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A Study Of Secondary School Level Area Career And Technical Education Centers In Central Illinois

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A STUDY OF SECONDARY SCHOOL LEVEL AREA CAREER AND TECHNICAL EDUCATION CENTERS IN CENTRAL ILLINOIS

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CAREER AND TECHNICAL EDUCATION

A Study of Secondary School Level Area Career and Technical Education Centers in Central Illinois

by

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Abstract

The purpose of this study was to examine high school level work-based learning programs at area career and technical education (CTE) centers in central Illinois. The question was how participation in work-based learning programs relates to the graduation rate and to career choices after high school completion.

Teachers of all programs at three selected area CTE centers were surveyed, as were the counselors at all high schools with students participating in those programs. Teacher surveys requested specific information about characteristics of their current students regarding gender, grade level, and academic ability level. They were also asked whether their students worked at paid or unpaid jobs and about the purpose(s) of their programs. Counselors at participating schools were asked for information on class size and number of students taking courses at their area CTE center. Class observations and teacher interviews were conducted in Family and Consumer Sciences related courses, specifically Child Development and Culinary Arts.

Results showed that, at the three centers combined, work-based learning programs were available in 34 different subjects, in the areas of agriculture, auto and building trades, business, child development, culinary arts, communications, health care, and others. Data indicated that students of various academic ability levels participated in the CTE programs. The largest percentage was categorized as average students, followed by good and at-risk students, then special needs students, and the smallest percentage being honor students. The participating students were approximately half male and half female. An average of 14.3% of all juniors and seniors from participating high schools were taking courses at the area CTE centers.

Interviews with teachers of Family and Consumer Sciences related courses showed that among Culinary Arts students, the average continuation rate was approximately 65%, and in Child Development the average continuation rate was about 60%. This reflects a combined total of students pursuing either employment or further education in their chosen career area directly after high school graduation. The participating high schools showed a combined average graduation rate of 96.6%, compared with a graduation rate of 92.6% of seniors attending the CTE center programs.

Dedication

I would like to dedicate this thesis to my husband, Doug, and our children, Ben, Danielle and Charlie, who are a constant source of joy and inspiration to me. This would not have been possible without their help, encouragement and cooperation.

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I would like to thank my thesis advisor, Dr. Jayne Ozier for her constant support and encouragement during the writing of this thesis, as well as her inspiration as a teacher during my graduate studies. With Dr. Ozier's guidance, the many hours spent completing this work were a pleasure as well as an invaluable learning experience.

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Chapter I

Introduction

Statement of the Problem

A primary goal of secondary education has traditionally been to prepare high school students for life on their own and for gainful employment after completing their education. It has been noted that our population has been shifting toward the extremes in level of well-being. The affluent are increasing in success and wealth as they continue to prosper. At the same time the problems of the poor are ever increasing. Teen pregnancy, unemployment, poverty and crime continue to be problems that are costly to individuals, families, communities and to society (Schwartz, 1995).

High school students from all backgrounds and ability levels can benefit from school-sponsored work-based learning programs, from college bound honor students to those at risk for dropping out of school, as well as students with special needs. In a school-sponsored internship program, a student can often gain real-world experience in his/her chosen career field before entering college. Through this experience one can develop important job skills as well as necessary interpersonal skills. It also provides the opportunity to gain experience in a career before committing to a college level program of study. Often the experience confirms what the student already felt was a good choice. Sometimes the student changes to a related occupation or a completely different one.

Students who do poorly in school because of poor environment or other circumstances often become discouraged and drop out of school before graduating. In 1992 dropouts earned slightly under $13,000 per year on average, about one-third less than high school graduates. It is estimated that with respect to lifetime wages, the 1993

dropout pool will earn $212,000 less than high school graduates, and $812,000 less than college graduates. Dropouts comprise nearly half of the heads of households on welfare, and a similar percentage of the prison population (Schwartz, 1995).

By providing students with various work-based learning programs at the high school level, it is possible that more of these marginal students will stay until graduation and then become/remain gainfully employed or continue their education in the career area of their choice. Work-study programs may even contribute to school success, especially for students who perform poorly or fail to see the relevance of school to future goals. Work-study programs are often identified as helping such students by decreasing the demoralizing effect of failure in academic course work, increasing self-esteem, and providing opportunities to practice skills that reinforce class work (Worley, 1995).

Background

The percentage of Americans completing high school has increased steadily over the past sixty years. According to U.S. Census Bureau figures, in 1940 less than 40% of all persons aged 25 to 29 had completed high school; by 1980, over 85% had done so, and in 1991 the rate was nearly 88%. Nonetheless, concern about the dropout issue has increased among educators, policymakers and the public (Goustad, 1991).

In 1999, the percent of high school dropouts among persons 16 to 24 years old averaged 11.2%. This included 7.3% of the white population, 12.6% of African Americans, and 28.6% of Hispanics. (Digest of Ed. Statistics 2000). Dropout rates remain disturbingly high in certain areas, particularly major cities, and among certain populations, such as Hispanics. Moreover, as changes in the nation's economy eliminate jobs for unskilled workers, dropouts will increasingly suffer in the job market (Goustad, 1991).

A basic indicator of risk is the education of the student's parents, primarily the mother. Highly educated mothers provide children with educational resources that less-educated mothers cannot; their children do better in school and stay there longer than do the children of mothers who have not completed high school. In 1987, nearly 13 million children and youths under 18, disproportionately African American and Hispanic, lived with mothers who dropped out of school (Pallas, 1989)

Schools can provide programs that will encourage at-risk students to stay longer and hopefully graduate. In this way, educators can help to improve the chances of future independence and success of these students.

In Illinois, vocational education, now referred to as Career and Technical Education (CTE) is a vital resource for students and the state's workforce. CTE opportunities are available for all students in Illinois.

Career and Technical Education promotes high school graduation. In the year 2000, Illinois' high school graduation rate was 82%. Among CTE students, specifically those who had completed two or more advanced courses in the same program, the graduation rate was 95% (Education for Employment System, 2001).

Career and Technical Education programs prepare students for skilled careers of the 21st century. According to the U.S. Bureau of Labor Statistics, in 1950, 65% of the work force consisted of unskilled laborers, 15% skilled/technical workers, and 20% professionals, whose work required at least a 4 year college degree. It is projected that by 2006, only 28% of work will involve unskilled labor, 52% skilled/technical work, and 20% professional, requiring at least a 4 year college degree. These figures show that, while the

proportion of jobs nationwide requiring a four-year degree or more has stayed virtually the same, there has been a significant shift in demand from unskilled to skilled/technical level employment, and for workers prepared to work effectively in these jobs.

Currently in Illinois, approximately three out of five (58%) high school students are enrolled in CTE programs annually. CTE programs serve the largest group of community college students (39%), compared with those enrolled in baccalaureate transfer programs (34%), adult education (18%) and general programs (9%), according to the Illinois Community College Board (Education for Employment System, 2001). These statistics reflect the significance of these programs and their impact on the future of Illinois' workforce as well as the quality of life of participating students.

Purpose of the Study

The purpose of this study was to examine work-study programs in central Illinois area career and technical education centers. More specifically, the study investigated the following variables:

1. the extent to which the educational needs of local students were met by participation in work-study programs,
2. the graduation rates of the participating work-study students, and
3. the career choices of participating work-study students after graduation.

Objectives

The primary objective of the study was to describe area CTE work-study programs in central Illinois. Specifically, the following objectives were addressed:

1. to identify subject areas in which work-study programs were available,

2. to describe the characteristics of students participating in the work-study programs, and
3. to determine the percentage of high school students enrolled in work-study programs.

Research questions

The research questions addressed in the study were as follows:

1. Do the current programs meet the needs of students of various ability levels and interests?
2. What teaching techniques are used to help students learn in the work-study classes?
3. What follow-up procedures are used to assess career choices after graduation?

Delimitations

1. The study includes programs offered at area CTE centers serving high school students which may differ from those offered at other high schools and in other geographic areas.
2. Due to the small number of schools and programs surveyed, the study may not be representative of the entire population of high school programs and students.

Definitions

Academically at-risk. In this study, the term "academically at-risk" will refer to students who have been exposed to inadequate or inappropriate educational experiences in the family, school, or community (Pallas, 1989).

Dropout. A dropout will refer to a high school student who leaves school without graduating and without transferring to another school or educational program (Gaustad, 1991).

Work-based learning. Work-based learning will refer to a program of study that includes time spent at a job site for the purpose of work experience and/or learning specific job skills. It can involve paid or unpaid work experience (Stasz and Brewer, 1998).

Work-study program. In this study, the term work-study program will refer to any high school program that provides a form of work experience as part of the course content or program arrangement (Worley, 1995).

Chapter II

Review of Related Literature

The review focused on the subject areas in which work-study programs are available, the characteristics of students enrolled, percentage of eligible students participating in the programs, the adequacy of programs to meet the needs of students of all ability levels and interests, and teaching methods used. Of the related literature available, five articles (California State Department of Education, 1995; Canny, 1996; Lombard, 1992; Meier, 1995; Stasz and Brewer, 1997) best reflected the basic goals of the typical high school work-study or cooperative education model.

