1993

Investigation of the Correlation Between the Tech Prep Initiative and the Restructuring of Curriculum in Selected Illinois High Schools

Sandra K. Ward

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Investigation of the Correlation Between the

Tech Prep Initiative and the Restructuring

of Curriculum in Selected Illinois High Schools

(TITLE)

BY

Sandra K. Ward

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Tech Prep Initiative and the Restructuring

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Abstract

The purpose of this study was to investigate the correlation between the Illinois Tech Prep Initiative and the restructuring of high school curriculum in Illinois. Tech Prep is a structured sequential program which emphasizes continuity in learning, integration of academics and vocational studies with technology, context-based teaching, and completion of the program with an associate degree.

This study examined the scope and degree which Tech Prep has influenced school districts to create new applied courses, implement new applied methods of teaching, and institute a new focus on technology. A questionnaire was mailed to principals of randomly selected high schools in Illinois Vocational Delivery Systems which participated in an Illinois Tech Prep grant during Fiscal Year (FY) 1991. The questionnaire solicited demographic information and data regarding implemented changes and/or planned restructuring of curriculum.

Evaluation of the data revealed that more than twice as many schools are participating in Tech Prep during the 1992-93 school year than did in the 1990-91 school year. Data revealed that few schools are adding new courses, but instead are modifying existing

curricula to include Tech Prep concepts and strategies.
Change has occurred most in vocational and mathematics
curricula. Applied teaching methods seem to be the
main focus for change in these areas. Furthermore,
data indicated that there is less focus on applications
of technology and less integration of curricula than
what might be expected of high schools participating in
a Tech Prep grant.

This study revealed that while more schools are
participating in Tech Prep each year, secondary
educators in many Illinois high schools need more
information and training regarding the purpose of Tech
Prep. Furthermore, the study indicated that in some
instances district level commitment necessary for the
implementation of Tech Prep is lacking.

Chapter 1

Overview

Introduction

It is generally agreed by educators that American society is in need of an educational excellence that prepares all young people for what the twenty-first century will require of them. The 1984 National Commission on Excellence in Education report, <u>A Nation At Risk</u>, states the dilemma in this way:

> More and more young people emerge from high school ready neither for college nor for work. This predicament becomes more acute as the knowledge base continues its rapid expansion, the number of traditional jobs shrinks, and new jobs demand greater sophistication and preparations (Parnell, 1985, p. 1).

In the pursuit of this excellence in education, a variety of reform reports, descriptions and strategies have been issued and examined. Yet, many educators believe that significant factors remain in the way of excellence in the modern American school and college educational program (Hull and Parnell, 1991).

First, many educators have allowed the traditional college prep/baccalaureate degree curriculum to be the one and only definition of excellence in education.

And yet, statistics show that three out of four high school graduates will not earn a baccalaureate degree (1991).

Second, the curriculum has become too disconnected from real-life issues. Teaching and learning in formal education usually take place outside the context of real-life situations, activities, and problems. In contrast, studies show that most individuals learn best when they are taught in a context of application (1991).

Third, little attention has been given in education to the subject of continuity in learning. As a result, American schools have become a collection of disjointed courses that often fail to connect with one another (Powell, Farrar, and Cohen, 1985).

Fourth, in defining educational excellence, little attention has been given to the dilemma of how to meet the great range of individual differences among students. Teenagers in this respect are more like adults than like young children. Powell et al. (1985) believes that high school students have lived long enough, grown enough, and learned enough to express actively the distinct personalities they will possess the rest of their lives. Even more than young children teenagers have minds, feelings, and wills of their own.

Fifth, many students have been allowed to graduate from secondary schools and even postsecondary programs without the competencies required to secure entry-level employment in a rapidly changing environment, or the flexibility to retrain later as job market requirements change (1991).

A new reform movement called Tech Prep represents a program which some educators say will overcome the five factors preventing educational excellence previously cited. Tech Prep represents a new approach to vocational education. This approach emphasizes continuity in learning; integration of academics and vocational studies with technology; context-based teaching; competency-based teaching; communication between learning institutions; and completion of the program with an associate degree.

Statement of Problem

The purpose of this study was to investigate the scope and degree to which the Tech Prep Initiative has influenced Illinois school districts to create new courses, implement new methods of teaching such as applied academics, and institute a new focus on technology. There has been little research regarding the influence of Tech Prep on the restructuring of curricula in Illinois High Schools.

Many educators believe that Tech Prep is the major restructuring strategy transforming secondary schools across the nation today (Hull and Parnell, 1991). But, when educators say they are involved in school restructuring and Tech Prep, what are they really doing? The problem addressed in this study is to determine if the Tech Prep Initiative is indeed generating change in secondary education in Illinois, or if Tech Prep is a temporary fad that will result in negligible changes in curricula.

This study provides useful data for business agencies and educators at the state, district and school system level to determine the extent and scope that resources directed to the Tech Prep Initiative are facilitating curricular change at the secondary level. The data may also provide rationale for some districts to move forward with restructuring curricula that include Tech Prep concepts and strategies.

The research questions that were investigated to answer the problem statement were:

1. Has Tech Prep led to the implementation of new vocational and academic courses?

2. Are applied teaching methods being implemented in existing vocational and/or academic courses?

3. Have vocational and/or academic courses been

integrated?

4. Have courses and/or programs been added or redesigned to provide applications of technology?

5.   Did schools discontinue the Tech Prep program after having participated for at least one year?

Operational Limitations, Delimitations, and Definitions

Limitations.   This research had limitations that may have influenced the findings:

1.   The findings were limited by the validity of the instrument used to collect the data.

2.   The findings were limited by the degree of accuracy which the principals exercised in completing the questionnaire.

3.   The findings were limited by the total number of surveys completed and returned.

Delimitations.   Because this study focused on curriculum--programs, courses, learning environment, and instructional strategies--the area of teacher training necessary for restructuring curriculum and recognizing different learning styles was outside its scope.

