

**BENEFITS OF SCHOOL-TO-WORK PROGRAM PARTICIPATION:
PERCEPTIONS OF STUDENTS AND COMPARISON OF
PRE AND POST GRADES AND ATTENDANCE**

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(ABSTRACT)

There has been limited evaluation to show the perceptions of student participants in school-to-work programs about the impact of school-to-work program participation as being beneficial to their postsecondary educational and career plans, and no research to determine whether perceptions differ significantly across race and gender. In addition, the minimal research conducted to date did not study student participants' perceptions about the impact of the program on their understanding of the relevance of the academics to the worksite and their overall academic success. Nor did the research address the actual change in grades and school attendance of students in school-to-work programs.

Students are a major stakeholder group in the school-to-work initiative, and therefore, consulting with them about their perceptions about the impact of school-to-work program participation is an important aspect in school-to-work evaluation. Students have not been consulted in educational program evaluation and have not had a significant voice in the school-to-work arena (Hollenbeck, 1996). It is important to assess the opinions and perceptions of students who are currently participating in school-to-work programs, because they are the major focus of the school-to-work initiative and information that they provide can be used by program administrators and policymakers in making future decisions about school-to-work programs. Such assessment should seek to determine their perceptions about the impact of the program on their overall academic success and future postsecondary education and career choices. It is also important to assess the impact of the program on students' academic success and school attendance.

A questionnaire was developed by the researcher and distributed to site coordinators in three school-to-work sites. Site coordinators worked with school staff to administer the questionnaire instrument. One-hundred twenty-four twelfth grade student participants in school-to-work programs, in these three sites, were asked to participate; 62% responded to the survey.

Based on the findings of this study, the following conclusions were made.

- ◆ The findings on students' perceptions that school-to-work program participation improved their overall academic performance, increased their acceptance of responsibility, increased their self-confidence and motivation can be an indicator of the success of the school-to-work program.
- ◆ The positive attitudes of students regarding the school-to-work program as being beneficial to their future education and career plans is important in promoting the concept of "life-long" learning.
- ◆ The use of measures to determine students' perceptions about understanding the relevance of school-to-work, improvement in academic performance, and overall satisfaction with the school-to-work program can be used as measures to evaluate the success of a school-to-work program.
- ◆ School-to-work program participation can be instrumental in influencing students to continue their education beyond high school.
- ◆ School-to-work program participation does not appear to negatively impact any group (gender or race).

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CHAPTER 1

INTRODUCTION

"America may have the worst school-to-work transition of any advanced industrial country." This harsh conclusion comes from the report "America's Choice: High Skills or Low Wages," drafted by the Commission on the Skills of the American Workforce, (1990). Summarizing the findings on the treatment of work-bound youth, the Commission further concluded that there is: 1) no curriculum to meet the needs of non-college bound youth; 2) no real employment services for them; 3) no certification of their accomplishments; and 4) no rewards in the workplace for hard work at school. The Commission further concluded that without an effective system for moving young people from school-to-work, American businesses' need for work-ready, skilled employees soon would far surpass the number available. The Commission is not alone in its harsh assessment of the United States' school-to-work transition for youth who do not go to college.

The General Accounting Office (GAO) concluded in a 1991 report, "Transition from School-to-Work: Linking Education and Worksite Training," that the U.S. provides noncollege youth with relatively little assistance for entry to the workforce. The report further concluded that U.S. schools direct the majority of their resources toward preparing students for college, while only about 20 percent (now 23% per the 1996 Education Statistics) of U.S. youth complete a four-year degree. This policy does not appear to be cost-effective and is in stark contrast to our competitor nations, who place much emphasis on the facilitation of non-college youth's entry into the workforce (U.S. General Accounting Office, 1991).

Another GAO report, "Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries-1990," compared the U.S.' and four foreign countries' expectations of their youth. The report concluded that the U.S. system for preparing youth, particularly non-college bound youth, for employment has evolved without a coherent strategy. The U.S. stresses the importance of a college education without providing similar emphasis to preparing non-college bound youth for employment. The report also concluded that the U.S.

devotes insufficient attention to preparing non-college youth as compared to the four major competitors--England, Germany, Japan and Sweden. The competitor countries tend to invest proportionately more in noncollege education and training. The competitor countries expect all students to do well in school where as the U.S. often accepts that many students will lag behind. These foreign competitors help students learn about job requirements and assist them in finding employment to a greater extent than the U.S. does. A key element in the process is the involvement of employers by the competitor nations. Finally, the report concluded that two of these competitor nations, Germany and England, seek to maintain quality occupational training by testing and certification to meet national standards, while the U.S. certificates often indicate only the completion of a course and not necessarily attainment of skill levels (U.S. General Accounting Office, 1990).

According to Paul E. Barton, each year 1.4 million young people enter an employment environment that is hostile to applicants without experience, training, or further education. As a nation, we have done practically nothing for those choosing not to go to college. Barton further stated that non-college bound youth get very little help from any quarter in making the transition from school-to-work (Barton, 1991).

In May 1990, the Secretaries of Labor and Education jointly sponsored a national conference that focused on linking school education with work. Participants of this conference included representatives of education, business, labor and federal and state policy makers. The following observations were made by participants about the United States' lack of an effective school-to-work strategy: 1) that once our economy had room for unskilled workers, however, the demand for workers who are prepared to work and can think on their feet and learn on the job is increasing daily; 2) that in practically all other industrialized countries how one does in school has some relationship to what job one gets, but in the U.S., high school grades are not considered by firms when hiring; 3) that as a society, we pay a terrible price for not providing students with an immediate incentive to do well in school; and 4) that work has moved to a new training paradigm, while schools tend to stick to the old model, a new paradigm for schools must be created--one that will blur the distinctions between work and learning and will have validity for individuals preparing to enter the workforce, and equal validity for those already in the workforce (U.S.

Department of Education & U.S. Department of Labor Report of the Proceedings of the "The Quality Connection: Linking Education and Work", 1990).

The nation's ineffective school-to-work transition strategy is a very real problem that is now acknowledged by all major stakeholders, even though the school-to-work concept has not been universally accepted as the ideal route for all students. The concept, however, has received support from policy makers, educators, and the business community. Several trends occurred to stimulate interest in this concept--changes in the nation's economic competitiveness and in the workplace. First, America experienced a decline in global competitiveness in part because the education system failed to prepare the majority of its students to enter the workplace, which increasingly demands adaptable and flexible workers with high levels of academic and technical skill (Brustein and Mahler, 1994). The second trend involved changes in the economy and in the workplace which have complicated the school-to-work transition (Ryan and Imel, 1996). The nation's economy was able to absorb dropouts and ill-prepared students into the manufacturing sector in the 1950s. However, now there are fewer manufacturing jobs, the aging population is remaining in jobs longer, there has been an increase in immigration and there are more women in the workforce. These changes necessitate a more carefully planned school-to-work strategy than ever before.

Because of this support, there are numerous efforts underway to effect substantial change in the way our youth are transitioned from school-to-work. These efforts are not only coming from the Federal, State and Local government levels, but from the private sector as well.

Educators and policy makers are specifically interested in effective ways to promote the transition from school to productive, skilled employment for all young Americans, especially since many students fail to see the connection between the world of work and school. This perceived disconnection particularly hurts those young people who enter the labor market directly out of high school (O'Neil, 1992). The aim of the school-to-work strategy is to help students see the relevance of school to the world of work.

Several approaches to transitioning students from school-to-work include career academies, co-op education, and vocational education. These programs have met with a barrage of criticism which include: that they have little effect on classroom curricula and fail to close the

gap between the academic world and the world of work, often de-emphasizing academic learning criteria; and that they do little to actually help students find work. Some of this criticism may be premature if not unfounded. Despite the criticism of co-op education, it does often clarify career goals and result in greater self-confidence and increased motivation (Hoerner & Wehrley, 1995). Past research on career academies has shown evidence that participation in these programs have positive effects on the participants' high school grades, attendance, and graduation rates (Reller, 1987; Stern et al, 1988; Stern et al, 1989). Stern, Raby and Dayton (1992) concluded that students in academies achieved better grades, had better attendance rates, and were more likely to graduate than students in the comparison groups.

Federal Initiatives to Integrate School-Based and Work-Based Learning

The Department of Labor sponsored the School-to-Work Transition Youth Apprenticeship Demonstration in 1990 to develop a wide array of school-to-work programs involving collaboration between schools and employers, and efforts to integrate school-based and work-based learning. These grants were allocated to support programs that promote high school completion, the acquisition of skills relevant to employers' needs, the transition from school to career-oriented employment and in some cases, to further education beyond high school. The 15 grantees implemented programs in manufacturing occupations and in service occupations. Preliminary findings (Corson & Silverberg, 1994) revealed a diverse set of approaches relevant to the planning, design and implementation of future school-to-work programs, and programs that represent a variety of targeted occupations.

