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A Study Investigating the Process for Designing and Implementing a Technical Academy for Decatur Public Schools

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A Study Investigating the Process for Designing and Implementing
a Technical Academy for Decatur Public Schools

BY

Darbe D. Brinkoetter

1952 -

FIELD EXPERIENCE

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
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Abstract

As a result of a study conducted to consider the problems of declining enrollment and buildings in need of repair, Decatur Public Schools identified technical training and strong academics as priorities for its high school students. Following several meetings with parents, staff, and community members, plans were initiated to restructure one of the three high schools into a four-year technical academy. The objective of this paper was to design a process for establishing a technical academy. New design models for high schools were researched and resulted in the identification of design elements, key questions, characteristics, and partners critical to designing the process for establishing a technical academy.

The process for designing the technical academy included the identification of several design elements such as (a) learning mission, (b) learning outcomes, (c) curriculum, instruction, and assessment, (d) school organization, (e) partnerships, (f) staffing and staff development, (g) facilities and technology, and (h) finance. Questions were developed for each design element to assist in the process of developing the academy. Characteristics applicable to each design element were included to facilitate the design process. The design elements build sequentially upon each other so the elements should be addressed in the order listed.

Implementation of the design process involves establishing a steering committee to guide the process. The steering committee will guide the partners for each design element through the design process and establish a timeline for completion of the work. Partners will use the key questions and characteristics as discussion points for designing the technical academy. The steering committee will use outside experts and focus groups to assist with the process to establish a technical academy. Any school system undergoing this process must take into consideration the design questions and characteristics, while tailoring the final design to its own situation.

The research leads to several recommendations. The recommendations include (a) disseminating the design process to the Decatur Public Schools' board of education; (b) pilot

testing the design process with a small group, such as a school within a school, before implementing in a larger school environment; and (c) implementing measures to test whether the design process leads to improved outcomes for students. High school restructuring must be dedicated to continuous improvement, not change for the sake of change, but retaining what works and finding better approaches in areas needing improvement.

Table of Contents

List of Tables	iv
Chapter 1: Overview of the Problem.....	1
Background.....	1
Problem.....	3
Objectives	4
Assumptions.....	4
Limitations	5
Delimitations	5
Definition of Terms	5
Uniqueness of the Study	7
Chapter 2: Rationale and Review of Literature.....	8
Rationale.....	8
Review of Literature.....	8
Restructuring the American high school.....	10
The design process	11
The learning mission.....	11
The learning outcomes.....	12
Curriculum, instruction and assessment.....	12
School organization.....	12
Partnerships.....	13
Staffing and staff development.....	13
Facilities and technology.....	14
Finance.....	14
Summary of Literature Review	15
Chapter 3: Design of the Study.....	17

General Design.....	17
Final Product.....	18
Chapter 4: Results	19
Overview.....	19
Results	19
Chapter 5: Summary, Conclusions, and Recommendations.....	29
Summary	29
Conclusions.....	30
Recommendations	30
References.....	33

List of Tables

Table 1: Total District and High School Enrollment 1986-1996	2
Table 2: Design Process for Implementing a Technical Academy.	21

Chapter 1

Overview of the Problem

Background

Decatur Public Schools is presently composed of 17 elementary schools, a kindergarten through eighth grade magnet school, three middle schools, and three high schools. An area vocational center located in Decatur serves the three Decatur high schools and high schools in 13 area school districts. In the researcher's opinion, the Decatur Public Schools' board of education and the Decatur community have been extremely conservative about decisions concerning school district expenditures. The last education fund referendum was held and passed in 1956. The last building fund referendum was passed in 1972 (J. Hendren--Decatur Public Schools business manager--personal communication, July 9, 1998). A recent building fund referendum held in November 1998 failed.

Decatur, Illinois, is home to several major industrial manufacturers and grain processors. Downsizing in most of these companies led to a decline in population from 94,081 in 1980 to 83,885 in 1990. This decline in population, coupled with a lower birth rate, led to declining enrollment in Decatur Public Schools. Schools closed in 1982 were Grant, Lincoln, Oglesby, and Roach elementary schools and Lakeview High School. Pershing and Spencer elementary schools were closed in 1989 (D. Roles--Decatur Public Schools research office--personal communication, July 9, 1998).

Between 1986 and 1996, enrollment in Decatur Public Schools declined from 14,126 to 11,912, a 15.7% decrease. Enrollment in the high schools decreased from 4,201 to 3,354, a 20.2% decrease, during the same time period as indicated in Table 1. Enrollment projections predict the district will continue to decline in enrollment. In 2006, total district enrollment is projected to be 10,669 with high school enrollment projected to be 2,951 (Buckler, 1996).

