (53)

10. Between the start of 9th grade and now, have you talked to a school guidance counselor about the following topics? (Mark ALL THAT APPLY)

	Yes	No	Multiple responses	N (Missing)
a. What courses to take this school year	91.38%	8.55%	0.07%	1415 (40)
b. Going to college	71.62%	28.31%	0.07%	1413 (42)

	Yes	No	Multiple responses	N (Missing)
c. Possible jobs or careers when you are an adult	63.83%	36.17%	0.00%	1410 (45)
d. Finding a job after high school	35.44%	64.56%	0.00%	1411 (44)
e. Steps necessary to pursue your career	63.34%	36.66%	0.00%	1402 (53)
f. Applying for college or vocational/ technical school	44.18%	55.82%	0.00%	1408 (47)

11. How much thinking and planning have you done in the following areas? For each item below choose the **ONE** answer that **BEST** tells what you have done so far.

	I have not thought about or done this	I have thought about doing this	I have made plans to do this	I have already done this	Multiple responses	N (Missing)
a. Gathering information about jobs I might be interested in.	7.62%	31.05%	27.17%	33.87%	0.28%	1417 (38)
b. Taking classes to help me decide what kind of job I want.	10.18%	18.,25%	24.12%	47.38%	0.07%	1414 (41)
c. Participating in school or out-of-school activities that will help me decide what kind of job I want.	19.08%	27.77%	20.78%	32.23%	0.14%	1415 (40)
d. Volunteering, interning, or working on a job to help find out what kind of job I want to have in the future.	19.36%	35.32%	22.55%	22.70%	0.07%	1410 (45)

12. In which of the following **work-based learning experiences** have you participated during high school?   (Mark ALL THAT APPLY)

- Internship (work experience, but not necessarily part of a vocational/career/technical class)
  N = 1402; Missing=53
  15.19%
- Co-op (work experience at a local business in your high school major or career cluster)
  N = 1400; Missing=55
    8.43%
- Job shadowing or work-site visits (visits to work places to observe one worker or many workers)
  N = 1401; Missing=54
    36.12%
- Mentoring (a match with an adult in your career area for advice and support)
  N = 1401; Missing=54
  11.35%
- Community service (volunteer work to support your local community)
  N = 1401; Missing=54
    28.62%
- School-based enterprise (working in a business run by students or teachers from your school)
  N = 1401; Missing=54
    12.56%

Part II: Classes and Schoolwork

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13. How many courses do you plan to take that will earn college credit by the time you graduate from high school? (Mark **ONE** RESPONSE)
N = 1427; Missing=28

3.64%	0 courses
5.61%	1 course
10.86%	2 courses
12.54%	3 courses
10.23%	4 courses
17.66%	5 courses or more
38.40%	Don't know
0.77%	Not applicable, not an option at my school
0.28%	Multiple responses

14. How often have you been in the following courses or programs in **high school**? (Mark ALL THAT APPLY)

	Never	1-2 Times	3 or More Times	Multiple responses	N (Missing)
a. Advanced Placement	52.54%	32.63%	14.68%	0.00%	1376 (79)
b. Vocational/career/technical	28.62%	56.17%	15.20%	0.00%	1401

courses (such as culinary arts, cosmetology, construction, graphic communication or health science courses)   (54)

	Strongly Disagree	Disagree	Agree	Strongly Agree	Multiple responses	N (Missing)
c. Special education (resource room or regular class)	80.06%	10.38%	9.34%	0.22%		1349 (106)

15. Please respond to the following statements about your **high school teachers** and **courses** <u>this year</u>.

	Strongly Disagree	Disagree	Agree	Strongly Agree	Multiple responses	N (Missing)
a. Most of my teachers make the subject matter interesting and useful.	8.44%	24.00%	58.41%	9.08%	0.07%	1421 (34)
b. Most of my teachers have set high standards for me.	4.08%	11.67%	62.61%	21.57%	0.07%	1423 (32)
c. Most of my teachers have encouraged me to do well in school.	2.62%	11.27%	56.34%	29.62%	0.14%	1411 (44)
d. Most of my teachers make connections between what they are teaching and how it applies in the real world.	7.05%	20.65%	55.25%	16.84%	0.21%	1419 (36)
e. Most of my teachers give me extra help when I need it.	4.78%	13.08%	59.35%	22.71%	0.07%	1422 (33)

16. What have most of your grades in <u>**high school**</u> been up to now?
N = 1432; Missing=23

6.22%	Mostly A's
37.22%	Mostly A's and B's
11.59%	Mostly B's
30.31%	Mostly B's and C's
6.77%	Mostly C's
5.17%	Mostly C's and D's
0.14%	Mostly D's
0.63%	Mostly D's and F's
1.96%	Multiple responses

Part III: Plans For The Future

17. As things stand now, what is the **highest** level of education you expect to complete? (Mark **ONE** RESPONSE)

N = 1430; Missing=25

4.13%	Not finish high school
6.85%	Graduate from high school or earn my GED
1.33%	Attend college but not complete a degree
11.96%	Complete a certificate or associate's degree
21.05%	Complete a bachelor's degree
26.22%	Complete a master's degree
18.88%	Complete a doctoral degree
8.32%	Don't know
1.26%	Multiple responses

18. What is the main thing that you plan to do the year after graduation from high school?
    (Mark **ONE** RESPONSE)

N = 1427; Missing=28

67.27%	Enroll in a 4-year college or university
6.68%	Enroll in a 2-year community college
7.64%	Enroll in a 2-year community college and then transfer to a 4-year college/university
2.52%	Enroll in a vocational, technical, or trade school
6.59%	Join the armed services/military
1.40%	Get a job
0.49%	Start a family
0.91%	Travel
0.07%	Do paid community service or missionary work
0.21%	Do unpaid volunteer, community service, or missionary work
1.26%	Other
5.34%	Not sure what I want to do
1.61%	Multiple responses

18a. If get a job, please give the job title:

N = 1421; Missing=34

0.07%	Any I like
0.07%	Auto repair or
0.07%	Auto technician
0.07%	Beautician
0.07%	Coast Guard
0.07%	Construction wi
0.07%	Dispatcher
0.07%	Drive trucks
0.07%	Electrician
0.07%	Get a job
0.07%	Gym
0.07%	Hair salon
0.07%	Landscaping and
0.07%	Musician
93.38%	NA
0.07%	Pediatrician

0.07%	Private detecti
0.07%	Truck drive
0.07%	Waitress
0.07%	Welding
0.07%	Whatever I find
0.07%	Work at UTI
0.07%	Work at a salon

18b. If other, please specify:
N = 1430; Missing=25

0.07%	Army
0.07%	Army, then enroll in 4 yr college
0.07%	Attend a music school
0.07%	Attend art institute
0.07%	Attend arts institute
0.07%	Attend the national fire academy
0.07%	Enroll in 4 year college and cosme
0.07%	Enroll in a 8-year college or univ
0.07%	Get a job and got to college or ge
0.07%	Get married, travel, go to a 2 yea
0.07%	Go in the military
0.07%	Go to Paul Mitchell
0.07%	Go to an art institute
0.07%	Hair School
0.07%	Hike to Alaska
0.07%	Jedi knight
0.07%	Military and college
98.11%	NA
0.07%	Not sure yet might play sport
0.07%	Paid internship
0.07%	Part-time job
0.07%	Party
0.07%	Rule a country
0.07%	Study abroad for a semester
0.07%	Take care of my son
0.07%	Technical institute
0.07%	Working musician/drug dealer

19. Looking ahead to when you are 30 years old, do you plan to have a job at that time?
N = 1358; Missing=97

54.20%   Yes, I plan to have a job at age 30. The name of the job that I plan to have at that time is:
N = 1357; Missing=98

0.07%	A traveling band (rock preferably)
0.07%	AV Tech

0.44%	Accountant
0.07%	Accountant at a bank
0.07%	Accountant or computer engineer/financial analy
0.07%	Accountant or statistician
0.07%	Accounting
0.07%	Accounting, business, or computer tech
0.07%	Actor, voice actor, and writer
0.07%	Advertising agent
0.07%	Aerospace engineer
0.07%	Aerospace engineer or biomechatronics engineer
0.07%	Aerospace engineering or aircraft engineering
0.29%	Air Force
0.07%	Air Force JAG
0.07%	Air Force fighter pilot
0.07%	Air Force fixing planes
0.07%	Algebra teacher
0.52%	Anesthesiologist
0.07%	Anesthesiologist and Army
0.07%	Anesthesiologist or nurse anesthesist
0.07%	Anesthesiologist/psychologist
0.07%	Anesthesiology
0.07%	Anestology and cosmetologist
0.07%	Animator
0.07%	Archeaology
0.44%	Architect
0.07%	Architect or entrepreneur
0.15%	Architecture engineer
0.15%	Architecture
0.07%	Architecture or landscaper
0.07%	Armed Forces
0.15%	Army
0.07%	Art professor/teacher
0.07%	Art therapist for children
0.07%	Artist
0.07%	Assistant principal or athletic trainer
0.07%	Athletic trainer
0.22%	Attorney
0.07%	Attorney/business owner
0.15%	Auto mechanic
0.07%	Auto mechanic/carpenter
0.07%	Auto technician
0.07%	Automotive industry
0.07%	Automotive mechanic
0.07%	Automotive mechanics and collision
0.07%	Automotive technician
0.07%	Bail bondsman

0.07%	Baller
0.15%	Band director
0.07%	Bank manager
0.07%	Be successful
0.07%	Beautician
0.07%	Behavioral psychologist
0.07%	Being a chemical engineer in the Air Force
0.07%	Being in the military
0.07%	Biologist or biochemist
0.07%	Broadcast journalist
0.07%	Broker/accountant
0.07%	Building construction
0.07%	Business accountant
0.07%	Business and management (owning a business)
0.07%	Business manager
0.07%	Business manager; taking over my mother's salon
0.07%	Business owner
0.07%	C.N.A., cosmetologist, or doctor
0.07%	CEO executive
0.07%	CEO of a major company
0.07%	CEO or financial analyst
0.07%	CFO
0.07%	CSX
0.07%	Campaign staffer
0.07%	Cancer specialist (doctor)
0.07%	Cardiac physician
0.15%	Cardiac surgeon
0.07%	Cardiovascular-thoracic surgeon
0.15%	Carpentry
0.07%	Certified athletic trainer
0.07%	Certified registered nurse anesthesist
0.15%	Chef
0.07%	Chef or anesthesiologist
0.15%	Chemical engineer
0.07%	Chemical engineering
0.07%	Chemistry teacher and a pharmacist
0.07%	Chief designer of Nike's design team – skateboar
0.07%	Child psychologist or guidance counselor
0.07%	Cisco networking
0.07%	Civil engineer
0.22%	Clinical laboratory scientist/technologist
0.07%	Clinical psychologist
0.07%	Clinical psychology
0.07%	Club owner; open my own club
0.07%	Coast Guard
0.07%	College professor

0.22%	Computer engineer
0.07%	Computer engineer or civil engineering
0.07%	Computer engineering
0.07%	Computer graphics
0.07%	Computer programmer or something in the military
0.07%	Computer science
0.07%	Computer tech
0.07%	Construction
0.07%	Cop/coroner/forensic investigator
0.15%	Corporate lawyer
0.29%	Cosmetologist
0.07%	Cosmetologist/nurse
0.29%	Cosmetology
0.07%	Cosmetology/military
0.07%	Counselor
0.07%	Crime scene investigation
0.22%	Crime scene investigator
0.07%	Crime scene investigator and cosmetologist
0.07%	Crime scene investigator, med. Examiner
0.07%	Criminal defense attorney or family court lawyer
0.07%	Criminal investigator in the US Army
0.07%	Criminal justic investigator
0.07%	Criminal lawyer
0.07%	Criminal profiler
0.07%	Culinary arts
0.07%	Culinary arts becoming a chef
0.07%	Culinary/wedding planning
0.07%	DEA
0.07%	Dance teacher
0.07%	Dancer, actor, and business woman
0.07%	Dealing with psychology
0.07%	Dental assistant
0.07%	Dental hygiene
0.07%	Dental hygienist
0.07%	Dental hygienists
0.15%	Dentist
0.07%	Dentist or therapist
0.07%	Dermatologist
0.07%	Design
0.07%	Designing and engineer automobiles
0.07%	Diesel mechanic/welder
0.07%	Dietician for in and out patients
0.07%	Director or producer
0.07%	Divorce lawyer
1.03%	Doctor
0.07%	Doctor working in ER

