DOCUMENT RESUME

ED 432 661 CE 078 961

AUTHOR Bragg, Debra D.
TITLE Enhancing Linkages to Postsecondary Education: Helping Youths Make a Successful Transition to College.
INSTITUTION National Center for Research in Vocational Education, Berkeley, CA.
SPONS AGENCY Office of Vocational and Adult Education (ED), Washington, DC.
PUB DATE 1999-07-00
NOTE 17p.
PUB TYPE Collected Works - Serials (022) -- Information Analyses (070)
JOURNAL CIT Centerpoint; n5 Jul 1999
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Access to Education; *Articulation (Education); *College School Cooperation; *Education Work Relationship; Educational Legislation; Educational Opportunities; *Federal Legislation; High Schools; Higher Education; Integrated Curriculum; Outcomes of Education; *Partnerships in Education; *Tech Prep; Theory Practice Relationship; Vocational Education

ABSTRACT

Many more of the nation's youths deserve the opportunity to make the transition from school to college, casting the net of postsecondary education more widely and equitably. The necessity of encouraging more youths to participate in rigorous academics so they are ready to make a smooth transition to college has been recognized for some time. In the late 1960s, some states began to integrate academic and vocational education as a means of facilitating secondary-to-postsecondary transition. Reinforcing these ideas, federal vocational education legislation since 1972 has consistently emphasized secondary and postsecondary linkages, along with applied academics. Fundamental components of successful transition programs are as follows: (1) rigorous and engaging learning; (2) formal articulation strategies; (3) implementation of articulation agreements; (4) local partnerships and advanced skills articulation; (5) meaningful linkages between theory and practice; (6) outcomes-focused curriculum; (7) identification of the primary outcomes; (8) exploration of new forms of assessment; (9) access and opportunity for all; (10) longevity through collaboration; and (11) accountability and quality in future transition initiatives. Enhanced school-to-college transition can create valuable educational opportunities for all students. (The publication includes a list of quality indicators recommended by the National Association of Tech Prep Leadership for five integral components of a tech prep program. The document contains 39 references.) (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

NCRVE National Center for Research in Vocational Education
University of California, Berkeley

Number 5
July 1999

ED 432 661

centerpoint
what we've learned...where we're going

Enhancing Linkages to Postsecondary Education: Helping Youths Make a Successful Transition to College

BY DEBRA D. BRAGG

In families where higher education is valued, where parents graduate from college and the benefits of a degree are tangible, youths grow up knowing the importance of preparing for college. They appreciate why they need to engage in rigorous high school studies. However, in homes where higher education is a luxury, youths grow up having less confidence about their futures. Urban and rural youths, racial and language-minority students, and youths with disabilities are especially "at risk" (Hamilton, 1990, p. 6). Still, many of these youths aspire to go to college just like their college-bound peers, even though their chances of realizing that opportunity are diminished by conflicting personal and family life circumstances. Financial concerns are a major reason that many youths whom educators and policy makers often stereotype as the "non-college-bound" never make it to college in the first place. Issues surrounding the adequacy of high school academic preparation are also evident. For many, an over-reliance on basic courses limits college readiness because advanced math, science, and technical courses are missing from their high school programs of study. Recognizing these complexities, recent federal legislation, especially the Tech Prep Education and the School-to-Work Opportunities laws, has emphasized that many more of our nation's youths deserve the opportunity to transition from school to college, casting the net of postsecondary education more widely and equitably.

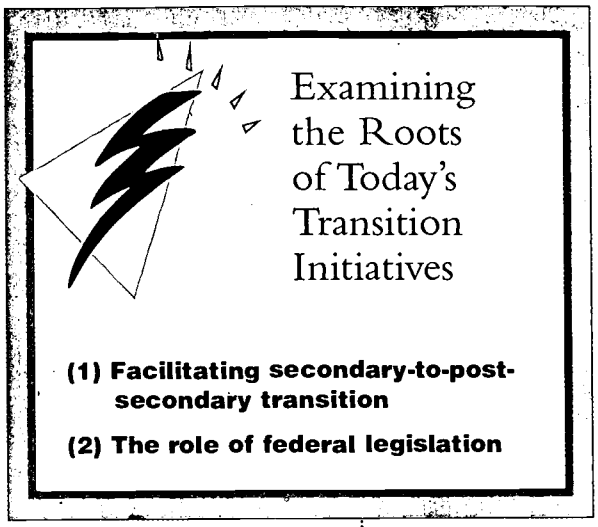
This issue of *CenterPoint* synthesizes what NCRVE has learned over the past decade about processes, policies, and practical approaches to forming effective linkages between secondary and postsecondary education. For years, liberal arts and sciences education at the high school level dominated the college preparatory curriculum. However meritorious, this track often engages only a small proportion of high school youths. Educational reforms such as tech prep and school-to-work are intended to integrate academic and vocational education and raise academic standards for all students. In this issue of *CenterPoint* we strive to reinforce the importance of creating well-conceived and integrated academic and career pathways that enhance school-to-college transition for all of America's youths. By expanding college-going opportunities, more students can attain the benefits of social mobility and economic prosperity that a college education can provide.

Many more of our nation's youths deserve the opportunity to transition from school to college, casting the net of postsecondary education more widely and equitably.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE



Examining the Roots of Today's Transition Initiatives

Firmly entrenched in the American high school, the college prep curriculum is highly valued for its effectiveness in preparing youths for college or university study (Tyack & Cuban, 1995). Selective four-year colleges and universities establish college admission requirements based largely on student participation in and acquisition of high school–level academic subject matter delivered through a sequence of liberal arts and sciences courses. Colleges reinforce students' college prep choices by using traditional measures of student achievement to determine the disciplinary knowledge students have acquired (Bailey & Merritt, 1997). Paradoxically, even though a growing proportion of high school students go on to college—recent estimates indicate as high as 70% of high school graduates proceed to postsecondary education of some sort—only the top echelon of high school students complete the college prep curriculum. Instead, most high school students take a hodge-podge of courses, contributing to a rising college drop-out rate. Citing figures from the American Council on Education, Gray and Herr (1995) report almost 50% of students who enter college never graduate. Thus, for many, the high school curriculum does not add up to a coherent whole, but rather a disarray of classes that is useful neither for college or work after high school. In today's increasingly complex world, this is a problem. Social, economic, and multicultural aspects of modern life make college a priority for most, if not all, high school graduates.