Table 1

Total District and High School Enrollments 1986-1996

School year	Enrollment	
	District	High school
1986	14,126	4,201
1987	13,601	4,079
1988	13,493	3,996
1989	13,096	3,818
1990	13,049	3,764
1991	13,099	3,850
1992	12,740	3,684
1993	12,461	3,595
1994	12,160	3,507
1995	11,837	3,364
1996	11,912	3,354

Note. The data in this table are from Decatur Public Schools' September enrollment report, unpublished raw data, by R. Buckler (1996).

During the 1996-97 school year, Decatur Public Schools involved the community in a study to restructure its elementary and high schools. This study was undertaken due to declining enrollment. The elementary study resulted in the closing of Copenbarger Elementary School. School boundaries were reestablished to adjust enrollment in the remaining elementary schools. The high school study was inconclusive. It revealed that although high school enrollment was projected to continue to decline, enrollment had not

yet reached the point where students could be consolidated into two high school buildings (High School Study Group, 1996).

A more extensive study was undertaken during the 1997-98 school year because of the age and disrepair of many buildings owned by Decatur Public Schools. Experts in educational research and specifications, plus local architectural firms, were employed to assist with the study. The study involved parents, staff, and community members. The purpose of this study was to determine the building repairs and remodeling required to support current and future educational programs, while also considering the continuing decline in enrollment. Information was gathered with a possible building fund referendum in mind.

It was the enrollment report cited in this 1997-98 study which identified the fact that Decatur Public Schools' high school enrollment had declined further than originally projected. High school enrollment for 1997 was projected to be 3,228 (Buckler, 1996). Actual high school enrollment in 1997 was 3,038. In the course of this study, the public identified technical training in combination with strong academics as a priority for its high school students. Restructuring one of the three high schools into a four-year technical academy, with the other two schools remaining as traditional high schools, emerged as a priority.

Problem

Decatur Public Schools has a need to design a process for establishing a technical academy to serve needs of high school students in the combined areas of academic and technical preparation. The technical academy is likely to be part of a building referendum proposal for Decatur Public Schools in April 1999.

The concept of a technical academy moves beyond the scope and sequence of a traditional high school. This concept features an integrated curriculum, high academic standards, flexible scheduling, supportive counseling services, continuous staff development, state of the art technology, and increased collaboration between education

and business. The academy focuses on redesigning and improving education in order to help students prepare for their future adult lives as workers, family members, and active community members.

Presently, Decatur provides technical preparation for 11th- and 12th-grade students at an area vocational center, with each high school providing the appropriate orientation level classes. Orientation level refers to classes for 9th- and 10th-grade students that serve as an introduction and exploration of careers in agriculture, business, family and consumer sciences, allied health, and industrial technology. In comparison, skill level classes provide 11th- and 12th-grade students with technical skills in the above areas, preparing them to enter employment or post-secondary education in that area. Few skill level classes are held at the high schools.

In the process of restructuring high schools in Decatur Public Schools, the problem arose regarding how to establish a technical academy, including identifying the process for designing and implementing the academy. The researcher is presently director of the area vocational center serving the Decatur Public Schools. The superintendent of Decatur Public Schools requested the researcher to study the possible implementation of a technical academy in Decatur Public Schools.

Objectives

The overall objective of this study was to develop a process that Decatur Public Schools' personnel can follow in their efforts to establish a technical academy. Specifically identified are the design elements, key questions, characteristics, and partners critical to the planning and implementation process.

Assumptions

It is assumed that three traditional high schools may not be needed based upon Decatur Public Schools' enrollment projections. Further, it is assumed that when restructuring occurs, a need exists to establish a technical academy. Finally, it is assumed that the Decatur Public Schools' board of education and community, when advised of the

need to restructure schools, will take steps to implement the recommendations of the restructuring committee and educational staff.

Limitations

No guarantee exists that Decatur Public Schools' board of education or community will accept the proposal to implement a technical academy. The board has not officially sanctioned the creation of a technical academy. The community has not voted support of a technical academy. No finances are available to house and develop the technical academy.

Delimitations

This study is concerned only with identifying a process for designing and implementing a technical academy for high school students in Decatur Public Schools. Inferences made to other communities from the results of this study should consider the extent to which conditions are similar in that community.

Definition of Terms

Assessment. The means used to determine and demonstrate that learning is progressing.

Characteristics. A distinguishing trait, quality, or property.

Comprehensive high school. Offers under one administration and one roof, secondary education for almost all the high school age children of one town or neighborhood.

Curriculum. The subject matter to be learned.

Design element. A factor that contributes to the outcome of the design process.

Design process. A continuing series of elements or activities leading toward a particular result.

Facilities. The settings where learning takes place.

Finance. Costs required to operate a school.

Instruction. Strategies used to teach the subject matter.

Integration. An approach to teaching, learning, and curriculum that consciously applies materials, methods, and language from more than one discipline to examine a central theme, issue, problem, concept, topic, or experience.