In 1994, Congress enacted the School-to-Work Opportunities Act (STWOA) to provide a national framework for building local systems to ensure that all students can achieve high levels of academic and technical skills, and prepare for further education and careers (National School-to-Work Office, 1996C). The Act was the culmination of 15 years of research and experimentation with how students learn and how to integrate the academic and work place.

Implicit in the Act is that every student, including the college-bound, can benefit from learning about careers as well as acquiring information to better prepare them in pursuing careers, via learning by applying abstract concepts to real-life situations. It provides a flexible framework

for states/communities to design education systems for all students and calls for collaboration and public/private partnerships among businesses, schools and other stakeholders at the state and local levels.

The Act has three main components that state strategies must incorporate; they are school-based learning, work-based learning, and connecting activities. School-based learning is the curriculum and instruction that integrates academic and vocational learning, includes career awareness and career exploration and counseling, and provides students with the opportunity to select a career major by the 11th grade. It must enable all students to achieve high academic standards to prepare for post-secondary education and careers.

Work-based learning involves providing actual work experiences for high school students. It connects classroom learning to work, includes workplace mentoring and instruction, and engages employers as partners with educators in providing opportunities for all students to participate in high-quality work experiences. Students have the opportunity to apply abstract concepts and principles while acquiring workplace skills in a real-life setting; work-based learning is structured around career majors which students choose and leads to a skills certificate.

Connecting activities encompass local school-to-work efforts. Linkages between schools and workplaces don't happen naturally; a range of activities is needed to integrate school and work.

The Act seeks to assist states in building an infrastructure for an effective school-to-work strategy for America's youth which is seen as crucial by many educators, policy makers and business partners to the nation's economic success. Many see it as a one of the nation's most promising education reform initiatives.

Initial research findings are optimistic which suggests that this approach has much to offer as a major educational strategy. Two recent studies on the progress of 21 school-to-work programs in place around the country reported positive findings; however, they did not reveal what impact, if any, school-to-work programs have had on types of employment found, wages and labor force participation rates. Findings from the Jobs for the Future Report showed that: there were significant expansion in the numbers and types of students, industries, and schools for all programs; there was significant and sustained employer involvement, with the intensity of

involvement increasing over time; there was significant percentages of students enrolled in postsecondary education and training; and employers, students and educators were very supportive of the school-to-work approach (Kopp et al, 1995).

The Pauly, Kopp, and Haimson research reached the following conclusions: there were a variety of program designs customized to suit local circumstances; extra resources will be needed for effective implementation; school-to-work programs serve a broad cross section of students, providing access to college and other post-secondary options; that providing work-based learning to large numbers of high school students will require a major effort to recruit employers and to expand the commitment of participating employers; and school-to-work programs that start early (by grades 9 or 10) can reach students before they drop out of school or become disengaged (Pauly et al., 1994).

Most state school-to-work systems are in their early stages of implementation and evaluations on these systems are still preliminary. The Secretaries of Education and Labor issued a Report to Congress in September 1996, on the status of school-to-work implementation. Initial findings are that for the 11 States with complete data on the progress of schools in implementing school-to-work: 210 partnerships reported that about a half million students representing 1,800 schools were engaged in school-to-work systems that offer curriculum that integrate academic and vocational learning, provides work-based learning experiences connected to classroom activities, and enhance linkages between secondary and post-secondary education; that 135,000 businesses are providing more than 39,000 work-based learning sites and nearly 53,000 slots for students; and that Federal funds have gone to 818 local partnerships, via State implementation grants and directly from the Federal government. Also, according to school-to-work directors, the biggest challenges include poor understanding of key school-to-work principles among some stakeholder groups and difficulty creating and sustaining collaboration among various public and private entities. However, progress has been made in building State-level interagency collaboration, forming partnerships, and getting employers involved in local partnerships (National School-to-Work Office, 1996C).

Concerns Expressed About School-to-Work

As with any major education reform initiative, there are concerns about the impact the school-to-work initiative will have on students. One concern is that economic development needs predominate and that they place "too much emphasis on bread winning" (Mendel, 1994, p. 16), with too much time devoted to preparing youth for occupations at the expense of preparing them for their role as citizens. However, being able to effectively participate in the workforce is part of the citizenship role, and not preparing youth for occupations could contribute to such social problems as drug abuse, teen pregnancy and crime.

Another concern voiced about the school-to-work initiative is that it is just another fad--an "edufad" that supplants real education, and that reducing the number of required courses so that students can spend more time at the job-site will dilute the academics (Saunders, 1996). This assessment of the school-to-work initiative is rather hollow. Real education is not just the academics or acquiring knowledge but also the application of that knowledge, which is the gist of the school-to-work initiative--the integration of school-based and work-based learning, and students being able to see the relevance of what they learn in school to the workplace. Furthermore, for some students, applied learning may be the only avenue that works and applying knowledge on the job could provide the hook to interest them in a whole range of course material/activities that they otherwise would not have learned.

Furthermore, the very nature of school-to-work activities, contextual, hands-on and offering more choice, can meet the learning needs of students and increase their engagement in the learning process. A critical element of fostering learning is to have students carry out tasks and solve problems in an environment that reflects the multiple uses to which their knowledge will be put in the future (Collins et al, 1991). Collins and his colleagues elaborated on a model of instruction which incorporates elements of schooling into an apprenticeship structure that draws on the apprenticeship way of learning but also incorporates elements of schooling. The purpose of the model is to "make thinking visible" to model cognitive skills.

Some parents have the perception that school-to-work programs de-emphasize college attendance and discourage their children from participating in them (Hollenbeck, 1996). However, research conducted by Hollenbeck (1996), Paulus (1995) and Kopp et al (1995) to

assess student perceptions on the benefits of school-to-work participation to their future career choices and post-secondary education, revealed that a large majority of students currently participating in these programs plan to pursue postsecondary opportunities in either four-year colleges, local community colleges or technical schools.

Yet another concern raised is the impact of school-to-work program participation on minority groups. A study issued by the Joint Center for Political and Economic Studies raised concern about the mixed record of European apprenticeship models being considered for adoption in the U.S. regarding the treatment of their own ethnic minorities. The study acknowledged that while the European model allows for crossover from the apprenticeship program to college and vice-versa, the European system has obstacles for low-income youths with low-skills. The combination of poor early schooling and additional requirements of employers (tests and interviews) can place minority students at a disadvantage. The Center concluded that any European apprenticeship model must be adapted to the United States, or it will negatively affect Blacks and other minorities (Joint Center for Political and Economic Studies, 1993). None of the relevant research conducted to date has addressed the issues of the perceptions of different racial groups regarding the benefits of school-to-work participation

Statement of the Problem

The intent of school-to-work is to expand young people's choices in life by preparing them for high-skill careers and further training or education, and to provide students with opportunities to learn academic subjects by seeing knowledge applied in the real world. It is also the intent of school-to-work to help students learn job-specific skills with stronger academic grounding, and to motivate them to continue learning so that they will see first hand how many good careers require post-secondary education and training (National School-to-Work Office, 1996C).

There has been limited evaluation to show the perceptions of student participants in school-to-work programs about the impact of school-to-work program participation as being

beneficial to their postsecondary educational and career plans, and no research to determine whether perceptions differ significantly across groups (gender and race). In addition, the minimal research conducted to date has not studied student participants' perceptions about the impact of the program on their understanding of the relevance of the academics to the worksite and overall academic success. Nor has the research addressed any actual change in grades and school attendance of students in school-to-work programs.

Students are a major stakeholder group in the school-to-work initiative, and therefore, consulting with them about their perceptions about the impact of the school-to-work program participation is an important aspect in school-to-work evaluation. Students have not been consulted in educational program evaluation and have not had a significant voice in the school-to-work arena (Hollenbeck, 1996). It is important to assess the opinions and perceptions of students who are currently participating in school-to-work programs, because they are the major focus of the school-to-work initiative and information that they provide can be used by program administrators and policymakers in making future decisions about school-to-work programs. Such assessment should seek to determine their perceptions about the impact of the program on their overall academic success and future postsecondary education and career choices. It is also important to assess the impact of the program on students' academic success and school attendance. The findings of this assessment will provide useful data that can answer the concerns of those who feel that the school-to-work initiative will dilute the academics by taking students away from important classes, will impact negatively on minority populations, and will steer students away from higher education opportunities.

