

Update

ON RESEARCH AND LEADERSHIP

Office of Community College Research and Leadership

University of Illinois at Urbana-Champaign

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Staff

Debra D. Bragg, Ph.D. Director, Office of
Community College Research & Leadership and
Assistant Professor, UIUC

Paula A. Puckett, Research Assistant, UIUC

To our readers

This newsletter focuses on Tech Prep implementation in Illinois and the nation. We begin with an article reporting recent research conducted by our staff on nationwide Tech Prep implementation. The article focuses on two areas of research: stage of implementation and barriers to progress. The second article describes a new model for Tech Prep that is designed especially for adult students and called, not surprisingly, Adult Tech Prep. The third article presents a general education-Tech Prep curriculum that has incorporated the SCANS competencies. Altogether, these articles present some of the most current information about Tech Prep available today.

Finally, we want to thank our two contributing authors, Donna Schaad and Bruce Peterson, for their fine articles. We also want to thank you for your continued support of the *Update* newsletter. *Update* is published semiannually by the Office of Community College Research and Leadership. It reports the latest research on issues of interest to community college educators.

Who we are

The Office of Community College Research and Leadership was established in 1989 at the University of Illinois at Urbana-Champaign (UIUC). *Our mission is to provide research, leadership, and service to community college leaders and assist in improving the quality of vocational-technical education in the Illinois community college system.* The Office is supported by the Illinois State Board of Education, Department of Adult, Vocational and Technical Education with funding from the Carl. D. Perkins Vocational and Applied Technology Education Act of 1990.

Send comments to:

Dr. Debra D. Bragg
344 Education Building, UIUC
1310 South Sixth Street
Champaign, IL 61820
Office: (217) 333-0807 FAX: (217) 244-5632

Tech Prep in Illinois

An Up-Close Look at Progress & Barriers

Paula A. Puckett & Debra D. Bragg
University of Illinois at Urbana-Champaign

Tech Prep has spread rapidly since passage of the federal legislation in July 1991. Today nearly 900 local consortia operate throughout the nation. The federal law helps to define Tech Prep in several important ways. First, Tech Prep must be delivered by a local consortia composed of secondary and postsecondary institutions. Second, the programs must be based on formal 2+2 articulation agreements. Third, they must provide applied or integrated academic and vocational-technical content. Fourth, the programs must lead to an associate degree or 2-year certificate. Altogether, these and other reforms associated with Tech Prep offer promise to improve secondary and postsecondary education.

Illinois has been very active in the Tech Prep movement. There is a great deal of pride in what Illinois has already accomplished with Tech Prep. According to the Illinois State Board of Education (ISBE), "the impact of this initiative is unmistakable. Tech Prep is achieving, and in many cases, surpassing the goals established at its inception." Currently 41 consortia are funded for planning and/or implementation. ISBE reports the involvement of more than 500 secondary sites and 51 community college campuses. Extensive activity is also occurring with business and industry.

NEW RESEARCH ON TECH PREP

Knowing the scope of the Tech Prep initiative in Illinois and throughout the nation, we wanted to determine how local coordinators viewed Tech Prep implementation. We wanted to understand how local coordinators would respond to the following kinds of questions: What components of Tech Prep are the most advanced and the least advanced? What barriers are impeding progress? What should be done to improve federal and state Tech Prep policy?

These and other questions formed the basis for a national survey conducted by staff of the National Center for Research in Vocational Education (NCRVE) site of the University of Illinois. The primary goal of the study was to describe local Tech Prep implementation and generate recommendations to improve Tech Prep at the federal, state, and local levels. This study involved a random sample of over

450 of the nation's local Tech Prep consortium coordinators. Of the total sample, 397 coordinators participated, yielding a high response rate of 85%.

ILLINOIS' INVOLVEMENT IN THE STUDY

Illinois' consortia played an important role in the study since 39 of the 40 consortium coordinators who were invited to be part of the study actually completed and returned the 16-page questionnaire. The questionnaire completed by the Illinois coordinators was identical to the one completed by the nation's coordinators. By taking this approach, it was possible to analyze data provided by Illinois' coordinators separately from the national respondents as well as together with the other national findings. An extensive amount of information is available from this study to describe Tech Prep implementation in the U.S. To obtain a copy of the findings from the entire NCRVE study or other related NCRVE reports, see page 7 of this newsletter.