Interdisciplinary. Involving two or more academic, scientific, or artistic disciplines in a given activity or project.

Learning mission. The specific focus or purpose of the school.

Learning outcomes. Knowledge or skill that one possesses as a result or consequence of a specific process.

Partners. Relationships in which individuals contribute talents, experiences, and resources to achieve a common goal or purpose.

Relational staffing. The extended flexible roles and responsibilities, i.e., advisors, mentors, team planning, required of staff in the care and guidance of students.

Restructuring. Action involving fundamental and pervasive change in school organization, that is, redefining rules, roles, relationships, and responsibilities, along with such structural components as schedules, administrative units, governance, and changes in content and presentation.

School organization. The arrangement of learners, learning processes, settings, time, and staff in the school.

Staffing. Everyone directly involved in the learning process, as well as those in supporting roles including janitors, secretaries, bus drivers, parent volunteers, teacher assistants, administrators, and school board members.

Staff development. Training for staff designed to improve instruction and lead toward career growth.

Technology. The practical application of technical processes, methods, or knowledge in order to accomplish a task or demonstrate learning.

Uniqueness of the Study

This project contributes to a better understanding of the process required to design and implement a new learning setting in the form of a technical academy. The design process will provide the Decatur Public Schools' board of education and staff a blueprint for developing the technical academy as a four-year high school. All constituents of the community will be involved in the process. In the researcher's opinion, few members of the Decatur Public Schools' staff and community are aware of the process required to design and implement a technical academy.

Chapter 2

Rationale and Review of Literature

Rationale

According to the National Association of Secondary School Principals (1996, p.3), “High school lays the foundation for what Americans become, and what Americans become shapes the high school that serves succeeding generations.” In the researcher’s opinion, high schools today are in a state of flux, impacted by the following conditions in society and economics:

1. Increasing numbers of children live in poverty.
2. Tens of thousands of high school students become teenage parents each year.
3. Fewer children live in two parent homes.
4. Rapid changes in the job market require more education to earn a living wage.

Based on many years’ experience as a teacher and administrator in the public school system, the researcher feels that the content and structure of high schools has been altered by pressures from these conditions. The high school is searching for renewal and stability. High schools throughout the country are undergoing restructuring in their efforts to increase their success in preparing youth for their future.

Review of Literature

A review of recent literature reveals unrest in public education. The education system has been engulfed by successive waves of reform since 1957 when the Russians put Sputnik into orbit (Hudelson, 1992, p. 28). During the 1960s and 1970s, the purpose of education became all encompassing. Educational research reports and legislation enacted during this time, promoted this viewpoint. In the 1967 study entitled The Comprehensive High School, James Conant was concerned with the high school having a diversity of offerings. He was in favor of including vocational programs in a comprehensive high school instead of providing them in a separate school for the purpose of encouraging

diversity (Copa & Pease, 1992, p. L-30). The purposes of legislation introduced during this time period included:

1. The Vocational Education Act of 1963 and the Amendments of 1968 and 1976 that focused on target populations, special needs learners, and provision of equality of opportunity.
2. The Economic Opportunity Act of 1964 providing for such programs as Upward Bound, Job Corps, and Head Start.
3. The Elementary and Secondary Act of 1965 providing massive financial assistance to local schools for compensatory education to improve programs for deprived students (Copa & Pease, 1992, p. L-31, 32).

This legislation demonstrated the encompassing nature of education. With all these needs to serve, public education was criticized for being aimless and not doing a very good job of anything.

In the 1980s, high schools focused on a limited set of subjects and America's strategic role in international economic competition. According to Hudelson (1992, p. 28), the new wave of reform focused not only on methods but also on results. This new wave of reform began with the 1983 publication of A Nation at Risk (as cited in Hudelson, 1992). This report warned that the American education system was threatened by increasing mediocrity, and it called for unspecified reform. Within days after the release of A Nation at Risk, the Task Force on Federal Elementary and Secondary Education Policy released its report citing concern about too many young people leaving school without essential learning skills and without self discipline and purpose (Copa & Pease, 1992, p. L-42).

This brief review of the recent history of American education illustrates that high school education has been in a state of change for some time. Conscious decisions were made to point high schools in specific directions. In the researcher's opinion, these decisions were shaped by the social and economic needs of the country.

As American education approaches the 21st century, powerful changes in values and behaviors, expectations and rewards, and in families render it essential that the high school reevaluate its purposes and functions. The economy and the changing world of work are still pressing concerns facing the United States and foreign countries. Improving high school education is one of those strategies at the top of the list for addressing these concerns (National Association of Secondary School Principals [NASSP], 1996, p. 3).