Subject Areas in Which Work-Study Programs Are Available

The Landmark Career Academy, an alternative high school program, had a partnership between the Fairfax County Public Schools; Training for Retail and Commerce (TRAC/USA), a private organization that helps fund school-to-work programs; and the Landmark Shopping Mall in northern Virginia (Canny, 1996). The academy's purpose was to combine academic learning with real-world experience. Students at the Academy completed the necessary course work for a high school diploma while developing marketable employment skills. Classes were held every weekday from 9 a.m. to 3 p.m. for eleven months of the year. Students were required to complete unpaid internships with businesses in the mall to develop skills in a variety of areas, from mall security, to taking inventory on computers, or serving cappuccino in a coffee shop. The owners and managers of department stores, specialty clothing stores, gift shops, restaurants, and coffee shops, serve as mentors for students during these internships, providing valuable information and retail experience.

In the state of California, all students are required to attend school until they are eighteen years of age, as opposed to the 16-year requirement in most other states. An educational option for students since 1919, Continuation Education programs are designed to meet the unique personal and educational needs of students who may have been unsuccessful in previous educational settings. In the California continuation high schools, service learning as an educational strategy allows students to provide service to the community in an organized, realistic context in order to apply skills and concepts in the core curriculum. The continuation program is also mandated to provide a program emphasizing occupational orientation and a work-study schedule (California State Department of Education, 1995).

Stasz and Brewer (1998) studied two programs in Los Angeles. The programs being compared were (a) a medical magnet high school (MMHS) that provided unpaid internships each year of high school, and (b) a work experience program (WEP) that provided paid work experience for one semester. The purpose of the study was to analyze students' perceptions of (a) the quality of their work experience, and (b) linkage between the work-based learning program and their schooling. MMHS provided unpaid internships in a variety of medical settings, mostly as hospital volunteers or assistants in the pharmacy, lab, or research department as well as other departments. The school emphasized a college preparatory curriculum for grade 10-12 students with internships provided for the purpose of career exploration. WEP loosely followed the cooperative education program model, and provided paid work experience and course credit for one semester. The program was a partnership between the school district and a large multinational company. Students described their jobs primarily as clerk/secretary (53%), administrative assistant (11%),

human resources (11%), customer service representative (8%) cashier/teller and child care worker (each 5%), nurse assistant, sales, and collection representative (each 3%).

Deborah Meier was founder and teacher-director of a network of public elementary schools in east Harlem, New York, and principal of Central Park East Secondary School. In 1995 she wrote a book, The Power of Their Ideas (Lessons From a Small School in Harlem). At Central Park East, all seventh to tenth grade students worked at a community service location one morning every week. As juniors and seniors, students had the opportunity for a more intensive work experience to which they devoted at least 100 hours (Meier 1997).

Researchers Lombard, Hazelkorn, and Neubert conducted a 1992 study entitled, *A Survey of Accessibility to Secondary Vocational Education Programs and Transition Services for Students with Disabilities in Wisconsin*. Recent findings indicated that students with mild disabilities who participated in secondary vocational education were more likely to be competitively employed than youths who did not take vocational education courses. According to Lombard, et al., secondary schools in Wisconsin typically provide course work in six occupational clusters: (a) Technology Education, (b) Family and Consumer Education, (c) Agriculture, (d) Business Education, (e) Marketing, and (f) Health Occupations. While the majority of moderate to large schools offer programs in each of the six clusters, many of Wisconsin's smaller schools offer related coursework in only four or five clusters.

In a 1997 study by Hershey, industries in which students had paid work experience included (a) Construction, (b) Manufacturing, Transportation, Utilities, (c) Retail and Restaurant, (d) Finance, Insurance and Real Estate, (e) Automotive Repair, (f) Health

Service, (g) Education, Public Administration, Legal/Social Services, and (h) Other. Results of the study indicated that workplace opportunities that the students get through school are of higher quality than opportunities they find on their own. They are more likely to work in industries related to their expressed career interests, spend more of their time learning and practicing skills as opposed to doing regular production work, and are more likely to get training in a structured classroom or workshop setting.

These studies reflected programs in a variety of subject areas available to high school students, from the traditional vocational subjects to more non-traditional human service areas. This indicates the importance of effective evaluation and planning in our educational system and within our schools in order to keep pace with changing societal needs.

Student Characteristics

In Lombard's 1992 study of Wisconsin secondary schools, it was found that 7% of the state's population of high school students were classified as having a mild disability. Of those students, 61% were classified as having learning disabilities, 26% had emotional disturbances, and 13% were classified as having mild mental retardation. As a group, 92% were enrolled in vocational courses.

During the 1980s, the government, foundations, policy analysts, and policy makers concentrated on "at-risk" youth, and means-tested approaches to employment and training. The 1990s witnessed a surge of interest both in the planned use of the worksite in education and training and in improving the school-to-work transition generally, under a combination of federal legislation and state action (Barton, 1996).

In the New York school (Meier, 1997, p. 31), "...wanted a place that would lead unexceptional children to greater heights and give them better training for the roles they might play in society. And we wanted this not just for the most favored children but a stimulating education for all children".

The Landmark Career Academy looks for students who are struggling in a regular academic setting but are likely to thrive at the mall school. When potential students are interviewed, they must be able to say why they believe they will do better at the academy. (Canny, 1996).

California's Continuation Education program is a high school diploma program for students whose needs are not being met in comprehensive high schools. Some have adjustment problems. Some need a flexible schedule. Whatever their goals, students who attend continuation high school are given a new chance to succeed (California State Department of Education, 1995).

In the Stasz (1998) study, both the medical magnet high school (MMHS) and work-experience programs (WEP) served non-white populations; for approximately 30% of the students, English was not the primary language. The MMHS program did not choose its students, but took those assigned by the district through the magnet school lottery enrollment system. WEP students had to have at least a C average and be selected to participate in the program.

It becomes apparent that the majority of work-study programs are geared toward at-risk or special needs students who need alternative activities to succeed in school. However, all students can potentially benefit from appropriately planned programs.

Rate of Student Enrollment

At Central Park East Secondary School in New York City, all students are encouraged to develop college preparatory skills. All students also participate in required internships, starting at community service locations. All students take a work seminar in their last two years that is usually given at school so they can debrief and share experiences (Meier, 1997).

In a 1996 study, 88 percent of high school seniors in the United States had held a paid job at some point in high school, but just 15 percent had ever obtained one through school. At one point, about 42 percent of seniors had an internship, volunteer position, or unpaid training; 17 percent of the seniors had found such opportunities through a school program (Hershey, 1997).

In the 1992 school year, 68 percent of high school seniors were working. Half of them were working in food service, as grocery clerks or cashiers, or as salespersons. "We observed that these education and employment institutions are in two separate worlds—taking little or no advantage of this shared involvement with students in this critical period in their growth and development" (Barton, 1996, p. 3).

Today approximately 500 continuation high schools enroll nearly 10% of California's high school students. Continuation schools assist students in acquiring a high school diploma by offering a broad-based curriculum that includes personalized instruction, a work-study program, and intensive counseling, guidance, placement and follow-up services (California State Department of Education, 1995).

In the Stasz (1998) study, the medical magnet high school enrolled 220 students in grades 10-12. The school was originally located at a local high school, but moved to

occupy space next to the medical university. For the work experience program (WEP), program representatives worked with counselors at each participating high school to identify about 15 students to participate each semester.

These examples show the wide range of student enrollment in work-based learning programs, from less than 10% to 100% of the student population. This reflects the numerous options possible in planning work-study or vocational programs, from programs being offered to interested students, to those requiring participation.

Adequacy of Current Programs

Over the years, the MMHS established a reputation for excellence. State and district evaluations consistently ranked it as one of the best schools in the state. In 1994, its graduation rate was 98.8% with 90% of students going on to college (Stasz, 1998).

In the Lombard (1992) study, the majority of male students with disabilities were enrolled in Technology Education Courses while the majority of females were enrolled in Family and Consumer Education courses. Few were enrolled in the Health Occupations or Marketing clusters. The results indicated that students with disabilities were using vocational education programs but not always a full range of programs and services as specified in vocational education legislation.

According to Hershey (1997), parents generally saw career development activities as useful for all students, rather than a form of tracking. They could help students select their high school courses, choose a career major where that option existed, and decide what workplace activity to pursue.

In Barton's study (1996), the National Center for Research on Vocational Education had a project on high-performance learning for adolescents in retail and food

service industries and states. The issue being, what could be done to enhance the educational content of jobs that young people already had, or would most likely obtain?

Since students in California are required by law to attend school until they are 18 years of age, Continuation Education is one solution to the problems faced. Young people who were not able to do well in a large, traditional setting find themselves being successful, earning credits, and developing a feeling of self-worth and responsibility (California State Department of Education, 1995).

The programs described here, while invaluable for at-risk students, are for the most part available and helpful to students of all ability levels who seek career exploration and experience. It is important, therefore, that all students have the opportunity to enroll in work-based learning programs that will provide them with these experiences.

Teaching Methods Used in Vocational Programs

A primary benefit of work-study programs is that students are able to gain practical experience and to learn through hands-on activities. This work experience, combined with a variety of other traditional teaching methods, provides students with a comprehensive background in their chosen career area as well as in academic subjects required for high school graduation.

