Expanding Opportunities

POSTSECONDARY CAREER AND TECHNICAL EDUCATION AND PREPARING TOMORROW'S WORKFORCE

A Position Paper   March 2007

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EXECUTIVE SUMMARY

OUR NATION IS FACING A deficit of skilled workers[1] and the need to get additional people in and through postsecondary education and training has never been more necessary. Obtaining advanced skills—which include workplace skills, academic knowledge and continuous lifelong learning—has become vital to career success. Meanwhile, pressures from increased global competition and retiring baby boomers signal a growing shortage of skilled workers necessary to sustain our economy.

With nearly a third of all students in for-credit postsecondary education enrolled in career and technical education (CTE) programs,[2] CTE is a valuable partner in moving reform efforts forward at the postsecondary level by providing leadership in pedagogy as well as systems-building and economic development. This enables CTE to play the role of leader and convener, engaging partners across multiple sectors in the work to improve postsecondary education. Career and technical educators are not only teaching the skills necessary for the workplace, but they are also providing the skills and the human capital students need to move to the next step in the educational system.

The Association for Career and Technical Education (ACTE) developed this paper to offer broad recommendations for improving postsecondary success through the experiences and resources of CTE. Systemic improvements to guarantee the availability of information, opportunities and access are imperative if we are to increase the number of people earning postsecondary credentials, which will ultimately ensure a highly skilled and well-trained workforce that is able to meet the needs of American business and industry. *We must create a system that enables people to access and complete postsecondary education and training throughout their lives that will enable them to secure high-skill, high-wage or high-demand jobs in current or emerging career fields.*

RECOMMENDATION 1
Establish Postsecondary Preparation and Expectations for All

Postsecondary coursework must be made more rigorous and relevant. We must ensure that all students exiting high school receive some level of postsecondary education and training, and that adults receive additional education and training to ensure continued career advancement and success. Federal and state governments must consider policies and provide investments that result in universal opportunity for all students through grade 14. Such investment is especially necessary in community and technical colleges where enrollment growth is very high, but the economic payoff is significant. Ongoing broad-based public outreach strategies targeted to both traditional and adult learners are required to increase enrollment and completion. Explicit efforts must also be made to raise lifelong learning expectations among adults, and to connect adult learners with employers who are eager to hire skilled workers.

RECOMMENDATION 2
Develop Education Systems that Integrate All Levels

Seamless P–16 education systems that align all education and training sectors are needed to foster postsecondary success. All states should enact policies that promote the integration and alignment of secondary and postsecondary education, workforce development, economic development, welfare, and adult education programs into a more coherent system focused on educational advancement, wage progression and a higher standard of living for all, including diverse populations. CTE has built a strong foundation for integration with the development of programs such as career clusters, which provide a broad framework to seamlessly organize all education and training to be more clearly oriented to the world of work. A critical step in alignment is integrated data systems that not only track educational progress and transitions, but link to labor market out-

comes. Such data systems help agencies ensure student and employer needs are being met.

RECOMMENDATION 3
Develop Curriculum and Instructional Offerings that Link to Careers, Foster Lifelong Learning, and Encourage Completion

Concrete linkages must be developed between middle and high school, postsecondary education, and work. Lifelong postsecondary learning must be a part of this cycle. CTE and its applied learning and academic and technical integration can serve as the connection point between and across these sectors. For traditional-age students, opportunities to blend secondary and postsecondary teaching and learning—both academic and CTE courses—will enable more students to move directly from high school to postsecondary education and training. For adults, it is vital to recognize that many learners need to complete postsecondary coursework quickly to obtain skills for the workplace. Intensive short-term credentials with employer-recognized value can lead to better employment, and flexible delivery of coursework. Postsecondary CTE has traditionally collaborated with employers to develop programs, but ensuring more students obtain credentials with labor market value requires deeper partnership, regular communication, and open feedback loops throughout the postsecondary system.

RECOMMENDATION 4
Ensure Portability and Transferability of Credits and Skills Attained

Students' progress toward and completion of postsecondary credentials would be improved with clear, consistent policies that ensure full transfer and articulation of postsecondary learning. Learners could then move from one institution to another without disrupting their progress, ensuring higher levels of credential attainment. Strategies include common course-numbering systems, articulation and transcripted credit for postsecondary CTE certificate programs that are currently non-credit-bearing. Beyond credit transfer agreements, postsecondary education,

including CTE, would benefit tremendously if states adopted systems to assess, measure and document the educational progress of learners in ways that are clear and meaningful to students as well as to their employers. Transferability of credits and skills attained through postsecondary education calls for re-examination of the ways that learning at the postsecondary level is measured and transcripted. Measuring competencies rather than seat time, or offering postsecondary credit for prior work experience, would enable documentation for what students can do and the skills they have attained.

RECOMMENDATION 5
Enhance Student Advising and Academic and Life-Supports

The availability of effective student supports can play a critical role in enrollment, persistence and completion of postsecondary credentials. States and postsecondary institutions must implement inventive solutions to provide students with academic, career and financial aid guidance, as well as explore opportunities to enhance funding for student services. Without knowledge of career options and clear paths to help them get from one place to another, many students fall out of the system and forego the education necessary to get them to the next level. Strategies include integrated student support centers and "learning communities." In addition, in order to truly support students and attend to the diverse challenges they face, it is necessary to involve the entire institution, and to make student support one of the institution's highest priorities, with funding and incentives to ensure student success.

RECOMMENDATION 6
Increase Financial Support for Low-Income Students

Cost barriers and the absence of strategies to increase financial aid will likely result in decreasing opportunities for all students to access postsecondary education, including CTE. As the price of postsecondary education has escalated, the purchasing power of federal and state need-based financial aid to low-income students has decreased. Need-based grants at the state and federal level

(such as federal Pell grants) must be increased to help low-income students enjoy the opportunities that education can provide. Financial aid policies should be expanded and revised to provide more support for part-time and working students, including those taking short-term basic skills and workforce development programs that do not grant credit, in order to help move these students through the education continuum.