Also, this study did not investigate the quantity, degree and range of articulation agreements between respondent high schools and community and technical colleges.   Furthermore, Illinois high schools

addressing changes in curriculum from other sources
were not included in this project.

Definition of terms. The following terms have
been defined to provide readers with an understanding
of their contextual use:

Applied teaching methods. The presentation of
subject matter in a way that integrates a particular
academic discipline, such as mathematics, science, or
English, with personal work-force applications (Hull
and Parnell, 1991).

Curriculum. The whole body of courses offered in
an educational institution (Webster's, 1982). For this
study, curriculum also encompasses instructional
strategies and learning environment.

Initiative. A new course of action (Webster,
1982).

Restructure. Reorganization and/or change of
educational courses, programs and/or instructional
strategies.

Tech Prep. Illinois Tech Prep represents an
educational path that integrates academic skills with
vocational education. It is a planned sequence of
courses, both academic and technical, that is
articulated with a postsecondary experience leading to

an associate degree (Illinois Board of Education, 1992).

Technology. For this study technology means computer, video, telephone, and/or any equipment associated with or related to these devices.

Chapter 2

Rationale, Related Literature, and Research

Rationale

The Tech Prep Initiative was given major emphasis in Illinois in the re-authorized Carl D. Perkins Vocational and Applied Technology Education Act of 1990. However, there has not yet been a study regarding the impact of Tech Prep on Illinois high school curriculum since the Tech Prep Initiative awarded grants in FY 1991.

With the apparent lack of data regarding the impact of Tech Prep on Illinois high school curricula, a need exists to investigate if Tech Prep is generating change in secondary school curricula.

Review of Literature and Research

One of the reasons dissatisfaction is often expressed about modern schools is that schools have failed to match in any systematic way the goals of schooling with the life-role needs of individuals living in our modern society. Not surprisingly, Kohl (1992) asserts that "Public schooling is at least a half-century out of date, rooted in a 'factory model' of schooling" (p. 70).

In the book The Neglected Majority (1991) Parnell explains that society of seventy years ago was

"information poor but experience rich" (1985, p. 59).

People received most of their information from books or

from neighbors, but they were involved in all kinds of

experiences. Usually children were given

responsibilities or chores from which they learned

practical skills and gained experience.

Parnell believes that today, in contrast, we live

in a different society, "an information rich but

experience poor society" (1985, p. 59). Children

acquire so much information from television that many

suffer from too much data. They are not emotionally

equipped to assimilate or interpret all they see and

hear without the personal experience that provides

realistic perspective. When students enter the

classroom, they are confronted with even more

information, often as ambiguous as and, generally, less

interesting than that on television.

As a result, traditional curricula and teaching

methods are undergoing a reevaluation in light of the

needs of our changing society and workplace. Among the

models being advanced to reestablish the connection

between what is taught in school and what is required

of graduates is applied academics. Applied academics

stresses the teaching of academic skills within a

contextual framework that is meaningful to students.

Research suggests that traditional teaching techniques--lectures delivered to students as passive recipients of information--are not the most productive. In addition, cognitive research supports the value of a hands-on approach that moves from the concrete to the abstract. It has also been shown that a contextual approach, in which students see the direct application of instruction to their own lives, promotes academic mastery. Furthermore, research on learning styles identifies the applied approach as appropriate for all students (St. Clair, Lunsford, & Hollingsworth, 1993).

A force behind the implementation of applied academics, Tech Prep provides structured instruction in academic and technical skills to students who are unlikely to pursue a baccalaureate degree. One of Tech Prep's principal strengths is that it breaks down the artificial distinctions between academic and vocational education. The occupations of tomorrow will require workers who are able to integrate all of their skills effectively (Atkinson, et.al, 1993).

Moreover, many educators believe that if the primary purpose of education is to help each student become a fully competent, self-motivating, self-fulfilling member of society, then attention should also be directed toward careers-education orientations.

Like applied academics, vocational and/or careers education enables students to relate information and knowledge with real life experiences (Rosenstock, 1991).

However, most discussions of education reform and educational excellence do not include vocational or careers education. The traditional way to approach vocational education reform is to upgrade equipment. In a recent study Kohl (1992) established that driving the need for the reform of vocational education are some fundamental, though not widely understood, facts about the degree of students' participation in vocational programs. More students take substantial amounts of vocational education than most people think. Research points out that most students take vocational education. Kohl cites the 1989 National Assessment of Vocational Education (NAVE) report that found that more than 97% of students take at least one vocational education course before they graduate from high school. About 20% of all the high school courses taken by students are vocational education courses. In fact, the typical high school student takes more credits of vocational education (4.2 credits) than English (4.0 credits). This supports the point that all high school students spend a substantial amount of their time in

vocational education.

At the same time, these statistics also point to the problem that unfocused learning remains a prime barrier to achieving excellence. For many students the high school curriculum is a combination of general, remedial, and personal/hobby courses. Even though these students take fifteen percent of their high school credits in vocational education courses, there is little evidence of any kind of focus or concentration. Students who are unfocused in their learning are more alienated toward school and have a significantly higher drop-out rate (Parnell, 1985).

Furthermore, many high school students indicate that their last year in high school does not amount to much. Students tend to arrive at the twelfth grade needing only two or three credits to graduate. As a consequence, the twelfth grade becomes a "goof-off" year, a phenomenon which Parnell believes has seemed to increase since the late 1960's. Parnell believes that excellence cannot be cultivated when half or more of the students in a senior class see their final year as unimportant in terms of learning. A system of structured learning and focused goals must remain within clear vision of the students (1985).