Facilitating Secondary-to-Postsecondary Transition

Of course, the necessity of encouraging more youths to participate in rigorous academics so they are ready to make a smooth transition to college has been recognized for some time. What is newer is the notion of integrating academic and vocational education as a means of facilitating secondary-to-postsecondary transition, although this idea has also been around for some time. Beginning in the late 1960s, a few states began to encourage better coordination of vocational programs between high schools and community colleges. Setting the stage for tech prep education specifically, an Oregon task force recommended that articulation agreements be developed between high schools and community colleges beginning in 1968. The task force recommended several strategies that have quite a contemporary flavor, including a "cluster approach" to occupational programming, career exploration beginning in grade 7 leading to more focused occupational preparation beginning in grade 11, and better guidance and counseling services (Dornsife & Bragg, 1992).

The Role of Federal Legislation

Reinforcing these ideas, federal vocational education legislation since 1972 has consistently emphasized secondary and postsecondary linkages, along with applied academics (and later the similar but broader concept of academic and vocational integration) (Gray & Herr, 1998).[1] Though overshadowed by *A Nation at Risk* (National Commission on Excellence in Education, 1983), the mid-1980s were a critical time for launching various secondary-to-postsecondary articulation initiatives, first with the endorsement of tech prep and applied academics by the National Commission on Secondary Vocational Education (1984). These recommendations were reinforced by passage of the 1984 Carl D. Perkins vocational education legislation, emphasizing vocational articulation and allowing expenditure of federal funds for tech prep. Paralleling these policies, Dale Parnell's book *The Neglected Majority* (1985), was published. In his book, Parnell argued for a much broader conceptualization of educational reform to meet the needs of students left out of the educational reform debate. Both separately and collectively, these actions reinforced

[1] The legislation referred to includes the Education Amendments of 1976, Title II, Vocational Education, amendments to the Vocational Education Act of 1963; the Carl D. Perkins Vocational Education Act of 1984; the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990; and the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1998.

a new direction for education, highlighting the need to link secondary and postsecondary education, particularly emphasizing student transitions from secondary to community, junior, and technical college education (henceforth called "community colleges") (Bragg, Kirby, Puckett, Trinkle, & Watkins, 1994).

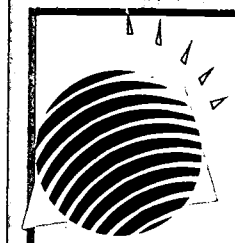
Legislation in the decade of the 1990s emphasized the importance of secondary-to-postsecondary transition even more. In 1990, the Carl D. Perkins Vocational and Applied Technology Education Act contained Title IIIE, The Tech Prep Education Act, which targeted federal funding toward the implementation of 2+2 Tech Prep education programs. Combined secondary and postsecondary programs designed to lead to two-year associate degrees, certificates, or adult apprenticeships were the primary goal of tech prep implementation. Similarly, the School-to-Work Opportunities Act (STWOA) of 1994 called for secondary-to-postsecondary articulation as a part of reformed educational systems focused on combining school and work in more creative and challenging ways for "all students." School-to-Work Opportunities systems were to be connected in real and significant ways to the federal Goals 2000 educational reform agenda. Finally, recent reauthorization of the Carl D. Perkins vocational legislation of 1998 has further legitimized secondary-to-postsecondary transition activities by continuing targeted funding for tech prep. Particularly notable is the expansion of tech prep by strengthening its relationship to baccalaureate degree programs, further enhancing student options for postsecondary education.

Fundamental Components of Successful Transition Programs

For students to be successful in the shift from the secondary to the postsecondary level, they need to be supported by a well-planned and well-executed educational transition system. Unless the educational system is designed to maximize student opportunities to move on to college, a successful transition will happen for some, but not all. Over the past several years, NCRVE researchers have learned there are many factors that contribute to successful transition experiences for students. Successful tech prep and school-to-work initiatives typically have six core components that enhance students' opportunities to make a successful transition from high school to college (Bragg, 1995):

- Rigorous and engaging learning
- Formal articulation strategies
- Meaningful linkages between theory and practice
- Outcomes-focused curriculum
- Access and opportunity for all
- Longevity through collaboration

These six components should underpin any secondary-to-postsecondary transition system, and various strategies can be employed to put these components into operation. The following discussion highlights these components and demonstrates how various state and local entities are executing them.



Fundamental Components of Successful Transition Programs

Successful tech prep and school-to-work initiatives typically have six core components that enhance students' opportunities to make a successful transition from high school to college:

(1) Rigorous and engaging learning

(2) Formal articulation strategies

(3) Meaningful linkages between theory and practice

(4) Outcomes-focused curriculum

(5) Access and opportunity for all

(6) Longevity through collaboration

Rigorous and Engaging Learning

When the goal of education is to encourage student involvement from the secondary to postsecondary level, it is essential that students become engaged in learning in a serious way at an early stage. Student transition is enhanced when learning in grades K-12 is rigorous, engaging, and carefully linked to postsecondary learning. Educational experiences that are student-focused and project-based help students connect with the learning process (Resnick, 1987; Rosenstock, 1991).

Educational experiences that are student-focused and project-based help students connect with the learning process and stay connected over time.

When this happens, students are more likely to advance toward higher-level academic and occupational competencies that are necessary for success in college.