RECOMMENDATION 7
Pilot Innovative Approaches to Funding

Public postsecondary providers are expected to fulfill a number of educational missions linked to separate funding streams, such as academic coursework, workforce education and training, distance education, and research. States must engage in thoughtful consideration of how postsecondary finance policy can be improved to increase the number of people earning credentials. More states should include noncredit courses in full-time equivalent (FTE) reimbursement and integrate categorical funding to enhance institutional ability to effectively deliver career-related credentials and meet diverse educational missions. States can encourage all postsecondary institutions to be more focused on student success by providing incentive funding based on course completion, not enrollment at the beginning of the semester. In addition to funding completion, states can create performance expectations and funding incentives for progression of students along the P–16 continuum.

Conclusion

There is a growing national interest in thinking about education as a system that flows from preschool through the completion of a higher education credential. Finding solutions that help more students—adult and youth alike—succeed in such an education system is crucial. It is important to recognize that CTE plays an important role in systems thinking and can lead the way in building smooth transitions for students. CTE, at both the secondary and postsecondary levels, is all about creating success for the next step in a student's life (either in the workplace or through additional education and training), and must play a critical role in expanding postsecondary opportunities for youth and adults.

INTRODUCTION

OUR NATION IS FACING A deficit of skilled workers[1] and the need to get additional people in and through postsecondary education and training has never been more necessary. Obtaining advanced skills—which include workplace skills, academic knowledge and continuous lifelong learning—has become vital to career success. Meanwhile, pressures from increased global competition and retiring baby boomers signal a growing shortage of skilled workers necessary to sustain our economy. Despite trends that increase the demand for a more educated citizenry, we are falling short. Education and training is provided by a series of disconnected parts with little incentive to work collaboratively; the result is too few people successfully completing postsecondary education.

With nearly a third of all students in for-credit postsecondary education enrolled in career and technical education (CTE) programs,[2] CTE is a valuable partner in moving reform efforts forward at the postsecondary level by providing leadership in pedagogy as well as systems-building and economic development. This enables CTE to play the role of leader and convener, engaging partners across multiple sectors in the work to improve postsecondary education. Career and technical educators are not only teaching the skills necessary for the workplace, but they are also providing the skills and the human capital students need to move to the next step in the educational system.

The Association for Career and Technical Education (ACTE) developed this paper to offer broad recommendations for improving postsecondary success through the experiences and resources of CTE. Systemic improvements to guarantee the availability of information, opportunities and access are imperative if we are to increase the number of people earning postsecondary credentials, which will ultimately ensure a highly skilled and well-trained workforce that is able to meet the needs of American business and industry. In order to increase successful transitions across the education continuum and world of work, every student, youth and adult, must understand how their learning connects with a career path and the possibilities for additional postsecondary education and training. *We must create a system that enables people to access and complete postsecondary education and training throughout their lives that will enable them to secure high-skill, high-wage or high-demand jobs in current or emerging career fields.*

PART ONE: CONTEXT AND CRISIS

What is Postsecondary Career and Technical Education?

A Test of Leadership, the report from the U.S. Department of Education's Commission on the Future of Higher Education, recognizes the current reality, "We acknowledge that not everyone needs to go to college. But everyone needs a postsecondary education."[3] Postsecondary education comes in many forms, and what has traditionally been described as CTE is on the front lines of preparing a skilled workforce at the postsecondary level.

The reality is that postsecondary CTE is an intricate enterprise that does not fit neatly into a simple description. Ideally, it is seamlessly integrated coursework and credentials after high school oriented to workplace success. Yet it is delivered by a wide range of providers offering an array of credentials and coursework for a diverse group of learners. A little more than 85 percent of all postsecondary institutions report offering CTE. This includes nearly 75 percent of all four-year institutions and almost 93 percent of two-year institutions.[4]

Types of publicly supported institutions that offer postsecondary CTE vary by state. They can include community colleges, technical colleges, universities, adult career centers, and adult education centers. The private sector also provides a significant amount of postsecondary education and training through business, industry associations, unions, and proprietary schools. Both public and private institutions offer a wide range of postsecondary training opportunities, including credit and noncredit courses offered in programs of varying length. Opportunities include associate degree programs (terminal or transfer), bachelor's degree programs, institutional certificate programs, industry skill certifications, and noncredit course work.

Students served by postsecondary CTE come with exceptionally diverse backgrounds, experiences and needs. One-third of college students are involved in what can be described as career and technical programs, and as many as 40 million adults engage in short-term postsecondary occupational training.[5] According to the U.S. Depart-ment of Education's National Assessment of Vocational Education in 2004:

- Among sub-baccalaureate students, twice as many (50.8 percent) choose a CTE major as an academic major (25.4 percent).[6]

- More than half (54.9 percent) of students who declare a CTE major are age 24 and older, with students age 30 and older making up 34.2 percent of all CTE students.[7]

- A little more than 30 percent of those enrolled in a sub-baccalaureate CTE credential program have already earned a postsecondary degree or credential.[8]

- A greater proportion of dependent students pursuing CTE programs (21.2 percent) live in low-income households earning less than $20,000 a year, than those pursuing academic programs (15.8 percent).[9]

The complex mix of students served by postsecondary CTE poses a challenge for systemic improvement—they are young and old; well-educated and poorly prepared; and tend to have greater financial need. This broad student base, coupled with the diversity of educational providers, results in the need to develop frameworks for systemic improvement throughout postsecondary education rather than developing a series of new programs.

Growing Skill Deficit

Employment projections paint a stark picture. While there is job growth in the low-skilled service sectors, many of the newest jobs are in occupations that have postsecondary skill requirements. The Bureau of Labor Statistics estimates that of projected openings in 2014, "24 of the 30 fastest growing occupations are among those for which the most significant source of postsecondary education and training is a CTE award or an academic degree."[10] While some skilled jobs are shifting overseas, projections show a growth in a variety of occupations and there is a clear need for more skilled workers here in the United States. However, these jobs do not all require a bachelor's degree. Nearly one-third of the fastest

growing occupations will require an associate degree or a postsecondary CTE certificate.[11]

Yet, for every 100 students that start ninth grade, only 68 will graduate from high school, 39 will enter postsecondary education and training, 26 will still be enrolled in college for their sophomore year and only 18 will graduate from college within six years.[12] Similar numbers hold true for adults; only approximately 28 percent of people who earn a GED progress to postsecondary education.[13] Our nation faces a growing shortage of skilled workers if we do not get more students enrolled in—and successfully completing—postsecondary education.