Today's high schools face three major problems. The first problem is that most high schools today show students little connection to what is happening in their work, families, and communities. Students are unable to connect what they are learning to its usefulness in their lives. Second, too many students are still channeled into tracks of learners fostering inequity. They are unprepared to interpret what they read, to solve real problems, and to make wise decisions. All students need a strong academic education combined with opportunity to develop specific skills directly useful in work, family, and community life. Third, the educational system is not organized in an effective way. Its current organization does not encourage continual progress and improvement in enhancing student learning (Copa & Pease, 1992, p.1). Literature reviewed by Raywid, Bottoms, Copa, and Pease examines ideas for restructuring high schools. Their ideas are discussed as follows.

Restructuring the American high school. According to Raywid (1994, p. 3), "Restructuring involves both fundamental and pervasive change in school organization: redefining rules, roles, relationships, and responsibilities, along with such structural components as schedules, administrative units, and governance--and, of course, changes in content and presentation." The movement to restructure schools has led, in some instances, to the establishment of choice schools called magnets, academies, or charters. These schools often integrate academics with a focus, instructional, or content theme.

The challenge is for high schools to begin to look at academy and magnet school models to determine how to incorporate their best features into the comprehensive high

school setting. Emphasis must be placed on establishing programs that are broader and provide better integration between high level academics and technical training. The educational setting must involve a core group of academic and vocational teachers, and incorporate business, industry, and post-secondary schools as learning resource centers (Bottoms, 1993, p. 27).

In summary, certain elements form the framework around which high schools must reconstruct themselves. Those elements include (a) learning mission, (b) learning outcomes, (c) curriculum, instruction, and assessment, (d) school organization, (e) partnerships, (f) staffing and staff development, (g) facilities and technology, and (h) finance (Copa & Pease, 1992, pp. 4,5). These elements are discussed here in detail.

The design process. Copa and Pease in New Designs for the Comprehensive High School (1992, p. 6) advocate a design-down process. In essence, each school system would go through this process for itself, taking into consideration the design characteristics and significant questions, while tailoring the final design to its own situation. The project should rely heavily on a group planning process. Developing the new design calls for close collaboration with practicing teachers, administrators, and other support staff; parents and students; and community representatives from business, labor, industry, and postsecondary education. Focus groups may be utilized to involve larger segments of the community (Copa & Pease, 1992, p. 6).

The learning mission. A common vision of what it means to be educated and how one becomes educated forms the basis of a coherent school design. It guides the school's planners in every aspect of planning and operations. It explains how the restructured school is different from other public schools (California State University Sacramento, 1995, chap.2, p. 1). Raywid (1994, p. 2) suggests that the more school components the theme in a magnet school can guide and suffuse, the greater the coherence it will provide.

Further research suggests that high schools with focus or special purpose provide an identity around which students can rally, talk, and share. The designation of a learning

symbol can bring special meaning to the school's focus. This symbol may be in the form of a person, picture, or set of words which portray the focus, beliefs, or concepts of the school (Copa & Pease, 1992, p.20).

The learning outcomes. Since the late 19th century several commissions and committees have attempted to define the proper work of schools. The recommendations in these reports ranged from the specification of instructional content to the measurement of competencies. Copa and Pease (1992, p. 28) recommend that learner outcomes focus on the customers of the school, meet local and national performance standards, represent balanced attention to all areas of human talent and development, inspire students to achieve educational excellence, and represent goals for all students. Outcomes must also focus on life roles of students by including communication, problem solving, teamwork, critical thinking, and technological competence (Bottoms, 1993, p. 3).

Curriculum, instruction, and assessment. The learning process must be flexible. Integration of curriculum, instruction, and assessment is necessary for a successful learning process. Student "learning lanes" must have a foundation of modern technical and high level academic education. Products and projects form a purpose and context for integrating technical and academic education (Copa & Pease, 1992, p. 34).

The content of the curriculum should connect itself to real-life applications of knowledge and skills to help students link their education to the future (NASSP, 1996, p. 15). Teachers must utilize a variety of instructional strategies designed to engage students in their own learning. Assessment should be integrated into instruction so that it measures not only students' knowledge, but becomes part of the learning process itself (NASSP, 1996, p. 25).

School organization. Learners should be organized into smaller groups within their learning community. Time schedules should be flexibly organized around time in class, time for learning in the community, and time for teacher planning and teamwork (Copa & Pease, 1992, p. 41). In many restructured schools, each student has an adult

advocate to help him or her personalize the educational experience. High schools are reorganizing traditional department structures to meet the needs of a more integrated curriculum. The academic program is extending beyond the high school campus to take advantage of learning opportunities outside the building. Staff interaction and innovation must be encouraged (NASSP, 1996, p. 49).