Purpose of Research

The purpose of this research was to assess the perceptions of student participants of school-to-work programs regarding the impact of the programs on: helping them see the relevance of the acquisition of knowledge to the world of work; improving their academic success; and influencing both their future career choices and decisions to pursue educational

opportunities beyond high school. The study compared students' pre and post grades and attendance and compared differences in the perceptions, grades and attendance of males and females and whites and non-whites. Finally, the findings of the study were compared to findings of earlier research on students' perceptions about school-to-work programs.

Research Questions

1. To what extent do student participants in school-to-work programs perceive:
 - A. that school is relevant to the world of work?
 - B. that their academic performance improved due to the program?
 - C. that participation in the school-to-work program influenced their future educational and career decisions?
 - D. that participation in the school-to-work program was beneficial to them--general satisfaction?
2. To what extent did the following change for students in school-to-work programs?
 - A. Overall grades from before and after program participation.
 - B. Overall school attendance from before and after program participation.
3. Additionally, how do student participants from different groups (gender and race) differ in their perceptions about the school-to-work program and its influence on them? How do actual grade and school attendance changes differ across gender and racial groups?

Significance of Study

This study will extend and expand available knowledge on students' perceptions about school-to-work program participation and its impact on their academic success, future academic and career planning, and actual work experiences. The findings and conclusions of this study will be useful to policy makers, educational planners and developers and other stakeholders in making decisions about future school-to-work program development and implementation, and in evaluating one of the major approaches of this initiative--the integration of school-based and

work-based learning.

Limitations of the Study

This study's most extensive limitations were created by its design and reliance on self-reported and retrospective data. Random assignment of subjects was not possible which meant that the internal validity of the study was weak. While this may serve to limit causal inferences (Cook & Campbell, 1979), it may not be detrimental to the overall findings, especially when viewed from the perspectives of policymakers and educational program planners who are seeking crucial information about the impact of school-to-work program participation on student outcomes. The findings of this study cannot be generalized to other populations.

Definition of Terms

For the purpose of this study, the following definitions were used.

Academic Performance: A student's overall grade point average (GPA) the year prior to participating in a school-to-work program and during their senior year of high school.

Career Academy: A school within a school that offers students academic programs organized around broad career themes, often integrating classroom instruction with work-based learning (National School-to-Work Office, 1996B).

Cooperative Education: A structured method of instruction whereby students alternate or coordinate their high school or post-secondary studies with a job in a field related to their academic or occupational objectives (National School-to-Work Office, 1996B).

Internships: Situations where students work for an employer for a specified period of time to learn about a particular industry or occupations. Workplace activities may include special projects, or tasks from a single occupation. Internships may or may not include financial compensation (National School-to-Work Office, 1996B).

Post-secondary Educational Institution: A school that provides formal instructional programs with a curriculum designed primarily for students who have completed the requirements

for a high school diploma or equivalency certificate. This includes programs of an academic, vocational and continuing professional education purpose, but excludes vocational and adult basic education programs (National School-to-Work Office, 1996B).

School Attendance: Attendance during the year prior to participating in the school-to-work program and attendance during the participant's senior school year.

School-to-Work Program: A program that integrates academic and occupational learning and provides links between secondary and post-secondary education, provides students with the opportunity to complete a career major, provides experiences in and understanding of all aspects of the industry, and provides equal access for students to a full range of program activities and components. A school-to-work program will feature a school-based learning component, a work-based learning component and a connecting activities component (National School-to-Work Office, 1996B).

School-to-work Program Participation: Participation in a range of program activities aimed at integrating the school-based and work-based learning, specifically having work-site experiences.

Service Learning: An institutional method that combines community service with a structured school-based opportunity for reflection about that service, emphasizing the connections between service experiences and academic learning (National School-to-Work Office, 1996B).

Tech Prep: A combined secondary/postsecondary program which consists of two (or four years as amended by the STWOA, 1994) years of secondary and two years of higher education, or an apprenticeship program of at least two years following secondary instruction with a common core of required proficiency in math, science, communications, and technologies designed to lead to an associate degree or certificate in a specific career field and leads to effective employment placement or transfer of students to four-year baccalaureate degree programs (Congressional Record, 101st Congress 2nd Session, 1990).

Youth Apprenticeships: A program for students 16 or older that integrates school instruction with on-the-job training and results in both academic credentials and certification of mastery of work skills (Imel, 1993).

Work-Based Learning: Activities at the high school level that involve actual work

experiences or connect classroom learning to work (National School-to-Work Office, 1996B). It connects the academics to work, with adults in the workplace helping students to see the relevance of what they are learning in school with skills and responsibilities in the workplace.

Chapter Summary

This chapter presents the discussion of the problem, the rationale for the study, the purpose of the study, the research questions being asked, and the significance of the study. It also presents key definitions of terms.

CHAPTER 2

LITERATURE REVIEW

Specifying the School-to-Work Problem and its Relationship to Labor Market Issues

Dramatic changes have occurred in the American labor market over the last twenty years. They are: the decline of wages for many groups of workers; an increase in the ratios of the wages of college graduates to those of high school graduates; and a decrease in the participation of low-skill workers in the labor market (Heckman, et al., 1993).

Recognizing these changes, policy analysts recommended policies aimed at investing in "human capital", training and education to upgrade the skill level of the workforce and to transform the American workplace. In influential policy circles, a new consensus appeared--that the U.S. labor market and educational system are unable to equip workers with sufficient skills to participate effectively in the labor markets (Heckman, et al., 1993). Our students have been moving through an educational system that has focused little attention on the majority of its students--those who do not attend colleges and universities.

In addition, a number of studies in the late 80's and early 90's helped to raise the consciousness of our leaders at the Federal level regarding the serious nature of the nation's ineffective school-to-work strategy. Most notable are:

- 1) **Workforce 2000: Work and Workers for the 21st Century** pointed out some key trends--that new jobs in service industries will demand much higher skill levels, U.S. manufacturing will have a much smaller share of the economy in the year 2000 and the workforce will grow slowly,

becoming older, more female and more disadvantaged (Johnson & Packer, 1987).

2) **Investing in People: A Strategy to Address America's Workforce** pointed out that demographic trends, technological change, and increased international competition are creating shortages of skilled workers and an excess of unskilled workers. These problems will likely worsen in the years ahead unless there is a public/private partnership under the leadership of the Secretary of Labor, additional human capital investments by States, communities, individuals and American business, a reallocation of federal human resource expenditures and a sustained increase in Federal expenditures on human resource programs (Commission on Workforce Quality and Labor Market Efficiency, 1989).

3) **America's Choice: High Skills or Low Wages** argued that our nation is attempting to compete on the basis of low wages and low skills, rather than high skills which would result in a decline in the standard of living. By contrast, many of our competitor nations are building their economies on higher skills and wages. Without basic changes, real wages will continue to fall, especially for the majority of our students who do not graduate from four-year colleges thus widening the gap between the "haves" and the "have nots" (Commission on the Skills of the American Workplace, 1990).

If international competitive pressures increasingly require us to get the most out of each and every worker, the United States' non-system of school-to-work transition is an obstacle to achieving this goal; it fails minority youth and poorly serves a significant percentage of all youth (Kazis, 1993). According to Kazis, the nation's school-to-work system could be restructured to give hundreds of thousands of American youngsters greater incentives and opportunities to be more productive sooner in their careers. There are four compelling reasons to look for public

policy strategies to improve the American school-to-work strategy. They are: the high costs of the current non-system to individuals and society; preparing young people for work and citizenship has broad legitimacy as a public policy concern--education and preparation for adult responsibility have long been accepted as essential public responsibilities; the return on public investments in the future productivity of young people is potentially great; and the demonstrated desire--among employers, young people, parents and educators--to address the school-to-work transition (Kazis, 1993).

According to a 1994 Mathematica Policy Research report, the problems non-college bound youths face as they enter the labor market are rooted in changes in the U.S. and global economies, technology, and demographic trends; there has been a decline in the availability of stable, high-wage employment for high school graduates in manufacturing, communications, transportation, utilities, and forestry. Mathematica also asserts that traditional sources of high-wage employment for youths with only a high school diploma have dwindled as part of a broader technological transformation of the U.S. and world economies. This transformation has been described by some as an "information revolution" fueled by the increasing use of computers, automation, and telecommunication. Because of this transformation, skill requirements have increased for new jobs and workers with a range of competencies and skills and the ability to reason, make decisions, and quickly learn are in great demand (Corson & Silverberg, 1994).