We cannot rely on an increase in traditional-age students pursuing postsecondary education alone to fill this gap in skilled workers. We must also reach out to increasing numbers of nontraditional students returning to postsecondary education for credentials. This speaks directly to the importance of developing a culture of lifelong learning and the importance of multiple levels of learning within the education system.

PART TWO: RECOMMENDATIONS FOR THE FUTURE

The impending deficit of well-trained workers calls for policymakers and educators to develop systemic educational responses to ensure people are getting the skills needed to be successful in the workplace and that we are training the workforce we need for our future. It is critical that all of the different sectors of education begin functioning as *systems* of lifelong learning in order to increase the number of people who continually earn postsecondary credentials for workplace success and stay up-to-date in their knowledge and skills.

Increasing successful transitions between postsecondary education and the workplace also requires education to forge deeper connections with and understanding of those that they serve. Educational institutions must be responsive to the needs of serving students and employers. Since one of the primary goals of education is preparing people for the workforce, more significant shifts must be made by postsecondary education to meet the needs of students and employers.

There is no single, simple solution to these challenges. Developing comprehensive systems that increase participation and completion of workforce education and training requires a multifaceted and concerted effort at both the policy and practice level to drive increased attainment. What follows is a set of interconnected recommendations promoting an integrated system of education that enables people to access and complete postsecondary education and training throughout their lives and to secure high-skill, high-wage or high-demand jobs in current or emerging career fields.

1. **Establish postsecondary preparation and expectations for all.**

2. **Develop education systems that integrate all levels.**

3. **Develop curriculum and instructional offerings that link to careers, foster lifelong learning, and encourage completion.**

4. **Ensure portability and transferability of credits and skills attained.**

5. **Enhance student advising and academic and life supports.**

6. **Increase financial support for low-income students.**

7. **Pilot innovative funding solutions.**

RECOMMENDATION 1
Establish Postsecondary Preparation and Expectations for All

Efforts to increase postsecondary attainment in the United States call for immediate action; otherwise, we will be looking at marginal increases that will not allow us to keep up with the rest of the world. We must shift our thinking and expect that all students exiting high school will need some level of postsecondary education and training, and that many adults will need additional education and training to ensure continued career advancement and success. Getting all citizens to understand that learning and skill acquisition is vital to developing a successful workforce.

Expectations for postsecondary success must reach both adults and youth. There are a variety of measures that policymakers and educators can pursue that will establish high expectations and adequate preparation for success in all postsecondary education and training as the norm. One simple, yet powerful way that states could increase expectations and improve transition to postsecondary education for traditional-age students is to align high school assessments/exit exams and college entrance exams. This has been accomplished in a handful of states, such as Colorado, Illinois, Michigan, Oklahoma and West Virginia, resulting in some intriguing outcomes.[14] Rewarding adults for prior learning and life experience, as in Pennsylvania, is another strategy that has fostered greater postsecondary success.

There are improvements in K–12 education that prepare more students for postsecondary education by challenging all students to meet higher standards through more rigorous and relevant coursework. In January 2006, ACTE identified key recommendations for high school improvement in the paper *Reinventing the American High School for the 21st Century.* Chief among the recommendations called for high schools

to prepare "every student for full participation in a spectrum of college opportunities, meaningful work, career advancement, and active citizenship."[15] Research consistently shows that effective preparation in secondary education is vital to postsecondary success.[16] One strategy that was highlighted in *Reinventing the American High School for the 21st Century* is preparation at the secondary level through rigorous coursework. The responsibility for developing secondary level curriculum requires more cross-system opportunities for secondary and postsecondary educators to develop curricular content collaboratively.

In an effort to boldly increase expectations, the time has come for the federal and state governments to consider policies that provide universal opportunity for all students through grade 14. This would require no small investment to build the capacity of the postsecondary system to meet increased enrollment, including adequate numbers of high-quality instructors. Such investment is especially necessary in community and technical colleges where enrollment growth is very high, but the economic payoff is significant; increases in a country's educational attainment by one year can generate significant economic growth—"as much as 6 to 16 percent."[17]

Ongoing broad-based public outreach strategies that encourage all individuals to make effective use of the postsecondary education system are also necessary to increase enrollment and completion. States must endorse a clear public commitment to postsecondary education and the message that postsecondary education, which comes in many different forms, is a bridge to greater career opportunities. This message must reach every person in the state.

Explicit efforts must also be made to raise lifelong learning expectations among adults. Although public outreach often gets less attention in discussions of strategies for increasing educational attainment, it is critical for adults. Many are unaware of what they can gain from postsecondary education and do not know about programs that are available to them. Effective public outreach and awareness efforts enable students to envision themselves entering postsecondary education, working with instructors and staff who are committed to their success, and connecting with employers who are eager to hire skilled workers. Such efforts could better inform those who believe that continued education is

out of their reach due to misconceptions about the costs, academic demands, and time requirements.

According to the 2004 NAVE Report, when adults engage in postsecondary education, it is most likely to be in a career and technical field.[18] There has been renewed interest in creating opportunities for adults to earn postsecondary credentials that will help them in the labor market. An important piece of this is clear information that describes how and where they can enter, shows them a bridge toward increased education, and reassures them that they can obtain financial help and succeed as students. Additionally, it is necessary to provide learning in ways that reflect and support the needs of adults; this could include strategies such as creating performance requirements to move more adults from GED and/or English as a Second Language (ESL) into career and technical coursework as well as more opportunities for self-paced and distance learning and/or accelerated programs of study.

RECOMMENDATION 1
Establish Postsecondary Preparation and Expectations for All

NATIONAL LEADERSHIP RESPONSE

- Continue to promote a national discourse concerning the need for an improved education system that addresses national competitiveness needs.

STATE LEADERSHIP RESPONSE

- Consider policies that provide universal educational opportunity for all students through grade 14.
- Challenge all students to meet higher standards through more rigorous and relevant postsecondary preparatory coursework.
- Align high school assessments/exit exams and college entrance exams.
- Develop targeted marketing campaigns to engage adults in postsecondary education and training.