In 1990 new federal legislation provided some of

the resources and tools needed to rebuild and reorient vocational education. The legislation was approved on September 25, 1990, as the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990. Wirt (1991) believes that the new law sets a new course to the future for vocational education. Likewise, Gray (1991) believes that the re-authorized Carl D. Perkins Vocational and Applied Technology Education Act of 1990 is an important step in redirecting vocational education and, ultimately, in restructuring high schools for the 21st century. Part E, Title III of the Carl D. Perkins Vocational and Applied Technology Education Act is cited as the "Tech Prep Education Act."

First among the new features of the federal Tech Prep legislation is the requirement that vocational and academic education be broadly integrated. This is a shift away from the traditional job-skills orientation of vocational education and toward the broader purpose of using vocational education as a vehicle for learning academic and other kinds of thinking skills. At both the secondary level and the postsecondary level the legislation calls for the "integration of academic and vocational education."

Specifically, integrating vocation education with

academic education requires educators to adopt a
different view: that vocational education is a
different way to learn the same academic concepts and
skills that non-vocational students learn. Parnell
(1985) advocates that vocational education must be
restructured so that it contributes much more to the
development of students' thinking skills. Parnell
concludes that to effectively prepare the work force of
the future, vocational education must become part of
the "thinking curriculum."

In addition to integration, the 1990 Carl D.
Perkins Act requires that vocational education move
from occupationally specific, narrow, skill-based
training to offer instruction in all aspects of an
industry. Rather than struggle to equip shops with the
most current technologies, schools will train students
to use their hands and minds to develop an
understanding of all aspects of an industry. Students
who come through such a program will have a broad
knowledge of the industry they have chosen to enter.
They will also have transferable skills that will
benefit them in later career changes.

An important change in the Carl Perkins
legislation is that the new law restructures the
relationship between the states and the local school

districts in an effort to encourage the districts to provide greater leadership in reforming and improving vocational education than they have in the past. The law expects local recipients to develop their own plans for using federal funds for improvement and services. (Wirt, 1991).

One of the major priorities of this shift to state leadership is to encourage the development of Tech Prep programs (Ford, 1991). The Tech Prep initiative in Illinois is an attempt to meet the educational challenge of the new Perkins legislation, and to provide Illinois with a labor force that possesses not only advanced technical skills, but also strong academic skills and interpersonal skills. Skill shortages, rather than job shortages, are likely to become the dominant labor problem of the future (Ford, 1991).

In Illinois as early as 1985 educational leaders at both secondary and post-secondary levels began to investigate methods of improving the transition between high schools and community colleges. At the same time, a need for programs designed to supply the private sector with well prepared "technicians" was identified. Prompted by Parnell's book The Neglected Majority (1985), general education students in high schools

became the target audience for this reform.

In the fall of 1986 the staff of the Illinois Community College Board (ICCB), under the direction of Ann Kuffer Bragg, assembled a task force consisting of ICCB staff, Illinois State Board of Education (ISBE) staff, and career deans from five community colleges. This task force, known as the Tech Prep Articulation Task Force, was charged with developing suggestions for improving the preparation of students for advanced technology careers. The report was released to secondary regional vocational systems and community colleges in Illinois in April, 1987.

This Task Force Report had little or no impact upon the educational community until August, 1989, when David Pierce (then Executive Director of Illinois Community College Board) issued a challenge at a statewide Education for Employment (EFE) meeting to evaluate the concept of Tech Prep. Richard Miguel, the new Assistant Superintendent of the Department of Adult, Vocational and Technical Education (DAVTE) accepted the challenge and authorized staff of the Vocational Education Program Improvement Section to begin developing a plan to cause Tech Prep planning to occur within Education For Employment (EFE) systems and community colleges throughout the state.

The Vocational Education Program Improvement staff responded by assembling a committee of educational leaders from across the state. This group consisted of college deans and instructors; high school superintendents, principals, and instructors; school board members, ICCB staff, and ISBE staff. The committee reviewed the 1986 report and was challenged to give definition to Tech Prep, to define Tech Prep programs' essential elements, and to recommend a plan for implementing Tech Prep in Illinois. As a result of the committee's work, Tech Prep in Illinois was defined and given endorsement by such agencies as the Illinois Manufacturing Association, the Illinois Tooling and Manufacturing Association, the Illinois Chamber of Commerce, the Illinois Council on Vocational Education, the Illinois Community College Board, and the Department of Commerce and Community Affairs.

In addition to developing a philosophy about Tech Prep, the Vocation Education Program Improvement staff used input from the statewide committee to develop a request for proposals. This request for proposals was developed to involve secondary systems and community colleges in the planning of Tech Prep. The Department of Adult, Vocational and Technical Education (DAVTE) set aside $500,000 for fiscal year 1991 in the hopes of

funding 10 planning sites at approximately $50,000
each. In response to the request for proposals issued
in March 1990, 32 proposals were received. A proposal
review team identified 17 proposals that warranted
funding. During FY 91, Tech Prep planning grants were
funded by the Illinois State Board of Education using
Carl Perkins and Job Training Partnerships Act (JTPA)
funds totaling $666,000. Those 17 planning grants
included 127 secondary sites and 20 postsecondary
sites. A variety of educators were involved with at
least 4,824 attending awareness presentations at
planning sites. Over 300 administrators and 448
representatives from business and industry were also
instrumental in the planning process.

During FY 92, the 17 initial sites were funded to
pilot Tech Prep in participating schools, as well as to
expand planning. In addition, 14 new planning sites
were funded using 2.6 million dollars in federal Carl
Perkins Vocational and Applied Technology Education
Title IIIE funds.

Accordingly, the Illinois State Board of Education
believes that Tech Prep represents a viable format in
which to enact school reform. Provided adequate funds
are made available, long range plans include the
involvement of every community college and secondary

regional vocational system in Illinois in the Tech Prep initiative. The initiative includes planning, pilot implementation, full implementation, and local adoption (Illinois State Board of Education, 1992).