At the Landmark Academy (Canny, 1996), students gained work experience through internships at businesses at their community shopping mall while completing required academic coursework on an independent study basis. Students who had been struggling in the traditional classroom setting were motivated by the mall's work-like atmosphere, and the flexibility which allowed them to choose which academic subject(s), as well as how many, to pursue at any given time. Students had access to computers and a

variety of software programs compatible with the school system's program of studies, for use in completing courses. With this option of immersing oneself in a single subject, students were sometimes able to complete a course in as little as one week's time. Through group instruction, work-based learning, team projects, and self-paced learning modules, students received credit for training that exposed them to career areas of retailing, hospitality, travel, tourism, financial services, and office skills.

At Central Park East Secondary School (Meier, 1997) the school day was organized into two-hour time blocks for humanities, math and science. During this time, students could choose from a variety of activities. They might be making a video, putting on a play, working in the art studio or doing an experiment in the science laboratory. The project might be elective in nature but connecting to a broader assignment. Projects completed were placed in a student portfolio. The satisfactory completion of 14 portfolios was the basis for high school graduation. It was emphasized that students must be taught how academic subjects can be applied to the larger society—work included.

Stasz's study (1998) described the program at the medical magnet high school (MMHS), where each resource site provided a statement of learning objectives that all students were expected to achieve during the job rotation. In addition to keeping daily journals, which the supervising teachers collected and graded, students were required to answer questions corresponding to the learning objectives, interview two people at the site, and learn about the college path to their job.

In these programs, a variety of teaching methods were used to help students learn, within their chosen vocational subject areas as well as in the required academic courses. Independent study, including use of computer programs for course completion provided

flexibility that helped to motivate students to achieve. Allowing a choice of activities to fulfill an assignment provided a creative outlet that required students to think through and plan an individual project. Keeping daily journals, conducting employee interviews, researching the college path leading to a specific job, and answering questions relating to established learning objectives were activities through which students could develop important written and oral communication skills that would be valuable to them later in life.

Summary

A review of literature described a number of successful programs in different geographic areas of the United States. These programs, while unique and different from one another, used the work-study format in a variety of ways to achieve educational goals for their students. Many of the programs were designed for 100% student participation within the school. The majority of these programs served academically at-risk students, although some programs were designed for participation by students of all ability levels. Most offered enough flexibility and variety to provide for the needs and interests of all students.

The programs described above were developed by schools to meet the needs of the students in their communities. In this study, the goal was to determine to what extent the educational needs of local students were being met by participation in programs at area career and technical education (CTE) centers in central Illinois. The centers served students living within the home district as well as those in surrounding rural communities. Because CTE programs are inherently expensive to operate, it is often more cost-effective to provide programs at a central location serving a number of schools.

Chapter III

Methodology

Design of the Study

The purpose of the study was to examine work-study programs at area career and technical education (CTE) centers in central Illinois, investigating (a) the adequacy of current programs, (b) the graduation rates of participating students, and (c) career choices of participating students after high school graduation. The sample for this study included teachers of all programs at each of three area CTE centers in central Illinois. These centers serve local students as well as those in surrounding communities. Guidance counselors at all participating high schools were also surveyed.

The Career and Technical Education Center Teacher Survey was previously distributed as a pilot study to seven teachers of work-study programs at a high school in east central Illinois with a student population of approximately 1200.

Instrumentation

Data collection involved a four-part process. The first part surveyed teachers at the area CTE centers. The second part surveyed counselors at high schools with students participating in programs at the CTE centers. The third part involved classroom observations, and the fourth included interviews with selected teachers at the area CTE centers.

Career and Technical Education Center Teacher Survey. The teacher survey measured variables to address Objective 1: identify subject areas in which CTE programs were available, Objective 2: describe characteristics of participating students, and

Research Question 1: Do current programs meet the needs of students of various ability levels and interests? The brief, seven-item survey requested information from the teachers about the classes they teach as well as characteristics of their current students. The survey asked whether the students work at paid or unpaid jobs, number of credits received, gender, grade level and academic ability level of students, as well as examples of student jobs, follow-up procedure, and purpose(s) of the program (See Appendixes A and B).

Career and Technical Education Centers: A Survey of Participating Schools. Information from this survey was used to calculate the graduation rate among seniors, and to answer Objective 3: to determine the percentage of high school students enrolled in CTE programs. This questionnaire was sent to counselors or administrators at the participating schools, requesting information on size of each graduating class, and the number of their students taking classes at the area CTE center (See Appendixes C and D).

Class Observations. The third part involved observation of selected classes within the Family and Consumer Sciences departments, averaging about one hour in length, with the purpose of gathering information about course content and to observe teaching styles and methods.

Teacher Interviews. Information from teacher interviews addressed Research question 2: What teaching methods are most used in the CTE classes? and Research question 3: What follow-up procedures are used to assess career choices after graduation? It also addressed the career choices of participating students after graduation. This part included interviews with the Family and Consumer Sciences teachers, as well as counselors and school administrators to gather information about the student population,

the purpose and goals of the collective programs and past successes with the current programs (See Appendix E).

Implementation Procedure

The researcher went to each of the three area CTE center locations on a scheduled day and gave the surveys to the principal, who distributed them to each of the teachers, with a request to complete the survey and return it by mail within two weeks. Counselor surveys were mailed to the 50 participating schools with a request to complete and return them within two weeks. After the surveys were returned, a second request was made to selected teachers and counselors from whom surveys had not been received, which resulted in a slightly higher rate of return. Data from the returned questionnaires were recorded and analyzed. A second visit to each center was scheduled to observe Family and Consumer Sciences related courses, specifically Child Development and Culinary Arts, and to collect more data through interviews with the teachers and school administrators.

Data Analysis

Survey data were recorded and analyzed. Frequencies and percentages were determined for student characteristics and basic course information. The observation notes were reviewed, and results written about classes individually and categorically. The information from teacher interviews was recorded, written individually and organized into identified themes and patterns. By determining the percentage of graduates in all participating schools, and comparing it with the percentage of those attending the area CTE center programs, the effectiveness of the programs was reflected. Also follow-up procedures and information determined whether students were pursuing these career areas after graduation.

Chapter IV

Results

Data were collected from three area career and technical education (CTE) centers in central Illinois, each located in a mid-sized city, and serving high school students from the home community as well as surrounding rural communities. Participating students attended classes at their home school for half a day. Then they went to the area CTE centers, which provided programs in a number of career interest areas. For this purpose, the centers will be identified as Center A, Center B and Center C. Center A had a total student population of 912. It provided CTE programs for juniors and seniors from 24 area high schools. Center B, with a student population of 338, served juniors and seniors from 14 area high schools. Center C served 456 students from 12 participating schools.

The rate of return averaged 59% for teacher surveys, with 50% (11) from Center A , 68% (13) from Center B and 60% (9) from Center C. Counselor surveys from participating schools resulted in a 74% return rate, 79% (19) from Center A, 64% (9) from Center B and 75% (9) from Center C.

Information gathered from the teacher and counselor surveys was used to achieve the following objectives:

1. to identify subject areas in which work-study programs are available,
2. to describe the characteristics of students participating in the programs, and
3. to determine the percentage of high school students enrolled in work-study programs.

Observations and teacher interviews were conducted in Child Development (Centers A, B and C) and Culinary Arts classes (Centers A and B) to answer the following research questions:

1. Do the current programs meet the needs of students of various ability levels and interests?
2. What teaching methods are used to help students learn in the work-study classes?
3. What follow-up procedures are used to assess career choices after graduation?

Objective 1: Programs Available at Area Career and Technical Education Centers

The three area CTE centers offered a combined total of 34 different programs of study, as shown in Table I. Twenty-two courses were offered at Center A, 19 at Center B, and 15 at Center C. The following seven programs were offered by all three centers:

The *Auto Body* program provides students with background in auto body repair and refinishing. Course content includes welding, dent repair with plastic filler, trim work and frame straightening, as well as painting preparation and techniques.

In *Auto Technology*, students gain a general knowledge of basic engine operation and its systems, including auto electrical systems, power-trains, brakes, exhaust, cooling, fuel, emissions, chassis, diagnosis and tune-ups. Auto shop practices and safety are stressed. Examples of student jobs include working at a Harley Davidson motorcycle dealer, working for an auto glass repair company, Quick Lube, or alignment/suspension shop.

Building Trades class provides a basic knowledge of carpentry and masonry, experience in reading blueprints and understanding layout procedures, operating hand and power tools, rough framing, roofing, siding, insulation, drywall, wood finishing and painting.

The *Child Care and Human Services* program combines classroom study with laboratory experiences in a child care setting. Topics include stages of

development, creating lesson plans and making objective observations, health and safety issues, classroom management, and development of career and job skills. Students at Center C have extended campus programs which include work experiences at elementary schools and daycare centers.

In the *Health Occupations* program, the goal is to expose students to a wide variety of health care occupations, including the medical, dental, veterinary, therapy, laboratory and pharmacy fields. Students learn basic health care skills and patient care techniques. Students assist in X-ray and other departments in the hospital. Course training can lead to certification as a Certified Nursing Assistant (CNA).

In *Interrelated Cooperative Vocational Education*, students receive on-the-job training in areas not taught in other academic or vocational programs. A combination of classroom study and paid work-based learning experience provide a practical background in the career area of the student's choice. Examples of student jobs include hospital radiology assistant, sales associate at mall, and tool room assistant.