This article presents only a few selected findings from the entire study. This article discusses:

- Stage of implementation of key Tech Prep components and the overall initiative
- Barriers to implementation of Tech Prep
- Recommendations for improvement

STAGE OF IMPLEMENTATION

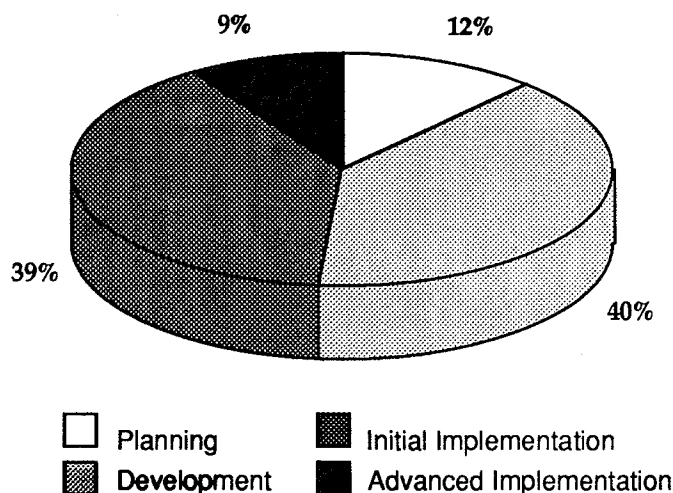
One section of the survey asked coordinators to indicate the stage of implementation of 30 Tech Prep components. This allowed us to examine how Illinois and the nation are implementing Tech Prep. Findings presented in the table on the next page specifically address this question. The table shows that the responses of Illinois coordinators closely paralleled those of the national sample of coordinators. Nine of ten components were rated by both groups as approaching or just beyond the initial implementation stage of 4.0 on the 5.0 scale. These ten "most advanced" components included several "essential elements" identified in the federal law such as articulation agreements, joint in-service, 2+2 core curriculum, and equal access for all students. Other components on both lists were planning, consortium building, team building, and marketing—all important activities for a new Tech Prep initiative.

One component was rated very differently by Illinois coordinators compared to the national sample of coordinators. Appearing fifth on the Illinois “most advanced” list was workplace professional development for teachers and counselors; the same component was ranked twentieth by the national sample of coordinators with a mean score of 3.0. This finding suggests that Illinois consortia have valuable experience with workplace professional development that could benefit consortia in the rest of the country.

On the other hand, absent from Illinois’ list of ten “most advanced” components was counselor in-service. Appearing tenth on the national list, this component was rated fifteenth by Illinois coordinators with a mean score of 3.05. Since this activity is an “essential element” of the federal law, counselor in-service should be carried out by all consortia. This finding points to the need for Illinois to give more attention to counselor inservice in the future.

Overall, the mean score ranking of the top ten components suggests a great deal of commonality in

implementation of Tech Prep between Illinois and the nation. The following pie chart displays local coordinator responses to a question about overall stage of implementation of Tech Prep.



Continue on page 6.

Ten Most Advanced Tech Prep Components					
Illinois (n=39)			National (n=397)		
Rank	Tech Prep Component	Mean	Rank	Tech Prep Component	Mean
1	Formal signed articulation agreements	4.12	1	Consortium building	4.10
2	Consortium building	3.89	2	Formal signed articulation agreements	4.02
3	Team building to facilitate Tech Prep	3.69	3	Joint in-service of secondary and postsecondary personnel	3.81
3	Joint in-service of secondary and postsecondary personnel	3.69	4	Team building to facilitate Tech Prep	3.80
5	Work place professional development experiences for teachers and counselors	3.61	5	Equal access for all students	3.66
5	Site-based planning and decision making for Tech Prep	3.61	6	Development of 2+2 core academic & technical curriculum	3.61
7	Long-range/strategic planning	3.55	7	Site-based planning and decision making for Tech Prep	3.55
8	Marketing and promotions	3.48	8	Long-range/strategic planning	3.53
9	Equal access for all students	3.38	9	Marketing and promotions	3.45
10	Development of 2+2 core academic & technical curriculum	3.35	10	In-service training of counselors	3.43

Note: Means are based on a five-point scale where 1 indicates the component has not begun and 5 indicates it is in advanced implementation.