0.07%	Doctor, ambulance, or fire fighter
0.07%	Doctor, pediatrician
0.07%	Doctor – OBGYN
0.07%	Doctor – internist
0.07%	Doctor/physician
0.07%	Driving trucks
0.07%	Early childhood education (elementary teacher)
0.07%	Ecology
0.07%	Education
0.07%	Education or engineering
0.07%	Electrical engineer
0.07%	Electrician/own a farm plantation
0.07%	Electrical engineer
0.15%	Elementary teacher
0.74%	Engineer
0.07%	Engineer [at specific company]
0.07%	Engineer of some kind
0.07%	Engineer or architect
0.44%	Engineering
0.07%	Engineering, computer engineering
0.07%	Engineering; Comp. Tech
0.15%	Entrepreneur
0.07%	Environmental engineering
0.07%	Environmental lawyer, criminal lawyer or crimin
0.07%	Esthian
0.07%	Ether working someone's massage parlor or milit
0.07%	Event planner
0.07%	Event planner working for a business
0.07%	Event planner/party planner
0.07%	FBI
0.07%	Family practice PR
0.07%	Farmer
0.07%	Farming
0.07%	Fashion Designer
0.07%	Fashion des.
0.07%	Fashion design
0.22%	Fashion designer
0.07%	Fashion designer/artist
0.07%	Fighter pilot for the USAF
0.15%	Fighter pilot in the Navy
0.07%	Fighting – military
0.07%	Film scorer for movies, looking more at Disney
0.07%	Financial analyst
0.07%	Fire department
0.07%	Fire dept and a cop
0.07%	Firefighter/paramedic

0.07%	Force recon
0.07%	Foreign language instructor for the government
0.07%	Forensic chemist
0.07%	Forensic pathologist
0.29%	Forensic scientist
0.07%	Forensic scientist (CSI)
0.07%	GM car company
0.07%	Manicures/pedicures/chiropractor business
2.15%	Game designer
0.07%	Game warden or animal control
0.07%	General practitioner in a hospital or own office
0.07%	Going to the military
0.37%	Graphic designer
0.07%	Graphic/game designer
0.07%	Have my own business
0.07%	Have my own hair salone
0.07%	High school math teacher
0.07%	High school principal or playing prof. basketba
0.15%	High school teacher
0.07%	High school teacher
0.07%	Home health care nurse
0.07%	Homocide detective
0.15%	I don't know
0.07%	I don't know but I want my own restaurant
0.07%	I plan to have my own hair salon
0.07%	I will have a career
0.07%	In a office
0.07%	Insurance service
0.07%	Interning residential neurosurgeon
0.07%	Investment banker
0.07%	Journalist
0.07%	Journalist (magazine/newspaper article writer)
0.07%	Journalist/novelist/editor
0.07%	K-4 teacher
0.07%	Keneisiology
0.07%	Kindergarten or 1st grade teacher
0.15%	Kindergarten teacher
0.07%	LPN/nurse
0.07%	Labor lawyer
0.07%	Landscape photographer/model photographer
0.07%	Landscaping
0.07%	Landscaping and lawn maintenance
0.07%	Law enforcement services
1.03%	Lawyer
0.07%	Lawyer in criminal justice
0.07%	Lawyer, start a law firm

0.07%	Legal counselor/psychologist
0.07%	Licensed pharmacist
0.07%	Machinist or mechanical engineer
0.07%	Magazine editor
0.15%	Managing a welding business
0.07%	Marine Corps Judge Advocate General
0.07%	Marine biologist
0.22%	Marine corps
0.07%	Marines
0.07%	Marketing executive or CEO of my own corporation
0.07%	Marketing for a business I create
0.07%	Marketing/PR
0.07%	Master Sergeant in the US Army
0.07%	Master of the universe or concert pianist
0.07%	Maternity nurse
0.07%	Maternity nurse or pediatrician
0.07%	Maternity ward nurse
0.22%	Math teacher
0.22%	Mathematician
0.07%	McDonals or Burger King
0.07%	Mechanic
0.07%	Mechanic and own my own business
0.07%	Mechanical drafting engineer
0.22%	Mechanical engineer
0.07%	Mechanical engineering
0.07%	Mechanical or aerospace engineering
0.07%	Medical assistant in a doctor's office or hospi
0.07%	Medical field in the military
0.07%	Medical research
0.07%	Medical researcher
0.07%	Medical researcher/university faculty
0.15%	Meteorologist
0.52%	Military
0.07%	Military Navy
0.07%	Military and medical school
0.07%	Military nurse
0.22%	Military officer
0.07%	Military technician
0.07%	Millitary
0.07%	Modeling, acting, author
0.15%	Mortician
0.07%	Multimedia and graphics designer
0.07%	Music education or musical theory
0.07%	Music production or graphic designing
0.07%	Music store owner, recording label owner
0.07%	Music teacher

0.22%	Musician
0.07%	My business I start
0.07%	My own architect business
0.07%	My own business
0.07%	My own enterprise
0.07%	My own fashion business, like my own clothing d
0.07%	My own fashion design line
0.07%	My own logging business
0.07%	My own salon
45.10%	NA
0.07%	NBA
0.07%	NBA legend
0.07%	NBA player
0.15%	NFL
0.07%	NFL or pilot in Air Force
0.07%	National football player
0.07%	Navy Seal chemist
0.07%	Navy Seal, forensic scientist, trauma doctor
0.07%	Neonatal doctor
0.07%	Neonatal nurse
0.07%	Neonatologist or obstetrician
0.15%	News anchor
0.29%	Nurse
0.07%	Nurse anesthesist or a restaurant owner
0.07%	Nurse or doctor in the A.F.
0.07%	Nurse or nurse practitioner
0.29%	Nurse practitioner
0.07%	Nurse practitioner or doctor
0.07%	Nurse/cosmetology
0.07%	Nurse/writer
0.29%	Nursing
0.07%	Nursing home
0.15%	Nursing job
0.07%	Nursing or medical assisting
0.07%	Nursing, teaching
0.07%	OB/GYN
0.15%	OBGYN
0.15%	Obstetrician
0.15%	Obstetrician gynecologist
0.07%	Officer in US Army
0.07%	Officer in the US Army
0.07%	Officer in the military
0.07%	Opening up my hair shop and getting good busine
0.07%	Optometrist
0.15%	Orthodontist
0.07%	Orthopedic surgeon

0.07%	Orthopedist
0.07%	Own my own business
0.07%	Own my own business or be in the NFL or be a ba
0.07%	Own my own daycare
0.07%	Own my own law firm
0.07%	Owner of [a bakery]
0.07%	Owning my own bakery
0.07%	Owning my own business
0.07%	Owning my own business being a cosmetologist
0.07%	Owning my own business or two
0.07%	Owning my own graphic company
0.07%	Owning my own restaurant
0.07%	Owning strip clubs
0.07%	PE teacher
0.07%	Local hospital
0.07%	Paralegal
0.07%	Pastor of a local Independent Baptist church
0.22%	Pastry chef
0.07%	Machine tool technology company
0.22%	Pediatric nurse
0.07%	Pediatric nurse/cosmetologist
0.07%	Pediatric physical therapist
1.18%	Pediatrician
0.07%	Pediatrician or biomedical engineer
0.07%	Pediatrician or cosmetologist
0.07%	Pediatrician or nurse
0.07%	Pediatrician or physician asst.
0.07%	Pediatrician or psychologist
0.07%	Performing musician
0.07%	Pharmaceutical manager
0.74%	Pharmacist
0.07%	Pharmacist (working in medical field)
0.07%	Pharmacist or basketball player or own my own b
0.07%	Pharmacy
0.07%	Pharmacy tech
0.07%	Photographer
0.07%	Photography or nursing
0.07%	Physical education
0.52%	Physical therapist
0.07%	Physical therapist or athletic trainer
0.07%	Physical therapist or something in medical fiel
0.15%	Physical therapy
0.07%	Physical therapy or marriage counseling
0.07%	Physician
0.07%	Physician (oncologist)
0.07%	Physician assistant

0.07%	Physician or dentist
0.07%	Physician or running a successful business
0.07%	Pilot
0.07%	Plant manager
0.07%	Plastic surgeon and owner of a club
0.07%	Plastic/cosmetic surgeon
0.07%	Playing in the NBA
0.07%	Playing sports still
0.15%	Police
0.15%	Police officer
0.07%	Police work/forensics
0.07%	Principal of a high school
0.07%	Private detective
0.07%	Professional athletic trainer
0.07%	Professional basketball player
0.07%	Professional clarinetist
0.07%	Professional dancing and choreographer
0.07%	Programming and software development
0.29%	Psychiatrist
0.07%	Psychiatrist or teacher
1.03%	Psychologist
0.07%	Psychologist or psychiatrist
0.07%	Psychologist or vet
0.07%	Psychologist/lawyer
0.07%	Psychology
0.07%	Psychology, professional WNBA player
0.07%	Deputy sheriff
0.59%	RN
0.07%	RN nurse
0.07%	RN and then later an anesthesiologist
0.07%	RN at a hospital
0.07%	RN nurse
0.07%	RN or neonatal nurse
0.07%	RN, nursing
0.07%	RNA
0.07%	Radio personnal
0.44%	Radiologist
0.07%	Radiology
0.07%	Radiology, cyciratrist, and performing arts
0.07%	Real estate and modeling (super)
0.07%	Real estate and wedding planning
0.07%	Real estate or professional football, or contra
0.07%	Recording artist/video game tester
0.07%	Recording engineer
0.07%	Registered dietician
1.18%	Registered nurse

0.07%	Registered nurse or nurse practitioner
0.07%	Registered nurse or therapist
0.07%	Registered pediatric nurse
0.07%	Retina specialist (surgeon)
0.07%	Running my own welding shop
0.07%	Local law firm
0.07%	Local power company
0.07%	School principal
0.07%	Services
0.07%	Sex therapist
0.07%	Singer
0.15%	Social worker
0.07%	Social worker, meteorologist, or a policeman
0.07%	Sociology
0.07%	Software engineer
0.07%	Soldier in the US Army
0.07%	Some kind of middle school teaching, preferrabl
0.07%	Some type of architectural firm
0.07%	Something in journalism
0.07%	Something in the medical field
0.07%	Something to do with med
0.07%	Something with criminal justice
0.07%	Something within pharmaceuticals
0.07%	Sous chef in a restaurant
0.07%	Spanish translator
0.07%	County SWAT Team
0.07%	Special ed teacher or nurse
0.07%	Specialist doctor
0.07%	Speech therapist
0.07%	Sportfishing captain
0.07%	Sports agent
0.07%	Sports manager
0.07%	Sports medicine
0.07%	Sports therapist
0.07%	Steel mill
0.07%	Stewardess or translator
0.07%	Still in the military
0.07%	Stock broker
0.07%	Superintendent of schools
0.07%	Supreme ruler of the world
0.15%	Surgeon
0.07%	TV newscaster
0.59%	Teacher
0.07%	Teacher or photographer
0.07%	Teacher, football coach
0.22%	Teaching

0.07%	Teaching at school
0.07%	Teaching elementary school and dance
0.07%	Teaching high school
0.07%	Teaching school or education
0.07%	Technician
0.07%	Technologist
0.07%	The same job that I went to college for
0.07%	Theater director or a theater professor in NYC
0.07%	Therapist
0.07%	Therapist, modeling, fashion industry, business
0.07%	Top lawyer or owner of a law firm
0.07%	Translator (anything to do with linguistics)
0.07%	Traveling nurse
0.07%	Local styling salon
0.07%	Truck drive
0.07%	Truck driving
0.07%	US Army
0.07%	US Army aviation officer
0.07%	Underwater welder
0.07%	United States Marshal
0.07%	Veterinary
0.29%	Vet
0.07%	Vet/animal doctor
0.74%	Veterinarian
0.07%	Veterinarian medicine
0.07%	Video game designer
0.07%	Video game designer/programmer
0.07%	Welding firm
0.07%	Welding
0.29%	Wildlife biologist at DNR
0.07%	Work with arts
0.07%	Work with music and have my own business
0.07%	Working at a business or a plant
0.07%	Working at a hospital
0.07%	Working at a law firm
0.07%	Working in a doctor's office
0.07%	Working in a hair salon
0.07%	Writer
0.07%	Writing novels
0.07%	X-ray technician
0.07%	Youth director
0.07%	Youth ministry pastor

44.18%   Yes, I plan to have a job at age 30 but don't know what type of job I will have.