Partnerships. Settings for learning must include community resources and a variety of learning environments. Learning partnerships may include the family, business, industry and labor, community-based organizations, and other schools (preschool through postsecondary). The NASSP (1996, pp. 90-94) advocates forming several alliances on behalf of students:

1. Engage students' families as partners in the students' education.
2. Work with agencies in the community to coordinate the delivery of health and social services for youth.
3. Develop political and financial relationships with individuals and organizations in the community to foster ongoing support for educational programs and policies.
4. Foster productive business partnerships that support and supplement educational programs.
5. Require each student to participate in a service program in the community, or in the school itself, that has educational value.

Staffing and staff development. Staffing refers to everyone involved in the learning process. Restructuring cannot succeed unless it draws on the strengths of teachers and others associated with the high school. Teachers should acquire a variety of strategies to structure learning that assist students in acquiring skills and abilities valued by society. The principal must provide leadership by building and maintaining a vision, direction, and focus for student learning supplemented by professional development for staff. Support staff should be assisted in their career growth and drawn into the school community as adults who can promote the well-being of students (NASSP, 1996, p. 22).

In a restructured high school, where integration of vocational and academic education is a focus, staffing requires close teamwork and interdisciplinary knowledge (Copa & Pease, 1992, p. 52). Staff development should be directed toward writing interdisciplinary and integrated curriculum, using a variety of instructional techniques, and developing alternative assessment methods. The high school must provide adequate funding, time, and other resources to ensure that professional development is a continuous, ongoing process (NASSP, 1996, p. 65).

Facilities and technology. True restructuring requires redefining what goes on within the classrooms and rethinking the way teachers teach and students learn (Copa & Pease, 1992, p. 55). Careful planning should advocate integrating technology throughout the school into all aspects of the program. A long-term strategic plan for use of technology in the school, including a code of ethics and allowing for ongoing changes, must be crafted (NASSP, 1996, p. 38). Only when this occurs can new technologies play a key role in facilitating change. Buying new computers and software programs will not magically transform the learning process. Rather, the new and emerging technologies needed in the restructured high school will be those that connect people to the learning environment and provide easy access to multiple sources of information. Computers, calculators, electronic networks, telecommunications, database, graphics and publishing software, videodisk, CD-ROM, interactive and satellite television all will be put to educational use. Through technology the schools will become host to a variety of community activities and endeavors (Copa & Pease, 1992, p. 56).

Finance. Several factors must be considered when contemplating the costs of a restructured high school where there exists a technology focus, a partnership focus, a relational staffing approach, and an integrated combination. Operational costs will vary due to local circumstances and conditions. Equipment and material costs will increase due to the technology emphasis. However, partnerships and relational staffing can potentially offset a portion of these costs. Opportunities may be available to share equipment,

materials, human resources, and training activities when learner settings are integrated into the community, and where the work environment of the high school is designed to replicate the work world of the adult. Creative partnerships involving shared facilities, equipment, and staff can result in cost savings to schools and their partners (Copa & Pease, 1992, p. 69).

Summary of Literature Review

In summary, a review of the literature identified various elements of school restructuring that make improving teaching and learning a major consideration when designing a process for restructuring high schools. Key elements of high school restructuring include (a) learning mission, (b) learning outcomes, (c) curriculum, instruction, and assessment, (d) school organization, (e) partnerships, (f) staffing and staff development, (g) facilities and technology, and (h) finance (Copa & Pease, 1992, p. 4,5).

Improving teaching and learning are objectives central to the design of the school's mission, outcomes, curriculum, instructional methods, assessment, and staff development. The goal in designing these elements is to increase students' school and postschool outcomes. These elements may be the most critical to the results of restructuring efforts. Successful educational reform requires more than altering the length of class periods or the administrative structure that exists in an educational setting. Restructuring requires altering how material is presented to students and how understanding that material is assessed. Staff development is crucial to the success of these efforts.

In the literature reviewed, school organization and leadership were clearly important elements of successful restructuring initiatives. Participants must be allowed to define the organizational structures necessary to enhance the learning of students and to promote social and economic equality. The school administration plays a leadership role in defining this structure.

Partnerships describe the collaborative relationships both in and out of school that facilitate restructuring efforts. Interdisciplinary activities within the school and collaborative relationships with community organizations, postsecondary institutions, and businesses outside the traditional academic environment have been described. Schools do not function in isolation from the other systems that exist within their communities. Connections must be fostered with those other systems to ensure the success of the school in the community.

Technology, facilities, and finance are the final three components of restructuring discussed in the literature review. These three elements will provide the structure to support teaching and learning in the restructured school. Schools will need to go beyond the usual sources to ensure technology upgrades and modern facilities.

The high school is a complex institution. Piecemeal efforts at restructuring will meet with some positive results. However, they will not be as effective as efforts that reach into many parts of the system. High schools must reformulate themselves in ways that lead to success for all students willing to put forth the effort.