In *Welding,* students receive basic instruction in the standard welding processes, including preparing metal for welding operations, understanding the basics of metallurgy, and adhering to safe work practices.

The following eight programs were available at two of the three schools:

In *Agriscience Technology*, students learn about various job opportunities in the agriculture industry. Animal science, plant science, soil science, horticulture, natural resources, agribusiness management, agricultural mechanics, agricultural

biotechnology, environmental science, and aquacultural science are included. Students jobs include animal care assistant for a veterinarian's office, maintaining greenhouse operations, or raising lilies for sale.

In *Computer Assisted Drafting (CAD)*, students learn fundamentals of computer use and drafting to apply CAD techniques to basic technical and mechanical applications, for industrial drafting as well as in the design of plans for various home styles. Student jobs include updating drawings for City Engineering Department, Sanitary District, utility companies and engineering firms.

The *Computer Repair and Networking* program teaches the fundamentals of troubleshooting and repair of personal computers. Also students learn troubleshooting and installation of network servers and operating systems, and installation of computer hardware and software.

In the *Cosmetology* program, students receive instruction in all phases of beauty culture: hair styling and shaping, permanent waving, hair coloring, manicures, facials, make-up and fashion. The course also covers the basics of sterilization and sanitation procedures, shop management and cosmetology law.

The *Culinary Arts and Hospitality* program prepares students for a variety of occupations. Skills are developed in quantity food preparation, menu planning, knowledge of sanitation and health requirements, service, organization, management, guest relations and other aspects of the hospitality industry. Student jobs include catering, hospital food service worker, cake decorator, short order prep cook, and assistant chef.

Table 1: Programs Available at Area Career and Technical Education Centers

Center A	Center B	Center C	Programs
X			Agricultural & Industrial Mechanics
X	X		Agriscience Technology
X	X	X	Auto Body
X	X	X	Auto Technology/Auto Servicing
X			Building Maintenance
X	X	X	Building Trades
	X		Business Computer Programming
	X		Business Marketing and Management Info. Technology
X			Business Technology Specialist: Legal/Medical
X	X	X	Child Care and Human Services
X			Communications & Media
X	X		Computer Assisted Drafting
X	X		Computer Repair & Networking
X	X		Cosmetology
	X		Construction Skilled Trades
		X	Consumer Services Management
X	X		Culinary Arts & Hospitality
X			Drafting
X			Electrical
	X	X	Electronics
X		X	Graphic Design
X	X	X	Health Occupations
X			Heating Ventilation & Air Conditioning
		X	Horticulture/Conservation
	X		Industrial Manufacturing Occupations
	X		International Business and Entrepreneurship
X	X	X	Interrelated Cooperative Vocational Education
X		X	Law Enforcement
	X		Legal/Medical Office Assistant
		X	Manufacturing Technology
		X	Office Procedures/Information Processing
X			Power Equipment Technology
		X	Sign Language
X	X	X	Welding

In *Electronics*, students learn fundamentals such as production and theory of electricity, as well as how to interpret schematic wiring diagrams, construct circuits, and compute the values of circuit components. Computer simulation is used in circuit analysis.

In the *Graphic Design* program, students learn to create and apply various forms of artistic representation. A graphic arts student may work as a printing press operator, graphic designer, or sign maker.

In *Law Enforcement*, students gain an understanding of the Illinois criminal justice system, the corrections system and its operations, patrol procedures, traffic directing and control, investigation of traffic accidents, and criminal investigations. They become familiar with trial and testifying procedures, and with the corrections system and its operations.

The following nineteen programs were offered at only one of the schools:

The *Agricultural and Industrial Mechanics* program teaches students to repair and service large and small engine systems, operate small hand tools, power tools and measuring tools, set up new farm and construction equipment.

In *Building Maintenance*, students learn procedures for cleaning, painting and maintaining building interiors and exteriors, including yard maintenance.

Business Computer Programming, an introduction to computer programming, provides instruction in Basic, Visual Basic, and C++ programming languages, with which students may develop business applications for real-world problems. Other topics include fundamentals of computer use, presentations, business math and accounting, and basics for a career in the Information Technology field.

In *Business Marketing and Management Occupations*, through classroom activities and work-based learning experiences, students gain skills in sales, promotion, buying, transportation, storing, stock control, financing, advertising and management.

The *Communications and Media* program provides students with background in any of a variety of career areas, including radio broadcasting, television and video production, photography, journalism and copywriting, cinematography and animation, telecommunications and marketing. Student jobs include radio disc jockey, TV Floor Manager, and broadcast news camera operator.

In *Construction Skilled Trades*, students learn basic construction skills, as well as carpentry, electrical safety and theory, concrete finishing, and masonry. Students receive an introduction to mobile crane operation and metal building assembly, as well as commercial and industrial wiring.

In *Consumer Services Management*, students gain work experience in service occupations such as bank teller, assistant manager in a retail store, or worker in a fast food establishment.

In *Drafting*, students learn to produce various types of drawings, and will be able to complete structural, mechanical and architectural drawings.

In the *Electrical* program, students learn about electrical circuits, residential wiring systems, application of electrical energy for power and illumination, and the National Electrical Code.

In *Heating, Ventilation & Air Conditioning*, students learn the basic principles of heating, ventilation and air conditioning, and will be able to perform repair analysis and entry-level installation and maintenance of equipment.

In *Horticulture/Conservation*, after completing general studies relevant to all areas, students select an area of concentration, choosing from greenhouse production, landscape, conservation, or floriculture. Student jobs include florist helper and landscaping laborer.

The *Industrial Manufacturing Occupations* program is designed for students interested in working as an Industrial Electrician, Industrial Maintenance Mechanic, or Industrial Toolmaker. The three levels of required training include high school courses, community college, and company apprenticeship program.

In *International Business*, students study international finance, international economics, and global marketing, using the Internet to gather information about different businesses around the world. Students have the opportunity to participate in an internship in local businesses to apply their knowledge and skills.

In the *Entrepreneurship* program, an advanced business course, students learn to write a business plan, do a market analysis, and manage a small business. Students gain an understanding of a small business's social and ethical responsibility to a community.

In the *Legal/Medical Office Assistant* program, students learn terminology associated with these specialized fields, office procedures, software for general office use and for specific legal/medical applications. Each student completes an internship in his/her area of interest. Examples include legal office assistant for the

State's Attorney, medical receptionist for a doctor's office, marketing assistant for a bank, and office assistant for a school.

The *Manufacturing Technology* course includes basic drafting, electronics, manufacturing and machine shop skills, use of Computer Aided Drafting (CAD) and an introduction to robotics. Student jobs include machine shop, electrical, and assembly work.

In *Office Procedures/Information Processing*, students have the opportunity to learn basic office procedures using traditional methods as well as computer software for office use. Students apply these skills working at part-time jobs at local businesses including an insurance company and an eye clinic.

Power Equipment Technology is a comprehensive program in which students learn to diagnose, repair and maintain engines and other operating systems in automotive, agricultural, industrial and recreational vehicles.

Sign Language students learn American Sign Language and the American manual alphabet, used in communicating with deaf or hearing-impaired people.

(Course descriptions are a compilation from Capital Area Career Center, 2002; Education for Employment Systems #390, 2001; and VOTEC, 2002)

Objective 2: Characteristics of Students in CTE Programs as Described by Teachers

Table 2 shows the breakdown regarding student ability levels reflected in each grade level, at each school. Data from Center A showed that the largest percentage of seniors, 27.7%, were described as average students, based on teacher observation and information available to them. Another 24.6% were academically at-risk, 23.4% good students, 17.3% special needs, and 7% honor students. Of the juniors, 31.6 % were

described as average students. Academically at-risk students made up 23.1%, followed by 20.5% good students, 17.6% special education/special needs, and 7.2% honor students. Survey results representing Center A indicated that 63.75% (357) of the students were male and 36.25% (203) were female. Programs having 90-100% participation by male students included Welding, Auto Technology and Servicing, Building Trades, CISCO, and Computer Aided Drafting. Programs reflecting 90-100% female participation were Business Technology, Early Childhood Care and Education, and Health Occupations. Communications and Media, and Graphic Arts both showed approximately a 50/50 male/female ratio. Culinary Arts was 37% male, 63% female.

Information from Center B's seniors showed 33% average students, 30.3% good students, 20.2% honor students, 10.1% special education, and 6.4% at-risk. Juniors were 32.3% average, 30.2% good, 18.7% special education, 11.5% honor students, and 7.3% at-risk. Survey results indicated that Center B's student population was 47.4% (90) male and 52.6% (100) female. Programs with a 90-100% male enrollment were Welding, Industrial Manufacturing Occupations, and Computer Networking. Those with a 90-100% female enrollment included Child Care and Human Services, Family and Consumer Sciences Occupations, and Health Occupations. Other programs were Agricultural Science (50% male, 50% female); Business, Marketing and Management Occupations (32% male, 68% female); Cooperative Education (61% male, 39% female); Drafting/CAD (65% male, 35% female); and Culinary Arts (40% male, 60% female).