Because the Illinois Tech Prep initiative is relatively new, there are no current studies investigating the relationship of Tech Prep and the restructuring of high school curricula in Illinois. Indeed, while educators agree on the need for restructuring high school curriculum, many remain on the sidelines, waiting to see what will happen and how the program develops (Rosenstock, 1991). The question addressed by this study is whether Tech Prep is being internalized by school districts in Illinois as a format for curriculum restructuring or whether districts are considering Tech Prep an educational fad with little effect on present or future high school programs?

Chapter 3

Design of the Study

<u>General Design</u>

As stated in Chapter I, the purpose of this study was to gain information in order to answer the following questions:

1. Has Tech Prep led to the implementation of new vocational and general studies courses?

2. Are applied teaching methods being implemented in existing vocational and/or academic courses?

3. Have vocational and/or academic courses been integrated?

4. Have courses and/or programs been added or redesigned to provide applications of technology?

5. Did schools discontinue the Tech Prep program after participating for at least one year?

There has been little research regarding the influence of Tech Prep on the restructuring of high school curricula in Illinois. Therefore, the intent of the study was to determine if the Illinois Tech Prep Initiative is generating change in secondary education, or if Tech Prep is a temporary fad in education that will result in negligible changes in curricula.

Data were collected from Illinois high schools participating in a Tech Prep grant for Fiscal Year (FY)

1991. ✓A survey instrument (Appendix C) was developed by the researcher to seek demographic information, current status of Tech Prep participation, and information regarding planned or implemented curricular changes as a result of Tech Prep. Demographic information included present position of respondent, school enrollment, school type, and school location.

Sample and Population

✓The population for the study was 288 high schools in Illinois. The 288 high schools were members of Illinois Regional Vocational Delivery Systems which participated in a Tech Prep grant in FY 1991, 1992, or 1993. A random sample of high schools was obtained by selecting every second school on the Illinois Vocational Delivery System Tech Prep list. One hundred forty-four Illinois high schools received a survey questionnaire. The researcher discovered that a more updated Tech Prep school list was being constructed by the Illinois State Board of Education, but the updated list would not be available until a much later time.

The Illinois State Board of Education list did not contain school addresses or the names of administrators and/or contact persons for the Tech Prep program. School addresses were obtained from the 1992-93 Illinois High School Athletics (IHSA) School Directory

and from personal contact with Illinois Vocational

Delivery Systems.

Once schools were selected, a cover letter

explaining the project (see Appendix A) was created and

attached to the questionnaire, along with a self-

addressed, stamped return envelope.

Each questionnaire was coded with a number to make

it possible to monitor which schools did not return the

questionnaire before the designated date. A follow-up

letter (see Appendix B) along with a stamped, addressed

envelop was mailed to those schools which did not

return the questionnaire.

Collection and Instrumentation

The survey questionnaire (see Appendix C) was

designed by the researcher of this study. Demographic

information, Questions 1-6, included present position

of respondent, school enrollment, years of

participation in Tech Prep, current status of

participation in Tech Prep, and location of school.

While the demographic information was not significant

to the survey results, the information was interesting

to the researcher and might be useful for future

analysis of data.

Question 7 and the remainder of the survey were

designed to seek data regarding curricular

restructuring as a result of Tech Prep. Respondents were asked to complete a matrix to give information regarding planned or implemented curriculum changes as a result of Tech Prep. Although the survey and matrix appeared to be complex, it could be completed within 20 minutes.

The survey instrument, cover letter, and stamped return envelopes were mailed to the selected high schools during February 1993. The cover letter included a request to return the survey by the specified date of March 15, 1993. One week following the date to have the questionnaire returned, a follow-up letter was sent to people who did not respond by the date requested.

Data Analysis

Data from the questionnaire were analyzed to determine curricular changes at the high schools, and to determine if the restructuring was related to Tech Prep. The effect of Tech Prep to restructuring of curricula was determined by evaluating the scope and extent of curriculum changes based on the research questions:

1. Has Tech Prep led to the implementation of new vocational and academic courses?

2. Are applied teaching methods being implemented

in existing vocational and/or academic courses?

    3. Have vocational and/or academic courses been integrated?

    4. Have courses and/or programs been added or redesigned to provide applications of technology?

    5. Did schools discontinue the Tech Prep program after having participated for at least one year?

    Responses to the study questionnaire were analyzed by the Eastern Illinois University computer services department. The results were expressed as frequencies and percentages. The sections of the questionnaire which asked open ended questions were hand tabulated by the researcher.

Chapter 4

Results

General Information

The purpose of this study was to investigate the scope and degree to which the Tech Prep initiative has influenced school districts to create new courses, implement new applied methods of teaching, and institute a new focus on technology.

The survey was mailed to 144 Illinois high schools. One hundred six questionnaires were returned. The total survey percentage received was 74%.

This chapter presents the data in three sections. The first section highlights relevant demographic information gleaned from the study. The second section presents findings of the status of the Tech Prep grants at the selected schools. Finally, findings of the research questions dealing with curricular changes related to Tech Prep are presented.

Demographic Information

The first four questions of the questionnaire obtained demographic information from the respondents. First, respondents were asked to check their current position at the school: principal, vocational coordinator, or other. If "other" was checked, the respondent was asked to identify the position. Space

on the questionnaire was provided for this information
to be written. Table 1 reveals data on the position in
the school of respondents of the survey.

Table 1

Position of Respondents

Respondent Position	Frequency	Percent
Principal	80	75.5
Vocational Coordinator	10	9.4
Other	15	14.2
Not useable	1	0.9
Total	106	100.0

Of the 106 questionnaires returned, 80 (75.5%)
were completed by principals. Ten (9.4%) were
completed by vocational coordinators. Fifteen (14.2%)
of the respondents marked "other." The positions
written in for this response were: Director for Adult
Education and Applied Arts; Dean of Students;
Superintendent (2); Tech Prep Coordinator; Tech
Division Head; Assistant Principal (2); Guidance
Counselor (3); Assistant Superintendent; Director of
Curriculum; Division Chairman for Careers and

Vocational Education; and Computer instructor. One
respondent marked both principal and vocational
coordinator and the question could not be used in the
demographic analysis.