Demographic and educational trends in the U.S. have exacerbated the gap between workplace demands and the skills youth bring to the labor market. There has been a decline in the number of young U.S. workers (18 to 19 years old) entering the workforce during the past four years, while the number of immigrants in the workforce has increased; many of the new

immigrants in the workforce lack basic education and proficiency in English--and minorities, historically are disadvantaged by poverty, inadequate schools, and families marked by poor education and skills. At the same time, overall high school dropout rates have not declined appreciably in the past 15 years and remain particularly high among minority populations, with the economic penalty for not completing high school--reduced employment and earnings--becoming larger as changes in the economy make basic academic skills more critical (Corson & Silverberg, 1994).

There is general agreement that the introduction of new technologies and forms of work organization designed to improve cost and quality will increase the skill demands of the workplace, and that high performing work organizations will need workers at all levels who can analyze data, communicate clearly, learn rapidly, participate in decision-making and work effectively on teams. Also, data on wages show that the real wages of high school dropouts and graduates fell significantly in the 1980s relative to college graduates, which suggest a growing skills gap (Kazis, 1993). However, economist McKinley Blackburn and two of his colleagues found that demand side factors such as the rate of technological change and shifts in the industrial composition of employment of workers with different skills explained little of the growing wage gap among workers with different education and skill levels (Blackburn, Bloom and Freeman, 1990).

The emerging consensus on the skills debate is that the problem is not a short supply of skills for the kinds of jobs that presently exist, but scarcity of skills required for the kinds of jobs that will have to be created if the nation's economy is to regain its competitive edge (Stern, 1991). That is, if we keep going down the track we're on, we won't have much of a skills gap; but we

also won't have much of a competitive economy. Worker skill levels must be raised, for both incumbent workers and new entrants to the workforce, not because the existing demand is so great, but because the alternative economic strategy--a low wage one--is politically and socially unacceptable.

Osterman (1991), an economist from M.I.T., identified several groups for whom the lack of a structured school-to-work transition has great and lasting costs. Minority youth is the most obvious group. Data from 1990 show that only 29% of black high school dropouts between the ages of 16 and 24 were working at any job, compared to 57% for white dropouts; and only 55% of all black youths with high school diplomas were employed, compared to 79% of whites. For Black and Hispanic youth who do not go to college, the employment picture worsened in the 1980s. Osterman used data from the National Longitudinal Survey on Youth to look at the youth population as a whole. He found a large proportion of each youth cohort still struggling in the labor market in their early thirties. More than 35% of all men leaving their twenties were working in jobs they held for under a year and 16% had only been in their current jobs for one year. The pattern was similar for women who had been in the labor market consistently in their late twenties.

Osterman also found that unemployment spells of long duration were common; about one-third of the sample had experienced at least one four-week or more spell of unemployment in the previous three years. Male high school graduates between 29-31, who had held the same job for three or more years, earned an average of \$11.15 per hour; those who were in their jobs for less than a year earned an average of \$8.67 per hour. Osterman concluded that roughly one third of all high school graduates, and somewhat more high school dropouts, fail to find stable

employment by the time they are thirty and that for this group, the rather casual American system does not work well.

It is clear that there is a relationship between the nation's ineffective school-to-work transition strategy and labor market issues such as: workers with inadequate skills to perform the duties required by today's jobs; high unemployment rates of youth and limited job attachment of our youth to the labor market (decline in the number of youth entering the workforce); and the increase in the number of immigrants in the workforce who lack basic education. Carefully crafted strategies must be implemented to ensure an effective school-to-work strategy for our youth that will alleviate many of the issues/problems confronting the labor market, thus impacting the national economy.

Who's Responsible for the Effective Transition of Students from School-to-Work

The U.S. educational system has been blamed, by many critics, for failing to develop programs that help youths acquire critical skills to make the transition from school-to-work, and critics argue that America's emphasis on college preparation has isolated academics from vocational education and weakened the school's ability to prepare youth for the demands of employment (Corson & Silverberg, 1994). Teachers of academic courses rarely help students understand why the symbolic ideas and mathematical abstractions they are being taught are important or relevant to work they might do in the future (Gardner et al., 1982). Because many youths learn best through hands-on experience, the separation between academic and vocational

high school programs aggravates the difficulties youth have in acquiring important basic skills.

Indeed many youths, particularly those confronted with depressed local job markets and evidence that high school completion does not lead to rewarding employment, view the link between academics and successful employment as tenuous (Corson & Silverberg, 1994).

Vocational education has not done the job in meeting the changing demands of the labor markets. Whether measured in terms of earnings, job placements, or employment success, secondary education does not meet the needs of students or employers (Committee for Economic Development, 1985). One study found that fewer than three of every ten graduates of vocational educational programs find jobs that require skills they learned in school (Lerman & Pouncy, 1990). Vocational courses offered are characterized by outdated skills training and minimal academic content; some vocational schools have become a "dumping ground" for low ability students and teachers with the lowest status (Corson & Silverberg, 1994).

Only recently did schools feel responsible for students once they left the classroom (Byrne et al, 1992). This lack of perceived responsibility was coupled with a singular focus on college preparation. It could be that many non-college bound youth have discounted the role schools play in their academic preparation for and actual transition from school-to-work because of this misplaced emphasis on college preparation (Smith & Rojewski, 1993). This academic decline can be directly attributed to students' correct assessment of the lack of connectedness between the world of work and schools (Bishop, 1992). This perceived disconnectedness particularly hurts those students who enter the labor market directly out of high school (O'Neil, 1992).

There are many partners in the U.S. educational system, and no one partner can be blamed for the nation's failure to effectively move students from school-to-work. One could most

certainly argue that traditionally our schools were charged with equipping students with the basic tools to function as literate, working members of society and that once basic tools meant the three "Rs"--reading, writing and arithmetic. However in today's society, the basic tools have been expanded to encompass highly technological skills, the ability to decipher and utilize information from a variety of formats and the ability to function in an environment that is constantly changing. The educational system must be prepared to keep up with new developments in technology and school systems must be properly funded to meet these challenges.

While the nation's school systems may be the nexus to link appropriate training and educational opportunities, it can not do so without the involvement of other major stakeholders. Schools in the U.S. are generally isolated from the labor market and have not been responsible for assisting non-college bound youth to make an effective transition from school to work (William T. Grant Foundation Commission on Work, Family and Citizenship, 1988). Schools have not been expected to provide orientation to job requirements and opportunities or to help non-college bound youth obtain employment. The youth, who look for employment immediately after high school, typically do not recognize the relevance of schooling to work and many are not motivated to do well in school. While they are likely to recognize the importance of a diploma for future employment, they do not see school grades as relevant for labor market success (U.S. General Accounting Office, 1990). Generally, schools and employers have provided little systematic assistance to help non-college bound youth find employment. Many young people are left to flounder in the labor market, remaining jobless or obtaining jobs that do little to improve their skills for future employment (William T. Grant Foundation Commission on Work, Family and Citizenship 1988).

Employers must accept some of the blame for this, particularly because of their hiring strategies regarding young people. Employers have had minimal contact with schools and have provided little in the way of structured training for the high school students or recent graduates they hired, often preferring to avoid hiring them entirely (Byrne et al., 1992).

Ray Marshall and Robert Glover argued that America's best employers, even those most publicly active on issues of school reform tend to "choose against youth." Glover and Marshall pointed to four consequences of conventional American hiring practices:

- 1) The delay in hiring American youths provides German, Japanese and other nations' youth a five to ten year head start in gaining access to significant occupational skill training.
- 2) The best American employers are disengaged from the process of instructing and socializing their future workers by "choosing against youth."
- 3) A natural communication loop for employers to articulate to schools the skills needed in the work-place is eliminated by the delay in hiring high school graduates.
- 4) The disconnection of effort and achievement in school from rewards in the workplace undermine student incentives to work hard and achieve in school (Glover and Marshall, 1993).

The Conference Board concluded in a 1983 survey that fewer than one in ten large American firms hired new high school graduates. High school graduates are rarely chosen by firms that offer good wages, attractive benefits and internal career ladders. These firms, which are best equipped and most likely to provide high quality training to their workers, frequently choose older, "more mature" workers for their entry-level career opportunities (Kazis, 1993).

Effectively transitioning students from school-to-work and preparing them for educational opportunities beyond high school is a joint responsibility. The transition process from school-to-

work must become the coordinated responsibility of school, family, business, community, and government; no single institution can or should take sole responsibility for or be expected to provide all of the approaches to educating, training, guiding, preparing, and supporting our young people. The School-to Work Opportunities Act of 1994 offers a chance to bring together partnerships of employers, educators, and others to build an effective school-to-work system that prepares young people for either high-quality jobs or further education and training (Kyle, 1995).