The New York City Technical College in Brooklyn, New York, has accomplished this goal by offering high school seniors a college-level interdisciplinary transition course that also satisfies a high school English credit. Known as "Great Thinkers in Science," this course integrates math, science, and technology in an exploration of Galileo, Kepler, Darwin, Freud, and Edison (Frenkel & Gawkins, 1995). By integrating academic and vocational content and teaching methods, faculty in Brooklyn and elsewhere create practical and challenging curriculum for students. Cooperative learning strategies are often associated with integrated curriculum to encourage students with diverse backgrounds to work together, learn from each other, and remain actively engaged in learning. At Delgado Community College in New Orleans, for example, after being introduced to project-based learning, students are seeking more opportunities to participate in collaborative team projects, emphasizing the need for team-building involving students and faculty (Dornsife, 1997, p. 151).

Beginning at the secondary level or even earlier, any core curriculum that links secondary to postsecondary education should ensure progressively rigorous subject matter. Such is the case in Oklahoma City where the Consortium to Restructure Education through Academic and Technological Excellence (CREATE) is tackling the challenge of aligning curriculum in grades 9 through 14 (Dornsife, 1997, p. 149). Other local partnerships such as the Mt. Hood Education Partnership in Gresham, Oregon, are accomplishing similar goals. Starting tech prep in the mid-1980s long before most of the rest of the country, the Mt. Hood Education Partnership has learned that students profit most when sequential curriculum is based on competencies and outcomes, rather than curriculum guides and course syllabi. At the secondary level, core curriculum focuses on academic (math, science, English, and other liberal studies) competencies that are intimately connected to career pathways composed of broad career clusters.

This approach is not confined to the secondary level, but provides a foundation for reshaping the postsecondary curriculum as well. Rather than limit curriculum reform to the secondary schools as many educational consortia do (Grubb, Badway, Bell & Kraskouskas, 1996), community college administrators and faculty in the Mt. Hood Educational Partnership are involved in the development of curriculum that extends from the middle- and early senior high level through at least grade 14, sometimes into four-year college and university studies. At the college level, course work should be even more academically rigorous, providing college graduates with the wherewithal to obtain satisfactory career opportunities, but also seek further education throughout their lifetimes. NCRVE researchers Grubb, Badway, Bell, and Kraskouskas (1996; Badway & Grubb, 1997) observe that community colleges have lagged behind high schools in the implementation of tech prep. Dramatic changes in content and teaching methods are needed to ensure that students transitioning from high school to college are successful. Changing what is taught is insufficient to improve student outcomes significantly. We must leverage change in teaching methods too.

Formal Articulation Strategies

Formal articulation agreements legitimize secondary-to-postsecondary transition opportunities for students. Through formal articulation agreements, transition becomes a reality for students. Educational administrators and faculty can gain confidence that the transition process is feasible. Students and their parents can realize that college-level studies are attainable. In terms of tangible benefits, formal agreements give students a leg up on college by reducing repetition of course content that they have already mastered. Theoretically, formal agreements can also become the vehicle that draws more high school students to community colleges, because these agreements put into writing a well-planned and endorsed course of study showing a pathway to college. Often matriculating students fail to cash in on articulated credits when they enroll in college. However, exceptions exist and some communities have successfully implemented formal articulation agreements.

BEST COPY AVAILABLE

Implementing Articulation Agreements

In Victoria, Texas, over one-quarter of all graduates of the twenty high schools feeding into Victoria College participate in articulated courses. Though not all high school graduates continue their postsecondary education at Victoria College, a sizable proportion do. Some are engaged as full-time students; others take only a few college-level courses that transfer to a four-year college or university. Regardless, the large proportion of students in either group who have accessed dual credits have realized both monetary and time savings. To many students, the latter benefit was of equal or greater importance. Building on these kinds of local successes with articulation, the state of Texas currently engages in a statewide articulation initiative with the goal of increasing access to college to an even greater number of students, allowing matriculation from secondary to postsecondary education throughout the state (Bragg & Dornsife, forthcoming).

Addressing the importance of articulation, but also the difficulties in implementing it, Dornsife (1997) concluded that even though students enrolled in NCRVE's Urban Network schools, they have not always received credits for the articulated courses they completed to the full extent possible. Network partners hold firm to the belief that articulation has important benefits for students in real and significant ways. Unfortunately, articulation courses are still not publicized widely in many consortia. Even when they are, students often have difficulty understanding what they mean and how they will benefit. But where teachers take the time to explain the idea of articulation and the specific time and monetary savings it can give students, we see heightened use of articulation agreements by students. Summarizing the thoughts of several Network partners, Dornsife argues, "Articulated course sequences are a powerful means of keeping students directed.... [A]s more students experience the benefits of sequenced courses, they will recognize the advantages.... In short, the [NCRVE Network] postsecondary partners support the philosophy 'if we build it, they will come'" (p. 154).

In addition to financial and time-saving benefits, academic benefits are evident for students who participate in an articulated iculum, which helps students prepare for more advanced academic work than they might have thought possible. At the Miami Valley Tech Prep Consortium in Dayton, Ohio, 10th-grade tech prep students are given the same academic assessments that are used for placement at Sinclair Community College. High school students are informed of their performance on mathematics, reading, and writing exams, including helping them to understand which courses they would be eligible to take at the community college, if they were transitioning today. Often students learn they would need to take remedial courses in college before they could register for college-level ones, heightening the motivation of these young students to continue to more advanced academics while still enrolled in high school. Students are counseled as to the secondary courses they should take to ensure their readiness for a successful transition into college-level academic courses, without remediation (Bragg & Dornsife, forthcoming).

Indeed, students in the Miami Valley Consortium are matriculating to Sinclair Community College without remediation at an impressive rate. At a time when remediation rates soar in community colleges (McCabe & Day, 1998), only 9% of tech prep students require remediation in math and 7% in English, showing that the remediation rate for tech prep students is only a fraction of that required by the general population of freshman students since. (At Sinclair, about 80% of entering freshman require remediation in either math or English.) The Miami Valley Consortium's experience demonstrates that a more academically prepared pool of high school students can lead to a more constant stream of college-level enrollments, with lesser remedial needs. In the future, higher-quality postsecondary programs can be offered because the need for remedial services is reduced. Consequently, resources can be redirected from developmental education to other academic programs and services. Thus, as the caliber of matriculating students increases due to better secondary preparation, postsecondary programs increase in quality as well.