LOCAL LEADERSHIP RESPONSE

- Establish and promote community goals for increased enrollment and completion of postsecondary education and training.
- Expose students to the career options available in the local community and the academic and skills pathways needed to enter these fields.

RECOMMENDATION 2
Develop Education Systems that Integrate All Levels

Over the past few years, policymakers and reform-minded individuals have promoted the development of seamless education systems to foster postsecondary success, like Florida's K–20 Education Data Warehouse, Washington state's Running Start, Georgia's P–16 Initiative and Iowa's Grow Iowa's Values legislation.[19] There have been many conversations across the country about creating P–16 education systems that align all education and training sectors from preschool through bachelor's degrees, with some of these systems going even further, for example, to P–20.

The idea of integrated systems thinking is not new, but the nation is at a point where it must move beyond rhetoric to finding real solutions. All states should enact policies that promote the integration and alignment of secondary and postsecondary education, workforce development, economic development, welfare, and adult education programs into a more coherent system focused on educational advancement, wage progression and a higher standard of living for all.

A significant step toward developing systems is for states to organize coordination of all levels of education; this may be done in a variety of ways—from convening state education leaders into a P–16 council to the merger of all education functions into a single state agency. While this is an important step, it is not the end of efforts; structure and governance matter but should be seen as a means for improvement and not an end.

Another critical component to developing systems includes the creation of integrated data systems to help agencies ensure student and employer needs are being met. Integrated data systems should not only track educational progress and transitions, but link to labor market outcomes as well. Such systems help programs and institutions measure their performance and progress toward goals. They provide policymakers with accountability data and the information they need for identifying and funding effective improvement strategies as well as demonstrating results to justify increased public investment. Few states have data systems that reflect integrated P–16 education and labor market outcomes. Developing such systems has significant costs and raises concerns from privacy advocates; these are factors not to be taken lightly, but many of these concerns can be appropriately addressed while still gaining the value of data-driven decision tools that are outcome focused.

Keeping student success at the forefront, at both the policy and practice levels, will enable systems improvements to be focused on outcomes, not institutional interests. Efforts must also be made to address the needs of diverse populations. Strategies must be developed to build pathways from postsecondary entry, whether through a high school diploma, Adult Basic Education, GED, ESL, or remedial education, with other parts of the education system to maximize credentials earned.

CTE must play a more significant role in these efforts to align systems for both traditional-age students as well as nontraditional students. True P–16 education systems integrate not only the learning that takes place in the classroom, but also include focus on community-based, work-based, technology-based and other contextual types of education that is gained outside of the traditional classroom setting to create inclusive lifelong learning opportunities. CTE has built a strong foundation for integration with the development of programs such as career clusters, which provide a broad framework to seamlessly organize all education and training to be more clearly oriented to the world of work.

RECOMMENDATION 2
Develop Education Systems that Integrate All Levels

NATIONAL LEADERSHIP RESPONSE
- Support research and dissemination of quality programs that seamlessly connect secondary, postsecondary and workforce requirements.
- Coordinate education and training programs between the U.S. Department of Education, the U.S. Department of Labor, and the U.S. Department of Health and Human Services.
- Provide incentives to states to establish data systems that effectively collect student outcome data across educational sectors.
- Examine FERPA regulations to ensure adequate flexibility in data collection for educational purposes, while maintaining privacy protections.

STATE LEADERSHIP RESPONSE
- Organize governance and/or coordination of all education and training P–16, and ensure that it is inclusive of adult learners.
- Build data systems that can follow student outcomes across all levels of education and the workplace.
- Establish performance expectations for adult education providers that include transition to next steps in postsecondary learning.

LOCAL LEADERSHIP RESPONSE
- Create local P–16 councils that are data-driven and enable educators, business and community leaders to set collaborative goals and develop exemplary career pathways for students.

RECOMMENDATION 3
Develop Curriculum and Instructional Offerings that Link to Careers, Foster Lifelong Learning, and Encourage Completion

Developing integrated systems with high expectations and outreach is essential but not enough; institutional practice must provide all students seamless transitions to and through postsecondary education. Strong connections and planning will be required between education sectors where real transition occurs; concrete linkages must be developed between middle and high school, high school and postsecondary, and postsecondary and work. Lifelong postsecondary learning must be a part of this cycle. These connections must go beyond rhetoric. CTE and its applied learning and academic and technical integration can serve as the connection point between and across these sectors.

In the 2006 Carl D. Perkins Career and Technical Education Act, career and technical programs of study are introduced as one significant model that provides an operational approach to help foster smooth transitions. These new programs of study are intended not simply as one strategy implemented at a single point along the learning continuum, but will facilitate traditional and adult student transitions from secondary to postsecondary education and into lifelong learning.[20] Creating true pathways builds on the strengths of CTE but requires significant work to get all partners working toward common ends by requiring the incorporation of secondary and postsecondary education elements leading to industry-recognized credentials or certificates, or associate or bachelor's degrees; and academic and career-related content.

For traditional-age students, opportunities to blend secondary and postsecondary teaching and learning will enable more students to move directly from high school to postsecondary education and training. Providing opportunities for students to engage in postsecondary work while still in high school helps them to feel more confident in their ability to learn at the college level. States should make opportunities for dual and concurrent enrollment accessible for students. While many often think of dual enrollment for core academic courses, it is also an option for CTE courses. For example, many states have developed effective CTE pathways through Tech Prep that enable students to blend secondary and postsecondary coursework, such as the Miami Valley Tech Prep Consortium which has a 90 percent transition rate to college for their Tech Prep students.[21] Dual and concurrent enrollment programs, especially for CTE programs, enable students to accelerate learning while gaining technical skills.

For adults, it is vital to recognize that many learners need to complete coursework quickly to obtain skills for the workplace. Some postsecondary institutions are redesigning credential and degree programs into short-term modules that are organized around specific employer needs, are linked to employment, provide credentials, and can be used as building blocks to complete more advanced certificates and degrees. Offering pathway opportunities helps more students—especially working students—complete intensive short-term credentials with employer-recognized value and can lead to better employment.