Our youth are our future workers and citizens. If a large percentage of our youth are left to flounder in low-paid, fruitless jobs, we face a nation divided between the educated and the prosperous and the uneducated and underemployed (W. T. Grant Foundation Commission on Work, Family and Citizenship, 1988). It is paramount that educational institutions work together with one another and businesses toward a common goal--strengthening students' skills, reducing their weaknesses and preparing them for career paths (Sharp & Sharp, 1992). Therefore, the education of our youth and helping them make the effective transition from school-to-work is the responsibility of many.

Research Findings on School-to-Work Programs

Widely Used in U.S. High Schools

A number of school-to-work programs are being utilized in U.S. high schools. Among the most widely used are cooperative education, career academies, Tech Prep, and Youth Apprenticeships. An important element of all of these, except Tech Prep, is combining school and work--during the same period of time (Stern et al., 1994). Tech Prep experiences are provided at the end of school day.

A 1992 survey conducted by National Assessment of Vocational Education revealed that 49% of U.S. secondary schools offered Cooperative Education programs, 34% offered other work experience, 19% offered school-based enterprise, 7% offered Tech Prep programs, 6% offered School-to-Apprenticeship programs, and 2% offered Youth Apprenticeship programs in 1990-91. The survey did not specifically ask if schools offered career academy programs; it is known from other sources that there were approximately one-hundred career academies representing less than one percent of the nation's secondary schools in 1990-91. Co-op enrollment in 1990-91 represented 3.7% of all students in grades 9-12, or 7.7% of juniors and seniors (Stern & Stevens, 1992).

Cooperative Education

Cooperative Education (Co-op), first adopted in Dayton, Ohio in 1913, has been recognized by federal authority since the regulations implementing the 1917 Smith-Hughes Act. It is the most common and most established of the school-to-work programs that are widespread in U.S. high schools (Stern et al., 1994). Co-op gradually expanded for several decades and gained a greater prominence as a result of the enactment of the Vocational Educational Act of 1963 and its 1968 amendments, however current law does not provide specific categorical support for co-op education. Co-op was the earliest attempt to overcome the isolation of school-based education from the educational requirements of work.

Co-op provides U.S. youth with a formal bridge from school-to-work and is offered in high schools and 2- and 4-year colleges. Co-op education methodology combines classroom instruction with work experience and on-the-job training related to a student's career aspirations

(Smith & Rojewski, 1993).

Research findings on co-op education has been mixed. Findings from the Herrnsstadt, Horowitz and Sum study (1979), the Walsh & Breglio study (1976), and the national longitudinal studies conducted by Lewis, Gardner & Seitz (1983), Leske & Perisco (1984) and Bishop, Blakemore & Low (1985) revealed no positive outcomes for high school co-op students. Students did not experience higher rates of labor participation, employment or wages. However, they were more positive about school and its relationship to employment, were more likely to say that their satisfaction with school had improved after taking their jobs, that these jobs fit with their career interests, that participation in co-op was associated with more positive attitudes toward school, and a stronger perceived connection between school and work.

According to Stern et al., (1994), one possible reason why co-op students apparently do not obtain any significant advantage in the labor market in the first few years after high school is that they do not receive any formal certification that is recognized by other employers. Furthermore according to Stern et al., any gain in skill, knowledge or work habits fail to pay off in the short run if former co-op students do not keep working for their co-op employer, simply because other employers can't readily recognize these gains. This theory was tested by Stern and Stevens (1992). They compared the labor market experience of former students who do and do not obtain permanent jobs with their high school employers. They found that former co-op students who kept working for their co-op employers did experience significantly higher earnings than other former students who also continued working for their high school employers; among students who changed employers, former co-op students had no advantage.

Another possible explanation as to why past research has shown no significant advantage

in the labor market for co-op students, in the first few years after high school, is that these studies have underestimated the effect of co-op participation on labor market outcomes (Stern et al., 1994). Most of these studies lumped together co-op and other school-supervised work experience programs without recognizing that co-op has a relatively rigorous format.

According to the W.T. Grant Foundation, students participating in co-op often develop specialized skills needed by one employer but fail to learn more generalized skills, which is a major shortcoming of co-op. Another shortcoming is that some co-op programs have placed students in low-skilled, unstructured work situations that do not promote skill development. Co-op programs have also come up lacking because they have little effect on classroom curricula and have failed to close the gap between the academic world and the world of work (W. T. Grant Foundation Commission on Work, Family and Citizenship, 1988).

There have been some positive research findings on co-op education programs. A short-term longitudinal study conducted by the New York State Education Department (1990) compared co-op to non co-op students. The survey concluded that co-op students were more likely to report working as their primary activity-- 53% as compared to 40% for non-co-op students, but less likely to report post-secondary education--36% as compared to 47% for non co-op students.

In 1991, the U.S. General Accounting Office (GAO) launched an assessment of the effectiveness of co-op programs. The GAO surveyed state directors of co-op education programs, visited co-op programs recommended by experts, and visited school-to-apprenticeship programs. The GAO found that high quality cooperative education programs show strong potential to enable the U.S. to better compete in global markets by improving work-force

preparation, and facilitating youth's transition from school to work. The study found that both students and employers benefit from participating in high quality cooperative education. Students attained work orientation, job skills, and often permanent employment, and were also more likely to stay in school and pursue additional education. Employers also gained access to a prescreened pool of employees.

The GAO further concluded that improving U.S. workforce preparation to better compete in the global economy will require strong leadership with active federal participation, and that high-quality cooperative education programs employ a structure with strong potential to facilitate the transition from school-to-work (U.S. General Accounting Office, 1991).

In spite of the criticisms, co-op education does often clarify goals and result in greater self-confidence and increased motivation (Hoerner & Wehrley, 1995). Cooperative education appears to offer a number of benefits to students, educational institutions, and employers (Smith & Rojewski, 1993).

Career Academies

Career academies were first developed in Philadelphia in 1961 to combine work and classroom learning and to break down the wall between the two. They are collaborations by school districts, local business and industry, and an intermediary community organization.

Nationally, academies have been created in approximately a hundred localities, usually as "schools within schools", serving students at high risk of dropping out of high school. According to a study by Manpower Demonstration Research Corporation (1995), career academies are no longer serving at-risk students--the population they were originally designed to reach--but have

been expanded to include academically successful and college-bound students. The study also found that voluntary enrollment appeared to influence the success of the ten programs examined in the study.

Studies conducted on the impact of career academies on student outcomes in California generally found positive effects; academy students had better grades and earned more credits than those in the comparison groups (Stern et al., 1988; Stern et al., 1989). However, a study conducted in 1989 found neither student grades nor attendance improved over the course of the first year in an academy in San Diego (Mitchell, 1989).

Surveys of students participating in the Oakland Career Academy programs revealed in a different way the value of top-notch school-to-career preparation: 48% of academy students strongly agreed with the statement that "my job has made me realize how important it is to learn and do well in school" (Mendel, 1994, p.13). By contrast, only 23% of co-op students and 16% of students working part-time jobs unrelated to school strongly agreed. Likewise, 39% of academy students strongly agreed with the statement that "what I have learned in school helps me do my job better" (Mendel, 1994, p.14). Just 12% of co-op students and 3% of students in non-school related jobs strongly agreed. The Oakland Health and Bioscience Academy maintained a 96% attendance rate, and more than 80% of its graduates met the entrance requirements of the University of California (Mendel, 1994).

A study conducted in 1996 measured the effectiveness of a business career academy program using outcomes relevant to employers, job performance and work attendance. School outcomes of grades and attendance were found to have a direct effect on post-secondary work outcomes of performance and attendance; the program's positive effect on high school attendance

had a positive impact on work attendance (Linnehan, 1996).

Other studies on the post-secondary effects of the career academy program have also been conducted. They reported positive effects of an academy on its graduates for such post-secondary outcomes as working more hours per week, being employed in jobs related to their high school training (Dayton & Stern, 1991), feeling that high school had prepared them for work (Reller, 1987), and using a wider variety of job search activities (Snyder & McMullen, 1987).

Tech-Prep

Dale Parnell's writing brought national attention to the significance of connecting secondary and post-secondary curricula as an alternative to the college-prep program (Smith & Rojewski, 1993). The Tech-Prep approach, also known as the "2+2" model is a recent transition model which involves giving students a broad foundation of applied academics and occupational preparation in the last two years of high school. It is followed by two or more years of advanced academic and technical training at the post-secondary level.

The tech-prep model spans two years of high school and two years of community, but can vary to include other approaches. One is the "4+2" approach which is built around all four years of high school and two years of community college. Another is the "2+2+2" approach in which students can pursue further education by transferring from a two-year community college into the last two years of a four-year college.