Local Partnerships and Advanced Skills Articulation

Articulation agreements can work in several different ways. Sometimes formal articulation agreements provide dual credit

School-to-work opportunities should be used to link learning in the school setting to the genuine laboratory of the workplace and community.

Whether using youth apprenticeships, cooperative education, school-sponsored enterprises, or other work-based learning models, lessons learned in Illinois and North Carolina demonstrate how work-based learning can facilitate school-to-college transition.

(high school and college) for students who have taken college-level academic and technical courses prior to completion of high school. When local partnerships such as the one in Gainesville, Florida, designate specific curricular areas or programs as "dual enrollment programs," students have a much clearer understanding of what will be required of them to be successful in the transition from high school to college (Hershey, Silverberg, & Owens, 1995). When successful in advanced high school courses, students feel more confident about continuing to the postsecondary level and are more likely to succeed when they get there.

Another beneficial approach to formal articulation is referred to as advanced or enhanced skills articulation. The key advantage of this model is its focus on creating a seamless and increasingly rigorous program of study that has a logical progression from the secondary to the postsecondary level. Again, at the Miami Valley Tech Prep consortium in Dayton, Ohio, students are eligible for an enhanced skills or honors diploma at Sinclair Community College (Olson, 1997). In addition to the Associate's degree, students are eligible for a special credential indicating they have mastered competencies beyond the typical two-year college level. In addition, students who participate in the tech prep program at the secondary level are also eligible to receive a scholarship from Sinclair. Created by the college's endowment, tech prep students are guaranteed free tuition if they continue to Sinclair as full-time students and maintain high academic standards. For tech prep students finishing high school, advanced skills articulation is a powerful incentive to continue their education at Sinclair. For students who would forgo college because of financial difficulties, knowing these funds are available can make all the difference in a student's decision to go on to college.

Educators in school-to-college transition systems should think about articulation as "incentive." The two concepts should be intertwined. When educators think of articulation as merely a bureaucratic or curricular process, students don't pay attention. Why should they? They don't see what's in it for them. But when articulation processes are oriented toward student needs, they can be a powerful "incentive" for students to continue on in college. From almost any student's perspective, articulation agreements that deliver valuable course content and college credit, thereby reducing tuition, are worth paying attention to. But to ensure their full value, educators should design articulation agreements that are not unduly burdensome (i.e., extensive testing or college-level coursework), that are easily understood by students and their parents, and that deliver college-level credits at both two- and four-year colleges (Pauly, Kopp, & Haimson, 1995). Without taking these steps, articulation agreements are not likely to appeal to students, losing their potential to entice students to participate in college.

Meaningful Linkages Between Theory and Practice

Secondary-to-postsecondary transition systems can be strengthened when students learn to integrate theory and practice. School-to-work opportunities should be used to link learning in the school setting to the genuine laboratory of the workplace and community. The gulf between theory and practice in educational curricula is detrimental to student learning, particularly for those who have difficulties learning abstract concepts without concrete examples and practice. To encourage learning for all, school-to-work opportunities connect the theory and practice inherent in both academic and vocational education. The philosopher John Dewey advocated a similar philosophy of education nearly a century ago. Specifically, Dewey's notion of "the shared practices of community that are the roots of human learning" (Wirth, 1992, p. 182) runs parallel to school-to-work and tech prep when learning is centered on the relationships between and among occupations and other subject matter that is integrally linked to the roles adults fulfill throughout a lifetime.

In keeping with the broader notion of school-to-work transition, work-based learning can provide opportunities for students to observe and experience "all aspects of the industry," as is advocated in the Perkins II and III, Tech Prep, and STWOA laws. In various localities throughout the nation, tech prep

BEST COPY AVAILABLE

and school-to-work have been combined skillfully to enable students to pursue rigorous school-based learning linked strategically to work-based learning (U.S. Congress, Office of Technology Assessment, 1995). In the new Perkins III, work-based learning has become a more explicit goal of tech prep programs, ensuring that tech prep initiatives that were once mainly school-based will now have work-based learning activities that are carefully connected to school-based learning. In Danville, Illinois, and Guilford County, North Carolina, high school academic and vocational curricula have been integrated with college-level career majors using a combined tech prep/youth apprenticeship approach (Bragg & Dornsife, forthcoming). In these tech prep/youth apprenticeship programs, which have profited by learning from one another through a continuous improvement and benchmarking arrangement, students can pursue intensive work-based learning opportunities through youth apprenticeships in such career fields as manufacturing, accounting, banking, and various health occupations. School-to-college matriculation rates are exceptionally high for these students. For example, 95% of high school youth apprentices in Danville, Illinois, have continued their education at Danville Area College, the region's community college. Most of these students plan to continue to the baccalaureate level after finishing the Associate's degree.

These communities have achieved what Berryman and Bailey (1992) suggest are the three keys to effective work-based learning programs. First, they offer learning experiences that reflect the demands of modern work. Youth apprentices in Illinois and North Carolina are mentored by employees in the workplace to facilitate their learning about current and future employment requirements. Second, effective work-based learning programs deliver broadly applicable knowledge and skills that are crucial to preparation for careers or further education. In neither the Illinois nor the North Carolina program are youth apprentices expected to conform to narrowly specified jobs. Instead, they rotate through a wide range of career options. Finally, effective programs emphasize theory and practice and the fascinating interrelationships between the two. Faculty who teach in these two programs are engaged in on-the-job professional development experiences in local businesses and industries, often through summer internships, thereby enhancing their ability to make linkages between students' in-school and out-of-school learning. For students, transition initiatives can be enhanced by using individualized career plans (ICPs) that show how academic and vocational competencies can be the centerpiece of an educational program. Whether using youth apprenticeships, cooperative education, school-sponsored enterprises, or other work-based learning models, lessons learned in Illinois and North Carolina demonstrate how work-based learning can facilitate school-to-college transition.