Center C's seniors were described as 29.3% at-risk students, 25% good students, 21.6% average students, 13.8% honor students, and 10.3% special education. Juniors were 32% average, 26% at-risk, 19% good, 11.5% special education, and 11.5% honor

students. Unlike Centers A and B, Center C had a small number of sophomores in attendance. Students were required to be at least 16 years old to participate in programs at the school, and some sophomores met the age requirement. Also there were some third-year students who, because of the limited number of credits received, were still officially sophomores instead of juniors. From the present sample, 50% of the sophomores were special needs students, 35% at-risk, and 15% were good students. The sample results from Center C indicated that 35% (102) of the students were male and 65% (193) female. The programs made up of 90-100% male students were Manufacturing Technology (100% male), Auto Technology (94% male, 6% female), and Electronics/Computer Networking (93% male, 7% female). Programs with 90-100% female students were Health Occupations (100% female) and Child Care (4% male, 96% female). Other programs were Consumer Service Management (14% male, 86% female), Information Technology (24% male, 76% female) and Horticulture (37% male, 63% female).

The combined sample from all three schools indicated that 30.3% (343) of the students were average, 23.2% (262) were good students, 21.6% (245) at-risk, 15.8% (179) special needs, and 9.1% (103) honor students. This would indicate that the CTE programs are attended by students of virtually all ability levels, primarily the average, good, and at-risk students, with a smaller but still substantial percentage of special education/special needs students.

The smallest category of students participating in CTE programs was the honor students category. At 9.1%, the proportion of the student population was appropriate, probably similar to the percentage of honor students at a traditional high school. It is likely that a number of the college-bound honor students would remain at their home schools,

focusing on college preparatory classes in traditional academic disciplines. However, the opportunities available at the area CTE centers, particularly in areas such as education, art and design, communications, and business, provide valuable experiences in these areas that would contribute to success in a college-level program of study.

Good to average students generally are able to learn quickly, follow instructions, and are likely to continue their chosen career path at a 2- or 4-year college. Academically at-risk and special needs students may require closer supervision but often do well with hands-on activities, and through participation in vocational programs, may be more motivated to finish high school and possibly continue studies at a community college. Special education students in Center A were identified by some of the responding teachers in other categories for academic performance level, even though they may have had disabilities. Therefore the numbers of special education students is listed as 57+ seniors and 54+ juniors.

Objective 3: Percentage of Eligible High School Students Enrolled in Work-Study Programs

Programs at area career and technical education (CTE) centers were available to juniors and seniors from participating high schools. Available data from schools participating in Center A programs indicated an average enrollment of 13.27% of eligible students, ranging from 1.8% (2 out of 109 students) to 30.8% (16 out of 52 students). Center B's average enrollment was 11%, ranging from 5.6% (10 of 179) to 15.3% (73 of 477). Center C's average enrollment was 23.1% with a range of 3.9% (4 of 102 students) to 32% (26 out of 82). The average rate of enrollment from all three CTE centers was

14.3% of all eligible students from participating schools. This indicated that the other 85.7% of juniors and seniors from the participating schools were taking traditional general

Table 2: Characteristics of Students in Career and Technical Education Programs as Described by Teachers

		School A		School B		School C	
		#	%	#	%	#	%
Seniors	honor students	23	7.0	22	20.2	16	13.8
	good	77	23.4	33	30.3	29	25
	average	91	27.7	36	33.0	25	21.6
	at-risk	81	24.6	7	6.4	34	29.3
	special needs	57+	17.3	11	10.1	12	10.3
	Total	329	100.0	109	100.0	116	100.0
Juniors	honor students	22	7.2	11	11.5	13	11.5
	good	63	20.5	29	30.2	22	19
	average	97	31.6	31	32.3	37	32
	at-risk	71	23.1	7	7.3	30	26
	special needs	54+	17.6	18	18.7	13	11.5
	Total	307	100.0	96	100.0	114	100.0
Sophomores	good					3	15.0
	at-risk					7	35.0
	special needs					10	50.0
	Total					20	100.0

education or college preparatory classes at their home schools. Because of the tuition cost per student which the participating schools are required to pay, schools sometimes limit the number of students they can send to the CTE centers. Also the centers can accept only as many students as they have facilities for. Actual data received is shown in Appendix F. Data are grouped according to school, and in order of combined class size for juniors and seniors.

Research Question 1: Do Current Programs Adequately Meet the Needs of All Students?

In examining current program adequacy it appears that the wide variety of programs available to students at all three area CTE centers meet the needs of most students seeking this type of work-based learning. Vocational programs have traditionally been geared toward the needs of students planning to enter the work force directly after high school. However, today's Career and Technical Education programs encourage students not only to develop marketable skills while completing their high school education, but to continue a course sequence in their chosen program at a 2-year or 4-year college. This provides a range of educational and employment options for high school students within each program.

Most of the programs were represented by students of all ability levels. Center A had no honor students in Auto Technology and Servicing, Building Trades, CISCO, Health Occupations, or Welding. At Center B, the only programs that had honor students in attendance were Child Care, Drafting/CAD, Industrial Manufacturing Occupations, and Welding. At Center C the only programs with honor students present were Child Care, Consumer Service Management and Health Occupations. Information Technology listed almost all good students with a small number of special needs students.

In Table 3, both Centers A and B indicated college preparation as one of the most frequently stated purposes for offering available courses, while dropout prevention was the least frequently stated purpose. At Center C, college preparation was only chosen by three respondents, while dropout prevention was indicated by 6 of the 9 respondents. Other purposes for courses were (a) career exploration, (b) acquire specific job skills, (c) acquire employability skills, and (d) acquire work experience. Nearly all respondents indicated these purposes, all of them reflecting valuable work related skills and experiences needed by students of various ability levels.

Table 3: Stated Purposes of CTE Courses

Purpose:	Center A (11)	Center B (13)	Center C (9)
College Preparation	9	13	3
Career Exploration	8	11	7
Drop-Out Prevention	4	2	6
Acquire Specific Job Skills	10	12	8
Acquire Employability Skills	10	12	9
Acquire Work Experience	9	12	9

Research Question 2: What Teaching Techniques Are Used in the CTE Programs?

Information gathered through class observations and teacher interviews in Child Development (Centers A, B, and C) and Culinary Arts (Centers A and B) indicated that the most used and most effective teaching techniques involved hands-on activities, where

the students were actually doing, creating or developing practical skills in their areas of interest. On the days of the class observations, students were participating in laboratory classes. Child Development students were working directly with 3 to 5-year-old children in the child development laboratories. Culinary Arts students were preparing food products in institutional-type kitchens to be served cafeteria-style during the school lunch hour. Students had specific responsibilities and worked efficiently on their own. Other teaching methods that were often used, according to the teachers, were lecture, demonstrations, textbook assignments, special projects, field trips, and guest speakers.

The child development laboratories at the three centers followed similar standard patterns. At all three programs, children ages 3 to 5 years were present on Tuesdays, Wednesdays and Thursdays. Center A and B held morning and afternoon sessions, which were attended by different groups of children as well as different high school classes. Center C had a morning session from 8:30 to 11:30, during which two different groups of high school students worked with the children, one for the first half and one for the second half of the three-hour session.

At all three centers, the children had group time led by the students, where they sang songs, talked about the calendar, read stories and had sharing time. At Center A, some of the students had planned and prepared activities for the children and they took turns explaining their activities to the group. Free choice activities planned by the students and implemented at the various centers included ice cube painting with powdered tempera paint, a snow cone stand, building a town with blocks, a paper-punch art project, a banner celebrating the Chinese New Year, and a play-dough type mixture containing coffee grounds, as well as standard cooked playdough and cutting and pasting activities.

At Centers A and C, students were divided into two groups. Each week one group was in the laboratory with the children while the other group completed textbook assignments, took part in discussion groups, and planned and prepared activities for the next week's laboratory sessions in which they would participate. At Center B, students were divided into three laboratory groups, each group working a six-week rotation. Two weeks were spent working with the 3-year-olds, two weeks with the 4-5 year-olds, and two weeks at a community day care center. On Mondays and Fridays the groups met as a combined class for lecture and note taking, quizzes and tests, field trips to day care centers and elementary classrooms, and other activities.

Interviews with head teachers at the three centers reflected similar program purpose and goals. Center A's stated purpose was for students to gain an understanding of the stages of child development, and appropriate practices at each stage; how to implement activities and work effectively with children; to identify and develop desirable character traits and workplace skills. Center B's purpose was to expose high school students to working with children in groups, while providing career exploration for students interested in day care, elementary education, or working with the elderly as an activity aide. Center C's purpose was to familiarize students with children of various age groups and the ability levels of each group (See Appendixes G, H and I).

The three centers' program curricula also had many similarities. Students were taught basic child development theory, or areas of child development, including social, physical, intellectual and emotional development; behavioral characteristics of children at various ages; and the importance and function of play. Classroom management concepts included health and safety issues; requirements of children with special needs; creating and

enforcing classroom rules; creating lesson plans, including activities in varied subject areas such as music and art, pre-reading and pre-writing activities, math and science, as well as activities for small and large motor development; curriculum development; and setting up a day care center. The course also emphasized the development of interrelation skills, employability and workplace skills, as well as personal goal setting and career planning.