1.25%   No, I don't plan to have a job at age 30.

0.37%   Multiple Responses

20. How far in school do you think your parents or guardians want you to go?
    (Mark **ONE** RESPONSE that reflects the highest level of education that you think
    your parents or guardians want you to achieve.)
N = 1423; Missing=32

1.55%	Not finish high school
6.96%	Graduate from high school or earn my GED
1.90%	Attend college but not complete a degree
10.68%	Complete a certificate or associate's degree
19.89%	Complete a bachelor's degree
24.17%	Complete a master's degree
25.44%	Complete a doctoral degree
8.36%	Don't know
1.05%	Multiple responses

Part IV: Beliefs and Opinions About Self/School

21. How much do you agree or disagree with the following statements? (Mark **ONE** response for
    each item)

	Strongly Disagree	Disagree	Agree	Strongly Agree	Multiple responses	N (Missing)
a. Most of the information we learn in school is useful for everyday life.	7.67%	34.20%	47.71%	10.34%	0.07%	1421 (34)
b. Most of the information we learn in school will be useful for college or further training.	2.54%	7.56%	59.22%	30.67%	0.00%	1415 (40)
c. Most of the information we learn in school will be useful for my career.	6.09%	25.09%	52.94%	15.80%	0.07%	1411 (44)

22. How many times did the following things happen in the first half of **this school
year**?

	Never	1-2 Times	3-4 Times	5 or More Times	Multiple responses	N (Missing)
a. I was late for school.	25.30%	43.01%	20.10%	11.60%	0.00%	1423 (32)
b. I cut or skipped classes.	72.90%	16.73%	5.86%	4.16%	0.35%	1417 (38)
c. I was absent from school.	13.15%	35.75%	28.78%	22.32%	0.00%	1407 (48)
d. I was put on in-school suspension.	70.68%	21.25%	4.89%	3.19%	0.00%	1412 (43)
e. I was suspended out of school.	79.83%	12.78%	4.69%	2.63%	0.07%	1408 (47)
f. I was expelled from school.	93.68%	3.69%	1.42%	0.99%	0.21%	1408 (47)
g. I went to class without my homework finished.	18.53%	37.27%	23.20%	20.93%	0.00%	1414 (41)
h. I went to class without pencil, paper, book, or other necessary supplies.	43.63%	32.16%	11.68%	12.46%	0.07%	1421 (34)

Part V: Demographics

23. What grade are you enrolled in this school year (2008-09)?
$N = 1455$; Missing=0
  - 0.00 %   9th grade
  - 100.00% 10th grade
  - 0.00%   11th grade
  - 0.00%   12th grade
  - 0.00% Multiple responses

24. Since the beginning of 9th grade, how many times have you changed schools? DO NOT count changes that occurred only because you graduated to another grade level.
$N = 1387$; Missing=68
  _____ times zero: ; one: ; two: ;
  - 82.77%   0
  - 10.89%   1
  - 3.10%   2
  - 2.24%   3
  - 0.43%   4
  - 0.36%   5
  - 0.07%   6
  - 0.07%   8
  - 0.07%   63

25. What is your gender?
N = 1450; Missing=5
       44.55%   Male
       55.31%   Female
       0.14%   Multiple Responses

26. Which of the following best describe your race/ethnicity? (Mark ALL THAT APPLY)
N = 1442; Missing=13
       1.04%   American Indian or Alaskan Native
       1.66%   Asian
       50.42%   Black or African American
       3.12%   Hispanic or Latino
       0.76%   Native Hawaiian or Other Pacific Islander
       34.81%   White
  `   8.18%   Mutlirace

27. How old are you today?
N = 1444; Missing=11
       0.07%   13
       0.07%   14
       3.74%   15
       76.87%   16
       17.17%   17
       1.73%   18
       0.35%   19 or older
       0.00%   Multiple responses

28. What is the highest level of education that your parents [or guardians] completed? Indicate the highest level of education for your mother [or female guardian] and father or [male guardian]. (Mark only **ONE** answer for each parent or guardian.)

	Mother/female Guardian	Father/male Guardian
a. Did not finish high school	5.42%	7.65%
b. Graduated from high school or earned a GED	18.87%	23.33%
c. Attended college but did not complete degree	11.64%	9.77%
d. Completed a certificate or associate's degree	12.08%	8.48%
e. Completed a bachelor's degree	13.45%	10.45%
f. Completed a master's degree	10.92%	8.11%
g. Completed a doctoral degree	1.66%	2.42%

h. Don't Know	11.14%	16.59%
i. Does Not Apply	1.01%	2.58%
j. Multiple responses	13.81%	10.61%
k. *N* (missing)	1383 (72)	1320 (135)

Thank you for taking the time to take our survey! Do you have any comments you would like to make about anything in the survey?

Career Clusters (<u>underlined</u> and in **bold**) and **High School Majors** (listed under clusters)

A. Agriculture, Food & Natural Resources
A1. Food Products and Processing Systems
A2. Plant Systems
A3. Animal Systems
A4. Power, Structural & Technical Systems
A5. Natural Resources Systems
A6. Environmental Service Systems
A7. AgriBusiness Systems

B. Architecture & Construction
B1. Design/Pre-Construction
B2. Construction
B3. Maintenance/Operations

C. Arts, Audio/Video Technology & Communications
C1. Audio and Video Technology and Film
C2. Printing Technology
C3. Visual Arts
C4. Performing Arts
C5. Journalism and Broadcasting
C6. Telecommunications

D. Business, Management & Administration
D1. Management
D2. Business Financial Management & Accounting
D3. Human Resources
D4. Business Analysis
D5. Marketing
D6. Administrative & Information Support

E. Education & Training
E1. Administration and Administrative Support
E2. Professional Support Services
E3. Teaching/Training

F. Finance
F1. Financial & Investment Planning
F2. Business Financial Management
F3. Banking & Related Services
F4. Insurance Services

G. Government & Public Administration
G1. Governance
G2. National Security
G3. Foreign Service
G4. Planning
G5. Revenue and Taxation
G6. Regulation
G7. Public Management and Administration

H. Health Science
H1. Therapeutic Services
H2. Diagnostic Services
H3. Health Informatics
H4. Support Services
H5. Biotechnology Research and Development

I. Hospitality & Tourism
I1. Restaurants and Food/Beverage Services
I2. Lodging
I3. Travel & Tourism
I4. Recreation, Amusements & Attractions

J. Human Services
J1. Early Childhood Development & Services
J2. Counseling & Mental Health Services
J3. Family & Community Services
J4. Personal Care Services
J5. Consumer Services

K. Information Technology
K1. Network Systems
K2. Information Support and Services
K3. Interactive Media
K4. Programming and Software Development

L. Law, Public Safety, Corrections & Security
L1. Correction Services
L2. Emergency and Fire Management Services
L3. Security & Protective Services
L4. Law Enforcement Services
L5. Legal Services

M. Manufacturing
M1. Production
M2. Manufacturing Production Process Development
M3. Maintenance, Installation & Repair
M4. Quality Assurance
M5. Logistics and Inventory Control
M6. Health, Safety and Environmental Assurance

N. Marketing, Sales & Service
N1. Management and Entrepreneurship
N2. Professional Sales and Marketing
N3. Buying and Merchandising
N4. Marketing Communications and Promotion
N5. Marketing Information Management and Research
N6. Distribution and Logistics
N7. E-Marketing

O. Science, Technology, Engineering & Mathematics
O1. Engineering and Technology
O2. Science and Math

P. Transportation, Distribution & Logistics
P1. Transportation Operations
P2. Logistics Planning and Management Services
P3. Warehousing and Distribution Center Operations
P4. Facility and Mobile Equipment Maintenance
P5. Transportation Systems/Infrastructure Planning, Management and Regulation
P6. Health, Safety and Environmental Management
P7. Sales and Service

Appendix I Supplement: Creation of the Variables Used for Analysis of Responses to Q3-Q5f and Q7a-Q8 of the Student Survey to Adjust for Skip Pattern Errors

The first part of the *Student Engagement/POS Experiences Survey* includes 12 questions that inquire about a student's coursework and career planning. In this section of the survey, there are two instances when a student's response to a question dictates which question should be next answered: question 2 (Q2) and question 6 (Q6). Directions beside the answer choices for these two questions indicate whether the student should continue to the next question or skip to a subsequent question.

Q2 is the first item that includes directions to skip certain questions depending on the student's response to this question. Q2 asks if the student has selected a high school major within a career cluster. If the student responds that she has not selected a major ("No") or is not sure ("Don't Know"), arrows beside those response choices prompt the student to go to Q6 on page 2. The student should only respond to Q3, Q4, and Q5a-f if she responds that she has selected a major ("Yes"). In addition, if the student responds that she has selected a major in question 2, a subsidiary question (Q2a) asks her to write the selected high school major on the line below. Likewise, Q6 asks if the respondent has put together a "'career plan' or 4-year 'Individual Graduation Plan (IGP)'" that outlines a series of courses that the respondent will take throughout high school. If the student responds that she has not done this ("No") or is not sure ("Don't Know"), then the student should skip to question 9a on page 4. Because questions 7a-f (Q7a-f) and 8 (Q8) reference the student's experience putting together a career plan or 4-year IGP, the student should only complete those items if she responded "Yes" to Q6.