Outcomes-Focused Curriculum

Outcomes-focused curriculum establishes clear goals for student performance throughout the secondary-to-postsecondary transition process. Identifying outcomes linked to occupational and academic standards helps to ensure that graduates acquire the competencies they need to be successful in attaining their desired goals, whether that be immediate employment, enrollment in further education, or some other plan.

Identifying the Primary Outcomes

In a national study of Tech Prep coordinators, Bragg, Layton, and Hammons (1994) learned that fifteen outcome areas have a high or very high priority to local implementation efforts, reflecting a wide range of preferred outcomes for students who engage in transition experiences. Three broad categories of outcomes identified by the tech prep coordinators were advanced academic and occupational preparation, successful school-to-college transition, and effective employability and interpersonal skills acquisition.

These outcomes are consistent with the standards and measures discussed in the Secretary's Commission on Achieving Necessary Skills (SCANS, 1991) as well as the federal vocational legislation, the Goals 2000 Act, and

If the goal of enhancing student learning is central to the secondary-to-postsecondary transition effort, it must be achieved through collaboration.

the occupational credentials advocated by the STWO legislation (Orr, 1998b). Later results obtained by Bragg (1997) reinforce these findings. In a research activity involving administrators, students, and business representatives from eighteen of NCRVE's Urban Network sites, exemplary tech prep and school-to-work curriculum was thought to require the following clusters of outcomes:

- Communications
- Democratic and participatory strategies
- Educational attainment
- Information use and decision-making
- Math and science
- Personal attributes, attitudes, and employability skills
- School-to-work transition
- Technology and quality management
- Work and interpersonal relationships

Exploring New Forms of Assessment

To ensure that these curricular outcomes are attained by students, alternative learner assessments should be used. Calls for new forms of assessment are being heard from various corners of the educational reform arena (Darling-Hammond, 1995), not just vocational education. Bailey and Merritt (1997) point out that a growing number of selective colleges are recognizing the merits of students having interests and commitments outside of school. By utilizing alternative or authentic forms of assessment such as portfolios, projects, or performance-based assessments, students can demonstrate their knowledge and skills in a realistic manner (Murnane & Levy, 1996; Resnick & Wirt, 1996). States such as Maryland, Oregon, and Wisconsin are experimenting with new forms of assessment for college and university admission. Forthcoming NCRVE research from Maidl Probbenow (forthcoming) will help us to understand the impact of these new admissions policies on student transition into four-year college.

Beyond alternative assessments, a focus on continuous improvement should be a high priority for secondary-to-postsecondary transition initiatives (Bragg, Kirby, et al., 1994; Bragg, Layton, et al., 1994), necessitating the use of program evaluation that is highly sensitive to changing measures of quality. Evaluation measures should capitalize on both incremental change and more dramatic breakthroughs. An emphasis on measuring incremental (systemic) change is particularly important to enhancing improvements in quality over the long term.

Local leaders tell us that executing any form of evaluation of tech prep and school-to-work is tremendously difficult (Bragg et al., 1997; Hershey, Silverberg, Owens, & Hulsey, 1998). Problems with identifying program participants, defining required curriculum elements, sharing information across institutions, and acquiring sufficient resources has impeded evaluation on all levels. For this reason, it is extremely important for state agency leaders to provide technical expertise and support to local practitioners to ensure that evaluation is implemented in meaningful ways. States such as Florida, Minnesota, Ohio, New York, Texas, and Illinois have engaged in systematic efforts to evaluate tech prep (Bragg, 1997). Most of these states also provide technical assistance to local consortia to improve local utilization of evaluation results to improve programs. Concerted efforts are being made at the state and local levels to ensure that educational programs as complex and far-reaching as tech prep and school-to-work are implemented successfully and sustained over the long term.

Access and Opportunity for All

Secondary-to-postsecondary transition opportunities need to be accessible to all students. At the start, tech prep was seen as most viable for the "neglected majority" (Parnell, 1985), but not necessarily for all students. However, with the passage of the federal STWOA legislation and increased understanding of the problems created when students are segregated from their peers, views of tech prep have changed. More educators now describe tech prep as appropriate for students who appear at every point on the academic ability continuum (Bragg et al., 1997), and they link it closely to STWOA activities that are perceived as appropriate for all students.

Worrying that the label of "all students" excludes the college bound, NCRVE researchers argue for the inclusion of college-bound students in school-to-work experiences. Bailey and Merritt (1997) contend that work-based learning holds potential for deeper and richer learning for college-bound students, and that colleges should capitalize on that learning. Stern et al. (1995) argue that if school-to-work initiatives do not attract the college bound, they will perpetuate the second-class status of vocational education. Without doubt, neither parents nor students want to be associated with education that hampers college admission.

As secondary academic standards rise, more students need be prepared to attend community college and four-year college. Recognizing this issue, local communities are increasingly more often engaging in concerted efforts to ensure that students who participate in Tech Prep or School-to-Work also fulfill college prep requirements. The College Tech Prep curriculum in Hillsborough County, Florida, typifies this approach (Bragg & Dornsife, forthcoming). In Hillsborough County, College Tech Prep enrollments are growing because of the advantages this model affords students by preparing them to matriculate to either two-year or four-year colleges. Recent findings show that while over one-half of high school graduates who participated in tech prep in high school continued to Hillsborough Community College, matriculation to four-year college is substantial. One-third of Hillsborough's tech prep graduates go on to four-year colleges immediately after high school graduation.

If educational programs designed to enhance secondary-to-postsecondary transition are to benefit all students, the idea of inclusive education—education for "all students"—has to be more than rhetoric. Secondary-to-postsecondary articulated curriculum must do more than simply acknowledge learner differences. It must value the diversity that individual students bring to learning and support their unique goals and academic pursuits. It must encourage and support the progress of students who have serious financial need, enabling them to continue to progress further in school than they might have otherwise.