The Culinary Arts programs at Centers A and B provided students with valuable experiences in food preparation methods that can be used for future employment. Center A had a morning and an afternoon session, each with a different group of students. Foods laboratory was held every day with morning students preparing foods to sell at school during the lunch hour, and the afternoon group preparing foods for special events. About 20% of the class time was spent on lecture and note-taking, textbook assignments, field trips and guest speakers. Center B class had only a morning session. Students had foods laboratory on Tuesdays, Wednesdays and Thursdays, during which time they prepared foods to sell during the school lunch hour. On Mondays and Fridays they had lecture and note-taking, demonstrations, textbook assignments, field trips and guest speakers.

Teachers at both centers said that the main purpose and goal of the course was to prepare students for future employment. They emphasized the basics of attendance and dependability, organization and teamwork, as well as developing culinary skills.

Curricula covered the principles of nutrition, sanitation and safety, and menu planning as well as preparation methods for all types of foods. Also covered were time management, cost management, and at Center A, a unit on personal life skills, including money management (See Appendixes J and K).

A substantial amount of information was covered during the school year. The teachers of Family and Consumer Sciences related courses at these area CTE centers used a variety of fairly traditional classroom methods, which accommodated the varied abilities and learning styles of their students. These methods were combined with a high percentage of class time spent doing hands-on activities. The students responded well, maintained interest and acquired a solid background in their chosen career area, which they could utilize in numerous career paths.

Research Question 3: What Follow-up Procedures Are Used to Assess Career Choices After Graduation?

Of the 50 participating high schools, survey results from 37 (74%) high schools showed an average graduation rate of 96.6%. Of those high schools with students attending Center A, the average graduation rate was 97.7%; of students attending Center B, the average graduation rate was 97%; and for Center C, 93%. These data do not necessarily reflect the dropout rate because they include students who transferred out of the district, as well as those who planned to graduate after continuing a fifth year in school.

For all three area CTE centers, the survey results showed an average graduation rate of 92.6%. Further analysis showed that 96.5% of all seniors attending Center A graduated at the end of their senior year; as did 93.2% of seniors at Center B; and 87% at Center C. The area CTE centers' average graduation rate was slightly lower than the traditional high schools' graduation rate. The rates for Center C and its participating schools were the lowest, with all non-graduating students coming from one large urban school district.

Although there is no requirement for follow-up procedure for area career and technical education centers in Illinois, all three centers reported a school-wide policy of contacting each student one year after high school graduation to find out what he/she is currently doing, whether working in his/her chosen field, attending school to pursue further education in that area, or has changed to a different line of work. While specific data were not available except for Center B (see Appendix L), interviews with teachers and administrators suggested that a significant number of students do continue in their chosen career path after high school.

At Center A, approximately 10 out of 18 Child Development students from last year are currently at the local community college, studying child development, early childhood or elementary education, or a related field. About six of the 18 students from last year have gone directly to a job in the field after high school graduation. Employment opportunities are limited for students with only a high school education. They can work as a child care aide, but to be a head teacher a minimum number of college credits in child development or related course work is required. A number of high school graduates work in child care programs while studying child development or education at the community college.

At Center B, approximately 75% of the child development students continue their studies at the local community college, sometimes also working part time as a day care aide. An additional 10% go directly to work as a day care aide after high school. As previously mentioned, the employment opportunities in day care are very limited for high school graduates without college level course work in child development. They can work as an aide, but not as a head teacher. Another option for high school graduates, when they

reach age 21, is to apply for a state license for home day care, a valuable and much needed service in most communities.

At Center C, about 10% of students each year continue their study of child development or early childhood education at a 2-year or 4-year college. Some work at the YMCA or a day care center while they are in college. Very few go directly to full-time employment at day care facilities.

In the Culinary Arts classes, about 50% of students at Center A pursue additional studies in the subject after high school. About 20% go directly into foods-related jobs after high school graduation. At Center B, about 20% of students continue their education in Culinary Arts, and about 30% go directly to related jobs.

These figures indicate that a significant number of students pursue further experiences in the occupational areas of their choice, based on the courses taken at the area CTE centers. For this reason, access to programs at area CTE centers plays an important role in workforce preparation and is therefore a valuable part of the secondary education system.

Summary

Area CTE centers offered work-based learning programs in a variety of subject areas to an average of 13.4% of all eligible students. Students were primarily of average academic ability, but included those of other ability levels. Teaching methods used were predominantly hands-on laboratory activities, combined with a variety of other traditional classroom methods. Most programs offered an opportunity for paid employment in the community for the purpose of developing skills in the students' chosen career areas. The current programs seem to adequately meet the needs of most students.

Chapter V

Conclusions, Implications and Recommendations

Conclusions

The purpose of this study was to examine whether the educational needs of high school students in central Illinois communities are met by participation in work-study programs at area career and technical education (CTE) centers and to determine how participation in these programs relates to the graduation rate and career choices after high school.

The main objectives were to identify subject areas in which work-study programs were available, describe characteristics of participating students, and determine the percentage of eligible students enrolled in available programs. At the three locations studied, a variety of programs were offered to high school students in areas of agriculture, auto and building trades, business, child care and early childhood education, culinary arts, communications, health care, and others. Data indicated that students of various academic ability levels participated in CTE programs, the largest percentages being categorized as average students, followed by good and at-risk students, then special needs students, and then honor students. The students enrolled in the programs represented here were approximately 51% male (523) and 49% female (494). The sample indicated that an average of 14.3% of all juniors and seniors from participating schools were taking courses at the area CTE centers.

Research questions addressed the adequacy of current programs, teaching methods used, and follow-up procedures used. Based on available information, it appears that the current programs adequately meet the needs of students of various academic ability levels

and interests. However, interviews with school administrators and counselors revealed that failing or marginal students, or those with a history of discipline problems, are generally not sent to, or are not accepted by the area CTE centers. Tuition is paid for each participating student by the home school district. Most districts have a limit on how many students they are able to send, and admission is sometimes competitive. Therefore, the students with the poorest grades generally do not make use of the CTE centers. It was also stated that, especially in large urban school districts, the failing and marginal students often drop out of school when they reach age 16, during or after their freshman or sophomore year. Since the area CTE centers provide an educational option only for juniors and seniors, most of the enrolled students are those who are committed to completing their selected program of study.

Interviews were conducted with Family and Consumer Sciences teachers in Child Development and Culinary Arts programs at all three area CTE center locations. The teachers all said that their students spent much of their time doing hands-on activities in their laboratory classes. They said that this is by far the most effective method and most preferred by their students The balance of the time they use other traditional teaching methods including lecture and note-taking, demonstrations, textbook assignments, guest speakers, field trips and other activities. The note-taking and textbook assignments not only provide information but help students to develop skills that they will need if they continue their studies at the college level.

All three vocational centers reported a school-wide policy of contacting all students one year after high school graduation to find out what they are currently doing, whether they are working or attending school in their chosen career area, or have changed

to another line of work. In the Culinary Arts programs, the average continuation rate was approximately 65%. In the Child Development programs the average continuation rate was about 60%.

The average graduation rate among seniors at the participating high schools was 96.6%. At the three area CTE centers, survey results showed a slightly lower average graduation rate of 92.6%.

Implications

Because the programs offered at these CTE centers appeared to meet the needs of participating students, it is vital that the programs continue to be supported financially at the district and state levels, so they will be available to benefit future students. It is also important that educators continue to update and improve course offerings.

Since participation in CTE courses appears to help in maintaining the graduation rate of high school students, educators should continue to encourage all students, but particularly at-risk students, to participate. Also, additional resources or programs may be needed for younger students, primarily freshmen and sophomores who are at risk of dropping out of school.

Study results indicated that an average of 14.3% of all juniors and seniors from participating high schools were taking courses at the area CTE centers. While this number is encouraging, the fact remains that 85.7% of the students are not using these course offerings. It would be beneficial to increase awareness and accessibility, setting a goal of 15-25% student participation.

Since all schools conducted follow-up studies one year after graduation, it is possible that former students would be able to provide other valuable information which could be used to improve current programs.

Recommendations

Further research could be done to:

1. determine cost-effectiveness, or cost per student of CTE courses as compared to adult education programs;
2. identify students' incentives or motivations for attending classes at the CTE centers;
3. compare advantages of area CTE centers to comparable CTE programs offered in a traditional high school setting;
4. gather information about student perceptions of CTE courses, including suggestions for additional course offerings;
5. determine the personal characteristics, knowledge and skills employers look for in high school graduate employees;
6. identify the types of introductory CTE programs available at participating high schools for freshmen and sophomores;
7. discover the various ways in which technology is used in FCS related courses; and
8. determine long-term outcomes by conducting a 3,5, or 7-year follow-up study.

Limitations

Study results may not be representative of the entire population of high school CTE programs and students. Programs offered at area CTE centers in central Illinois may differ from those available at traditional high schools and in other geographic areas. The sample studied was small with an average 59% teacher and 74% counselor survey return.

Appendix A

Cover Letter to Teachers

December 11, 2001

Dear Career and Technical Education Center Teacher,

As a graduate student in Family and Consumer Sciences at Eastern Illinois University, I am currently working on a thesis. My project is to determine how student enrollment in high school work-study programs relates to the graduation rate and career choices after high school. _____ Center offers a number of programs designed to meet a variety of student needs. As a teacher of one of these programs, I am requesting your help in collecting information about your program and the students enrolled in your class(es) this semester.

I would greatly appreciate it if you could take a few moments of your time to complete the attached survey and return it to me by December 20, 2001. If you have any questions about the survey please contact me by phone at (217) 344-7816 or by e-mail at bdmill52@aol.com. Thank you for your assistance.