Next, respondents were asked to check the
appropriate reply regarding student enrollment for
their school: between 50-250; between 251-500; between
501-800; or more than 800. Data regarding student
enrollment is found in Table 2.

Table 2

Enrollment of Responding Schools

School Enrollment	Frequency	Percent
50 - 250	27	25.5
251 - 500	17	16.0
501 - 800	21	19.8
> 800	41	38.7
Total	106	100.0

Twenty-seven schools responding to the survey
(25.5%) have a student enrollment between 50-250.
Seventeen schools (16%) have 251-500 students enrolled.
Twenty one returned questionnaires (19.8%) marked
student enrollment as 501-800. Respondents from

schools with an enrollment of over 800 students accounted for 41 (38.7%) of the returned questionnaires.

The third question asked respondents to check if their school is best described as rural or urban. Table 3 displays data indicating whether the responding schools are urban or rural. Seventy-five respondents (70.8%) identified their schools as rural and 25 (27.4%) identified their schools as urban. Two surveys (1.9%) were unusable.

Table 3

Description of Responding Schools

School Description	Frequency	Percent
Rural	75	70.8
Urban	29	27.4
Not useable	2	1.9
Total	106	100.0

Finally, respondents were instructed to mark the location of the high school: north of Interstate 80, between Interstate 70 and 80, or south of Interstate 70. Table 4 shows data of the location of responding schools.

Table 4

Location of Responding Schools

Location	Frequency	Percent
North of I-80	43	40.6
Between I-70 & I-80	28	26.4
South of I-70	32	30.2
Not useable	3	2.8
Total	106	100.0

Forty-three respondents (40.6%) are located north of Interstate 80. Twenty-eight schools (26.4%) are located between Interstate 70 and 80. South of Interstate 70, 32 (30.2%) schools responded. Three respondents (2.8%) did not mark school location.

Demographic information from the study revealed that a majority of the responding schools were high schools located north of I-80 with enrollments over 800 students. Most of the surveys were completed by principals.

Participation In Tech Prep

Survey Questions 5 and 6 asked respondents to provide information regarding their participation in Tech Prep. Table 5 shows data regarding respondents'

participation in Tech Prep.

Table 5

Participation in Tech Prep

	Checked		Not Checked	
Year	Frequency	Percent	Frequency	Percent
1990-91	40	37.7	66	62.3
1991-92	70	66.0	36	34.0
1992-93	84	79.2	22	20.8

Specifically, Question 5 asked the respondent to check all years in which the school participated in a Tech Prep grant. Forty respondents (37.7%) checked participation for 1990-91 school year, whereas 66 respondents (62.3%) did not participate for that year. Seventy respondents (66.0%) checked participation in 1991-92, while 36 respondents (34.0%) did not participate in 1991-92. Eighty-four respondents ((79.2%) marked participation in 1992-93, whereas 22 (20.8%) did not participate in Tech Prep for that year.

Thirty-nine respondents (36.8%) indicated that their school participated in a Tech Prep grant all three school years (1990, 1991, 1992). Fourteen (13.2%) respondents marked that their schools have not

ever participated in a Tech Prep grant. Two
respondents did not check survey question 5.

Question 6 asked respondents who no longer
participate in Tech Prep to check reasons for non-
participation. Table 6 illustrates reasons respondents
gave for not participating in Tech Prep.

Table 6

Reasons for Not Participating

Reason	Frequency	Percent marked	Percent returned
Money not received	8	40.0	7.5
Preferred not to	6	30.0	5.7
Other	6	30.0	5.7
Total	20	100.0	18.9

Eighty-six respondents (81.1%) did not respond,
which would indicate that they are currently
participating in an Illinois Tech Prep grant. Twenty
(18.9%) indicated that they are currently not
participating in Tech Prep. Reasons given for not
participating were: "grant money not received" by
eight respondents (7.5%); "preferred not to

participate" by six respondents (5.7%); and "other" reasons were given by six respondents (5.7%).

The reasons respondents gave for "other" were: "still in organizational position"; "superintendent took a `wait and see' attitude"; "carefully looking over"; "got restructuring grant"; "have not yet gotten teachers sold on this"; and "powers that be didn't think we were ready."

The data indicated that almost twice as many schools participated in Tech Prep during FY "93 than participated FY '91. Most schools continue to participate after the first year.

Curriculum Changes Related to Tech Prep

The remainder of the survey instrument, Questions 7, 8, and 9, asked respondents to provide information about curricular changes as a result of participation in the Tech Prep Initiative.

Specific curriculum areas. Question 7 asked respondents to mark specific curriculum areas where restructuring has occurred as a result of Tech Prep. Table 7 exhibits areas in which respondents indicated change as a result of Tech Prep.

The curriculum areas listed on the survey were: math; social science; vocational; language arts and/or communications; and science. Question 7 also gave

respondents an option to mark "no changes due to Tech Prep."

Table 7

Curriculum Changes

Curriculum Area	Checked		Not Checked	
	N	%	N	%
Vocational	62	59.0	43	41.0
Math	53	50.0	53	50.0
Language Arts	47	44.8	58	55.2
Science	47	44.8	58	55.2
Social Science	10	9.5	95	90.5

Sixty-two of the survey respondents (58.5%) checked that vocational curriculum was changed because of Tech Prep. Forty-three respondents (40.6%) checked no changes in vocational courses.

