LESSONS LEARNED

from
HIGHLY
IMPLEMENTED
PROGRAMS OF STUDY

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American businesses and industries have long identified shortages in key career and technical areas—some of these areas require two- or four-year college degrees, whereas others simply require industry certifications. Career and technical education (CTE) has the potential to play a central role in filling these gaps.

The current Carl D. Perkins Act (Perkins IV), reauthorized in 2006, seeks to prepare individuals for both college and careers. Programs of Study (POS) are a central component of Perkins IV. Developed to provide a systematic means of connecting secondary and postsecondary programs, POS connect secondary and postsecondary institutions, include rigorous academic content aligned with standards, lead to industry-recognized credentials, and provide options for dual credit or concurrent enrollment.

In order to evaluate the impact of POS, the National Research Center for Career and Technical Education (NRCCTE) commissioned three longitudinal, field-based studies that focus on efforts being made to implement POS across the country. In 2009-2010, the NRCCTE conducted a cross-site evaluation of these three studies. This evaluation gave us the opportunity to explore lessons learned regarding POS across three schools that were identified as having a high level of POS implementation. Our goal was to compare common elements across the schools in order to uncover key components that could be shared with others actively involved in developing more effective POS.

During the study, we conducted more than 40 interviews with a variety of school personnel, including CTE and academic teachers, school counselors, CTE and high school administrators, and state directors of CTE. We also conducted interviews with business and community representatives in order to understand the relationships between the schools and local industry. Interview data were evaluated using a computer-based qualitative program that generated six predominant themes that describe what highly implemented POS look like.

Six Central Findings of Highly Implemented POS

- **Engagement:** At each site, school personnel talked about the power of POS to engage students in learning, primarily by connecting academics to meaningful learning experiences through engagement in work-based and project-based learning. POS were described as helping students "learn by doing" by getting them involved in activities and environments that allowed them to engage in applicable skills.

- **A system developed to support learning:** POS were established to ensure that learning—both academic and skill-based—was the primary activity of students. Learning was supported with appropriate systems. For example, block schedules were implemented to allow students sufficient time to learn content in greater depth; academic and CTE teachers were provided with planning time to engage collaboratively in lesson and project planning.

- **Certification of knowledge and skills:** As mandated by Perkins, CTE components were supposed to result in some kind of industry-recognized certification. Students were also asked to demonstrate competence in academic subjects by applying academic knowledge in CTE contexts.

- **Seamless education:** The impor-

tance of developing a seamless educational system connecting primary and secondary education to college was articulated across the sites. POS at these sites actively linked high schools with community colleges, ensuring that students engaged in a series of courses and activities that taught them about careers and the application of academics in real-world contexts.

- **Increased understanding and respect of CTE:** Although CTE was traditionally seen as a "dumping ground" for less able students, POS appeared to be changing that perception at our sites. Students of all abilities were increasingly attracted to CTE, especially when several dual credit-earning options provided parity with highly regarded academic programs like Advanced Placement courses.

- **High-quality teachers made a difference in the delivery of POS:**

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Attracting and retaining high-quality teachers was considered essential to making POS work. Many interviewees emphasized the value and timing of instructional systems embedded in CTE programs that require teachers to possess higher levels of instruction, knowledge and reflection. High-quality teachers were described as knowledgeable about their subject areas and able to integrate academic and CTE instruction, establish trusting relationships, and deliver instruction through project-based instructional strategies.

POS Design Framework

We further evaluated our study data in an effort to determine how the sites had incorporated the Career and Technical Programs of Study Design Framework, which was developed by the U.S. Department of Education's Office of Vocational and Adult Education (OVAE). The Framework consists of 10 elements deemed essential for good POS practice.

Legislation and policies: Each of the sites had been implementing something resembling POS for several years, but it was clear that legislation and policies made the development and implementation of POS more feasible—creating a sense that programs had to move from existing "on paper" to functioning in reality. One good example of the effects of legislation and policy is South Carolina's Personal Pathways to Success program, which funds school counselors and career specialists, engages youth, families and counselors in identifying a career pathway, and focuses students on planning their futures with career outcomes in mind.