ADULT TECH PREP

A Model for the "Forgotten" Adult Student

Donna Douglas Schaad

Black Hawk College, Moline, Illinois

Educators at Black Hawk College believe that the Tech Prep Associate Degree (TPAD) is an exciting option for high school students—those Dale Parnell described as the “neglected majority.” Tech Prep offers hope for students who have traditionally been abandoned by our educational system. However, educators at Black Hawk also believe this Tech Prep model is not enough. They argue that many adult students have not only been “neglected,” they have been “forgotten” and they deserve a chance to benefit from Tech Prep too.

Can adults compete with Tech Prep high school graduates in the community college classroom or in the job market? Beginning in 1992 Linda Fairweather, Director of Adult Basic Education (ABE), and her staff began exploring that question. Their answer was an enthusiastic “yes” and their commitment to the idea eventually led to the development of Adult Tech Prep, a model designed specifically to prepare adults for further education and work. With full college support, the fall semester of 1993 saw the first students—GED candidates, older returning students, and under prepared non-Tech Prep high school graduates—admitted to the program.

...many adult students have not only been “neglected,” they have been “forgotten” and they deserve a chance to benefit from Tech Prep too.

FOUNDATION OF APPLIED ACADEMICS

To develop the program, information was gathered about Tech Prep. Library research, group discussions, and brainstorming were all used in the early stages. The program was built on cooperative agreements and in-service training involving area high school and Black Hawk College personnel. Faculty for the program were chosen based on their knowledge of applied academics as well as their experience with adult students; an understanding of the complexity of adult life was seen as critical to the program’s success.

Faculty at the College emphasized that applied academics at any level should not be considered remedial; therefore, an entrance requirement of 10th grade-level reading and math was adopted. Taking into

consideration the requirements of traditional Tech Prep and Black Hawk College technical curricula, the following courses were selected to give the adult student a quality Tech Prep background:

- Applied Communications
- Applied Mathematics
- Computers
- Applied Physics
- Job Readiness

The curriculum reinforces SCANS basic skills, thinking skills, and personal qualities. In addition, interdisciplinary projects are used to reinforce skills and knowledge across the curriculum.

Classes are scheduled similarly to regular college classes rather than unstructured, open entry/open exit GED classes. After starting their program at the Black Hawk College Outreach Center, students are moved to campus to ease their anxieties about college. Once in the program, some classes meet at the Center; others meet on campus to utilize college lab facilities.

OUTCOMES-FOCUSED CURRICULUM

Student outcomes are specified in the following areas:

- Broad applied academics background
- Job readiness
- Transition to college technical majors
- Computer literacy
- Improved self esteem

High expectations are maintained for students. Steps are taken to assess the program by tracking students through college and into work. This can help to determine how this new model of Adult Tech Prep benefits the adult student. Will the model offer adults the opportunity to further their education or careers beyond what is available to them currently? Will the program be successful? Black Hawk College seems committed to seeing that it will be.

FOR MORE INFO

Contact Donna Schaad, administrator of Adult Tech Prep at Black Hawk College, at (309) 796-1311 ext. 242 for more information about this program.

GENERAL EDUCATION IN TECH PREP

A SCANS-Validated Approach

Bruce Peterson

Northwest Technical College, Detroit Lakes, Minnesota

At Northwest Technical College in Minnesota, a new general education curriculum is being developed to supplement technical training. This curriculum is designed to support the region's Tech Prep initiative. It is viewed as an effective supplement to the training agreements already in place between the College and local secondary Tech Prep programs. How Minnesota's Northwest Technical College developed this new general education-Tech Prep curriculum is the focus of this article.

HOW THE PROGRAM STARTED

When first developing the program, instructors and administrators defined their primary customer. Some said the customer was the student; others said business and industry. The group concluded that the ultimate customer of education is the business and industry that employs graduates. Consequently, preparing the future workforce for business or industry became the focus of a new alliance called ADVANCE (Application Driven Value Added Network for Career Enhancement). This alliance of Technical Colleges and Tech Prep consortia took ownership for designing the new curriculum.

The program began with the realization that each high school in Northwest Technical College's area had different programs articulated with the college. While effective training agreements existed, relatively few students could take advantage of them because of the limited resources and vocational program mix at the campuses and schools. In looking at what was available across the region, it became important to focus on general education requirements for all students. Work-relevant general education provided a common ground for developing a new general education-Tech Prep curriculum. ADVANCE dedicated itself to designing education to develop student workplace skills.