During the data entry process, it became apparent that many respondents did not skip questions appropriately. In fact, in almost 30% of the surveys analyzed, respondents did not skip questions correctly after responding to Q2 or Q6. To circumvent eliminating these surveys altogether, new variables were created for Q3, Q4, and Q5a-f, and for Q7a-f and Q8. These new variables included an additional data code created to indicate when a question was not skipped appropriately and the response should not be included in the analysis ("Created Not Applicable," i.e., "Created NA"). Relative frequencies were created for Q3 – 4 under the following conditions:

- The respondent responded "Yes" to Q2
- The respondent responded "Yes" to Q2, even if they didn't report a major for Q2a
- The respondent did not respond to Q2 but reported a major for Q2a
- The respondent responded "No" or "Didn't Know" to Q2 but reported a major for Q2a
- The respondent responded "No" or "Didn't Know" to Q2, did not report a major for Q2a but responded "Don't Know" to both Q3 and Q4

Because Q5a-Q5f involve agreement with outcomes associated with having a high school major and career cluster, the surveys where respondents indicated that they did not have a major or were not sure they had selected a major and did not list a major were not included in the analysis, that is, they were "Created NA." Relative frequencies were created for Q5 under the following conditions:

- The respondent responded "Yes" to Q2
- The respondent responded "Yes" to Q2, even if they didn't report a major for Q2a
- The respondent did not respond to Q2 but reported a major for Q2a
- The respondent responded "No" or "Didn't Know" to Q2 but reported a major for Q2a

The schematic below summarizes the creation of the new Q3Analysis-Q5fAnalysis variables.
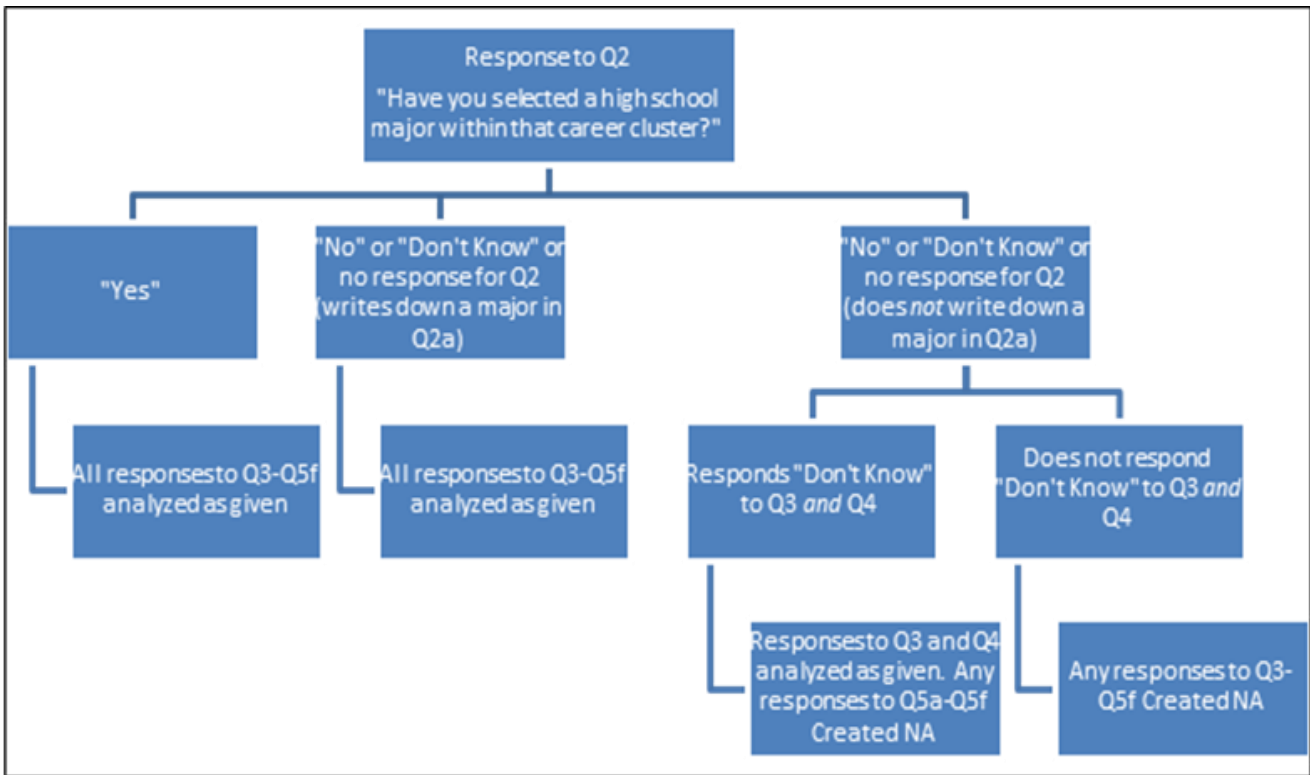
Figure I1. Creation of the Q3Analysis-Q5fAnalysis variables.

The analysis of the questions following the second instance when survey respondents were prompted to skip or continue (Q6) was straightforward. If a student answered that she had not put together a career plan or IGP ("No") or that she did not know ("Don't Know") whether she had put together a career plan or IGP, then any response for Q7a-Q8 was "Created NA." Figure I2 highlights when a student's responses following Q6 were analyzed as provided or "Created NA."
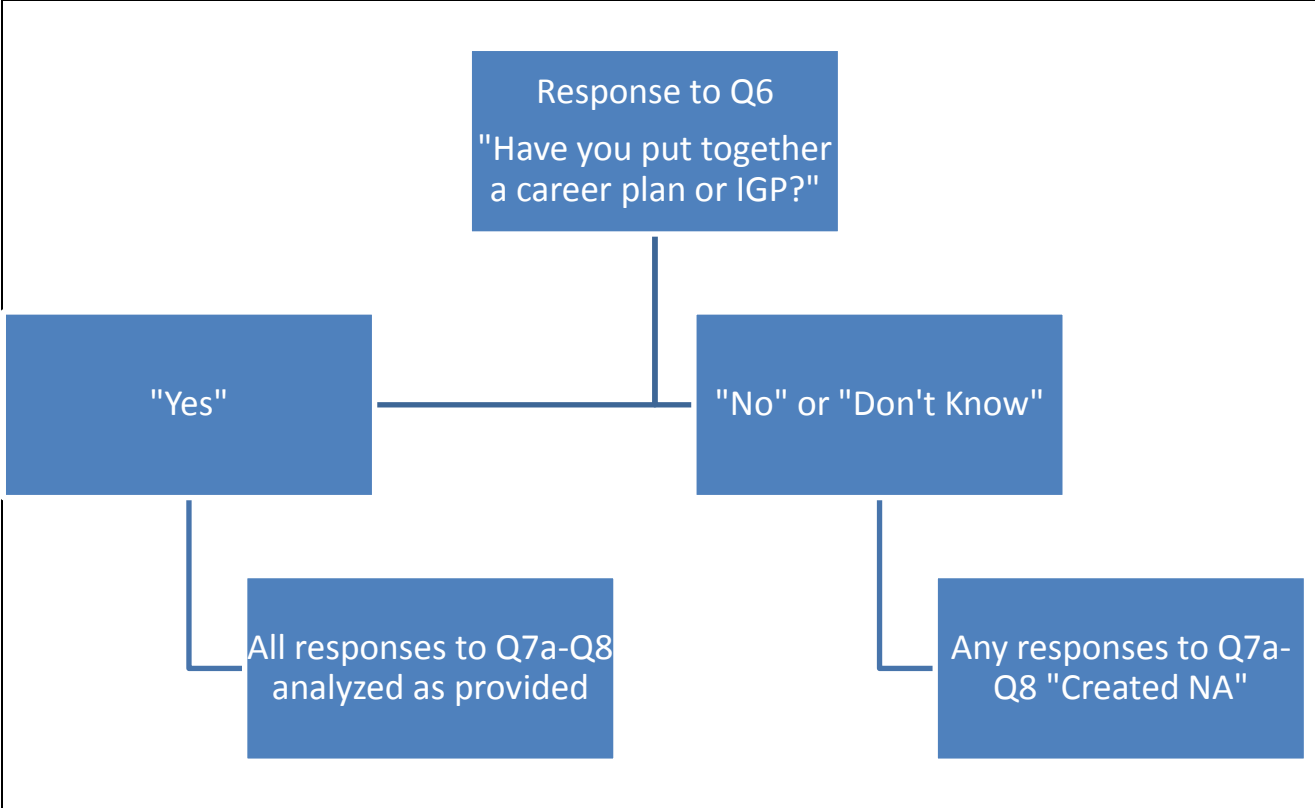
Figure I2. Creation of the Q7aAnalysis-Q8Analysis variables.

Introduction to Focus Groups

- About our study:
  We are conducting a study in 8 high schools across South Carolina about career clusters, majors, and career planning activities. We've already talked to staff at your school but want to get the perspective of students about these activities.

- We want to talk to you about
  1. Your experiences with:
     - developing an Individual Graduation Plan,
     - career planning in high school, and
     - having a major or cluster of study
  2. and How the IGP and your major/career cluster impacted your school experience and future plans

- This interview will last about 45 minutes.

We want to assure you that:
- Your comments will remain <u>anonymous</u> and <u>confidential</u>. Your name will not be associated with answers that you give.
- School <u>administrators and teachers will not be looking at what you tell us</u>.
- Participation in this study is <u>completely voluntary</u>. You may decide not to participate or not to answer some of the questions.
- Your participation is up to you and you <u>may stop participating at any time without getting into trouble</u>.
  - This research will <u>not affect your grades</u> in any way.

We would like to audio-tape this interview to make sure that we accurately portray your interview in our notes.
- This recording will be used for research purposes only and will not be shared with your school.
- If you do not wish to be recorded, you can ask us to stop recording at any time. Would it be OK if we recorded our discussion?

<u>Any questions for us before we begin?</u>

South Carolina Personal Pathways Study
Protocol for Student Focus Groups in Sample Schools (Year 4)
Class of 2011 as Seniors

[Note: For each group, the facilitator will have a copy of the registration guide and materials and a blank, sample IGP used by their school to show students if they are unsure of whether they developed a plan.]

Note majors and/or CATE programs of students in each group:

_____

_____

1. UNDERSTANDING THE IGP

    a. Do you know what an Individual Graduation Plan is?

        ✓ *Did you fill out a piece of paper or a chart, maybe online, that told you about or outlined the classes that you will be taking each year – or did you fill out a form for pre-registration?*

    b. What do you call it?

    c. Did you develop one of these plans?

2. THE IGP PROCESS AND THE GUIDANCE COUNSELOR

    a. Would you explain how the IGP process worked at your school?

        ✓ *How often did you meet and with whom?*

        ✓ *What information was shared with you at that time?*

        ✓ *What were you told about the range of options of CATE courses and programs and possible certifications available through these programs?*

        ✓ *How was this process helpful to you in planning for high school?*

        ✓ *How was it helpful in planning for your future career?*

3. THE IGP PROCESS AND PARENTAL INVOLVEMENT

    a. When you were developing your course plans and plans for your future, how were your parents involved in this process?

        ✓ *Did they have to come in to the school and sign your IGP and/or talk to the counselor or teachers?*

    ✓ *Did you talk at home about this? What did you talk about? (courses? graduation? career goals?)*

4. CAREER CLUSTER/MAJOR

   a. When you developed your Individual Graduation Plan (IGP), what did you select as a career cluster? Major?

   b. Why did you select this career cluster and major?

   c. Were you encouraged to explore and/or try different majors before you made a final selection or were you asked to pick one and stay with it?

   d. Are you satisfied with the major you are in now?

****

[For students who selected a career cluster/major]

   e. Has having a cluster/major/plan influenced you in any way?

   f. Did it influence how you felt about school?

   g. Did it influence the types of courses that you took in high school?

   h. How did your academic courses change due to your major?

   i. Did it influence or change your performance in your courses?

   j. Did it affect your post high school plans?

   k. Have you taken any courses that give you dual or college credit? (for example AP, TAP, dual credit?)

   l. Were they related to your career cluster/major?

   m. CATE-Related Experiences/Activities (or something like this)

5. CATE-RELATED EXPERIENCES/ACTIVITIES

   a. Have you been involved in a career-technical student organization such as FFA, HOSA, DECA, BPA, FBLA, TSA, FCCLA, Skills USA, or National Technical Honor Society during high school?

b. How was participation in one or more of these groups helpful to you in planning for your future?

c. Are you going to complete a CATE program before you graduate? If so, which one(s)? If not, why not?

d. Are you going to get, or have you already received, certifications in any area before you graduate? If so, which one(s)? If not, why not?

6. <u>APTITUDE EVALUATIONS</u>

a. Before or during the development of your course and/or plans for the future, , did you ever take a skills assessment/test or a test to identify your career interests (such as Kuder or SCOIS or WorkKeys)?

b. If so, how were they helpful?