It is also important to align structures within postsecondary systems to promote lifelong learning. Too many postsecondary institutions consider their developmental, workforce and academic departments as wholly separate entities with little or no structural overlap. Opportunities should be created to bridge Adult Basic Education, GED, ESL, or developmental education coursework with workplace and technical education so that adults can quickly engage in learning that has labor market value (See I-BEST program example on page 17).

Flexibility with regard to meeting times and delivery of the coursework are also important issues to consider, especially with regard to adult and nontraditional learners. Strategies such as online course offerings and non-standard course times such as late night or weekends can be effective for many students. For example, recent studies show that 3.2 million students took at least one online course during the fall 2005 term[22] and that 95.1 percent of community colleges are offering CTE courses online.[23] Also, affordable college-level courses and career training are co-located and offered at workplaces, high schools, career centers, and other community locations, making learning convenient and cost effective.

Partnering with business, industry and labor is foundational to the success of students in the postsecondary system. Postsecondary CTE has traditionally collaborated with employers to develop programs, but ensuring more students obtain credentials with labor market value requires deeper partnership, regular communication, and open feedback loops throughout the postsecondary system. Analysis of labor market needs, and collaboration with regional employers at the sector level is necessary to ensure students are receiving the skills necessary for future success. Business and industry environments are ever-changing. No career path is static

and the technology and skill sets needed may change regularly. Ongoing communication and open feedback are critical to ensure the relevance of postsecondary programs to the labor market. The presence of employers who can point out the trends—and aid in the continual reorganization and assessment of a program—is invaluable for the program to remain relevant and engaging for students.

RECOMMENDATION 3
Develop Curriculum and Instructional Offerings that Link to Careers, Foster Lifelong Learning, and Encourage Completion

NATIONAL LEADERSHIP RESPONSE

- Expand programs such as Tech Prep to build upon existing best practice models that align secondary and postsecondary education.
- Identify and remove policy barriers to better align and integrate adult education and training programs so that more adult learners can more efficiently acquire postsecondary credentials.

STATE LEADERSHIP RESPONSE

- Ensure that dual and concurrent enrollment programs and policies "do no harm" fiscally to secondary or postsecond-

RECOMMENDATION 3
Case Study Example:

The College and Career Transitions Initiative (CCTI) is a collaborative project with the League for Innovation in the Community College (League) and the U.S. Department of Education's Office of Vocational and Adult Education (OVAE). At present, the League works across the nation to identify, develop and refine practices that help community colleges provide leadership to:

- ease transitions between secondary and postsecondary education and careers; and
- improve academic performance at both the secondary and postsecondary levels.

CCTI has worked to promote career pathways at 15 sites as well as advance research, develop tools, and promote policy improvement for creating pathways. CCTI provides the 15 exemplar sites with technical assistance

and funding to create comprehensive pathways to smooth the transition from secondary to postsecondary education. Additionally, the League has collaborated with the Southern Regional Education Board's (SREB) High Schools That Work to help states develop improved practices to smooth student transitions through the development of career pathways. CCTI has developed a template for the development of career pathways for students from grade 9 through community college and sometimes to 4-year colleges. CCTI has also collaborated with the state directors of CTE and completed work on developing this modified template for 81 career pathways in 16 career clusters.

In addition to these secondary to postsecondary pathways, a number of states in the CCTI project are also working on building similar pathways for adult learners.

ary providers so that access is encouraged for students across the educational system.

- Map occupational clusters of importance to the state and identify education and training opportunities that correspond to those jobs and address gaps in policies and service.
- Conduct labor market analyses to ensure that the output capacity of postsecondary programs is oriented to meet the workforce needs.

LOCAL LEADERSHIP RESPONSE

- Partner with organizations such as economic development councils and local workforce investment boards to ensure that the output capacity of postsecondary programs is oriented to meet the local workforce needs.
- Offer programs and coursework in innovative ways designed to address student needs. This may include: modularized curriculum, open-entry/open-exit programs, courses at nonstandard times, and blending online and real-time learning.
- Expand contextualized dual and concurrent enrollment programs for youth and adults.
- Develop "bridge" programs that smooth students' transition to the next step of the education and training continuum, while allowing for the attainment of a marketable credential.
- Create contextualized learning opportunities that provide labor market skills to students in Adult Basic Education, GED, and ESL programs.
- Build opportunities for educators to align curriculum between middle grades, high school and college.

RECOMMENDATION 4
Ensure Portability and Transferability of Credits and Skills Attained

All postsecondary learning has value that should be recognized. It is becoming more common that students—especially adults—take an a la carte approach to postsecondary education by pursuing coursework at the time and place that fits their career goals. This may result in students with credits and/or credentials from multiple institutions. Unfortunately, too often relevant coursework is not accepted for credit if it was not offered by a particular institution. This results in repetitive work and delayed acquisition of credentials for many students. Students' progress toward and completion of postsecondary credentials would be improved with clear, consistent policies that ensure full transfer and articulation of postsecondary learning.

Transfer of coursework among institutions requires additional scrutiny. Some states, such as Florida[24] and Texas[25], have made great strides in enabling smoother transfer of credits through strategies such as common course-numbering systems. More must be done to ensure that relevant coursework is recognized between the different public providers of postsecondary education. For example, completion of credentials would increase with efforts to articulate and provide transcript credit for postsecondary CTE certificate programs that are currently non-credit-bearing.

Ideally, full articulation and transfer would apply to all institutions in a given state, at a minimum (with efforts to broaden transfer agreements across state lines), allowing students to experience and plan for continuous educational progress. When it is necessary to move from one institution to another, learners could then do so without disrupting the progress they had made previously. Thus, when a student completes a program, a firm foundation would be in place for success in a more advanced program.

Beyond credit transfer agreements, postsecondary education, including CTE, would benefit tremendously if states adopted systems to assess, measure and document the educational progress of learners in ways that are clear and meaningful to students as well as to their employers or future employers. Workforce readiness certificates, such as those developed by ACT, Equipped for the Future, JA Worldwide, and the U.S. Chamber of Commerce, may be one way to document this progress. Building portability and transferability of credits and skills attained through postsecondary education calls for re-examination of the ways that learning at the postsecondary level is measured and transcripted.