The Tech-Prep model has become very popular. By June 1990, 122 tech-prep programs had been implemented in 33 States (Mendell, 1994). The number of Tech-Prep programs had grown to approximately 900 by September 1992 (Layton & Bragg, 1992). The potential merit of

the "2+2" approach was recognized by Congress, when it reauthorized the Carl Perkins Act of 1990 to provide \$63 million for tech-prep programs in fiscal year 1991 and \$90 million in fiscal year 1992.

Since Tech Prep is a longitudinal program involving at least four years before a student can complete a sequence of courses, there are few analyses of program completers; most of the work so far has focused on process rather than program outcomes (Hayward et al., 1993). However, preliminary data suggest that at their best Tech Prep programs can produce excellent results (Mendell, 1994). Since the implementation of Tech Prep in 1986 in North Carolina's Richmond County High School, the four-year dropout rate decreased from 27% to 12%; students now take tougher classes, do better in them, and enroll in much greater numbers in two-year and four-year colleges.

Youth Apprenticeships

Our system of youth apprenticeship has many of the underpinnings of several European educational systems: 1) coordination among employers, schools, labor and government; 2) integration of school-based and work-based learning; 3) certification of academic and occupational skill mastery; and 4) high skill and high wage career routes that do not require a bachelor's degree (Imel, 1993). The essential idea of youth apprenticeship is to provide structured, work-based learning for high school students, who are too young and too numerous to qualify for the small number of formal, registered apprenticeship programs that exist in the U.S. (Stern et al, 1994).

More recently, apprenticeships for youth have been proposed as a way to promote school-

to-work transitions. In America's high-tech and services-dominated economy, youth apprenticeship is one of the hottest topics in education. President Clinton, in his 1993 State of the Union Address, proposed expanding youth apprenticeships into a national program, allocating \$1.2 billion over the next four years for this initiative (Finegold, 1993).

Youth apprenticeship has attracted so much attention because it takes the best elements of the Career Academy and Tech Prep models and enhances them with substantial work-based learning, leading to formal skill certificates and potential employment with sponsoring employers. As compared to youth academies, the youth apprenticeship approach puts a greater emphasis on job experience and on the acquisition of occupational skills in the workplace (Corson & Silverberg, 1994).

Youth apprenticeship programs are not necessarily limited to occupations in the traditional registered apprenticeships, even though the occupational focus may be on these fields. Some youth apprenticeship programs include postsecondary education like the tech-prep model and extend beyond the tech-prep model by including a work-site component.

A two-year evaluation (1993-1995) of Wisconsin's Youth Apprenticeship Program in printing (YAP) was conducted in 1995 (Orr, 1995). Orr made the following conclusions:

- 1) YAP graduates made a smooth transition to full-time quality employment in the printing industry; six to eight months after graduating, 94% of YAP graduates were employed and all had jobs in the printing industry in contrast to 60% of the co-op graduates.
- 2) Seventy-five percent of YAP graduates continued working for their apprenticeship employer, as compared to 20% of co-op graduates.
- 3) Working YAP graduates had better quality jobs than did other graduates, as measured by

hourly earnings, hours per week, and skills required.

4) The YAP graduates had more concrete, long-term, industry-focused career and educational plans than did their peers.

5) The YAP graduates were less likely than their peers to be enrolled in a postsecondary institution, but most of those in college combined school and work, often with employer support. Forty-five percent of YAP graduates were enrolled in a college program six to eight months after graduation, as compared to 60-63% of their peers; 71% of YAP graduates in college were majoring in printing, 71% were enrolled full-time and 86% were pursuing a technical college degree.

6) The YAP graduates enthusiastically attributed their employment and academic orientation, preparedness, and success to the program.

7) Employers highly valued the students' training and competency-based assessment and perceived the YAP students to be equally or better prepared than other entry-level employees on a range of technical and social skills.

8) The YAP was well implemented across the five sites, maintaining strong program fidelity although differently structured for local conditions and resources.

9) Several employers and schools found the YAP model to be an impetus to change and school-based commitment to school-to-work approaches.

The research findings on these programs are mixed, with some programs showing more positive results than others, while some e.g., Tech Prep, are still in their implementation stage and therefore, outcomes have not been evaluated on a wide-scale basis. However, Youth Apprenticeships appear to be a "major hit." Many see the Youth Apprenticeship Program as an

alternative to low-paying jobs and as providing a way to break down the pervasive anti-youth bias of American employers.

Relevant Research on Students' Perceptions about the School-to-Work Program and its Benefits

Students are a stakeholder group that has traditionally not been consulted widely in educational evaluations and, in particular, students have not had a significant voice in the school-to-work arena (Hollenbeck, 1996). According to Hollenbeck, those who feel that students lack maturity and direction or that it is impossible to design instructional programs that can engage and motivate high school students, should talk to students participating in innovative school-to-work transition initiatives.

Only a few research studies have been conducted to ascertain student perceptions about the benefits of school-to-work program participation to their future career and educational plans. In 1996 Hollenbeck conducted research in this area, using student participants in the Kalamazoo County Education for Employment (EFE) Consortium. Focus group sessions were held with approximately 60 high school students enrolled in EFE programs; students represented the entire spectrum of abilities and interests. All were mature and articulate about the benefits they were receiving from their experiences in different types of work-based learning programs (Hollenbeck, 1996).

The EFE offers four types of work-based programs: worksite-based classroom programs which involves formal classroom at worksite settings; workforce entry or co-op which is paid

work experience in a student's occupational area of interest; business/industry worksite training which is offered to students interested in occupational areas that do not have sufficient student interest to fill a school-based class or occupational areas that are not traditionally taught at the high school level; and apprenticeship which offers individuals work for pay outside of school with employers who have agreed to provide the students with the experience and postsecondary education requirements of a formal U.S. Department of Labor-approved apprenticeship leading to journey person status.

Ten focus group sessions were held in March 1995, with five to eight students participating in each session. The ten groups were distributed across program type: school-based programs; worksite-based classroom programs; workforce-entry; business/industry worksite training; and apprenticeship. Each focus group was guided by a common set of questions that covered the following areas: educational and career plan; the meaning of school-to-work transition for students; the extent to which their schools encourage and support EFE programs; and strengths and areas for improvement of the program. Student participants were selected by their instructors, who were asked to choose students representative of all students in the programs across the entire spectrum of ability and achievement.

The following observations were made, based on the focus group sessions:

- ◆ Student comments suggested that the EFE programs achieve the objective of school-to-work programs in stimulating student interest in particular occupation/occupational clusters, but also bestow far deeper career-related benefits--some students learned that they did not want to pursue some occupations or jobs that they had originally been interested in. Some made contacts with employers who they felt would be useful to them

in the future and some valued the skills that they were learning and realized that these skills would be useful in their future careers, even though they would not enter the specific occupations of the programs in which they were enrolled.

- ◆ All students felt that postsecondary attendance was important. They clearly did not hold the notion of some critics of school-to-work programs that only a strictly academic, college-preparatory curriculum should be pursued. The EFE programs encouraged some students to plan to attend postsecondary training who were not otherwise headed in that direction.
- ◆ Some students felt that their work-based experiences lacked any educational content--they were "just" low-skilled jobs, while others felt that they were engaging in useful learning experiences but that they weren't assimilating the knowledge because not enough emphasis was being placed on instruction.
- ◆ Students articulated many ways that the EFE programs were different from, and in their opinion better than academic courses. Some students attributed the benefits that they were receiving from the EFE programs to the instructors of the programs or supervisors at the work sites.
- ◆ Most students felt that teachers (outside of EFE) and students, in general, had very little awareness of these programs and their benefits. Many students felt that they had gotten involved almost by accident--someone they knew had participated in the program or a counselor had recommended that they look into the program. Students clearly felt that schools should be providing more information to students more often.

Hollenbeck concluded that in Kalamazoo County, where several hundred high school

juniors and seniors are participating in school-to-work programs, students clearly and maturely recognized the many benefits that they are receiving for their careers, postsecondary education plans and personal development.

A study, *Wisconsin's Youth Apprenticeship Program: An Overview of the Effect of Student Participation in a Youth Apprenticeship Program has on Student Participants and their Families*, was conducted by Rita L. Paulus (1995). This research presented an overview of the School-to-Work Initiative, specifically the Youth Apprenticeship Program (YAP), in Wisconsin. The YAP integrates school-based and work-based learning to provide youth with academic and occupational skills which leads to a high school diploma and also a Certificate of Occupational Proficiency in a specific industry.