7. <u>REAL OR SIMULATED WORK EXPERIENCE/INFORMATION</u>

a. During high school, what experiences such as internships, job shadowing, senior project with a mentor, service learning, volunteering or paid employment were you involved in?

b. Did the school make all or part of the arrangements for this opportunity? Did you get course credit for it or was it required or encouraged through some course?

c. How were they related to your major or CATE program?

d. How were these helpful to you in affirming or changing your chosen major or in planning for your future career?

e. When in your academic courses (such as English, math, science, social studies, art), did you talk about different careers and how what you were doing in that particular subject related to different careers or specific jobs?

    ✓ *For example, in math, did you talk about which careers need to have math and how math is used in those careers?*

    ✓ *Or in English or journalism did you talk about how what you were learning applied to different careers? (marketing campaigns, radio broadcasts, writing technical manuals)?*

f. When, in your academic courses (such as English, math, science, social studies, art), did you do any projects that simulated real job experiences?

    ✓ *English – designing/producing a brochure or newsletter, simulating a broadcast, preparing a marketing plan*

✓   *Math – solving an engineering problem, building a bridge, solving mathematical problems that applied to your cluster*

✓   *Science – relating the environment or animal life, chemistry, temperature of materials to your area of study, health related projects, taking blood samples*

✓   *Social Studies – relating historical changes to your area and how they have affected it, how human relations affect the world of work*

✓   *Art –graphic computer projects, clothing design projects, design of product packaging and marketing*

g. In which courses did you have these experiences?

h. How about any CATE courses you took – Can you give some examples of experiences you had in those courses that involved hands-on opportunities—either real or simulated?

✓   *i.e., an auto mechanic major working on a real automobile*

✓   *a computer technician working on computers in the school office or regular computer lab*

✓   *engineering student solving a real engineering problem or designing a usable part*

✓   *a health sciences major participating in clinicals, hospital rounds, testing each other*

i. In which courses did you have these experiences?

8. POST HIGH SCHOOL PLANS

a. What are your after-graduation plans – for the year after you graduate from high school?

b. How are they related to the major you selected/the courses you took while you were in high school?

c. How well prepared do you feel for your post high school plans?

d. To what would you attribute that answer? Did anything during high school help or not help you feel more prepared?

Appendix K: EEDA Level of Implementation (LOI) Coding Scheme

Based on guidelines provided to school personnel,[25] the study team identified the most salient initiatives for high schools (our focus in this study) and grouped them into six key facets to construct our conceptualization of EEDA Level of Implementation (LOI). The six identified facets are listed below with the coding scheme to determine one LOI measurement for each sample school. Each facet subscore with a finite range was standardized by dividing the actual score by the possible score. For facet subscores with infinite ranges, quartile rankings were determined, then standardized as stated above. Where scores or subscores were averaged, the scores were standardized first, prior to averaging.

Facet 1: *Identification of and assistance for high-risk students.*
All schools are required to identify students at risk of dropping out of school using the criteria defined by the State Board of Education, and to adopt one or more of the evidence-based strategies identified by the Board to assist identified students.
1. As mandated by EEDA, does the school have a clear and specific method or process (such as reviewing grades and/or discipline referrals each year, getting referrals from teachers, counselors and/or parents, etc. each year) to identify the high-risk students to receive special assistance that is obviously being used by school staff, according to reports/descriptions of at least one staff member?
Note: Evidence could appear in the interviews with the principal, the asst. principals, the guidance director and/or the teacher focus groups. In section about your school's programs for high-risk students. Yes = 1; No = 0
2. Are you providing evidence-based assistance programs to these students? Yes = 1; No = 0
3. Are the programs Tier 1 or Tier 2 programs (from the SDE list)? Neither = 0; Tier 1 = 1; Tier 2 = 2; Both = 3
4. When was it implemented? (Note the law had a deadline: implemented by school year 2007-2008.) Before deadline = 2; At deadline = 1; After deadline = 0
Based decision on principal interviews - what reform the principals said they are using and when it was implemented (Principal Interview Questions III. 3. a-c)
5. Principal's rating of implementation of this facet (range 1-5 – Serve Survey from 2006-2007 school year) – from scoring sheets. 1 & 2 = Planning stage; 3 & 4 = Partially implemented; 5 = Fully implemented
6. Team's rating of implementation of this facet (range 1-5 – Site Visits 2008-2009 school year). Took the average - averaged all of the team members scores
1 & 2 = Planning stage; 3 & 4 = Partially implemented; 5 = Fully implemented

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[25]South Carolina Technical College System series, *How EEDA Works for South Carolina*, including: *An Educator's Guide to Develop and Implement the EEDA Curriculum Framework and Individual Graduation Plan* (2006a) and *An Educator's Orientation Guide to the Education and Economic Development Act* (2006b); and South Carolina Department of Education, *South Carolina Education and Economic Development Act Guidelines* (2006a).

Facet 2: *Integration of rigorous academic and career-focused curricula, organized into career clusters and majors.*
High schools must implement at least three career clusters, organize curricula around these three clusters and create majors within the clusters. All students are required to take the 17 core academic courses. Students should meet these requirements with courses that best fit their selected major/career cluster. School districts must provide work exploration guidance activities and career awareness programs that combine counseling on career options and experiential learning with academic planning to assist students throughout their high school years in fulfilling their IGPs. Every eighth grader will design an Individual Graduation Plan (IGP) that will serve as a guide for academic, career, and postgraduation transition planning. The IGP will be developed with input from guidance personnel, parents, and students.

1. Implementation of clusters
   a. Three or more clusters in place as required by law? (spring interviews)? Yes = 1; No = 0. Was there agreement among interviewers? Yes=2; Agreed within 3 = 1; Greater than 3 difference or more than two with little or no knowledge = 0. Average of two subscores.
   b. Indication of a dynamic process in clusters/majors (e.g. adding programs, etc.)? Conveyed interest and commitment to process (added additional information, conveyed enthusiasm and hope)? Have programs changed since EEDA? (See POS interview Q2 and spring 2009 questions P5a1, AP5a1, GD3a1, GP1a1, P5a2, AP5a2, GD3a2, GP1a2) Average of two subscores, each 0 or 1: one from spring 2009 interview notes and one from fall 2009 interview notes.
   c. How were clusters/majors developed? Who was involved in development of program curriculum? (EEDA district curriculum integration survey – three schools missing – found supplemental info in interview notes or POS charts) Score based on average scores of two subscores: one an indicator of "Factors Considered" (student needs and/or community needs) and the other an indicator of "People Involved" (secondary education administrators, secondary education teachers, higher education and/or the business community).
   2.1.c., subscore 1, Factors Considered: if considered both student and community needs = 2; if just one of these = 1; if none = 0
   2.1.c., subscore 2, People Involved: 1 point for each of these indicated: Teachers involved (CTE and/or non-CTE); Other school, district or state secondary education people involved; Business representatives involved; High education representatives involved
   d. 2009 Class of 2011 10th grade survey – Have you selected career cluster to plan for? Maximum percentage of students at each school responding "yes" was 91%
   e. 2009 class of 2011 10th grade survey – Have you selected a major within that career cluster? Maximum percentage of students at each school responding "yes" was 72%
   f. Class of 2011 10th grade survey (2009) – questions about if major they wanted available at their school? (Q4 on survey). Maximum percentage of students at each school responding "yes" was 63%

2. Evidence of shift to using EEDA terminology and providing information on EEDA and clusters to students

a. EEDA language used in written materials? (original SLOI scoring from materials review--Supplemented with materials collected on site & responses)
   1. General overview/description of EEDA? Yes = 1; No = 0
   2. General outline of available career clusters? Yes = 1; No = 0
   3. Provides list of additional resources on EEDA/career cluster materials or information? Yes = 1; No = 0
   4. Current catalog uses EEDA terminology? Yes = 1; No = 0
   5. Catalog in compliance?
      Catalog outlines career clusters, majors within each cluster, and specific courses for each major = 5; Catalog outlines career clusters and specifies majors, but not specific courses for each major = 4; Catalog lists career clusters only, but does not specify majors or courses within each cluster = 3; Clusters, majors, and courses outlined only for district's Career/Tech Center = 2; or Catalog does not mention career clusters = 1
b. Students' access to occupational information? (what information is distributed to students, how is it distributed and how often is it distributed? – from original scoring sheets, supplemented w/ interview data)
   1. Is career planning information made available to students?
      i. Ease of access and coverage to all students. (Spring 2009 interviews: GP2c&b, GP4f, P5g, AP6c, GD3g, etc.) Scale of 0-2
      ii. Average perceived level of student awareness of clusters as reported by administration, staff, teachers (level of awareness questions from Spring 2009 interviews) (For level of awareness scores for facet 2, the teachers' average responses were weighted 3 times, since 1-3 groups of 3-4 teachers were interviewed at each school, compared to only 1 principal, 1 assistant principal, 1 guidance director, and 2-3 guidance personnel.) Ranges for each staff interviewed: 1-5

      Responses to student survey of the class of 2011 as 10th graders. In high school, have you ever done any of the following activities to help you identify jobs or careers that you might be interested in pursuing?
      iii. Q9a, Answered questions related to jobs and careers on a computer or filled out a questionnaire? Maximum percentage of students at each school responding "yes" was 88%
      iv. Q9b, Researched different jobs or careers? Maximum percentage of students at each school responding "yes" was 88%
      v. Q9d, Spoke with or visited someone in a career that interests me? Maximum percentage of students at each school responding "yes" was 65%

      Responses to student survey of the class of 2011 as 10th graders. Between the start of 9th grade and now, have you talked to a school guidance counselor about the following topics:
      vi. Q10c, Possible jobs or careers when you are an adult? Maximum percentage of students at each school responding "yes" was 88%
      vii. Q10d, Finding a job after high school? Maximum percentage of students at each school responding "yes" was 49%

        viii.   Q10e, Steps necessary to pursue your career? Maximum percentage of students at each school responding "yes" was 82%

2. Is career planning information made available to parents?
   i. Looking at spring 2009 interviews GP2a4, GD4h4, and other contextual data from spring 2009 interviews. Yes = 1; No = 0
   ii. Average perceived level of parent awareness of clusters as reported by administrators, staff, teachers. (level of awareness questions from Spring 2009 interviews) (For level of awareness scores for facet 2, the teachers' average responses were weighted 3 times, since 1-3 groups of 3-4 teachers were interviewed at each school, compared to only 1 principal, 1 assistant principal, 1 guidance director, and 2-3 guidance personnel.) Ranges for each staff interviewed: 1-5

3. Is career planning information readily available to staff?
   i. Looking at spring 2009 interviews T1c, GP2c, GP2h. Yes = 1; No = 0
   ii. Average perceived level of teacher awareness of clusters as reported by administrators, staff, teachers. (level of awareness questions from Spring 2009 interviews) (For level of awareness scores for facet 2, the teachers' average responses were weighted 3 times, since 1-3 groups of 3-4 teachers were interviewed at each school, compared to only 1 principal, 1 assistant principal, 1 guidance director, and 2-3 guidance personnel.) Ranges for each staff interviewed: 1-5

4. Are career skills assessments available to students, from GD4g? Yes = 1; No = 0

3. Use of the IGP. Organization of curricula around offered clusters--the IGP process - selection of cluster in 8th grade, selection of major in 10th grade, students provided w/ individualized choices, appropriate resources and materials, availability of courses in major?

a. P5b, AP5b, GD3b Are 9th and 10th graders notified of IGP requirement? Yes = 1; No = 0

b. P5b1, AP5b1, GD3b1 – Are 10th graders notified of the requirement that they must declare a major within a career cluster? YES = 1; NO = 0

c. P5e, AP5d, GD3e Are IGPs updated annually? YES = .5; NO = 0

d. Parental involvement:
   1. Are parents included in update meeting? Yes = 1; No = 0 (based on spring 2009 interviews)
   2. Percentage of 9th and 10th graders attending IGP meetings (2009 GP report) Maximum percentage was 94%

e. P5f, GD3f – How far along is your school in implementing the electronic IGP system? – open-ended question (supplemented with SDE data from 3/2008) Just getting started, significant problems mentioned = 1; Minor issues = 3; No problems mentioned, all indications that all aspects are working well = 5. Also included scores of 2 and 4 for "in between" 1 and 3 and 3 and 5, respectively.

f. Assessment of interactions between middle schools and high schools on IGP development/9th grade registration (method of getting involvement?) – are 9th graders coming to high school with IGPs? Do high school staff work w/ MS, or with 8th graders on IGPs - Are middle schoolers brought in for a tour of the high school and/or tech center? Range 0-3

     g. Class of 2011 10th grade survey (2009) – Q6. Have you put together a career plan or 4-yr IGP that outlines a series of activities and courses that you will take throughout high school? Maximum percentage responding "yes" was 77%

4. Programs developed around majors/clusters/careers? Inclusion of career-focused curriculum – availability of information and experiences relating to career major? Integration of rigorous core curriculum?

     a. Evidence of CTE being incorporated into core curriculum and other non-CTE classrooms/curricula?