VALUABLE RESOURCES

Any new movement in education needs validation. The basis for the ADVANCE curriculum was two documents: *What Work Requires of Schools. A SCANS Report for America 2000* and *Transformation: What Minnesota Business Needs from Education*. These reports identified essential

workplace skills that provide the curriculum building blocks in basic skills, thinking skills, and personal qualities. SCANS further defined five competency areas in which the student needs to show proficiency, including systems thinking and technologies.

Work-relevant general education provided a common ground for developing a new general education-Tech Prep curriculum.

Once these competencies were accepted by ADVANCE, instructors and administrators from the entire area developed the curriculum. Since Minnesota requires future graduates be evaluated by achieving outcomes, outcome-based education was used.

PORTABLE GENERAL EDUCATION

Overall the curriculum centered on a general education component that could be taught at the secondary or postsecondary level. The thrust was on teaching traditional elements of education but in a way that would emphasize student understanding of basic concepts. Students were given problems from real situations and encouraged to apply the basic knowledge. Because students were encouraged to use basic concepts, they were more motivated to learn and more likely to be successful as learners.

ADVANCE recently produced a document that includes outcomes, proficiencies, and rubrics for measuring student achievement in the SCANS areas. In addition, an assessment and software package is being developed to monitor student progress through the curriculum. ADVANCE is also developing tools to translate the outcomes used in the secondary system to content goals used in the technical college system.

FOR MORE INFO

To learn more about ADVANCE, contact Jerry Neff at ADVANCE EDUCATIONAL SPECTRUMS, Route 5, Box 458, Detroit Lakes, MN 56501. The author of this article, Bruce A. Peterson, is an instructor of Marine Engine Technology and Curriculum Specialist at Northwest Technical College, 900 Highway 34 E, Detroit Lakes, MN 56501, (218) 847-1341.

Overall Illinois' coordinators saw themselves moving toward advanced implementation, although few were at that stage at the time of our survey during the summer of 1993. The local coordinators indicated that slightly over 50% of consortia were at the planning/development stages and slightly under 50% were at the initial/advanced implementation stages. Not surprisingly, the stage of implementation was closely related to the length of time a consortia had received funding. Local consortia funded in 1990 or 1991 usually saw themselves at the initial or advanced implementation stage; consortia funded in 1992 or 1993 usually reported their activities to be at the planning or development stage. ISBE described these findings as an accurate picture of Illinois' progress with Tech Prep and reflective of several priorities: 1) High expectations based on forming three partnerships (education and business, industry, and labor; secondary and postsecondary; and academic and vocational), 2) Tech Prep viewed as total school reform, and 3) A commitment to involve all high schools and community colleges.

BARRIERS TO IMPLEMENTATION

The survey also asked coordinators to indicate the impact of 50 potential barriers to Tech Prep. Listed below are the top ten barriers for Illinois and the nation based on the mean scores of each group. Nine barriers appear on both lists. Illinois' barriers ranged from 3.8 to 4.6 compared to 3.7 to 4.2 for the national sample. (The scale for this question ranged from 1 for no impact to 6 for very major impact.) This finding indicates that 8 of the 10 barriers were perceived by Tech Prep coordinators in Illinois to have a slightly greater impact than by their peers on the national level. It also suggests that although commitment to Tech Prep is high, as evidenced by the progress reported on overall implementation, Illinois' coordinators still saw themselves as having to overcome several "major" obstacles to reach full-scale implementation of Tech Prep.

Continue on the following page.

Top Ten Barriers to Tech Prep Implementation					
Illinois (n=39)			National (n=397)		
Rank	Barrier	Mean	Rank	Barrier	Mean
1	Lack of staff, time, and money	4.57	1	Little time for joint planning by academic and vocational or secondary and postsecondary faculty	4.21
2	Little time for joint planning by academic and vocational or secondary and postsecondary faculty	4.46	2	Failure of four-year colleges/universities to award college credit for applied academics or other Tech Prep courses	4.09
3	Failure of four-year colleges/universities to award college credit for applied academics or other Tech Prep courses	4.40	3	Lack of general awareness of Tech Prep	4.06
4	Belief that Tech Prep is a "fad"	4.07	4	Lack of staff, time, and money	4.05
5	Lack of general awareness of Tech Prep	4.05	5	Belief that Tech Prep is a "fad"	3.84
6	Negative attitude toward vocational ed.	4.02	5	Difficulty dealing with ed. bureaucracies	3.84
6	Difficulty in dealing with ed. bureaucracies	4.02	7	Negative attitude toward vocational ed.	3.79
8	Lack of knowledge and skills among ed. personnel in how to implement change	4.00	8	Lack of knowledge and skills among ed. personnel in how to implement change	3.75
9	Looking at Tech Prep as vocational education by another name	3.92	9	Looking at Tech Prep as vocational education by another name	3.72
10	Pressure for quick success and student head counts	3.82	10	Resistance from academic educators to make changes for Tech Prep	3.70