Fifty-three respondents (50.0%) marked that math curriculum at their school had been changed as a result of Tech Prep. Likewise, 53 respondents (50.0%) did not mark math, indicating that math curriculum in their school was not changed as a result of Tech Prep.

Forty-seven respondents (44.3%) indicated curriculum changes in language arts and/or

communications as a result of Tech Prep; whereas fifty-eight respondents (54.7%) did not mark this area as change.

Moreover, 47 respondents (44.3%) checked changes in science curriculum, while 58 respondents (54.7%) indicated they had no change in science due to Tech Prep. One survey (.9%) was not useable.

In the area of social sciences, 10 respondents (9.4%) marked curriculum changes as a result of Tech Prep. Ninety-five respondents (89.6%) indicated no change in social science curriculum. One survey (.9) was not useable.

Finally, 25 respondents (23.6%) marked they had "no change due to Tech Prep". The remaining 80 respondents (75.5%) left this response blank which would indicate that some curriculum changes were made in their schools as a result of Tech Prep. One response (.9%) was not useable.

It should be noted that two respondents who marked "has not participated in a Tech Prep grant" in survey question 5 also checked curriculum changes in math, social science, vocational, language arts and/or communications, and science in question 7.

The total percentages equaled more than 100% because some respondents marked more than one area that

had changed as a result of the Tech Prep Initiative.

Planned and implemented changes. Next, Question 8
asked respondents to complete a table defining specific
Tech Prep curriculum changes in their school. They
were to write P for PLANNED CHANGE or I for IMPLEMENTED
CHANGE under each curriculum area and beside each Tech
Prep strategy. The respondents were instructed to
leave the table blank if curricular changes were not
previously checked in Question 7. Tables 8, 9, 10, and
11 show data regarding planned changes and implemented
changes related to Tech Prep.

Applied teaching methods. Table 8 shows data
regarding planned and implemented applied teaching
methods in the areas surveyed. Data reveal that 48 of
the responding schools (45.3%) have planned or
implemented applied teaching methods in vocational
courses due to Tech Prep. In addition, 47 of the
responding schools (44.3%) have planned or implemented
new applied teaching methods in math.

Forty-one of the respondents (38%) showed planned
or already implemented applied science courses and 34
(32%) responded that their schools have planned or
implemented new applied language arts/communication
courses. Six respondents (5.7%) reported planned or
implemented applied teaching methods in social science

courses as a result of Tech Prep.

Table 8.0

Applied Teaching Methods

	Planned		Implemented		Not Marked	
Curriculum	N	%	N	%	N	%
Vocational	15	14.2	33	31.1	58	54.7
Math	23	21.7	24	22.6	58	54.7
Science	19	17.9	22	20.8	65	61.3
Language Arts	17	16.0	17	16.0	72	67.9
Social Science	4	3.8	2	1.9	100	94.3

New focus on technology. Table 9 shows
information about planned and implemented focus on the
applications of technology as a result of the Tech Prep
Initiative.

Thirty-eight respondents (35.9%) indicated a
planned or already implemented new focus on technology
due to Tech Prep. In math 23 respondents (21.7%)
marked planned or implemented new focus on technology.
In science 22 (20.7%) reported a new focus on
technology planned or implemented in their schools.
Twenty respondents (18.8%) reported a planned or
already implemented new focus on technology in language

arts and/or communication.

Table 9

New Focus On Technology

Curriculum	Planned		Implemented		Not Marked	
	N	%	N	%	N	%
Vocational	9	8.5	29	27.4	68	64.2
Math	8	7.5	15	14.2	83	78.3
Science	12	11.3	10	9.4	84	79.2
Language Arts	8	7.5	12	11.3	86	81.1
Social Science	2	1.9	6	5.7	98	92.5

Furthermore, eight respondents (7.6%) indicated a planned or already implemented new focus on technology in social science because of Tech Prep.

New courses which integrate. Table 10 gives data regarding planned and implemented new courses which integrate with other curriculum areas.

Data show that 30 of the responding schools (28.3%) have planned or implemented vocational courses which integrate with another curriculum because of Tech Prep. In science 29 of the responding schools (27.4%) showed new courses which integrate with another

curriculum. Twenty-two responding schools (20.8%) reported planned or implemented new math courses which integrate with another curriculum area. Also, 21 respondents (20.7%) reported planned or implemented integrated language arts and/or communication courses. Further- more, data reveal that six respondents (5.7%) marked planned or implemented new integrated social science courses.

Table 10

New Courses Which Integrate

Curriculum	Planned		Implemented		Not Marked	
	N	%	N	%	N	%
Vocational	13	12.3	17	16.0	76	71.7
Science	14	13.2	15	14.2	77	72.6
Math	13	12.3	9	8.5	84	79.2
Language Arts	12	11.3	10	9.4	84	79.2
Social Science	4	3.8	2	1.9	100	94.3

New courses added. Table 11 presents data concerning planned and implemented new courses added because of Tech Prep.

Data show that 12 of the responding schools

(11.4%) marked that new courses were planned or already implemented because of the Tech Prep Initiative. Eleven respondents (10.4%) showed planned or implemented new math courses because of Tech Prep.

Furthermore, nine respondents (8.5%) indicated planned or implemented new science courses. Five respondents (4.7%) marked planned or implemented new language arts and/or communication courses. One respondent (.9%) checked planned or implemented new social science courses.