To facilitate student access, opportunity, and success throughout an articulated program, various support services are needed. Preparatory and developmental services need to be provided to accommodate learner needs of an academic, career, or personal nature. Guidance and counseling, academic and career assessments, career information, and job placement services should also be provided to ensure that students' academic and social needs are met. NCRVE's Office of Student Services has conducted exhaustive national searches to identify exemplary programs that support successful transition from high school to college. In one of these award-winning sites, the North Harris College in Houston, Texas, a shared counselor partnership program has been instituted with two service area school districts to facilitate successful student transition by sharing counselors who focus exclusively on helping students make the transition to college. To reduce potential conflict between educational entities, these counselors are paid jointly by the high schools and community college. At another exemplary site, Parkland College in Champaign, Illinois, students are provided extensive support services by the Career Planning and Employment Services unit, which plays a central role in Parkland's efforts to facilitate success in career decision-making, development of employability skills, and completion of transitional processes.

Longevity Through Collaboration

Collaboration on all levels is essential to the success of student transition from the secondary to the postsecondary level. If the goal of enhancing student learning is central to the secondary-to-postsecondary transition effort, it must be achieved through collaboration. Joint planning involving academic and vocational faculty at both the secondary and postsecondary levels is essential to overcoming turf battles. Dornsife (1997) points out that difficulties can be overcome if people take the simplest and easiest step: Go out, meet, and talk to one another.

At the Volunteer State Community College in Nashville, Tennessee, staff development training involving faculty from both the sec-

Educational reforms that link secondary-to-postsecondary education in new and significant ways, such as tech prep and school-to-work, ask people to think differently . . . To stop thinking in such ways and start seeing all of education (secondary and postsecondary) with new eyes challenges our deepest beliefs about what "real school" is all about.

ondary and postsecondary levels was instituted when tech prep and school-to-work first came along, partly to enhance communication and break down barriers. Local Nashville leaders attribute much of their success to this strategy. In the CREATE partnership in Oklahoma City, faculty who engage in collaborative endeavors are rewarded with special opportunities to attend workshops and conferences. Potential problems over control of curriculum and distribution of resources were resolved when people began talking to one another and seeing how they contribute to a common goal—to assist students in their successful transition to college and work.

At the organizational level, collaboration is required to ensure that educational institutions and other interested groups, such as business, industry, labor, parent groups, student groups, and community-based organizations, have a clear understanding of their roles and contributions. Through transition programs, formal consortium partnerships can provide a foundation and ready network for ongoing communication and collaboration. An active exchange of information via meetings, the Internet, newsletters, and other means promotes an environment that can sustain curriculum reforms that span the educational system. In the best of situations, these organizations create the curriculum blueprint and lay down the foundation for its implementation and continued operation.

Orr (1998a) points out that local systems are highly dependent upon state interpretation of federal policies and that these interpretations have a direct influence on local transition systems. Orr's research in four states (Florida, Pennsylvania, New Jersey, and North Carolina) shows that the more boundaries, goals, and practices mesh between existing secondary and postsecondary programs, the more effective new transition systems will be. Whether simple or complex, it is important to remember that the most effective governance systems involve a wide range of community groups in real and significant ways (Hershey, Silverberg, & Owens, 1995). Without broad representation, the chances are slim that students—particularly students least likely to see themselves as college bound—will succeed in the transition process.

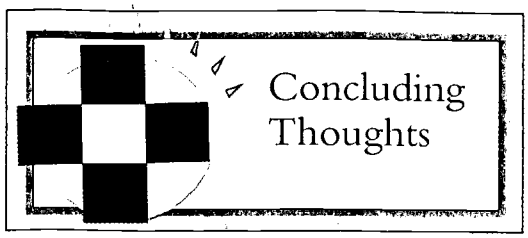
Finally, many different collaborations are required that involve students, both directly and indirectly. In the classroom, cooperative (group) activities are important to helping students engage in realistic and active learning. By employing a constructivist curricular approach—actively engaging learners in the creation and sharing of knowledge—students are provided the opportunity to engage with their peers in learning opportunities that they deem beneficial.

Learning can take place outside the classroom through student leadership organizations as well. In Danville, Illinois, high school students participate in the Tech Prep Student Leadership Academy where they gain additional insights into leadership. These students are actively engaged in mentoring younger students and their peers at the high-school level. Danville engages students in student/faculty and peer mentoring relationships at both the secondary and postsecondary levels. Students work together and with designated faculty to negotiate various school-to-college and school-to-work transitions.

Our recent interviews with students involved in tech prep and school-to-work programs reveal that those who have little support from home to go to college reap important benefits when a teacher, counselor, or peer helps them think through complex decisions about college and work (Dare & Bragg, 1999). Later, reflecting on their decisions and experiences, students believe they would not have been successful without the continued support they received from teachers and peers.

Ensuring Accountability and Quality in Future Transition Initiatives

Evaluation is critically important to the institutionalization and sustainability of tech prep, although concerted efforts at evaluation have been lacking. To this end, the National Association on Tech Prep Leadership (NATPL) has exerted leadership and offered direction to consortia throughout the nation that are attempting to implement evaluation efforts. Key elements of recommended evaluation practices for tech prep address such areas as curriculum, professional development, and student outcomes.



In many respects, educational reforms that link secondary-to-postsecondary education in new and significant ways, such as tech prep and school-to-work, ask people to think differently. These reforms ask people to stop thinking that, for far too many students, formal education should stop at high school graduation; that only a fraction of the high school population can and should go to college; that this same small group of students is the only one that can and should be challenged academically; that liberal studies should be disconnected from career preparation; or that good teaching occurs only within the confines of schools. To stop thinking in such ways and start seeing all of education (secondary and postsecondary) with new eyes challenges our deepest beliefs about what "real school" is all about. Like historians Tyack and Cuban (1995), we believe that our nation must commit itself to improving education—not just "tinkering with reform." However, rather than emphasizing academic instruction solely, we believe improved approaches to education would benefit by being more integrated, through better connections between academic and vocational education as well as between secondary and postsecondary education. Only by recognizing the overwhelming challenges associated with making fundamental changes in education and then investing in systemic reforms can we create new educational approaches that yield meaningful results. By enhancing school-to-college transition, we can create valuable educational opportunities for all students. With so much invested already, we owe it to ourselves and the nation to make that commitment.