        1. Inclusion of career-focused curriculum--particularly availability of information and experiences relating to career major--in non-CTE courses? Range 0-2, depending on the number of teachers who gave specific examples (from material in interview notes from spring 2009)

        2. Inclusion of career-focused curriculum--particularly availability of information and experiences relating to career major--in non-CTE courses? Are Core and CATE teachers working together? Range 0-2, depending on the number of teachers who gave specific examples (from material in interview notes from fall 2009)

        3. Are extended learning opportunities for students available? Yes = 1; No = 0, from spring 2009 interviews T1e, GP2g, GD4e

     b. Evidence of non-CTE and core curriculum being incorporated into CTE classrooms/curricula?

        1. Inclusion of core curriculum. Range 0-2, depending on the number of teachers who gave specific examples (from material in interview notes from spring 2009)

        2. Inclusion of core curriculum. Range 0-2, depending on the number of teachers who gave specific examples (from material in interview notes from fall 2009)

     c. Class of 2011 10th grade survey (2009) – questions about WBL in educational activities?

        1. Q9 on survey (% who answered yes to "Been in a class where someone from a local business talked about working at their company or in their career" Maximum percentage responding "yes" was 66%

        2. Q9 on survey (% who answered yes to "Toured a local business with a group from my school") Maximum percentage responding "yes" was 34%

        3. Q12 on survey (% students who took part in an internship) Maximum percentage responding "yes" was 17%

        4. Q12 on survey (% students who took part in a co-op experience) Maximum percentage responding "yes" was 11%

        5. Q12 on survey (% students who took part in job shadowing) Maximum percentage responding "yes" was 49%

        6. Q12 on survey (% students who took part in a school-based enterprise) Maximum percentage responding "yes" was 17%

5. Is school physically organized around clusters/majors/POS as SLC, where clusters are grouped and co-located in hallways and/or buildings? Yes = 1; No = 0

Facet 3: *Increased counselor role in education and career planning.*
School counselors are seen as key players in the implementation of EEDA. EEDA requires the implementation of a career guidance program model in high school. All middle and high schools

must provide students with the services of a counselor with a Global Career Development Facilitator (GCDF) certification or a career specialist with a bachelor's degree and GDCF certification, to help students, for example, to select majors, develop and revise their IGPs, and set up out-of-classroom learning experiences. The student-to-guidance personnel ratio has to be no more than 300 to 1 at every middle and high school. Professional development related to career development must be provided for all school counselors.

1. Is guidance being reorganized and trained to handle the new requirements? Organization and structure of guidance staff. Have they restructured their roles as required? Are they being overwhelmed (adding duties rather than restructuring)?
   A. Are they being prepared?
      1. Certifications – GDCF certification, interviews & GP report--Do they have one person certified as GDCF? In process = 1; Yes = 2; No = 0--Refer to the guidance survey.
      2. Professional Development (thoroughness and frequency). Focus groups for GP on interview notes. Question III 2h. h. Have you received professional development or inservice on…
      SCORE 2 = Received professional development or inservice on student career development AND school's career clusters
      SCORE 1 = Received professional development or inservice on student career development OR school's career clusters
      SCORE 0 = received NO professional development or inservice on student career development or school's career clusters
      PLEASE NOTE: IT MAY BE DIFFICULT TO GET A FREQUENCY MEASURE BECAUSE NOT ALL OF THE SCHOOL'S INDICATED HOW OFTEN THEY RECEIVED TRAINING...
   B. Are they being given the time?
      1. Fewer "inappropriate duties"? Specifically Cited as Inappropriate Activities for Counselors in the Personal Pathways Guidelines Document (June 2006, p. 16). Use the guidance survey for the official answer. Use the means for whether it's changed for each school for those kinds of duties. Use the interview notes for context only (GP and GD). 1= Duties increased greatly; 2 = Duties have increased somewhat; 3 = Duties have not changed in this area; 4 = Duties have decreased somewhat; 5 = Duties have decreased greatly.
      2. Chart of duties (spending more time w/ assisting with career preparation) – "appropriate duties".
      Use the guidance survey for the official answer. Use the means for whether it's changed for each school for those kinds of duties (e.g., all duties related to career preparation). Use the interview notes for context only (GP and GD). 5= Duties increased greatly; 4 = Duties have increased somewhat; 3 = Duties have not changed in this area; 2 = Duties have decreased somewhat; 1 = Duties have decreased greatly.
      3. Have roles been redefined/reorganized? Is there now a career specialist? Do counselors have specialized counselor roles? Or have duties been redistributed over existing personnel?
      Look across GD & GP interviews for emergent themes.   Interview notes IV. #4 or guidance surveys for information about career specialists. What specialized

counselor roles means is do they have counselors that only do IGPs and another counselor that only does academic. Or, do they not have specialized roles (e.g., they divide up alphabet and everyone does everything)?   CONTEXTUAL ONLY - NO SCORING

4. Are school staff other than counselors involved with career guidance duties (outside of guidance - ex: use of other personnel, use of school-to-work personnel, or no change in personnel.) (For example, are other school staff involved in the IGP process – who? Also, are other school staff teaching students about extended learning opportunities - who?) What guidance personnel are involved in career planning and development at your school?) Might find in GP interviews III 2a or the GD interviews when they are talking about their roles (e.g., SB 2.8 has a school-to-work coordinator so this is unique). This question is not directly asked so look through the interview notes.
GP Interview Notes Q III 2 b. What guidance personnel are involved in career planning and development at your school?
CAREER SPECIALIST, COUNSELORS, AND OTHER (E.G., TEACHERS, SCHOOL-TO-WORK) – 2; CAREER SPECIALIST, COUNSELORS – 1; ALSO, KEEP THE CONTEXT IN THERE.

5. Are there reports of having duty overload? (Look through entire GP and GD interviews. Note what challenges such as not enough time or not enough knowledge)
Look throughout the interview notes. Look after the chart of duties – maybe comments there. Or, sometimes at the end when asked if there is anything that we missed. SCORING: SCORE OF 0 - (YES) REPORT OF DUTY OVERLOAD; SCORE OF 1 - NO REPORT OF DUTY OVERLOAD

6. Student/Counselor ratio <= 300:1? Yes = 1; No= 0
From Scoring Sheet: Requirement: student-to-guidance personnel ratio of 300 to 1. Does school meets ratio requirement? Left column

2. Are IGPs being implemented as planned?   Scale GD Interview notes III 3d. How does the IGP process work at your school? Who is involved and how are they developed? How are students informed of the IGP requirements? Same question for GP interviews. Requirements: 1. update student IGP yearly, 2. Meeting must be between counselor, student, parent/parent designee meet annually, 3. it must be done online
SCORE OF 3 - MEET ALL THREE REQUIREMENTS; SCORE OF 2 - MEET 2 REQUIREMENTS; SCORE OF 1 - MEET 1 REQUIREMENT; SCORE OF 0 - MEET NO REQUIREMENTS
A. Did the school develop eIGPs for the required grade levels for 2008-09? Yes = 2; In Process =1; No = 0
GD Interview Q III 3f. How far along is your school in implementing the electronic IGP system? I did not see the same question asked to GP. Requirement: 2008-2009 was the last year that they were supposed to be in process for 9th and 10th graders. Interviewed in Spring 2009.
B. Degree to which counselors are meeting w/ students on their IGPs?
    1. Interviews w/ principals/assistant principals/counselors. Interview notes questions: Are IGPs reviewed regularly? Who reviews them and how often are they reviewed? Same question across interview groups. SCORE OF 1:

REVIEW IGP ANNUALLY AND MEET WITH STUDENTS ABOUT IGPS; SCORE OF 0: DO NOT MEET WITH STUDENTS ANNUALLY TO REVIEW IGPS

2. GP Accountability Reports. CS/GP report - add the numbers all together for the student data for Q10-12 and for January & June to get the student data/9th and 10th grade enrollment

3. For LOI, add student survey data
   a. Q6 - % yes; Look at class of 2011 as 10th graders
   b. Q7c on student survey (% that said 3 or more times)

C. Degree to which counselors are meeting w/ parents/parent designee about students' IGPs?

1. Interviews w/ principals/ap/counselors . Interview Protocols: Are IGPs reviewed regularly? Who reviews them and how often are they reviewed? Same question across interview group. SCORE OF 1: REVIEW IGP ANNUALLY AND EFFORTS MADE TO ENCOURAGE PARENT PARTICIPATION (E.G., PARENT REGISTRATION); SCORE OF 0: DO NOT MENTION ENCOURAGING PARENT PARTICIPATION AND/OR REVIEW IGP ANNUALLY

2. GP Accountability Reports . Add together Q10 and 11 to get the % parent/parent designee (9th and 10th graders) / 9th and 10th grade student enrollment

3. For LOI, add student survey data
   a. Q7a on student survey (% that said 3 or more times)
   b. 7e on student survey (% that said 3 or more times) – refer to blackboard to get student survey results – Look at class of 2011 as 10th graders

3. Distribution of Information/Training/Career Planning guidance

   A. Information to students

   1. GP - # assisted w/ accessing info on careers and career clusters . Career Specialist/GP report 2008-2009 – Q6 - % 9th and 10th students

   2. GP- # completing at least 1 career assessment . Career Specialist/GP report 2008-2009 – Q8 - % 9th and 10th students

   3. Interview data on career assessments. Interview notes for GD using Q IV. 4g. Are career skills or interest assessments available to students? Do students take them? If so, how often? GP not asked same questions so just used GD interviews. CONTEXTUAL INFORMATION ONLY

   4. Student Survey Data. Q9a % yes (class 2011 – 10th graders)

   5. GP - # using computer-assisted career planning systems . Career Specialist/GP report 2008-2009 – Q9 - % 9th and 10th students

   6. Interview - Are they providing career planning information. Interview notes for GD using Q IV. 4f. What types of career planning information is available to students and parents? How is it made available to them? I did not see the same question asked to GP so just use GD interviews.   CONTEXTUAL QUESTION ONLY

   7. Career programming events at schools
      a. Look at student survey for issues related to these for LOI2- Q9d & e on student survey (class 2011, 10th graders) - % yes

          b. Look at student survey for issues related to these for LOI2- Q9f on student survey (class 2011, 10th graders) - % yes

B. Information to parents
1. % parents provided with info on career development activities. Career Specialist/GP report 2008-2009 – Q13 - # parents (Jan and Jun) /total school enrollment (NOT just 9th and 10th graders). So Q13/Q3.
2. Interview – Are they providing career planning information . Interview notes for GD using Q IV. 4f. What types of career planning information is available to students and parents? How is it made available to them? I did not see the same question asked to GP so just look at GD interviews. CONTEXTUAL QUESTION ONLY

C. Information for/training of teachers
1. GP - % workshops. Career Specialist/GP report 2008-2009 – Q5a Divided by total # of educators
2. GP - % educators. Career Specialist/GP report 2008-2009 –Q5b/total number of educators using report Cathy H. sent me
3. Teacher interviews. Teacher interviews Q III 2a. During the last school year (2007-08), how many career development and guidance workshops/professional development/inservice activities were given for teachers? What types of activities were offered?   WE ARE MISSING TEACHER DATA FROM TWO SCHOOLS. WE DECIDED TO USE THESE DATA FOR CONTEXTUAL INFORMATION.
4. Guidance (GP) interviews. For GP interviews, Q III 2d. How are each of these guidance personnel at your school involved in career development professional development activities/inservice for teachers and other staff? CONTEXTUAL INFORMATION ONLY

4. Guidance personnel providing access to experiential learning (ex: WBL, co-op, apprenticeships). Interview notes for GD using Q IV 4e. and GP using QIII2g - Are students given opportunities for extended learning/work-based learning experiences? What types of opportunities are available and who provides them? How do students learn about these? CONTEXTUAL INFORMATION ONLY

A. Identifying and coordinating work-based/extended learning opportunities for students GP SURVEY DATA IN EXCEL FILE

5. The number of educators, parents and students provided with information on CTE programs offered in the district. For parents and students, get percentage in relation to student enrollment and then put into 1 of three or four possible ranges (wait to do ranges after we have the percentages). For educators, compare to # staff, teachers, educators from school report cards.