All but one of the barriers, lack of general awareness of Tech Prep, received a higher impact rating from Illinois coordinators than the national sample. Barriers felt more keenly in Illinois included lack of staff, time, and money; time for joint planning; failure of four-year colleges to award credit; Tech Prep is a "fad"; and negative attitude toward vocational education. To facilitate Tech Prep implementation, these barriers must be addressed on a local, state, and national level.

The barrier appearing on Illinois' top ten list but missing from the nation's top ten list was pressure for quick success and student head counts. This barrier was thirteenth on the national list with a mean score of 3.5. This barrier is troubling because it has the potential to threaten early planning and development efforts that create a foundation for Tech Prep.

Also appearing on the national top ten list of barriers but not in Illinois' top ten was resistance from academic educators to make changes for Tech Prep. This barrier was ranked fourteenth by Illinois coordinators with a mean score of 3.67, which was nearly identical to the mean score on the national list. Since the barrier was rated similarly by both groups, it is important to not overstate its significance to Illinois' efforts. However, the fact that it has fallen from Illinois' top ten list may indicate progress on one of the state's three partnerships: the partnership between academic education and vocational education.

COORDINATOR RECOMMENDATIONS

An important goal of the survey was to generate ideas regarding federal and state policies on Tech Prep. The responses of the Illinois coordinators were categorized into three areas: leadership, purpose, and resources. Each area of recommendations is summarized briefly here. First, several Illinois coordinators endorsed the importance of strong leadership for Tech Prep. This recommendation was made most poignantly by a coordinator who wrote, "National, state and local leadership needs to be more vocal and visible about the resources allocated and the outcomes expected from this initiative. If a long range plan exists, it should be communicated to lay citizens. A plan would help young people and parents form a vision; encourage business/industry to include TP [Tech Prep] in their strategic plans; and most importantly present an incentive for faculty to perceive the value and challenge in workforce preparation."

A second set of recommendations was in the area of reaching consensus on the purpose and appropriate delivery strategies for Tech Prep. A few coordinators cautioned against directing Tech Prep to selected

student groups and advised a more inclusive approach. Others recommended that any new federal legislation should allow Tech Prep to begin prior to the 11th grade. Still others recommended articulation to four-year colleges and universities as an appropriate capstone experience for Tech Prep students. In order to put any of these goals into place, several of the coordinators asked for assistance with articulation of applied academic courses to four-year colleges, and improved guidance and counseling. The State's recent efforts to reach consensus on a definition of Tech Prep should be welcomed by local coordinators who are searching to clarify the Tech Prep concept and implementation strategies for it.

"National, state and local leadership needs to be more vocal and visible about the resources allocated and the outcomes expected from this [Tech Prep] initiative..."

Finally, a third area of recommendations was in ensuring sufficient resources for implementation. One coordinator emphasized the need to integrate funding for Tech Prep with other federal employment and training programs. Still another said, "Reduce state and federal barriers to full cooperation. Provide tax or other incentives to business and industry for full participation." These recommendations are probably best summarized by one coordinator who wrote "It takes time, patience, persistence, and money to convince and educate high school and community college teachers [and all other interested parties] about the need for reform and [to] change from "business as usual."

FOR MORE INFO

The study was conducted during the summer of 1993 by the University of Illinois site of NCRVE under the direction of Dr. Debra D. Bragg. Results of this research will help to describe how Tech Prep is progressing nationwide. An *Executive Summary* of the findings will be distributed to all survey respondents in January of 1994. The technical report entitled *Tech Prep Implementation in the United States: Promising Trends and Lingering Challenges* will be available from the NCRVE Materials Distribution Center in early 1994. A second report based on these survey findings and related research will be available from NCRVE in the spring of 1994. It is tentatively entitled *Building Futures: Transforming Education with Tech Prep*. To order these or other NCRVE products, call 1-800-637-7652.

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Office of Community College
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College of Education
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