NATPL's Quality Indicators

In the summer of 1998, the National Association of Tech Prep Leadership (NATPL) Board of Directors charged its research committee with conducting a review and synthesis of the existing indicators for quality tech prep programs (NATPL, 1999). An extensive review was conducted by the research committee of various evaluation plans and policies of local and state educational agencies, national tech prep organizations, and national research organizations. Results of these efforts yielded a set of indicators that has strong parallels to the six components of successful transition programs identified here. Furthermore, NATPL has conducted a crosswalk of the tech prep quality indicators and determined that, when implemented, these indicators provide most, if not all, of the information needed to meet the accountability requirements of tech prep programs operating under the Perkins Act of 1998 legislation. The new Perkins law identifies the four core indicators as skill proficiencies, secondary and postsecondary degrees and credentials, postsecondary education and employment, and non-traditional training and employment. Listed below are NATPL's recommended quality indicators for five integral components of a tech prep program:

Accountability/Sustainability

1. The tech prep program has identified benchmarks/objectives, outcomes, and definitions. These elements are developed, advanced, and evaluated by a functioning governance committee/council.
2. The tech prep program is evaluated in relation to those objectives and outcomes on an annual basis. Evaluation of the program includes the collection of qualitative and quantitative information and data (e.g., completion rates, placement information, articulation data, student and business satisfaction).
3. Program assessment is designed to measure and summarize student outcomes resulting from tech prep articulated programs of study.
4. Mechanisms are in place to ensure institutional sustainability of the program.

Student Opportunities

1. All students are afforded the opportunity to participate in tech prep.
2. Tech prep students are enrolled in a seamless program of study that begins preferably by grade 9 but at least by grade 11 and continues through at least two years of postsecondary education. The seamless program incorporates broad career clusters and rigorous academics.
3. Tech prep students have a program of study (i.e., occupational specialty/interest area) which includes sustained academic and career counseling and encourages them to investigate non-traditional training and employment opportunities and workforce shortages.
4. Tech prep students have the opportunity to be placed in a variety of paid and/or unpaid work-based learning experiences inside and/or outside the classroom or laboratory that match the program of study (i.e., student recruitment and placement services).
5. Tech prep students possess the vocational, technical, and academic skills required to enter higher education remediation free and/or enter the employment market.

BEST COPY AVAILABLE

Curriculum

1. Curriculum contributing to the tech prep program is seamless from secondary through postsecondary and is developed and evaluated by educators; business, industry, and labor leaders; counselors; students; and parents.
2. Local, state, and national academic and technical/occupational standards define the curriculum.
3. All aspects of the industry are embedded into the curriculum.
4. The curriculum incorporates career clusters and programs of study that embrace rigorous academic and technical competencies.
5. The curriculum integrates contextual and performance-based learning and assessment.
6. Instructional technology is a viable component of the tech prep program content and instruction.
7. Multiple assessments of student performance are used including performance-based, project-based, and portfolio-based assessments.

Articulation

1. The tech prep program shows collaborative involvement with between secondary, postsecondary, and business representatives.
2. Written articulated agreements are seamless between secondary and postsecondary institutions.
3. Articulation is inclusive to academic and technical courses.
4. Articulated competencies/skills are enhanced, not necessarily time-shortened.

Professional Development

1. The plans for technical and academic instructors/faculty professional development are aligned with the goals, objectives, and outcomes of the tech prep program.
2. The technical and academic instructors/faculty involved with tech prep have coordinated planning time to work in teams. Counselors and administrators are also involved with tech prep teams.
3. Secondary and postsecondary faculty and administration have training in instructional delivery, assessment, and all aspects of an industry to ensure that students meet high academic and employability standards (e.g., contextual and performance-based learning and assessment).
4. Training for counselors is designed to improve and strengthen career guidance skills and to help them stay current with employment trends, needs, and expectations.
5. Secondary and postsecondary faculty receive training in the use and application of technology.
6. Training on the infusion of gender and multicultural concepts takes place on two levels: (1) the content within a course of study and the management of student learning within the classroom, and (2) the entire school building.
7. Internships are established and maintained for technical and academic instructors/faculty with business, industry, and education. Internships include guidance personnel and administration. Business representatives have the opportunity to intern within the classroom/lab portion of the tech prep program.
8. Training is provided in the use of multiple assessments of student performance, including performance-based, project-based, and portfolio-based assessment.

ERIC

center 12 point

BEST COPY AVAILABLE

References

Badway, N., & Grubb, W. N. (1997). *A sourcebook for reshaping the community college: Curriculum integration and the multiple domains of career preparation* (MDS-782). Berkeley: National Center for Research in Vocational Education, University of California.

Bailey, T., & Merritt, D. (1997). *School-to-work for the college bound* (MDS-799). Berkeley: National Center for Research in Vocational Education, University of California.

Berryman, S., & Bailey, T. (1992). *The double helix of education and the economy.* New York: Institute on Education and the Economy, Teachers College, Columbia University.

Bragg, D. (1995). Linking high schools to postsecondary institutions: The role of tech prep. In W. N. Grubb (Ed.), *Education through occupations in American high schools* (Vol. 2, pp. 191–211). New York: Teachers College Press.

Bragg, D. (1997). *Educator, student and employer priorities for tech prep student outcomes* (MDS-790). Berkeley: National Center for Research in Vocational Education, University of California.

Bragg, D., & Dornsife, C. (forthcoming). *Community college and beyond. How tech prep/school-to-work affects students* (MDS-1303). Berkeley: National Center for Research in Vocational Education, University of California.

Bragg, D., Kirby, C., Puckett, P., Trinkle, K., & Watkins, L. (1994). *Building a preferred future with tech prep systems* (MDS-713). Berkeley: National Center for Research in Vocational Education, University of California.

Bragg, D., Layton, J., & Hammons, F. (1994). *Tech prep implementation in the United States: Promising trends and lingering challenges* (MDS-714). Berkeley: National Center for Research in Vocational Education, University of California.