A. GP - % educators provided info on CTE
Career Specialist/GP report 2008-2009 – # Q7/total number of educators using report that Cathy H. sent me
B. GP - % students provided info on CTE
Career Specialist/GP report 2008-2009 – # Q7/total 9th and 10th graders
C. GP - % parents provided info on CTE
Career Specialist/GP report 2008-2009 – # Q7/total school enrollment

Facet 4: *Implementation of evidence-based high school reform.*

High schools must organize their programs around the 10 key practices outlined in the High Schools That Work model or another similar model approved by the South Carolina Department of Education (SDE).

1. As mandated by EEDA, does the school have a specific whole-school reform model? (pulled from scoring sheets) . Yes = 1   No = 0
2. Did you select HSTW or a state-approved program like HSTW? (pulled from scoring sheets) Yes = 1   No = 0
3. When was the program implemented (before or with EEDA)? (EEDA deadline was 2007-2008 school year) (pulled from scoring sheets). Before deadline = 3; At EEDA deadline = 2; After deadline = 1
4. School staff's (Principal and AP) average rating of level of implementation of this facet? FOUND IN INTERVIEW NOTES - III. 3. E.
5. Research team's rating of level of implementation of this facet? Find it on summary sheets in interview notes. Question 2.a. Avg taken from team.
6. Indication that HSTW has changed or impacted the day-to-day activities at the school (e.g., it's assisting EEDA or POS implementation, it's why we are getting professional development, it helped us select clusters/majors, helped set up WBL initiatives). INDICATION THAT HSTW HAS AFFECTED OTHER THINGS. LOOK FOR KEY WORD OF HSTW. INTERVIEW NOTES - III, #
Don't know the Impact = 1; Impact is Minimal (just started recently, provided some professional development but unaware of whether it has affected students/school) = 2; Moderate Impact (had some professional development or some school-based exercises/learning; clusters have been developed through/because of HSTW; evidence that it has affected students/school) = 3; Considerable Impact ("fabric of the school"; considerable professional development, use in school is apparent; it's assisting EEDA or POS implementation, it's why we are getting professional development, it helped us select clusters/majors, helped set up WBL initiatives) = 4
7. Level of detail about HSTW according to teachers (as only group asked this question). WHAT IS HSTW ACCORDING TO THESE TEACHERS? INTERVIEW NOTES - V, #4D
Teachers have little to no details about HSTW = 1; Teachers had some training and have some general knowledge about HSTW but are not fully implemented/knowledgeable = 2; Teachers know a great deal about it and have been trained to implement it/implementing it = 3

Facet 5: *Facilitation of local business-education partnerships and resource dissemination.* Regional Education Centers (RECs) are being developed in 12 designated Local Workforce Investment Areas in accordance with the South Carolina Workforce Investment Act. They will serve as the focal point for each region's training and education resources, helping to facilitate business-education partnerships, coordinate workforce education programs, and promote community involvement. This facet also includes each school's efforts to disseminate information on CTE and efforts toward school/business partnerships.

1. Knowledge of REC and school involvement with REC (from GD and P interviews)? Level of involvement and coordination?
No information in interview notes/scoring sheet = 0; Didn't know anything about it = 1; Knew about it but had no involvement = 2; Knew about it and had involvement

with it = 3

2. Levels of awareness of EEDA and clusters at the school (teachers, admin, counselors, parents, students)? Average and Range (Look at top right column of top table for each school "Average EEDA and Career Cluster," then average across groups.)

3. Levels of awareness of EEDA and clusters at the district (district staff, district admin)? Average and Range (Look at top right column of top table for each school "Average EEDA and Career Cluster," then average across groups.)

4. Levels of awareness of EEDA and clusters among business partners? Average (Look at top right column of top table for each school "Average EEDA and Career Cluster.")

5. Levels of awareness of EEDA and clusters in the larger community? Average (Look at top right column of top table for each school "Average EEDA and Career Cluster.")

6. Variation in perceptions of awareness across the 5 different school groups that were interviewed (teachers, asst principals, principals, guidance director and guidance personnel) on each level of awareness? Combined standard deviation of awareness scores for each school. Cathy is sending this. Do not use in scoring.

7. Amount of information distribution on EEDA and career clusters and how often distributed? (Interview responses on coding sheet and the following GP report (2008-2009 report for baseline) questions:

   a. Career Specialist/GP report 2008-2009 – Q5a Divided by total # of educators

   b. Career Specialist/GP report 2008-2009 –Q5b/total number of educators using from report Cathy H. sent me

   c. GP report 6 (percent of students assisted in identifying and assessing career cluster info and materials) - 9th and 10th grade students

   d. Career Specialist/GP report 2008-2009 – # educators Q7/total number of educators using report that Cathy H. sent me

   e. Career Specialist/GP report 2008-2009 – # students Q7/total 9th and 10th graders

   f. Career Specialist/GP report 2008-2009 – # parents Q7/total school enrollment

   g. Career Specialist/GP report 2008-2009 – Q13 - # parents (Jan and Jun) /total school enrollment (NOT just 9th and 10th graders). So Q13/Q3.

   h. GP report 14 (#one-time career events/programs coordinated by career spec/ total student enrollment

   i. GP report 15 (# ongoing career events attended by students coordinated by career spec/ total student enrollment)

8. Comments about business partnerships – level of involvement, based on comments about awareness and elsewhere in interviews/focus groups. Look in level of awareness discussion in the interview notes.

   a. Look at student survey for issues related to these for LOI2- Q9d & e on student survey (class 2011, 10th graders) - % yes

   b. Look at student survey for issues related to these for LOI2- Q9f on student survey (class 2011, 10th graders) - % yes

   c. Student survey #12 (participation in WBL) - % yes internship

   d. Student survey #12 (participation in WBL) - % yes co-op

   e. Student survey #12 (participation in WBL) - % yes job shadowing

   f. Site Visit protocols notes (interview notes) - around the level awareness of

charts will find will find information on whether they have business partnerships and how good they are. 1 = provided some business partnerships; 0 = did not mention any business partnerships

Facet 6: *Articulation between K-12 and higher education or employment.*
Colleges must find ways to articulate with the K-12 career clusters and make sure dual enrollment credits are accepted and college curricula continue the career pathways. Articulation agreements, guidelines, and policies for dual enrollment coursework will be reviewed at the state level and recommendations made for providing seamless pathways for students from high school into postsecondary education.

1. Are there national or industry certification programs available to students at the high school level? (found on LW coded Facet 6 Excel file and/or interview notes)
2. Opportunities for students to get college credit through
   a. dual enrollment
   b. dual credit
   c. or other college credit earning program?
   (found on scoring sheet and/or interview notes)
3. Opportunities for students to get college credit through
   a. AP (or TAP)
   b. IB
   (found on scoring sheet and/or interview notes)
4. Articulation agreements in place for these courses? (see POS charts) .
   # Major/Programs w/ articulation agreements at school or career center divided by # Majors/Programs at school and career center
5. Plans of students to earn college credit while in high school (Student Survey #13) Class of 2011 10th grade. % 4+ courses
6. Expectations of students to go into higher ed or be industry certified? (SS Q# 17) Class of 2011 10th grade. Q17 - Sum of % Attend college but not complete a degree; %Complete a certificate or associate's degree; % Complete a bachelor's degree; % Complete a master's degree; %Complete a doctoral degree

Appendix L: Study-Defined Perkins IV POS (POS4) Development and Identification

Table L1.

Example of 2008-2009 Clusters and Majors/Programs of Study/Completer Programs Checklist

Checklist Example School Clusters & Majors/Programs of Study/Completer Programs 2008-2009	Alignment with 2- and 4- year postsecondary education programs								Alignment with industry standards						Alignment with postsecondary apprenticeships, internships, training					Credential												
	Major-specific curriculum is linked between secondary & postsecondary levels			Has a major-specific written articulation agreement spelling out alignment			Institution agreement is with (Please list the institution(s))	Specific partner/ contact person that worked with on alignment	Major-specific required courses aligned with industry standards			Program completion prepares student to pass industry exam			Has written articulation agreement spelling out alignment			Business/ organization agreement is with	Specific partner/ contact person that worked with on alignment	Results in industry-recognized or sponsored credential -- at secondary level			Results in industry-recognized or sponsored credential -- at postsecondary level			Results in 2-year degree			Results in 4-year degree		
	Yes	No	N/A	Yes	No	N/A	Institution(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Organization(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
Agriculture, Food & Natural Resources																															
Horticulture																															
Architecture & Construction																															
Building Construction																															
Electricity																															
Arts, AV Technology, & Communication																															
English																															
Commercial Graphics																															
Performing Arts																															
Business, Mgmt & Admin																															

Checklist Example / School Clusters & Majors/Programs of Study/Completer Programs / 2008-2009	Alignment with 2- and 4- year postsecondary education programs				Alignment with industry standards						Alignment with postsecondary apprenticeships, internships, training					Credential												
	Major-specific curriculum is linked between secondary & postsecondary levels			Has a major-specific written articulation agreement spelling out alignment			Institution agreement is with (Please list the institution(s))	Specific partner/ contact person that worked with on alignment	Major-specific required courses aligned with industry standards			Program completion prepares student to pass industry exam			Has written articulation agreement spelling out alignment			Business/ organization agreement is with	Specific partner/ contact person that worked with on alignment	Results in industry-recognized or sponsored credential -- at secondary level			Results in industry-recognized or sponsored credential -- at postsecondary level			Results in 2-year degree			Results in 4-year degree		
	Yes	No	N/A	Yes	No	N/A	Institution(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Organization(s)	Contact(s)	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
Administration & Info Support																															
Financial Management & Accounting																															
Education & Training																															
Teaching & Training																															
Foreign Languages																															
Government & Public Administration																															
Social Studies																															
Health Science																															
Health Technology																															
Sports Medicine																															

**Steps and Measures Used to Determine
Study-Defined Perkins IV POS (POS4)**

First step: Determine which of the majors/programs at each school are <u>eligible</u> to be CTE POS, based on whether they are eligible for CATE/Perkins funding by the South Carolina State Department of Education (SDE):

Conditions necessary for major/program to be considered to be eligible to be a CTE POS – must meet at least one of these:

Options	Yes/No
1. The SDE CATE office reported "Yes" that this major or program was eligible for state funding on a chart provided to the CATE office by Personal Pathways staff of majors/programs available at the 8 sample schools, **OR**	
2. The reported school major CIP Code (from e-IGPs) matches a CATE program CIP Code, even though what the school and CATE call the major/program may differ. The major/program name to be used in study reports will be the one used by CATE, **OR**	
3. The program is listed in the career center's registration guide, in the career section of the school's registration guide, or is an e-IGP major with enrollment and has a name the same as or very similar to one in the SDE CATE office state approved program list for the designated school year but not same CIP Code, **OR**	
4. Is included in the 2008-2009 or 2010-2011 SDE CATE report for this school as a funded CATE program with concentrators **OR**	
5. Was reported in the SDE CATE report (2008-2009 or 2010-2011) as this school's district's one required "official" POS for Perkins IV funding purposes	
AND Additional Requirement:	
6. The major/program may not necessarily be listed in the school's registration guide for the designated year but it <u>will</u> be identified in the career center guide, in the course listings as a major or program, or as a header/course grouping/program area of a narrow subject area outlined in the CTE section with more than one course listed under the header/area. [Coded only for those that had a "YES" in one of the option columns]	
Meets at Least One Option (1-5) and Item #6?	