Chapter 3

Design of the Study

This study was qualitative in nature and developed as a resource for the Decatur Public Schools' board of education and staff to use as a process for designing and implementing a technical academy. Additional audiences for this design process include school districts with the opportunity to build new schools or districts planning to implement a school within a school. The objective of the study was to design the process for establishing a technical academy, including identifying design elements, key questions, design characteristics, and partners critical to implementing the process. This chapter explains the procedure followed to develop the process indicated in the objective.

General Design

The initiative to create change in the current structure of the high school required knowledge of new high school design models, ideas from a variety of partners in the process, and support for education reform. The design process for a technical academy required research on new designs and models for high schools. The ideas for design elements came from this research. Questions were developed for each design element to assist in the process of developing and implementing the technical academy. Characteristics applicable to each design element were included to facilitate the design process. Each phase in the design process requires collaboration from a variety of individuals willing to share their views.

A wide variety of partners must be identified and formed into committees for each design element. Partners should include students, parents, teachers, administrators, postsecondary school leaders, community representatives, and employers. Each design element group will establish meeting times and deadlines in order to complete the project within a given time frame. The individual design groups will address their task according to the following set of orderly steps:

1. Discussion of a set of key questions developed for each design element in the process.
2. Identification of characteristics that merit consideration during the process.
3. Inclusion of partners to explore selected issues in more depth, to gather information, and to gain consensus on design.

Final Product

The researcher selected the most useful information from recent educational literature and research for drafting the design process. A set of key questions for each element that any school district undergoing a restructuring process should ask itself was developed. Design characteristics were identified based upon the research. The suggested list of partners to include in the process was designed to be inclusive. Every school system would need to go through this process for itself, taking into consideration the design questions and characteristics, while tailoring the final design to its own situation.

Chapter 4

Results

Overview

The purpose of this study was to develop a process which Decatur Public Schools could follow in their efforts to establish a technical academy. The objective was fulfilled by developing a process for establishing a technical academy which included identifying design elements, key questions, characteristics, and partners crucial to the planning and implementation process.

Results

The results of this study provide a process for Decatur Public Schools to follow in establishing a technical academy. A review of the literature identified the following design elements as critical to school restructuring: (a) learning mission, (b) learning outcomes, (c) curriculum, instruction, and assessment, (d) school organization, (e) partnerships, (f) staffing and staff development, (g) facilities and technology, and (h) finance. Each of these elements are listed in Table 2 with key questions, characteristics, and partners critical to each element of the design process. Publications which assisted in the design of this process include New Designs for the Comprehensive High School (Copa & Pease, 1992) and Breaking Ranks (NASPP, 1996).

The process for establishing a technical academy must begin with a steering committee to guide the process. The steering committee will oversee all work as outlined in Table 2 and establish the timeline for completion of the work. The table will be used to facilitate the design process. The design process will address each design element listed in the table according to the following procedure:

1. The design elements listed in the first column of the table will be addressed in the order listed beginning with learning mission.
2. Key questions are listed in the second column, to the right of the design element, and will serve as discussion points for designing the technical academy.

3. In the third column, key characteristics are listed for consideration when discussing key questions for each element.

4. The fourth and final column lists partners suggested to guide the discussion for each design element.

The design process will need to be sequentially accomplished because one design element builds upon another. The design elements should be addressed in the order listed in the table beginning with the learning mission. The learning mission and learning outcomes are key elements upon which all other elements are based. Each of the design elements following are interactive with the next phase. At times, a previously discussed design element may need to be modified based upon new insights and information.

Key questions and characteristics applicable to each design element are provided to guide the partners. For some design elements, experts outside the design group may be consulted. Focus groups may also assist with specific elements in the design process such as (a) learning outcomes, (b) curriculum, instruction, and assessment, (c) staffing and staff development, and (d) facilities and technology.

The design process calls for collaboration between students, parents, teachers, administrators, postsecondary school leaders, community representatives, and employers. A design group for each element will involve partners as suggested in Table 2. The steering committee will guide the partners for each design element sequentially through the design process according to an established timeline. Participants involved in the design process will use the key questions and characteristics cited in Table 2 as discussion points for designing the technical academy. The general meeting format will include discussion of the key questions related to the design element under study. The steering committee will assist in developing consensus on these matters. The use of outside experts and focus groups will assist with the process to establish a technical academy.