The study population consisted of YAP students from two areas, Fox Valley and West Bend, and the parents of participating students. The study examined the effect participation in the YAP had on student participants regarding attitudes toward work and school, communications skills, acceptance of responsibility and enhancement of self-esteem, development of career and or educational goals, and the perceived benefits of working with adults. The effect student participation had on the family and increased parental involvement in students' education were also studied.

A total of 74 surveys were mailed to students and parents in the Fox Valley and West Bend areas. The response rate to the parents survey was 69% and the response rate to the student survey was 68%. The percentage of male and female students respondents was 50% each. Information was also obtained via a literature review of program materials. The findings of this research were:

- ◆ The majority of students and parents, over 70%, stated that adequate information had been received regarding program participation responsibilities, high school graduation requirements, and college entrance requirements.
- ◆ The author concluded that student involvement in the YAP had a positive effect on participating families. Of the parent respondents, 74% cited that student participation in the YAP had a positive effect on the family; 88% of the parents stated that parental involvement in their child's education had increased; 70% stated that financial concerns regarding postsecondary education were somewhat relieved; and 65% stated that student communication with parents had increased.
- ◆ The findings concluded that working with adults is considered beneficial to students' personal growth. Working with adults was considered beneficial to students by 94% of the student respondents and by 100% of the parent respondents.
- ◆ The survey data showed that 78% of the students and 85% of the parents thought that students' acceptance of responsibility had improved; 92% of the students and 89% of the parents perceived an improvement in the level of maturity; 72% of the students thought there was a noted improvement in their self-esteem, while 85% of the parents thought that students self-esteem improved; and 76% of the students and 80% of the parents cited an improvement in career and educational goals.
- ◆ Study findings concluded that the majority of the students were planning to further their education in some manner. More than 60% of the students stated that they were planning to further their education at either a technical or four year college; 28% of the students stated that they would continue with the program or continue working; and some of the

students stated that they would be looking at different career options than the program in which they were involved.

- ◆ Research results revealed that the YAP is a very good program. Sixty-two percent of the students rated the programs as very good or excellent and 83% of the parents did the same.

Paulus concluded that the survey responses of students and parents from the Fox Valley and West Bend areas exemplified positive attitudes regarding student participation in the YAP and that when schools, communities, and area businesses, in conjunction with parents, take an active personal interest in the lives of American children positive results occur.

The study's limitations were also recognized, e.g., that the study did not include all the districts or program areas that are currently a part of the YAP and only briefly touched the surface of student involvement in the YAP; that urban areas and minority populations were not represented in the survey and could dramatically change survey results; that the study did not examine how the school and work experiences related to each other; what aspects of the program students thought were beneficial; how parental involvement increased as a result of student participation; and what changes might be suggested to improve the program.

The Jobs for the Future study, *Promising Practices: A Study of Ten School-to-Career Programs* (Kopp et al, 1995), provided new and detailed information on ten of the country's pioneering school-to-work programs, including results from a survey administered to seniors in eight of the ten programs at the end of the 1993-1994 school year. The survey was self-administered, with seniors from the Cambridge youth Apprenticeship Programs (Cambridge, MA); Craftsman 2000 (Tulsa, OK); Kalamazoo Health Occupations Programs (Kalamazoo, MI);

Oakland Health and Bioscience Academy (Oakland, CA); Pasadena Graphic Arts Academy (Pasadena, CA); Pennsylvania Youth Apprenticeship Program (six in four regions: Philadelphia, Pittsburgh, Williamsport, and York, PA); Pickens County Youth Apprenticeship Program (Easley, S.C.); and ProTech (Boston, MA). Findings from the student survey were:

- ◆ Nine out of ten seniors surveyed in Spring, 1994 reported that they planned to enroll in a two- or four-year college; 56% in a four-year college or university and 34% in a two-year school. Five percent reported that they were planning to enroll in a vocational training school. This indicates progress in connecting students to higher education since many of these students had no serious college plans before enrolling in their programs.

In three programs that track postsecondary enrollment of graduates (Cornell, Kalamazoo and ProTech), between 77% and 84% of participating students enrolled in postsecondary programs, either two- or four-year college, were either full-time or part-time in combination with work.
- ◆ Students reported that their work-based learning experiences enhanced their motivation at school; 56% reported that involvement in a school-to-work program made them feel better about high school while 2% reported that their participation made them feel worse about school. Regarding the aspect of their program that they liked best, 46% stated that they liked the career exploration and job exposure that their program provided.
- ◆ When asked about the quality of their work-based learning experiences, 51% stated that at least half of their time at the workplace was spent learning new skills; 82% stated that the workplace experience provided useful career exploration; 92% stated that their work-based learning experiences encouraged good work habits; 65% reported that the

workplace experience was "more enjoyable than school," but only 15% reported that it was "more important than school" which could indicate that the work experience helped them see a greater value in academic achievement; and only 3% described their workplace as "boring."

- ◆ Students were asked whether their programs allowed them to form special relationships with adults; 75% felt that their participation fostered this kind of interpersonal development. Moreover, the largest percentage of these students identified a worksite mentor or supervisor as the person with whom such a relationship developed.
- ◆ About half of the students reported that in their English, math and science classes, they learned about topics and issues related to the industry in which they work. When asked about whether their teachers know about their work placement, 67% percent reported that they did; 56% reported that they were asked to write and/or talk about their work experiences as part of their class activities.
- ◆ Students were very positive about their school experience; over half reported that they felt that their classes were more interesting, that they have better relationships with their teachers, and that they received more help with planning and applying for college than their friends outside the program.
- ◆ Students also felt positive about their program's efforts to group or cluster them together in more than one class; 48 percent were clustered in four or more classes with other students in their program and nearly 84% of the surveyed students indicated that they liked taking more than one class with the same group of students. The more students were clustered, the more they liked this grouping arrangement.

Relevant research showed that most student participants of school-to-work programs, were positive about the programs and the benefits to their future education and career plans. Students' perceptions about the program are important in the evaluation of the program.

Chapter Summary

This chapter contains a review of the literature that: provides the justification and rationale for building a coherent and cohesive national school-to-work strategy; shows the impact of an ineffective school-to-work strategy on our youth and their ability to find stable, high wage jobs, on the ability of the workforce to meet the challenges of an ever-changing technological society; shows the relationship between education and the nation's ability to remain competitive in the international market; looks at the historical relationship between education and employers in the transition of students from the classroom to the workplace and presents the school-to-work transition process as a joint responsibility of all stakeholders; summarizes recent research on school-to-work programs that are widely used in U.S. high schools; and summarizes relevant research on the perceptions of student participants in school-to-work programs regarding the impact on their future education and career choices.

In addition, this chapter provides the background information needed to frame the research proposal and provides the rationale to present the findings of the study as solutions to problems presented in this chapter. The impact of the school-to-work program on student outcomes is crucial in assessing the school-to-work initiative and its ability to transition students from school-to-work and to positively change attitudes regarding the need for life-long learning.

CHAPTER 3

RESEARCH DESIGN & METHODS

The design of this research study was descriptive. It described the way things were at a specific point in time and involved data collection to answer questions concerning the current status of the sample being studied. This type of research is most suitable when the researcher can not control the independent variables. However, control can be exercised in the selection of cases to be included in the descriptive study, and cases can be chosen to meet certain criteria (Spector, 1981). In this design, specific criteria were used for site selection (sites that received a school-to-work implementation grant in 1994 and implemented programs in the 1994-95 school year) and for case selection (limited to 1996-97, 12th grade participants in school-to-work programs).

Selection of Subjects

The subjects for this study were selected from three school-to-work sites: Rochester City School District, Rochester, New York; Metropolitan Tulsa Chamber of Commerce/Career Partners/Tulsa Public School District, Tulsa, Oklahoma; and the Northwest Comprehensive Employment Program (CEP) Wisconsin/Spooner School District, Spooner, Wisconsin. The target sample were all 12th grade students (1996-97 school year) who were participating in a variety of school-to-work programs in these sites. A total of 124 students were surveyed. This represented all of 12th grade school-to-work students in these three sites.

Nonprobability sampling was used to select the subjects for this study, specifically,

judgmental sampling was used. These subjects may not reflect the larger population of school-to-work students, and were included in the study purposively because of the interest expressed by the site coordinators to participate in the study.