Postsecondary CTE provides opportunities for people to obtain sophisticated skills to be successful in the workplace. Yet there is a tension between the acquisition of skills and the current systems of measuring educational progress. Most postsecondary education is measured in terms of time spent learning and is not reflective of what students have learned. Measuring competencies would enable documentation for what students can do; enabling opportunities to transcript competencies for greater portability to the workplace and postsecondary continuation. Moving toward competency measures will require significant work

with institutions and faculty, states, accrediting organizations, business and industry, and testing agencies, but will result in a clearer understanding of exactly what students can do when they complete their postsecondary learning.

In addition, states should consider offering postsecondary credit for prior work experience. Pennsylvania's governor, seeking to bolster the number of adults in the state who pursue postsecondary education, recently encouraged higher education institutions to develop processes by which to evaluate prior work experience for postsecondary credit.[26] In addition, many higher education institutions use Prior Learning Assessments to enable students, especially nontraditional students returning to postsecondary education from the workforce, to have learning and prior work experience assessed and will grant credit for this experience.

RECOMMENDATION 4
Ensure Portability and Transferability of Credits and Skills Attained

NATIONAL LEADERSHIP RESPONSE
- Establish clearer transfer and articulation guidelines with accreditation organizations.
- Develop incentives that encourage full transfer and articulation of postsecondary learning within and among states.

- Collaborate with accreditation and assessment organizations to develop competency-based demonstration projects.

STATE LEADERSHIP RESPONSE
- Develop models that ensure students have full understanding of how their coursework articulates and transfers within the public postsecondary system. This may include strategies such as common course numbering or course applicability systems.
- Provide transcript credit for postsecondary CTE certificate programs that are currently noncredit-bearing.
- Articulate coursework and skills obtained in secondary CTE and dual enrollment programs to associate and bachelor's degree programs.
- Expand prior learning assessments that enable students to apply earlier learning and skills toward completion of credentials.

LOCAL LEADERSHIP RESPONSE
- Develop agreements between institutions to articulate related coursework.
- Expand partnerships with business and industry to establish necessary competencies.
- Examine institutional policies regarding transfer and articulation to ensure that they are clear and consistent.

RECOMMENDATION 4
Case Study Example:

The Ohio Career Technical Credit Transfer (CT2) initiative was created by the legislature and directs the Ohio Board of Regents to work collaboratively with the Ohio Department of Education to develop policies and procedures that ensure students at an adult career-technical education institution or secondary career-technical education institution can transfer agreed upon technical courses. The initiative requires that courses adhere to recognized industry standards, and allows transfer of course credits to any state institution of higher education "without unnecessary duplication or institutional barriers." Presently, five areas of transfer are being developed: nursing, engineering technology, medical assisting, information technology (networking), and automotive technology.

The project is building upon the lessons learned from previous transfer and articulation efforts and seeks to provide a clearer P–16 continuum and enhancement of workforce development. This learner-centered project requires a system to be developed that will enable commonly agreed upon coursework, based on recognized industry standards and successfully completed by either adult or secondary career-technical students, to be transferable and applicable to any state supported institution of higher education. This initiative does not alter the mission of participating schools and does not imply the evolution of adult-career schools into associate or bachelor's degree offering entities. CT2 is expected to be completed by April 15, 2007.[27]

RECOMMENDATION 5
Enhance Student Advising and Academic and Life-Supports

The availability of effective student supports can play a critical role in enrollment, persistence and completion of postsecondary credentials. Guidance and advising is vital to selecting programs that match well with students' interests and skills. Moreover, support to help address life challenges outside of the classroom can play a tremendous role in whether a student succeeds in postsecondary education. While there are many ways to support students while in postsecondary education, student services are often vastly under funded, and institutions lack capacity to provide student support. For example, the counselor to student ratio on community college campuses is more than 1:375.[28]

States and postsecondary institutions must implement inventive solutions to provide students with academic, career and financial aid guidance, as well as explore opportunities to enhance funding for student services.

All learners—secondary and postsecondary—should receive the information they need to make thoughtful decisions about choosing a career path, setting career goals, and selecting the educational options suitable to reach those goals. *Reinventing the American High School for the 21st Century* identified personalization in academic and career planning and decision-making as a key factor to secondary and postsecondary success. Preparation for success in the 21st century demands that all students—adult and youth—clearly understand the various education and training possibilities available to help them pursue opportunities throughout their lives. Without knowledge of their options and clear paths to help students get from one place to the other, many students fall out of the system and forego the education necessary to get them to the next level.

Implementing this recommendation requires states and institutions to develop comprehensive information and advising systems. Outstanding career counseling must be made available to every student. Another important step is the implementation of an integrated information system to make it easy for students across the P–16 continuum to explore all postsecondary education and training options, track their progress, and gain a clear picture of their success.

In addition to the need for effective career counseling, many students enter postsecondary education with aca-demic, financial, family and other challenges that make it difficult to stay continuously enrolled for a multi-year program of study. Innovative colleges are finding that they can encourage and help students stay in programs and schools if certain important supports are more readily available. These supports address both academic and life circumstances and should be considered investments that can pay off in terms of student retention and success.

Strategies include integrated student support centers that address academic skill development through tutoring, while also helping students deal with personal problems and challenges. Another model is a "learning community" in which students take several courses together connected with a single faculty member, adviser or other member of the institutional support staff. CTE courses often offer unique opportunities for this type of relationship due to the project-based nature of the coursework and close communication between students and instructors. Other institutions have consolidated student support services into a single location to make these support services easier to access. Services can range from help with government-provided benefits and financial aid to assistance with housing, day care, transportation and other supports that can make it easier for students to stay in and complete a program.

In addition, in order to truly support students and attend to the diverse challenges they face, it is necessary to involve the entire institution, faculty, advisers, staff and others, and to make student support one of the institution's highest priorities. This priority must, in turn, be supported with funding and incentives to ensure student success.

NATIONAL LEADERSHIP RESPONSE
- Create a national career and postsecondary awareness and information campaign.
- Continue to support GEAR-UP and TRIO programs that encourage low-income students to participate in postsecondary education, including the elements of these programs, such as Student Support Centers, that are aimed at helping students succeed once they are enrolled in postsecondary education.