Table 2

Design Process for Establishing a Technical Academy

Design Element	Key Questions	Characteristics	Partners
Learning Mission	What symbol or statement would uniquely characterize the new school?	Give character to the school.	Students
	How can we insure all interests have a voice in selecting the symbol or statement?	Communicate the vision for the school. Be easily and clearly understood.	Teachers Parents
	Should there be a symbol and statement for the entire school or should different groups within the school develop their own symbol and statement?	Include all students and aspects of the school.	Administration
	Who should be involved in determining outcomes?	Present clear focus and direction.	Students
Learning Outcomes	What significant problems, challenges, opportunities will students have to anticipate, address, and solve?	Focus on customers of the school. Represent multiple areas of talent and learning. Provide challenge and opportunity.	Teachers Parents Administration Community

(table continues)

Table 2

Design Process for Implementing a Technical Academy

Design Element	Key Questions	Characteristics	Partners
Curriculum, Instruction, and Assessment	Who are the customers?		Business
	What direction should curriculum take?	Aligned with outcomes and goals.	Teachers
	How will instruction change to meet the	Relevant to students.	Administration
	needs of the curriculum?	Engage students in learning.	Parents
	What different forms of assessment	Focus on problem solving, critical	Community
	should be used?	thinking, and communication.	Business
	How will special needs students be	Demonstrate application of learning.	
	served?	Be rigorous and challenging.	
	How will curriculum, instruction, and	Expand learning outside the school.	
	assessment relate to each other?		
How will curriculum, instruction, and			
assessment address different learning			
styles?			
What is the community's role in			
curriculum, instruction, and assessment?			

(table continues)

Table 2

Design Process for Implementing a Technical Academy

Design Element	Key Questions	Characteristics	Partners	
School Organization	How will learners be organized in the school?	Align with mission, outcomes, curriculum, instruction, assessment	Students Teachers	
	How will community policies and perception impact the school?	Involve students in the planning process.	Administration	
	What are exemplary ways for balancing integration of subject matter?	Organize students in smaller groups with teacher advisors to maximize motivation and achievement.	Community Business	
	What are the legal implications of expanding learning activities beyond the school walls?	Organize curriculum for integration. Provide flexible scheduling. Extend learning setting into community.		
	What are the best ways to promote flexibility in learning and efficient use of resources?			
	Partnerships	What must be in place to meet state requirements?	Include state education consultants, employers, community organizations in the school.	Administration Parents Community
		What partnerships must be formed with		

(table continues)

Table 2

Design Process for Implementing a Technical Academy

Design Element	Key Questions	Characteristics	Partners
	business and industry?	Implement training to build trust,	Business
	What partnerships should be formed with	bridge gaps.	District Middle Schools
	community organizations?	Provide for work based learning,	Post Secondary
	How will time and training sustain the partnerships?	mentors, health services, volunteerism.	Schools
What articulation will take place with post secondary schools?			
How will we implement collaborative partnerships?			
Staffing and Staff Development	How will staff be selected	Maintain high expectations for all	Students
	so that desired staff competencies are available?	students.	Teachers
	Can existing staff implement the process?	Know how to research, design, and	Administration
	How can staff development be managed?	develop interdisciplinary and integrated curriculum that addresses learner	

(table continues)

Table 2

Design Process for Implementing a Technical Academy

Design Element	Key Questions	Characteristics	Partners
	What process needs to be in place to	outcomes.	
	insure continuous staff development and	Understand and address different	
	improvement?	learning styles.	
		Use a variety of instruction methods	
		and strategies.	
		Be able to work in teams.	
		Know how to develop and administer	
		multiple forms of assessment.	
		Evaluate curriculum, instruction, and	
		assessment in terms of its effectiveness	
		in achieving learner outcomes.	
		Create and establish opportunities for	
		the community to become involved in	
		the learning process.	
		Provide staff development for all staff	

(table continues)

Table 2

Design Process for Implementing a Technical Academy

Design Element	Key Question	Characteristics	Partners
Facilities and Technology	What is the school's long-term technology plan?	<p>participating in the learning process.</p> <p>Must be continuous, on-going, and appropriate.</p> <p>Access technology applicable to the workplace.</p>	Students Teachers
	What technology will increase students productivity?	Access multimedia for information, production, and presentation.	Parents Administration
	How can the community access technology in the schools?	Provide networked access throughout the school and to resources in the community and beyond.	MIS Staff Community
	How will the legal aspects of technology be addressed?	Use interactive performance management system to monitor alignment of curriculum, instruction, assessment, and student performance.	Business
	What resources exist in the community for providing educational experiences for students?	Allow access to technology in multiple	
	How can the school setting be arranged		

(table continues)

Table 2

Design Process for Implementing a Technical Academy

Design Element	Key Questions	Characteristics	Partners
Finance	to foster integration and communication between disciplines? How much support and orientation for students will be provided? What will be the status of extra curricular activities? What are student's responsibilities as part of the learning community (i.e., tutoring, service learning, work experience, school leadership)? What impact will technical programs, increased technology, support staff, and	spaces--open areas, small cubicles, individual learning. Provide continuous assessment of technology needs. Costs will be over and above those of traditional high schools and will vary due to local circumstances and conditions. Equipment and materials costs will increase as technology use increases. Partnership's can potentially reduce costs. Organize work environment similar to adult work environment.	Students Teachers Parents Administration School Business Manager Post Secondary Schools Community Business

(table continues)

Table 2

Design Processor for Implementing a Technical Academy

Design Element	Key Questions	Characteristics	Partners
	staff development have on school costs?	Create opportunities to share equipment,	
	How will outside services impact	materials, staff, and training.	
	school costs?	Increase in transportation needs.	
	What will be the financial impact of		
	articulated or shared programs with		
	community colleges?		
	What federal, state, and grant funds are		
	available to help support the school?		