Table 11

New Courses Added

Curriculum	Planned		Implemented		Not Marked	
	N	%	N	%	N	%
Vocational	6	5.7	6	5.7	94	88.7
Math	6	5.7	5	4.7	95	89.6
Science	5	4.7	4	3.8	97	91.5
Language Arts	2	1.9	3	2.8	101	95.3
Social Science	1	.9	0	0.0	105	99.1

New Courses and/or Other Changes

Question 9 asked respondents to list new courses and/or other changes directly related to Tech Prep that

might not have been previously stated in the
questionnaire. Respondents wrote the following
comments:

    1. Our teachers are trying to implement something
in each other's classes;

    2. We will replace two math classes with applied
math I and II over the next two years. We will use
CORD materials made available from our Tech Prep Grant;

    3. Statistics;

    4. Curriculum change in industrial education
survey course;   *

    5. Tech Math, Tech Electricity, Tech Drafting;

    6. BSAA - Ag Sci.;

    7. We have hired a Tech Prep coordinator based on
a 1992-93 grant;

    8. We are in our first year of involvement and we
are merely looking at programs and ideas;

    9. Careers Orientation/study skills for freshman;

    10. Team teaching approach with CAD Drafting,
Machine Shop and Mathematics. Students are
further blocked into English, Social Science
and Physics;

    11. Phys-Ma-Tech, Manufacturing Technology,
Physical Science integrating technology;

    12. Looking into doing a pilot course in English

geared to the Tech Prep concept;

13. Applied Communications, Auto/physics, Entrepreneurship;

14. Life skills (9th grade)-9 weeks of Industrial Technology, Study Skills, Home Economics, Keyboarding;

15. For the most part, we have been planning and implementing changes to our existing curriculum as opposed to the actual addition of new courses;

16. No new courses were added. Existing courses were modified;

17. Applied Math, Applied Biology/Chemistry, Applied Communications;

18. English IV Applied, PSAA - Physical Science Ag. Applications, Careers;

19. Plan to implement Tech Prep concepts into some math and English classes for the 1993-94 school year;

20. Implemented a Tech Math I course in 1991-92, added a Tech Math II course in 1992-93, implemented a Tech Prep English course in 1991-92, implementing Tech Prep in physics for 1993-94, Establishing a Business Education cooperative;

21. Applied Mathematics;

22. We offer Principles of Technology to all students;

23. Business English/Communication co-taught with a business education teacher and English teacher;

24. Added Applied Biology and College Prep Biology, Applied Communication, and various vocational changes;

25. Contemporary Communications, Contemporary Communications for Business;

26. Applied Math;

27. Independent Study for Health Occupations;

28. Communications Media and Marketing;

29. We currently offer Tech Math I, Applied Communication I and II, Principles of Technology, and Applied Bio/Chemistry;

30. Graphics, Applied Science;

31. Applied Math, Applied Physics, Vocational Writing;

32. We have added Applied Biology using Tech Prep teaching materials;

33. Applied Math, Applied Science, Applied Technology;

34. Applied Math;

35. Business/Communications Technology, Phys-Ma-Tech, Production Technology;

36. Technology Lab.;

37. Applied Math, Principles of Technology, and

revised Industrial Tech courses;

38. Humanities-sophomore and junior levels, gifted, Computer Literacy, and Pre-Construction Skills Orientation;

39. We are now in second year of Principles of Technology course which carries 1/2 science credit and 1/2 vocational education credit. All of these things have caused changes in basic curriculum offerings for math, science, and vocational education; and

40. Applied Communications added to English and Report Style Research Papers, geometry added, CADD and CAMM I and II-full year courses added to vocational education.

Chapter 5

Summary, Findings, and Recommendations

<u>Summary</u>

This study focused on curricular changes due to the Illinois Tech Prep Initiative. A review of literature disclosed that many educators, including the Illinois State Board of Education, theorize that Tech Prep is a major restructuring strategy transforming secondary schools across the state today.

The Tech Prep Initiative was given major emphasis in Illinois in the re-authorized Carl D. Perkins Vocational and Applied Technology Education Act of 1990. However, there has not yet been a study regarding the impact of Tech Prep on Illinois high school curriculum since the Tech Prep Initiative awarded grants in 1990.

In order to determine the impact of Tech Prep on Illinois high school restructuring the research questions to be answered by this study were:

1. Has Tech Prep led to the implementation of new vocational and academic courses?

2. Are applied teaching methods being implemented in existing vocational and/or academic courses?

3. Have vocational and/or academic courses been integrated?

4. Have courses and/or programs been added or redesigned to provide applications of technology?

5. Did schools discontinue the Tech Prep program after having participating for at least one year?

Answers to these questions could assist business agencies and educators to determine the extent and scope that resources directed to the Tech Prep initiative are facilitating curricular change at the secondary level. The data may also provide rationale for some districts to move forward with curriculum changes that include Tech Prep concepts and strategies.

Findings

A brief summary of the demographic information in this survey revealed that a majority of the respondents are principals in rural schools with student enrollment less than 800. Almost half of the respondents represented schools north of Interstate 80 in Illinois. The remaining respondents were located south of Interstate 80 in central and southern Illinois.

Research question one. Has Tech Prep led to the implementation of new vocational and academic courses? Data revealed that approximately 90% of the schools which participated in the study have not implemented or plan to add new vocational and academic courses as a result of Tech Prep. Written responses seem to

indicate that existing curricula is being modified to include Tech Prep concepts and strategies.

Research question two. Are applied teaching methods being implemented in existing vocational and/or academic courses? Although data were not overwhelming, there is consistent evidence that applied teaching methods are being implemented in existing vocational and/or academic courses, particularly in mathematics. Over 44% of the respondents reported implementing new applied teaching methods in math. While data showed that applied teaching methods are also being implemented in language arts and science curriculum, the percentage of respondents (approximately 38%) was somewhat less than in vocational and mathematics.

Research question three. Have vocational and/or academic courses been integrated? This study revealed there is less integration of curricula than what might be expected of schools involved in Tech Prep. The most integration of curricula seems to be in the area of vocational and science. Slightly less than thirty percent of the responding schools reported new vocational and science courses which integrate with other curricula. Responding schools reported even less integration in the mathematics and language arts curricula.