Partnerships and collaboration: Partnerships took a variety of forms, with each site developing an array of partnerships between secondary and postsecondary, business and education, teachers and community members, and students and teachers. One of the more valuable partnerships consisted of advisory committees composed of business and industry personnel. Members of these councils met regularly with secondary and postsecondary faculty to design courses and curricula, identify certifications and approaches to employment, and provide up-to-date information on local employment needs.

Professional development: All three sites engaged in professional development efforts. In some sites, this occurred more informally; in others, the process was well supported by the school district and community college system. Most professional development efforts focused on pedagogical training, and the integration of academic knowledge and skills with applied learning.

Accountability and evaluation systems: Accountability and evaluation systems were in place at each site to track students' progress and their level of participation in CTE. However, each site reported some level of difficulty in collecting reliable information on students and tracking them as they transitioned from high school to postsecondary education programs.

College- and career-readiness standards: All sites viewed college- and career-readiness standards as including both academic and career-related knowledge and skills that would allow each student to graduate with a career plan that connects to higher education and employment. In one site's state, all students complete a graduation plan that includes post-high school activities. In another state, sites encouraged students to complete dual enrollment courses and graduate with college credits.

Course sequences: Course sequencing was a functional component of POS at all three sites, but took different forms. At one, students planned their high school curriculum by taking a sequence of courses that prepared them for a particular career. POS course sequences often spelled out the names, numbers and types of courses required for particular career objectives. At another, many courses were co-taught on the community college campus. Courses with dual credit status had been aligned in a logical, non-duplicative sequence from secondary to postsecondary. At the third site, all systems collaborated to align courses to ensure continuous movement through a sequence of skills that led to the next level of education and career competence.

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Credit transfer agreements: Credit transfer agreements existed at all three sites. The most common form was a list of courses that qualified for dual credit at both the secondary and postsecondary levels. Collaborations between schools and local community colleges provided specific courses with credit transfer or dual credit options.

Guidance counseling and academic advisement: Guidance counseling and academic advisement played an important role in all three sites. First, early exposure to CTE and career options was identified as necessary in helping students to begin thinking about careers. Second, academic and career planning were identified as important to students' long-term success. Third, CTE teachers not only provided valuable information to students and school personnel about the skills and training needed, but they also provided "real life" insights about the inner workings of their field. Community college personnel also provided career guidance and program information to high school students as a means of encouraging them to take dual credit courses and recruiting them to enroll at the college.

Teaching and learning strategies: Each site mentioned exemplary programs like Project Lead the Way and High Schools That Work as models for their most important teaching strategy, project-based learning. Teachers and administrators believed that involving students in projects, especially those that connected to real-world activities, helped motivate students to learn and provided a platform to ensure that learning was achieved and applied.

Technical skill assessments (TSAs): All sites provided examples of TSAs used to measure student achievement. The most prevalent were those created by NOCTI (the National Occupational Competency Testing Institute). We also saw the use of occupationally specific skills or knowledge. Each of the sites also used TSAs carried out by career and technical student organizations like Future Farmers of America (FFA) and Health Occupations Students of America (HOSA).

Lessons Learned

Our numerous interviews with those engaged in highly implemented POS revealed that collaboration and effective communication played pivotal roles. Collaborations with institutions like community colleges and career centers provided many of the supports needed to develop comprehensive POS, and support the alignment of educational initiatives with the needs and standards of business and industry. Further, collaboration between academic and CTE instructors provided the relevance students needed to make learning both interesting and useful. Developing relationships with businesses and industries provided both the support and expertise needed to develop relevant programs and work-based learning opportunities for students.

Time will tell if POS continue to transform and expand opportunities for students to gain the academic and technical knowledge and skills needed to become college- and career-ready. **T**

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