Chapter 5

Summary, Conclusions, and Recommendations

Summary

Decatur Public Schools are faced with declining enrollment, especially in the high schools, and buildings in need of repair. Population in Decatur declined from 94,081 in 1980 to 83,885 in 1990. This decline in population, and a lower birth rate, led to declining enrollment in Decatur Public Schools during the same time period. In addition to declining enrollment, the last Decatur Public Schools' building referendum was passed in 1972 resulting in buildings needing repair.

A committee involving parents, staff, and the community studied these problems. Experts in educational research and specifications, plus local architectural firms, were employed to assist with the study. Information was gathered with a possible building referendum in mind. As a result of the study, the committee identified technical training combined with strong academics as a priority for its high school students. Restructuring one of the three high schools into a four-year technical academy, with the other two schools remaining as traditional high schools, emerged as a priority. The technical academy is likely to be part of a building referendum proposal for Decatur Public Schools in April 1999.

The objective of this paper, therefore, was to design the process for establishing a technical academy. To accomplish the objective, the researcher reviewed literature on methods and processes for restructuring and redesigning high schools. The following elements were identified as critical to the design process for restructuring schools: (a) learning mission, (b) learning outcomes, (c) curriculum, instruction, and assessment, (d) school organization, (e) partnerships, (f) staffing and staff development, (g) facilities and technology, and (h) finance. This research resulted in the development of a process for establishing a technical academy including identifying design elements, key questions, characteristics, and partners as a product of the study.

Conclusions

The results of this study show that Decatur Public Schools has a need to design a process for establishing a technical academy. The process for designing the technical academy included the identification of several design elements. These design elements are (a) learning mission, (b) learning outcomes, (c) curriculum, instruction, and assessment, (d) school organization, (e) partnerships, (f) staffing and staff development, (g) facilities and technology, and (h) finance.

For each of these design elements, key questions were identified to assist participants in the process. A set of characteristics for each design element was provided from educational research. Participants important to the success of the design process were identified as partners. Implementation of the design process will assist in establishing the technical academy to the specifications of the partners involved in the process.

Recommendations

Based upon declining enrollment and buildings in need of repair, Decatur Public Schools recognized a need to restructure its high schools. A committee involving parents, staff, and community identified the desire to establish a technical academy. The objective of this paper was to design a process for establishing a technical academy in Decatur Public Schools. The process included the identification of design elements, key questions, characteristics, and partners critical for implementing the process. Individual school systems would need to go through this process for themselves, taking into consideration the design questions and characteristics, while tailoring the final design to their own situation. The research leads to the following recommendations for future consideration.

The initial recommendation is to disseminate the design process to the Decatur Public Schools' board of education who must make the decision, based upon finances and public support of a building referendum, to develop the technical academy. Following approval of the decision to establish a technical academy, the process for designing the academy must begin.

Teams will need to be established for each design element. The design teams will help to (a) manage the process, and (b) prepare school leaders for the change process. The information provided in this paper can serve as a guide for the design teams to use in managing the process. School leaders will need to prepare for the consequences of changing the status quo of the high school. They should be prepared to respond to discussion about critical educational issues and concerns that surface with each element of the design process. The key questions developed for each design element will help anticipate what these issues might be and bring them into the open. The questions were developed as a result of a review of educational research and will facilitate discussion of each element.

An additional recommendation would be that the Decatur Public Schools pilot test the design for the technical academy. Piloting the technical academy as a school within a school for a smaller group of students may assist in identifying and solving problems before expanding to a larger school environment.

The aim of the design process is to create a technical academy that would provide better educational opportunity and outcomes for all students. Therefore, a final recommendation would be to test whether the design specifications lead to improved outcomes for students. Measuring outcomes may be achieved through the following methods:

1. Outcomes related to academic achievement may be measured through the administration of Illinois Standards Achievement Tests, the National Assessment of Academic Progress, or standardized achievement tests.

2. Work life outcomes or SCANS competencies may be measured using Work Keys, developed by American College Testing service, or through conducting follow-up studies of students.

3. The North Central Association school improvement or outcomes-based evaluation process will assist in measuring achievement of targeted goals and strategies for learning.

Further study of educational research on new designs for the comprehensive high school is always a recommendation for those seeking to improve high schools. High school restructuring must be dedicated to change for the sake of improvement, retaining what works but finding better approaches to teaching and learning in areas needing improvement.

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