- Provide support for comprehensive guidance programs throughout the P–16 system and beyond.
- Provide leadership and technical assistance on innovative funding approaches that encourage institutions to package resources to help meet a range of student needs.

STATE LEADERSHIP RESPONSE
- Develop comprehensive statewide career and postsecondary opportunity information portals.
- Expand funding for guidance, advising and support services at the secondary and postsecondary levels.
- Apply funding from federal sources such as Temporary Assistance to Needy Families (TANF) to support postsecondary student success for vulnerable populations.

LOCAL LEADERSHIP RESPONSE
- Dedicate staff and resources to ensure effective advising and supports.
- Explore strategies to integrate advising and supports such as learning communities and peer tutors.
- Ensure as many students receive college advising as possible by leveraging collaborations with GEAR-UP, TRIO and community-based college access programs.
- Foster partnerships between education institutions and community-based organizations to provide supports for life circumstances.
- Develop a comprehensive culture of student success at the postsecondary level with expectations for all faculty and staff to engage in its promotion.

RECOMMENDATION 6
Increase Financial Support for Low-Income Students

Cost is one of the biggest barriers to enrollment in postsecondary education, and this is especially true for students from families with modest income. Current federal student aid offerings are not enough to offset the growing cost of postsecondary education. CTE programs are particularly affected since data show that a higher number of students from lower socioeconomic

RECOMMENDATION 6
Case Study Example:

In its project Opening Doors, MDRC, a nonprofit, nonpartisan social policy research organization, is working with community colleges in several states to design and implement new types of financial aid, enhanced student services, and curricular and instructional innovations. According to MDRC, the goal is, "helping low-income students earn college credentials as the pathway to better jobs and further education." Integral to the demonstration project is a random assignment study measuring how the Opening Doors interventions affect students' education, labor market, and personal outcomes. Initial results indicate that some of the interventions have a positive effect on persistence.

In Louisiana, Opening Doors designed a cash assistance intervention to help low-income parents attending community college cover more of their expenses as well as provide incentives to make good progress. The program operated at two New Orleans-area institutions— Delgado Community College and Louisiana Technical College-West Jefferson—in 2004–2005, (pre-Hurricane Katrina). The colleges offered students a $1,000 scholarship for each of two semesters, or $2,000 total, if they maintained at least half-time enrollment and a 2.0 (or C) grade point average. The scholarships were in addition to Pell Grants and any other financial aid for which students qualified and were paid in installments so that college counselors could verify that students stayed enrolled and passed their courses. Most of the program's participants were women who are single parents. Analysis of transcripts for students who entered the study in spring and summer 2004 shows that, compared with the control group, students in Opening Doors:

- were more likely to enroll in college full time;
- passed more courses and earned more course credits; and
- had higher rates of registration in college in the second and third semesters after random assignment.

While it is too early to conclude that the Louisiana Opening Doors program is an unequivocal success, these early findings suggest that a performance-based scholarship can have a significant positive effect on persistence and academic achievement among low-income parents. [31]

backgrounds enroll in postsecondary CTE. The absence of strategies to increase financial aid will likely result in decreasing opportunities for all students to access postsecondary education, including CTE. The financial needs of low-income students must be addressed to provide them with adequate resources to enroll and persist in credential and degree programs.

Studies consistently show that availability of need-based financial aid has a positive correlation to enrollment in higher education. However, as the price of postsecondary education has escalated, the purchasing power of federal and state need-based financial aid to low-income students has decreased. For example, in 2001 Pell Grants covered 73 percent of average postsecondary expenses for low-income students.[29] In 2006, this has fallen to less than 40 percent.[30] As a result, students are either incurring a much more significant debt burden or having to forego postsecondary education and training altogether.

In addition to diminished purchasing power of grants, another troubling trend has been a growing shift to non-need based aid. While merit-based aid is an important component of ensuring access for numerous students, it should not constrain opportunity for low-income students to receive need-based aid. Need-based grants at the state and federal level (such as Pell) must be increased to help low-income students enjoy the opportunities that education can provide.

For low-wage working adults attending school part-time, federal financial aid policies can include unintended consequences and barriers. For instance, a "work penalty" exists that makes it difficult for adults who are attempting to work and attend postsecondary education to receive adequate financial aid. While such barriers in federal policies should be addressed, states can also enact innovative policies that can help lower tuition for part-time working students. State financial aid policies should be expanded to provide support for part-time students, including those taking short-term basic skills and workforce development programs that do not grant credit, in order to help move these students through the education continuum.

RECOMMENDATION 6
Increase Financial Support for Low-Income Students

NATIONAL LEADERSHIP RESPONSE
- Establish funding levels for the Pell Grant program set at a percentage of average public university tuition that ensures purchasing power for the neediest of students.
- Improve financial aid opportunities for part-time students and working students.
- Examine policies under the Temporary Assistance to Needy Families program and the Workforce Investment Act to provide coordination with other federal programs and incentives for individuals to pursue education and training.

STATE LEADERSHIP RESPONSE
- Prioritize funding to support need-based financial aid programs.
- Expand state scholarship funding for low-income part-time students.
- Ensure workforce training support may be applied to postsecondary education.

LOCAL LEADERSHIP RESPONSE
- Develop institutional commitment to low-income students by focusing on need-based aid.
- Work with the community to create "last-dollar" scholarship endowments to provide for students with financial needs unmet by other federal and state aid programs.
- Create institutional emergency fund grants for low-income students to address financial crises that may prevent persistence in coursework (child care, transportation, etc.)

RECOMMENDATION 7
Pilot Innovative Approaches to Funding

Finance issues are key drivers of the actions of postsecondary institutions. Public postsecondary providers are expected to fulfill a number of educational missions. These varied missions may entail the institution receiving funding for academic coursework; developmental and remedial courses to prepare students for college-level work, including Adult Basic Education and ESL instruction; and workforce education and training. Institutions also receive resources for other important roles as well, such as

continuing education, distance education, dual/concurrent enrollment for high school students, and research. In most states, the services provided through each of these missions are linked to a different revenue stream with varying outcome expectations. States must engage in thoughtful consideration of how postsecondary finance policy can be improved to increase the number of people earning credentials.