Sincerely,

Bridget Miller

S. Jayne Ozier, Ph.D
Professor, Family and Consumer Sciences
Thesis Advisor

Appendix B

Career and Technical Education Center Teacher Survey

Teacher name:_____ Course:_____

1. Does your class involve work-based learning? _____
2. If so, do the students work at paid or unpaid jobs?_____
3. How many credits per semester do they receive for participation in the program?_____
4. How many of your students are male?_____ female?_____
5. Based on your observation and information available to you, what number of your current students would represent each of the following categories?

	Freshmen	Sophomores	Juniors	Seniors
Honor students				
Good students				
Average students				
Academically at risk				
Special ed./special needs				
Other				

6. Has any follow-up activity been done to determine the success of your program? If so, please describe your follow-up procedure.

7. Give examples (two or three) and brief descriptions of jobs some students have in your program.

8. Which of the following would describe the purpose of your program? Check all that apply:

_____College preparation
_____Career exploration
_____Dropout prevention
_____Other
_____Acquire specific job skills
_____Acquire employability skills
_____Acquire work experience

Appendix C

Cover Letter to Counselors

December 7, 2001

Dear Counselor,

As a career and technical education teacher and graduate student, I am interested in knowing how student enrollment in work-based learning programs relates to the graduation rate and career choices after high school. I am working in cooperation with Mr. _____ at _____ Center to collect information on subject areas, teaching methods, and participation in programs at that school. Since your school has students enrolled at the vocational academy, I am requesting your help in providing information about your school's total student enrollment, number of students participating in vocational programs, and graduation rates.

I would greatly appreciate your taking the time to provide this information by completing the enclosed survey and returning it to me by December 17. If you have any questions about this survey, please contact me by phone at (217) 344-7816 or by e-mail at bdmill52@aol.com. Thank you for your assistance.

Sincerely,

Bridget Miller

S. Jayne Ozier, Ph.D
Professor, Family and Consumer Sciences
Thesis Advisor

Appendix D

Career and Technical Education Centers: A Survey of Participating Schools

School:_____ Counselor Name:_____

Class of 2001

_____students enrolled in May, 2001

_____students graduated in May, 2001

_____students participating in programs at area vocational school in 2000-2001.

_____participating students that did not graduate.

Class of 2002

_____students currently enrolled

_____students enrolled in May, 2001

_____students enrolled in May, 2000

_____students enrolled in May, 1999

_____students currently participating in programs at area vocational school

_____students that attended vocational school last year, but are no longer in school

Class of 2003

_____students currently enrolled

_____students enrolled in May, 2001

_____students enrolled in May, 2000

_____students currently participating in programs at area vocational school

Class of 2004

_____students currently enrolled

_____students enrolled in May, 2001

_____students currently participating in programs at area vocational school

Class of 2005

_____students currently enrolled

_____students currently participating in programs at area vocational school

Appendix E

Teacher Interview

1. What are the main purpose and goals of the course(s) you teach?

2. What topics does your curriculum cover?

3. What percentage of your students pursue continued/additional studies in this subject area after high school?

4. What percentage pursue careers in this subject area after high school?

5. Do you conduct any type of follow-up procedure to identify student career choices?

6. What are the primary teaching methods that you use in class?

7. Is there a certain activity or teaching method that the students especially like or do well with?

8. Questions to clarify data from observation?

Appendix F

Percentage of High School Students Enrolled in CTE Programs From Participating Schools

School A

Participating School	# CTE Students	Class Size	
1.	6	15 juniors	
	1	12 seniors	
	7	27	7/27=25.9%
2.	4	19 juniors	
	10	33 seniors	
	14	52	14/52=26.9%
3.	5	26 juniors	
	11	26 seniors	
	16	52	16/52=30.8%
4.	4	48 juniors	
	2	35 seniors	
	6	83	6/83=7.2%
5.	2	43 juniors	
	0	43 seniors	
	2	86	2/86=2.3%
6.	16	52 juniors	
	9	40 seniors	
	25	92	25/92=27.2%
7.	13	48 juniors	
	9	53 seniors	
	22	101	22/101=21.8%
8.	10	57 juniors	
	10	50 seniors	
	20	107	20/107=18.7%
9.	1	57 juniors	
	1	52 seniors	
	2	109	2/109=1.8%

10.	8	68 juniors	
	10	74 seniors	
	18	142	18/142=12.7
11.	12	116 juniors	
	12	76 seniors	
	24	192	24/192=12.5%
12.	22	100 juniors	
	16	99 seniors	
	38	199	38/199=19.1%
13.	14	158 juniors	
	20	158 seniors	
	34	316	34/316=10.8%
14.	8	197 juniors	
	11	222 seniors	
	19	419	19/419=4.5%
15.	5	226 juniors	
	5	207 seniors	
	10	433	10/433=2.3%
16.	48	282 juniors	
	37	202 seniors	
	85	484	85/484=17.6%
17.	27	309 juniors	
	25	305 seniors	
	52	614	52/614=8.5%
18.	43	324 juniors	
	51	299 seniors	
	94	623	94/623=15.1%
19.	91	350 juniors	
	52	273 seniors	
	143	623	143/623=23.0%
Total	631	4754 students	631/4754=13.27%

School B

Participating School	# CTE Students	Class Size	
1.	0	14 juniors	
	5	20 seniors	
	5	34	5/34=14.7%
2.	3	31 juniors	
	6	39 seniors	
	9	70	9/70=12.9%
3.	7	47 juniors	
	3	53 seniors	
	10	100	10/100=10%
4.	10	78 juniors	
	6	57 seniors	
	16	135	16/135=11.9%
5.	4	70 juniors	
	18	97 seniors	
	22	167	22/167=13.2%
6.	4	96 juniors	
	6	83 seniors	
	10	179	10/179=5.6%
7.	5	166 juniors	
	5	150 seniors	
	10	316	10/316=3.2%
8.	23	190 juniors	
	28	204 seniors	
	51	394	51/394=12.9%
9.	37	257 juniors	
	36	220 seniors	
	73	477	73/477=15.3%
Total	206	1872 students	206/1872=11.0%

School C

Participating School	# CTE Students	Class Size	
1.	0	14 juniors	
	2	20 seniors	
	2	34	2/34=5.9%
2.	6	25 juniors	
	2	34 seniors	
	8	59	8/59=13.6%
3.	16	47 juniors	
	10	35 seniors	
	26	82	26/82=31.7%
4.	15	41 juniors	
	17	46 seniors	
	32	87	32/87=36.8%
5.	0	60 juniors	
	4	42 seniors	
	4	102	4/102=3.9%
6.	12	44 juniors	
	26	84 seniors	
	38	128	38/128=29.7%
7.	16	66 juniors	
	14	63 seniors	
	30	129	30/129=23.3%
8.	15	90 junior	
	15	90 seniors	
	30	180	30/180=16.7%
9.	70	310 juniors	
	70	282 seniors	
	140	592	140/592=23.6%
Total	310	1393	310/1393=22.3%

Appendix G

Teacher Interview –Center A Early Childhood Program

1. What are the main purpose and goals of the course(s) you teach?

To understand child development principles, appropriate practices, how to implement and work effectively with children. Also to develop work place skills and desirable character traits.

2. What topics does your curriculum cover?

Areas of development, behavioral characteristics, lesson plans, importance and function of play, interrelation skills, employability/workplace skills. Also goal setting and career planning.

3. What percentage of your students pursue continued/additional studies in this subject area after high school?

Ten out of 18 graduating students from last year are currently at the local community college, studying child development, early childhood education or elementary education.

4. What percentage pursue careers in this subject area after high school?

Six of the 18 graduating students from last year have gone directly to employment in the child care field.

5. Do you conduct any type of follow-up procedure to identify student career choices?

All teachers at the center conduct follow-up studies one year after graduation, to see what students are currently doing.

6. What are the primary teaching methods that you use in class?

Primarily laboratory classes, also demonstration and other visual and auditory methods.

7. Is there a certain activity or teaching method that the students especially like or do well with?

Methods involving hands-on activities and verbal interaction.

Appendix H

Teacher Interview –Center B Child Development Program

1. What are the main purpose and goals of the course(s) you teach?

To expose high school students to working with children in groups. Also to provide career exploration for day care, elementary education and working with the elderly as an activity aide.

2. What topics does your curriculum cover?

Areas of child development, including physical, emotional, social, and intellectual development. Also safety, health, classroom management, special needs students.

3. What percentage of your students pursue continued/additional studies in this subject area after high school?

About 75% of our students go on to pursue child development related studies at the community college after high school graduation.

4. What percentage pursue careers in this subject area after high school?

About 10% go directly to day care centers to work as an aide.

5. Do you conduct any type of follow-up procedure to identify student career choices?

The school calls the students the following year after graduation, to find out what they're doing.

6. What are the primary teaching methods that you use in class?

Tuesdays, Wednesdays and Thursdays: lab. Mondays: lecture and note-taking, textbook and magazine assignments, also make projects for lab. Fridays: tests, lecture, other activities, field trips to day care centers, elementary classrooms.

7. Is there a certain activity or teaching method that the students especially like or do well with?

Hands-on activities, and working with the children.