Bragg, D., Puckett, P., Reger, W., Ortman, J., Thomas, S., & Dornsife, C. (1997). *Tech prep/school-to-work partnerships: More trends and challenges* (MDS-1078). Berkeley: National Center for Research in Vocational Education, University of California.

Dare, D., & Bragg, D. (1999). *Winds of change: A case study of the Heartland tech prep consortium* (MDS-1307). Berkeley: National Center for Research in Vocational Education, University of California.

Darling-Hammond, L. (1995). *Authentic assessment in action: Studies of schools and students at work* (Series on school reform). New York: National Center for Research Restructuring Education, Schools and Teaching, Teachers College, Columbia University.

Dornsife, C. (1997). The postsecondary partner. In E. Nielsen Andrew, C. Dornsife, M. Flack, M. T. Hallinan, L. Jackson, M. Raby, & M. Steadman (Eds.), *Lessons learned: Five years in the urban schools network* (MDS-1110, pp. 147–158). Berkeley: National Center for Research in Vocational Education, University of California.

Dornsife, C., & Bragg, D. (1992). An historical perspective for tech prep. In D. Bragg (Ed.), *Implementing tech prep: A guide to planning a quality initiative* (MDS-241, pp. 2-1–2-17). Berkeley: National Center for Research in Vocational Education, University of California.

Frenkel, M., & Gawkins, A. (1995, April). The missing link. *Vocational Education Journal, 70,* 26–27, 43.

Gray, K., & Herr, E. (1995). *Other ways to win.* Thousand Oaks, CA: Corwin Press.

Gray, K., & Herr, E. (1998). *Workforce education: The basics.* Boston: Allyn and Bacon.

Grubb, W. N., Badway, N., Bell, D., & Kraskouskas, E. (1996). *Community college innovations in workforce preparation: Curriculum integration and tech prep* (MDS-783). Berkeley: National Center for Research in Vocational Education, University of California.

Hamilton, S. F. (1990). *Apprenticeship for adulthood: Preparing youth for the future.* New York: The Free Press.

Hershey, A., Silverberg, M., & Owens, T. (1995). *The diverse forms of tech prep: Implementation approaches in ten local consortia.* Princeton, NJ: Mathematica Policy Research, Inc.

Hershey, A., Silverberg, M., Owens, T., & Hulsey, L. (1998). *Focus for the future: The final report of the national tech prep evaluation.* Princeton, NJ: Mathematica Policy Research, Inc.

Maidl Pribbenow, C. (forthcoming). *Changing admission procedures in four-year colleges to support K-14 reform: An interim summary* (MDS-1203). Berkeley: National Center for Research in Vocational Education, University of California.

McCabe, R., & Day, P. (Eds.) (1998). *Developmental education: A twenty-first century social and economic imperative.* Mission Viejo, CA: League for Innovation in the Community College.

Murnane, R. J., & Levy, F. (1996). *Teaching and new basic skills.* New York: The Free Press.

National Association of Tech Prep Leadership. (1999). *Tech prep program quality indicators.* Lincoln: Nebraska Department of Education.

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform.* Washington, DC: Author.

National Commission on Secondary Vocational Education. (1984). *The unfinished agenda.* Columbus: National Center for Research in Vocational Education, The Ohio State University.

Olson, L. (1997). *The school-to-work revolution.* Reading, MA: Addison-Wesley.

Orr, M. T. (1998a). *Community colleges and secondary schools: Collaborative efforts for school-to-work reform.* New York: Community College Research Center, Teachers College, Columbia University.

Orr, M. T. (1998b). Integrating secondary schools and community colleges through school-to-work transition and educational reform. *Journal of Vocational Education Research, 23,* 93–111.

Parnell, D. (1985). *The neglected majority.* Washington, DC: American Association of Community Colleges.

Pauly, E., Kopp, H., & Haimson, J. (1995). *Home-grown lessons: Innovative programs linking school and work.* San Francisco: Jossey-Bass.

Resnick, L. B. (1987). Learning in school and out. *Educational Research, 16,* 13–20.

Resnick, L. B., & Wirt, J. (1996). *Linking school and work: Roles for standards and assessment.* San Francisco: Jossey-Bass.

Rosenstock, L. (1991, February). The walls come down: The overdue reunification of vocational and academic education. *Phi Delta Kappan, 72,* 434–435.

Secretary's Commission on Achieving Necessary Skills. (1991). *What work requires of schools: A SCANS report for America 2000.* Washington, DC: U.S. Department of Labor.

Stern, D., Finkelstein, N., Stone, J., Latting, J., & Dornsife, C. (1995). *School to work: Research on programs in the United States.* Washington, DC: The Falmer Press.

Tyack, D., & Cuban, L. (1995). *Tinkering toward utopia.* Cambridge: Harvard University Press.

U.S. Congress, Office of Technology Assessment. (1995). *Learning to work: Making transition from school to work* (OTA-HER-637). Washington, DC: U.S. Government Printing Office.

Wirth, A. G. (1992). *Education and work for the year 2000.* San Francisco: Jossey-Bass.

BEST COPY AVAILABLE

Notes

point
Number 5 • July 1999

Program Management

Peter F. Seidman
Dissemination Program Director

Editorial Staff

Mary Carol Randall
Managing Editor

Claire Splan
Senior Editor

Marilyn Abbink
Copyeditor

David Carlson
Web Publishing

Design

Bobbi Sloan

This publication was published pursuant to a grant from the Office of Vocational and Adult Education, U.S. Department of Education, authorized by the Carl D. Perkins Vocational Education Act.

Printed on recycled paper with soy-based inks.

NCRVE

National Center for Research
in Vocational Education
University of California,
Berkeley

2030 Addison Street, Suite 500
Berkeley, CA 94720-1674

NONPROFIT ORGANIZATION
U.S. POSTAGE
PAID
PERMIT NO. 1
BERKELEY, CA

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

REPRODUCTION BASIS

☐ This document is covered by a signed "Reproduction Release (Blanket) form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☒ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").