In most states, the core of public support for postsecondary education comes from reimbursement for the number of full-time equivalent (FTE) students enrolled in credit bearing coursework that counts toward college degrees. Most states do not provide institutional funding for students in noncredit courses. Noncredit is a large category that includes noncredit CTE credential coursework at a less than associate degree level. These important programs must either be underwritten through the college's general fund or supported wholly through tuition. Some states, such as Oregon, California and North Carolina, have begun to include noncredit courses in FTE reimbursement.[32] More states should consider this model; this type of stable funding enhances institutional ability to effectively deliver career-related credentials.

Integrating categorical funding from state and federal sources is another innovative approach to expanding opportunity for more individuals to earn postsecondary credentials. Generally, categorical programs limit how the funds may be used, the types of people who may participate or benefit, and the outcomes that can be realized. These programs include TANF, federal and state Title II Adult Basic Education and ESL, the Workforce Investment Act, the Carl D. Perkins Act, and other state workforce development resources. Washington's I-BEST initiative (see below) is an excellent example of an innovative approach to removing categorical funding barriers.

At present, it is very easy for students to slip through the cracks of postsecondary education. Many students enroll in postsecondary education, but often leave without completing any meaningful credential. Each state must find thoughtful ways of increasing the number of postsecondary credential earners through innovative higher education finance policies. Such shifts will require policymakers to connect educational goals with the necessities of the finance picture.

States can encourage all postsecondary institutions to be more focused on student success by providing incentive funding based on course completion, not enrollment

RECOMMENDATION 7
Case Study Example:

The Washington State Board for Community and Technical Colleges has recently piloted the Integrated Basic Education and Skills Training Program (I-BEST). This innovative effort provides weighted funding support to pair ESL/Adult Basic Education (ABE) instructors and professional-technical instructors in the classroom to concurrently provide students with literacy education and workforce skills.

The I-BEST demonstration program is a weighted funding model that results in a 1.75 full-time equivalent (FTE) reimbursement per student. The Washington State Board of Community and Technical Colleges combined funding streams for traditional FTE coursework and ABE to enable each college to hire two instructors for each I-BEST course. One instructor covers teaching workforce skills in context while the other teaches ESL or ABE content. The innovation in funding creates a model that is designed to address learning needs rather than historical funding patterns. I-BEST has also tested traditional notions that students must first pursue basic education before they can begin workforce training.

On average, I-BEST students were 15 times more likely to complete their I-BEST skills training than were comparison ESL students. During the I-BEST demonstration period, 44 percent of I-BEST students completed skills training. Eighteen percent of I-BEST students completed credentialed training and 26 percent reached other recognized skills attainment levels. I-BEST's 44 percent completion rates are in contrast to just 3 percent of the comparison group's ESL students who concurrently completed workforce training in the same time period. This included 2 percent who completed noncredentialed programs or coursework and 1 percent who completed credentialed programs.

at the beginning of the semester. The vast majority of state institutions are funded based on enrollment just a few weeks into the semester with no institutional incentive to promote completion. Funding often drives behavior and postsecondary institutions would likely develop comprehensive retention strategies as a result. Effective policies must also address the potential unintended consequence of "creaming" to only enroll students who are most likely to complete. Utah has recently embraced this funding model; but it is too early in implementation to determine what effect it may have on completion.

In addition to funding completion, states can create performance expectations for progression of students along the P–16 continuum. Additional challenge funding can be provided to institutions that successfully promote continuation of postsecondary learning.

RECOMMENDATION 7
Pilot Innovative Approaches to Funding

NATIONAL LEADERSHIP RESPONSE
- Provide technical assistance to states from the U.S. Departments of Education, Health and Human Services, and Labor on how to maximize categorical funding to support postsecondary success, including technical assistance on ways to use multiple funding streams to support a project, while maintaining the unique mission of each program.

STATE LEADERSHIP RESPONSE
- Examine postsecondary funding policies to ensure they are oriented to meet the goals of the future rather than building upon historical policy traditions.
- Explore the costs and benefits of providing full-time equivalent (FTE) reimbursement for noncredit coursework, especially noncredit work that leads to a credential.
- Pilot funding incentives to improve course completions and measure any gains in student success.
- Implement policies that foster integration of categorical funding streams.
- Provide increased financial incentives to institutions that offer programs in areas of economic need or that are more costly to operate.

LOCAL LEADERSHIP RESPONSE
- Integrate multiple funding streams to create a continuum of education from low-skill entry points through certificate and degree programs.

CONCLUSION

There is a growing national interest in thinking about education as a system that flows from preschool through the completion of a higher education credential. Finding solutions that help more students—adult and youth alike—succeed in such an education system is crucial. It is important to recognize that CTE plays an important role in systems thinking and can lead the way in building smooth transitions for students. CTE, at both the secondary and postsecondary levels, is all about creating success for the next step in a student's life (either in the workplace or through additional education and training), and must play a critical role in expanding postsecondary opportunities for youth and adults.

Orienting postsecondary success in ways that translate into career success will not only benefit students, but will result in a more stable economic base and educated citizenry. ACTE believes that aligning systems and promoting postsecondary opportunity for all individuals is essential to maintain and improve our standard of living. The national dialogue concerning the importance of rigorous postsecondary credentials must continue because it is directly linked to our nation's economic competitiveness. Improvement of the system may not be easy, or inexpensive, but it is vital to our future.

ACTE is ready to join with other organizations and individuals in working toward implementing these recommendations. We are hopeful that we can create a system that enables people to access and complete postsecondary education and training throughout their lives that will enable them to secure high-skill, high-wage or high-demand jobs in current or emerging career fields.

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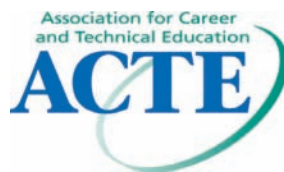
The Association for Career and Technical Education (ACTE) is the nation's largest not-for-profit education association dedicated to the advancement of education that prepares youth and adults for successful careers. It provides advocacy, public awareness and access to information, professional development and tools that enable members to be successful and effective leaders. Founded in 1926, ACTE has more than 29,000 members including teachers, counselors and administrators at the middle school, high school and postsecondary levels.

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