Notes:
- Item #6 was added to make sure that the school or career center was treating the major/concentrator program as a program of study/career pathway and was promoting/advertising it as available through school materials. Since EEDA is supposed to be having a school-wide impact on POS, we felt that it was important that the entire school was aware of and treating this as a major/program and not just information limited to CTE staff or students.

- In the case of a CATE major CIP Code matching more than one school e-IGP CIP Code (like business majors for SB2.8), any of these e-IGP majors that have an IGP (or there is an IGP for a major very similar in name to that reported through the e-IGP) or are identified as programs with specific courses in the school catalog will be considered together as one CATE major and eligible to be considered to be one POS, using the CATE major name and cluster.
- A school major will be considered a potential CATE POS even if the matching CIP Codes are in different clusters. The cluster designation used by CATE is the one that will be used for study reporting.
- There may not be any students reported by the school to the SDE or reported by CATE as enrolled in this major/program for the designated school year.

Coding:
Major/program meets at least one condition from items 1-5 and meets item #6 and is therefore eligible to be further reviewed as a potential POS.

Major/program DOES NOT meet at least one of the above items 1-5 and/or DOES NOT meet condition for item #6 and is therefore NOT eligible for further consideration.

FOR ALL POS ELIGIBLE PROGRAMS

Second Step: Do these programs meet criteria for 4 elements?

> **Look at each of the identified eligible/potential POS and use the *following criteria, based on their responses to the chart we sent out* and the additional information gleaned from our site visit interviews.**

 Note: The language used below on the four elements came from the *Career and Technical Programs of Study: A Design Framework* document that outlines the core elements of a POS and the 10 additional components.

Element 1: Incorporate and align secondary and postsecondary education elements

1.1 The school or career center reported that there is an active, major/program-specific written articulation agreement with a 2- or 4-year postsecondary institution for one or more courses in the program. OR

1.2 At least one postsecondary course for dual credit or dual enrollment, or other training or apprenticeship is offered specifically for this program/major that was included on the chart filled out by schools or described during our POS site visit. This could be a TAP course with no automatic college credit. This would NOT include core curriculum courses required for all students for

graduation, such as math or English, unless they are specified as one of the "required courses" for a specific major/program on the major/program's IGP template.

School Major/Program	Option 1.1	Option 1.2	Meets 1 option

Responses will be coded "Yes" or "No."

Element 2: Include academic and CTE content in a coordinated, non-duplicative progression of courses

A. Coordinated progression of courses

A.1 The major/program and the progressive sequence of 4 CATE courses outlined in the CATE annual report for the district-claimed CTE POS used for Perkins funding purposes are offered at that school during the designated school year. If the courses listed in the IGP template for the major in the school's registration materials don't match the list of courses in the district's list, then the school doesn't meet this element. OR

A.2 The IGP template in the school catalog outlines a distinct sequence of at least 4 courses to complete that major and courses are offered at that school, career center or at another school in the district. OR

A.3 There is a distinct sequence of at least four courses listed in the course listings in the school's catalog under this major/program.

RULE: (1) Must offer at least 4 courses in the major/program; and (2) must have some type of logical sequence of courses – such as offering an introductory course and then higher level courses

School Major/Program	Option A.1	Option A.2	Option A.3	Meets 1 option

Responses for A will be coded "Yes" or "No."

B. Measure of academic rigor

B.1 School does not offer any level of courses below college prep. All academic core courses are automatically considered to be college prep courses and meet state standards unless alternative core courses are still offered in the catalog such as "applied" or "tech prep" courses (with the exception of core courses for some Spec Ed student groups) OR

B.2 School may still offer "Tech Prep" math and English or "applied" courses, but these are NOT included in the IGP template for this major as a core or required course.
- SD11.19 offers Applied Biology and Physics for the Technologies, Math for the Technologies. But these are not mentioned in the IGP template for any of the CATE majors (or any other majors).

- SB19.22 has three tracks (illustrated on a chart about science courses) and these are included in the IGP major templates but all IGP major templates include the same list of courses that have lower to higher level courses listed but different required courses for majors. So, for example, the school reported an articulation agreement for their Therapeutic and Diagnostic Medical Services major, and the CIP Code of the major matches a CATE code, but the catalog includes low level and higher level courses in the IGP template for this major.

B.3 Regardless of what is in catalog, during site visit, staff consistently mentioned that they did away with Tech Prep and that ALL students, regardless of major, are taking at least college prep core courses and there are no longer Tech Prep courses available.

RULE: If the "applied" or "Tech Prep" course(s) is not included on the IGP template for that major/program, whether as core courses or courses required for the major, even if available at the school, we will still assume that all courses for this major/program are "college prep." If the IGP template includes these, whether as core or required for major, then this program/major does not meet the requirements for this measure.

School Major/Program	Option B.1	Option B.2	Option B.3	Meets 1 option

Responses for B will be coded "Yes" or "No."

C. Measure of technical rigor/meets industry standards

C.1 Staff reported on chart or during site visit interviews that "Major specific required courses aligned with industry standards" for this major/program. In addition, may state in catalog that course(s) prepare students for professional certification (or apprenticeship) in some skill area.
.

School Major/Program	Option C.1	Meets Option C.1

Responses for C will be coded "Yes" or "No."

Total Score for Element 2: Must receive "Yes" on A, B, and C to receive a "Yes" for Element 2

School Major/Program	Element 2 Aspects			Meets All 3?
	A: Progressive course sequence	B: Academic rigor	C: Technical rigor/meets industry standards	

Element 3: May include dual or concurrent enrollment programs or other ways to acquire postsecondary education credits

3.1   There must be at least one option for receiving college credit specified for this major/program, whether TAP, dual enrollment, or dual credit, based on a mention in the registration guide or mention in the Fall 09 interview with school personnel OR

3.2   We would count any applicable AP courses if they are listed under the "required courses" on the IGP template for this major/program (e.g., for SC2.8 – one major requires AP Biology and AP Chemistry)

School Major/Program	Option 3.1	Option 3.2	Meets 1 option

RULE: If there are courses available to all students at the school that offer just general college credit, but are not specified on the IGP template in the "required courses" section for a specific major/program, such as college-level psychology, math or English, they do not meet this requirement.

Responses will be coded "Yes" or "No."

Element 4: Leads to credential after postsecondary training/education and/or leads to a 2- or 4-year degree

4.1   Checked on chart that major/program can lead to postsecondary degree or postsecondary certificate in this subject area OR

4.2   School contacts told us during the interview in fall 2009 that this major/program could lead to a postsecondary certificate or degree

School Major/Program	Option 4.1	Option 4.2	Meets 1 option

Responses will be coded "Yes" or "No."

Overall Perkins IV POS score (see scoring sheet, Table L2):

Element 1: Incorporate and align secondary and postsecondary education elements

Yes (1) or No (0)

Element 2: Include academic and CTE content in a coordinated, non-duplicative progression of courses

   A. Coordinated progression of courses
   Yes (1) or No (0)

B. Measure of academic rigor
Yes (1) or No (0)

C. Measure of technical rigor/meets industry standards
Yes (1) or No (0)

Must meet all three to receive Yes (1) for this element

Element 3: Includes dual or concurrent enrollment programs or other ways to acquire postsecondary education credits

Yes (1) or No (0)

Element 4: Leads to credential after postsecondary training/education and/or leads to a 2- or 4-year degree

Yes (1) or No (0)

Fully developed Perkins IV POS (POS4), based on this definition: major/programs scores all 4 points ("yes")

Table L2

Number of Eligible CTE Majors/Programs that Meet Requirements for 4 Core Perkins IV POS Elements (POS4) in 2008-2009

SCHOOL 2008-2009 CTE Clusters & Majors/Programs of Study/Completer Programs	Element 1 Incorporate and align sec and postsec	Element 2 Include academic and CTE content in coordinated, non-duplicative progression of courses elements				Element 3 Include dual credit or concurrent enrollment or other options to receive college credit	Element 4 Leads to credential after postsec training/education or leads to 2- or 4-year degree				TOTAL # Elements Met
	Has an active/current major-specific written articulation agreement spelling out alignment OR Offers at least one dual credit/enroll or TAP course in major	Coordinated progression of courses: at least 4 course sequence to complete major	All core and major-required courses are "college prep"	Major-specific required courses aligned with industry standards	Met all 3?	At least one dual credit/enroll or TAP course offered in major OR AP courses if listed under required courses for major	Results in industry-recognized or sponsored credential -- at post-secondary level	Results in 2-year degree	Results in 4-year degree	Met at least one?	
TOTAL											

Total number of POS:

Steps and Measures Used to Determine District Identified Perkins IV POS (POS5)

First step: Determine from the state CATE report for the applicable school year (2008-2009 and 2010-2011?) which major/program in the district was selected to be the CATE POS for Perkins IV funding purposes.

1. Is listed as the district CATE POS for Perkins IV funding purposes: Yes or No

Second step: Determine if the district reported CATE POS is available to students at the sample school during the designated school year, based on available materials we received from schools and career centers.

2. Review the school or career center's catalog/registration materials for the designated school year to discern whether the district-identified CATE major/program:

   (a) Is listed in the catalog/registration materials of the school or career center as a major/program (as a major with an IGP template or CTE program, or as a header/course grouping/program area with more than one course listed under the header/area)

AND

   (b) The four core courses outlined in the district's report for that POS are listed as required for that major/program at that school in the IGP template, in the career center catalog/registration materials or in the catalog course listings. The district courses need to be listed as either the only four courses specifically required for the major/program or if the district courses are listed in a list with one or more additional courses, then the district courses needed to be clearly listed as the primary courses or the first in a sequence of courses.

AND

3. Review the course listings for that school and determine if all 4 courses listed for the district POS are available/offered (according to the course catalog at the school or career center) to students at the sample school, at their career center, and/or through another high school during the designated school year. Courses with very similar but not the exact same names as those outlined by the district were considered to be a match to the district.

District identified School Major/Program	1(a) listed in materials	1(b) required courses listed in school materials	2 courses offered	Meets 1(a), 1(b), and 2

Responses will be coded "Yes" or "No." Both (a) and (b) must be coded as "Yes."

Responses will be coded "Yes" if all 4 courses are available or "No" if less than 4 of the courses are available during that school year.

If 1, 2(a), 2(b), and 3 above are all coded "Yes," then this major/program will be considered a POS by this definition at that school.