Appendix I

Teacher Interview –Center C Child Development Program

1. What are the main purpose and goals of the course(s) you teach?

For students to gain hands-on experience and become familiar with the various age groups of children, and their abilities.

2. What topics does your curriculum cover?

Careers in Child Development, stages of development, setting up a day care center, planning activities in music, writing, science, including small and large motor activities. Also curriculum development, classroom rules, health and safety, and job search methods.

3. What percentage of your students pursue continued/additional studies in this subject area after high school?

About four or five students each year go to the local community college or to a 4-year college to study child development or early childhood education.

4. What percentage pursue careers in this subject area after high school?

Very few. Some work at the YMCA or a local day care center while they are in college.

5. Do you conduct any type of follow-up procedure to identify student career choices?

The school conducts follow up survey of students one year after graduation to find out what they're doing.

6. What are the primary teaching methods that you use in class?

Besides the Tuesday, Wednesday and Thursday lab, students do a senior portfolio, which includes five favorite projects in each of nine different areas. Students research and teach the class about a specific childhood problem. Also textbook assignments, field trips with the children, guest speakers and student field trip to the community college child development program.

7. Is there a certain activity or teaching method that the students especially like or do well with?

Hands-on activities, and working with children in the lab.

Appendix J

Teacher Interview—Center A Culinary Arts Program

1. What are the main purpose and goals of the course(s) you teach?

To prepare students for work—attendance and other workplace skills, as well as food preparation skills and nutrition.

2. What topics does your curriculum cover?

Principles of nutrition, menu planning, time management, cost management, cooking for others, also life skills including personal money management.

3. What percentage of your students pursue continued/additional studies in this subject area after high school?

About 48% of our students go on to pursue further study in culinary arts.

4. What percentage pursue careers in this subject area after high school?

About 22% go directly to employment in the field.

5. Do you conduct any type of follow-up procedure to identify student career choices?

The school conducts follow-up one year after graduation to find out what the students are currently doing.

6. What are the primary teaching methods that you use in class?

About 75% to 80% of the class involves hands-on lab activities. The other 20% to 25% consists of lecture and note-taking, textbook assignments, guest speakers and field trips.

7. Is there a certain activity or teaching method that the students especially like or do well with?

They like the hands-on activities, preparing food products in the lab.

Appendix K

Teacher Interview –Center B Culinary Arts Program

1. What are the main purpose and goals of the course(s) you teach?

   Organization, teamwork, and culinary skills.

2. What topics does your curriculum cover?

   Nutrition, sanitation and safety, and food preparation skills for all types of food products.

3. What percentage of your students pursue continued/additional studies in this subject area after high school?

   Usually about 20% of the students. Last year one out of seven students pursued additional studies.

4. What percentage pursue careers in this subject area after high school?

   About 30% go directly to employment in the area of culinary arts.

5. Do you conduct any type of follow-up procedure to identify student career choices?

   The teachers contact students one year after graduation to see what they are currently doing.

6. What are the primary teaching methods that you use in class?

   Besides the Tuesday, Wednesday and Thursday foods labs, we do lecture and note-taking, demonstrations, and textbook assignments.

7. Is there a certain activity or teaching method that the students especially like or do well with?

   They like the hands-on activities in the foods lab.

# of students = the number responding to the survey.
in field = the number in a related field of work or higher education.

STUDENTS IN RELATED FIELDS OR HIGHER EDUCATION
1995-2000

	95-96			96-97			97-98			98-99			99-00			TOTALS		
	# in field	# of students	Percent in field	# in field	# of students	Percent in field	# in field	# of students	Percent in field	# in field	# of students	Percent in field	# in field	# of students	Percent in field	# in field	# of students	Percent in field
Accounting 95-98	0	2	0%	1	3	33%	1	2	50%	0	0					2	7	29%
Agriculture Sci.										4	5	80%	3	8	38%	7	13	54%
Auto Body	6	9	67%	6	18	33%	4	16	25%	0	1	0%	3	4	75%	19	48	40%
Auto Mech	7	15	47%	8	11	73%	7	12	58%	4	4	100%	6	9	67%	32	51	63%
Bldg Trades	10	16	63%	10	13	77%	8	16	50%	9	12	75%	11	12	92%	48	69	70%
BCP							1	2	50%	5	9	56%	1	1	100%	7	12	58%
BNA/ HEALTH OCC.	2	8	25%	13	27	48%	20	25	80%	6	14	43%	7	11	64%	48	85	56%
Cab. Making	1	3	33%	0	3	0%	1	3	33%	0	0					2	9	22%
Child Care	1	9	11%	11	23	48%	17	19	89%	3	11	27%	7	13	54%	39	75	52%
Computer Ast. Draft.	3	6	50%	9	10	90%	13	14	93%	9	10	90%	13	16	81%	47	56	84%
Computer Network.													2	6	33%	2	6	33%
Construct Skill Trade										1	1	100%	1	2	50%	2	3	67%
Cosmetology	5	21	24%	9	21	43%	13	33	39%	13	14	93%	11	17	65%	51	106	48%
Data Proc- Last yr.	1	2	50%							0	0					1	2	50%
Electronics	0	2	0%	7	16	44%	4	13	31%	3	3	100%	3	4	75%	17	38	45%
Entrepreneurship										1	1	100%	0	0	#DIV/0!	1	1	100%
VCE/EXCEL(96-97)	0	2	0%	3	4	75%	13	13	100%	7	13	54%	21	26	81%	44	58	76%
Food Service	0	1	0%	1	3	33%	2	4	50%	0	0		0	3	0%	3	11	27%
HERO	3	5	60%	6	16	38%	8	13	62%	3	4	75%	5	7	71%	25	45	56%
Industrial Man. Occ.										8	8	100%	4	4	100%	12	12	100%
Info Proc	0	0	0%	4	7	57%	1	2	50%	0	0					5	9	56%
Med Rods / LMOA 97	1	9	11%	3	4	75%	0	2	0%	2	2	100%	1	4	25%	7	21	33%
MTT	1	1	100%	2	4	50%	6	8	75%	6	7	86%	4	5	80%	19	25	76%
Office Ed	1	11	9%	2	7	29%	2	2	100%	0	0					5	20	25%
PN	11	21	52%							0	0					11	21	52%
Welding	11	15	73%	3	8	38%	6	15	40%	4	11	36%	6	10	60%	30	59	51%
TOTALS:	64	158	41%	95	190	50%	121	199	61%	84	130	65%	106	162	65%	470	839	56%

****NOTE**** This chart indicates the total students contacted for Follow-up and students are counted only once for schooling or working in the field

****NOTE**** Work totals do not reflect students serving in the military

References

Barton, P. E. (1996). *A perspective on student employment*. Princeton, NJ: Educational Testing Service, Policy Information Center. (ERIC Document Reproduction Service NO. ED395988)

California State Department of Education (1995). *Continuation Education in California Public Schools*. Sacramento, CA: Youth, Adult and Alternative Education Services Division (ERIC Document Reproduction Service No. ED380561)

Canny, M. C. (1996). Shopping Mall 101. *American School Board Journal*, 183 (4), 48, 50.

Capital Area Career Center. Retrieved January 15, 2002, from http://www.capital.tec.il.us/

Education for Employment System. (2001). *Career & Technical Education: 2001* [Brochure]

Education for Employment System #390. (2001) *Decatur Area Technical Academy Course Description Guide*. (Available from Heartland Region Education for Employment System, 300 E. Eldorado, Room 109, Decatur IL 62523).

Gaustad, J. (1991). *Identifying potential dropouts*. Eugene, OR: ERIC Clearinghouse on Educational Management.(ERIC Document Reproduction Service No. ED339092)

Hershey, A. (1997). *Partners in progress: Early steps in creating school-to-work systems.* Princeton, NJ: Executive Summary. Mathematica Policy Research. (ERIC Document Reproduction Service No. ED408768).

Interview with Deborah Meier (1997). *Techniques: Making Education and Career Connections*, 72 (2), 30-35.

Lombard, R. C., Hazelkorn, M. N., & Neubert, D. A. (1992). A survey of accessibility to secondary vocational education programs and transition services for students with disabilities in Wisconsin. *Career Development for Exceptional Individuals*, 15 (2), 179-88.

Meier, D. (1995*). The power of their ideas: lessons for America from a small school in Harlem*. Boston, MA: Beacon Press.

Pallas, A. (1989). *Making schools more responsive to at-risk students*. New York, NY: ERIC Clearinghouse on Urban Education. (ERIC Document Reproduction Service No. ED316617)

Schwartz, W. (1995) *School dropouts: New information about an old problem*. New York, NY: ERIC/CUE Digest, Number 109. (ERIC Document Reproduction Service No. ED386515)

Stasz, C., & Brewer, D. J. (1998). Work-based learning: Student perspectives on quality and links to school. *Educational Evaluation & Policy Analysis*, 20 (1), 31-46.

United States Department of Commerce, Bureau of the Census; United States Department of Education (August, 2000). *Digest of Educational Statistics 2000* (chap. 2). Retrieved from http://nces.ed.gov/pubs2001/digest/dt106.html

VOTEC. Retrieved January 15, 2002, from http:// www.danville.net/~votec

Worley, L. P. (1995). Working adolescents: Implications for counselors. *School Counselor*, 42 (3), 218-23.