Research question four. Have courses and/or
programs been added or redesigned to provide
applications of technology? The study showed that
vocational curriculum was the principal area which
responding schools reported adding or redesigning
courses to provide applications of technology. Less
than 20% of the schools reported that applications of
technology was instituted because of Tech Prep. This
is number is less than what might be expected of
schools involved in the Illinois Tech Prep Initiative.

Research question five. Did schools discontinue
the Tech Prep program after having participated for at
least one year? Data indicated that schools are
continuing participation in Tech Prep grants for more
than one year. The study showed that more Illinois
high schools are participating in Tech Prep each year.
Of the 106 returned surveys, slightly over twice as
many schools participated in a Tech Prep grant in FY
1993 than in FY 1991.

It would appear that while Tech Prep is not yet a
major restructuring force in Illinois High Schools, it
is indeed creating some change in curricula. As
educators are forced by the business community to
consider Tech Prep strategies and programs, more
changes may occur.

Recommendations

    This study revealed that while more schools are
participating in Tech Prep each year, secondary
educators in many Illinois high schools need more
information and training regarding the purpose of Tech
Prep. Also, the study seemed to indicate that the
district level commitment needed to make systemic and
curricular changes necessary for the implementation of
Tech Prep is lacking.

    Recommendations for achieving the implementation
of Tech Prep in Illinois high schools include:

    1. Seminars which address the purpose of Tech
Prep for all administrators and teachers.

    2. Teacher re-training programs with emphasis on
contextual based teaching methods and integrating
technology in the learning environment.

    3. In-service presentations for teachers and
administrators which emphasize integrating language
arts and/or effective communication throughout all
curriculum areas.

Recommendations for Further Study

    The following recommendations may be beneficial in
further study of Tech Prep and the restructuring of
Illinois high schools:

    1. The present study should be modified to

eliminate the section of the matrix regarding new courses added. Respondents could write this data so new courses are better defined.

2. The present study should be replicated to include all high schools in Illinois participating in a Tech Prep grant.

3. The present study could be enhanced by using a research instrument which has been tested for reliability and validity.

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Appendix A

<u>Cover Letter to Principals</u>

February 23, 1993

Principal, 1~
2~
3~

Dear Principal:

　　Your high school has been selected to participate
in a study to determine the correlation between the
Illinois Tech Prep initiative and the restructuring of
curricula in high schools in Illinois. This study is
being conducted to fulfill requirements for my
Specialists Degree at Eastern Illinois University.

　　Please take about 20 minutes of your time to
complete the questionnaire regarding curriculum changes
that have occurred since 1990 and/or curriculum changes
planned for the future. A stamped, self-addressed
envelope is enclosed for you to return the
questionnaire.

　　Thank you for your help and cooperation with this
project.

Sincerely,

Sandra K. Ward

Enclosures

Appendix B

<u>Follow-up Letter</u>

March 22, 1993

Dear Colleague:

This letter is to request your assistance in a research
study regarding the correlation of Tech Prep and the
restructuring of curriculum in Illinois high schools.
Your response to the enclosed questionnaire will
provide data to be analyzed as part of this study.

The code number on the envelope and the questionnaire
will only provide information as to who returned the
surveys and to provide report summaries. All responses
will be treated confidentially, and individual schools
will not be identified.

I truly appreciate your time! It would be of great
assistance to me if the questionnaire could be
completed and returned by April 1, 1993. A stamped
envelope is enclosed for your convenience.

Thank you.

Sincerely,

Sandra Ward

Enclosures

Appendix C

<u>Survey Questionnaire</u>

Investigation of the Correlation Between the
Tech Prep Initiative and the Restructuring
of Curriculum in Illinois High Schools

Questionnaire to principals of Tech Prep high schools:Check the appropriate responses.

1. My current position at this school is

_____ principal
_____ vocational coordinator
_____ other: Please identify position

_____

2. The student enrollment of this school is

_____ between 50 - 250
_____ between 251 - 500
_____ between 501 - 800
_____ more than 800

3. This school is best described as

_____ rural
_____ urban

4. The location of this high school can best be described as

_____ north of Interstate 80
_____ between Interstate 70 and 80
_____ south of Interstate 70

5. This high school has participated in an Illinois Tech Prep grant
    (Check all that apply)

_____ 1990 - 1991 school year
_____ 1991 - 1992 school year
_____ 1992 - 1993 school year
_____ has not participated in a Tech Prep grant

6. If you are not participating in a Tech Prep grant this year, please check the response
    that best describes why

_____ grant money not received
_____ preferred not to participate
_____ other: _____

7. Using the definition of restructuring as the REORGANIZATION AND/OR CHANGE OF
EDUCATIONAL   COURSES, PROGRAMS, AND/OR INSTRUCTIONAL STRATEGIES AND LEARNING
ENVIRONMENTS, please   respond to the following statement:

Since 1990 the Tech Prep Initiative has caused this school to restructure (make changes in)
the following curriculum area(S): (Check all that apply.)

____ math   ____ language arts/communications   ____ social science
____ science   ____ vocation   ____ no changes

8. If changes were marked in any of the curriculum areas listed in question #7, please complete the chart below.

Write P for PLANNED CHANGE or I for IMPLEMENTED CHANGE beside the response in the column of the curriculum area(s) identified in question #7.

	MATH	LANGUAGE ARTS	SOCIAL SCIENCE	SCIENCE	VOCATIONAL
Implementation of applied teaching methods					
New focus on technology (ie computers)					
New course(s) which integrate with other curriculum area(s)					
New course(s) added different than described above					

2. Please list new courses and/or other changes directly related to Tech Prep that might not have been previously stated:

_____

_____

_____

10. If there are questions concerning the above responses, may I call you?

___ yes   ___ no

If you answered yes or would like to have the results of this investigation, please give your name, address, and phone number:

     Name: _____

     Address: _____

     Phone: _____

Thanks for your time and cooperation with this project.

Please mail by March 15, 1993.