In January 1997, the school-to-work coordinators of 10 local partnerships were contacted by telephone regarding the participation of students in their school-to-work programs in this study. The Fact Sheet: School-to-Work Implementation Grants Directory, published by the National School-to-Work Office (1995), was used to identify the 10 sites out of the 44 sites that received school-to-work implementation grants in 1994. The ten sites that were contacted included: the San Diego, California Partnership; Dade County, Florida Public Schools; the Uptown and Edgewater Local School-to-Work Initiative, Chicago, Illinois; the Baltimore City School-to-Work Partnership, Baltimore, Maryland; the Boston, Massachusetts Education to Work; the Saginaw Michigan MECA Partnership; the Rochester City School District, Rochester, New York; the Metropolitan Tulsa Chamber of Commerce/Career Partners, Tulsa, Oklahoma; the Fox Valley Education for Employment Consortium, Appleton, Wisconsin; and the Northwest Wisconsin School-to-Work Opportunities Partnership, Ashland, Wisconsin. The intent was to, as much as possible, contact sites that represent the different geographic locations in the country--south, northeast, northwest, mid-west, and west.

Telephone discussions with the coordinators were initiated in January and continued through the middle of March, before there was final agreement and understanding of expectations from the four sites that agreed to participate in this study: Career Partners, Tulsa, Oklahoma; Rochester City School District, Rochester, New York; Saginaw, Michigan MECA; and Bayfield School District, Northwest, Wisconsin Career Employment Program (CEP). Four sites (San

Diego California Partnership, Dade County Florida Public Schools, Uptown and Edgewater Local School-to-Work Initiative in Chicago, Illinois, and the Wisconsin Fox Valley Education for Employment Consortium) chose not to participate in the study either because they were about to do their own evaluation or were not sure that the study was feasible for them at this time. Two sites (Baltimore City, Maryland School-to-Work Partnership and Boston, Massachusetts Education to Work) expressed no interest in participating in the study. Numerous calls to these sites were not returned.

During the discussion phase, tentative research questions and other relevant information were faxed to the coordinators to help them decide if participating in this study was feasible. After much discussion, there was agreement from the Saginaw Michigan MECA Partnership, the Rochester City School District, the Metropolitan Tulsa Chamber of Commerce/Career Partners, and the Northwest Wisconsin CEP to participate in this study. However, the Saginaw Michigan MECA (with over 500 12th grade school-to-work participants) pulled out of the study in April 1997, approximately three weeks before the data collection phase of the study was to begin. No official reason was given for this action and efforts to contact the site coordinator were fruitless. Fortunately, the Northwest Wisconsin CEP was able to secure another site--the Spooner School District--to participate in this study. However, the Bayfield School District decided that they did not have the time to administer this questionnaire prior to the distribution of questionnaires, thus decreasing the number of sites from four to three, and the sample from 172 to 124. The following is a brief description of the three school-to-work sites involved in the study.

Rochester is an urban school district that is 80% non-white and 20% white. It implemented its school-to-work initiative in 1994-95 school year, creating a partnership with the

State Education Department of Workforce Preparation. The school-to-work initiative includes: Youth Apprenticeship Program; Intern Program; and Tech Prep. There are 37 employers providing work-based experiences to school-to-work participants. Data on the number of students who have graduated from school-to-work programs and the number attending either two or four year colleges were not available.

The Tulsa School District is part of Careers Partners, Inc (formerly Craftsman 2000). Tulsa is an urban school district and is 45% minority and 55% non-minority. Students participate in the Apprenticeship Program and Tech Prep. Craftsman 2000 started in 1992; the graduates of the first class graduated from Tulsa Junior College in May 1996 with an Associates Degree. All student participants of Craftsman 2000 will either go from junior college to a four-year university or to work at an estimated starting salary of \$30,000. In 1996, 53 companies were involved in Careers Partners, Inc. and 466 students were enrolled in a variety of work-based and school-based learning activities.

The Spooner School District is one of the 25 school districts that formed a school-to-work partnership with the Northwest Wisconsin Concentrated Employment Program (CEP), the Cooperative Educational Services Agency 12, and the Private Industry Council. Spooner is a rural school district that is majority white. Approximately, 147 employers are providing work-based learning experiences for students. The school-to-work initiative includes: Youth Apprenticeship Program; Community Service Learning; Cooperative Education; and the Internship Program. Prior to the 1996-97 school year, 47 students had graduated from Spooner's school-to-work programs; forty-two or 89% attended two or four year colleges.

Instrumentation Development

A questionnaire (See Appendix A) was designed for the 12th grade sample of school-to-work participants. Three previous surveys developed by Kopp, et al (1994) for Jobs for the Future, Mathematica Policy Research (1996) and Rita L. Paulus (1995) to assess students' perceptions about participating in school-to-work programs were used in the construction of this instrument. In addition, the questions used by Kevin Hollenbeck (1996) in his focus group study of students participating in Education For Employment programs in Kalamazoo, Michigan were also used in the construction of questions. A few pre-existing items from these surveys were modified and used in this questionnaire. They included:

1. The Paulus question about students' change in overall academic performance;
2. The Kopp, et al questions regarding classes in which students learn about topics and issues related to the industry in which they work and students' classroom experiences; and
3. The Mathematica Policy Research questions regarding parents' educational level.

The instrument was divided into four sections: Relevance of School to Work; School-to-Work Participation/Academic Success; General Satisfaction; and General Demographic Questions. Each section was aimed at gathering data to answer a specific research question and to gather other pertinent demographic data. Questions 1, 2 and 5 addressed students' participation in school-based and work-based activities. Questions 3 and 4 specifically addressed Research Question 1, Part A and questions 6 and 7 addressed Part B of Research Question 1. Part C of Research Question 1 was addressed by questions 8, 9 and 12, and Part D of Research Question 1 is addressed by questions 8, 9, 10, and 11. Questions 13-22 provided general

demographic data, information about the type of school-to-work programs and career majors students participated in, and information about students' plans after high school.

Three summated Likert scales were designed: one to measure students' understanding of relevance of school-to-work (question 4); one to measure students' perceptions about the change in their overall academic performance (question 7); and one to measure students' overall satisfaction with the school-to-work program (questions 8-11).

Reliability and Pilot-Test of the Survey Instrument

According to Fowler (1984), good questions are reliable, providing consistent measures in comparable situations and a good questionnaire has the following properties: questions are written in such a way to fully prepare respondents to answer questions; the questions mean the same thing to every respondent; and the kinds of answers that constitute an appropriate response to the question are communicated consistently to all respondents. The instrument used in this study was developed with these properties in mind--they were extensively reviewed by site coordinators (twice) who provided input on the phrasing of questions and made suggestions on rewording to ensure the clarity of each question, and to ensure that questions meant the same thing to student participants in their particular site. Site coordinators also provided input on the multiple choices of responses given to the respondents that would appear to be meaningless, and coordinators provided suggested language that was more familiar.

Reliability

The questionnaire contained three measurement scales: question 4--understanding of relevance of school-to-work; question 7--perception about overall academic performance; and questions 8, 9, 10,11--overall satisfaction.

The Cronbach Alpha statistical procedure was applied to students' responses to the five statements in question four to determine the internal consistency reliability of the statements as a measure of students' understanding of the relevance of school-to-work. Using alpha, the estimated reliability of the measure based on the five items was .60.

The Cronbach alpha was applied to the responses to the seven items in question 7 to determine the internal reliability consistency of this question as a measure of students' perception about overall academic performance. The estimated reliability of the measure based on the seven items was .90.

The Cronbach alpha was applied to responses to questions 8-11 to determine the internal reliability consistency of these questions as a measure of satisfaction with the school-to-work program. The estimated reliability of the measure based on the four items was .90.

In addition, the instrument was reviewed in the following ways:

1) It was reviewed by Department of Labor staff, a statistician, an unemployment insurance program specialist, and an operations researcher--all of whom have had extensive experience with designing and administering survey instruments. The purpose of this review was to determine if there were questions that were confusing, questions that were difficult to answer, whether there were leading questions, ambiguous questions or words/phrases that might convey different things to different people. They were also asked to look at overall presentation of the

survey and format of the questions.

2) It was reviewed twice by the three site school-to-work coordinators and their staff for relevancy of survey questions to research questions being asked, to determine if the questions accurately represented what they were intended to measure and to ensure that terminology and phrases used in the questionnaire were not foreign to the school-to-work participants. The survey was faxed to each coordinator twice and responses were faxed backed. A follow-up telephone call was made to each coordinator to clarify and discuss their comments.

Pilot-Test

The instrument was pilot-tested by seven 12th grade school-to-work program participants in the Flambeau School District in the Northwest, Wisconsin CEP.

The school district of Flambeau is a comprehensive K-12 public school with two K-6 schools and one 7-12 school. It served 700 students in a very rural and economically challenged part of Northwestern Wisconsin. The school district has a strong commitment to providing educational services to community residents of all ages and to establishing relationships with a wide range of community partners. Flambeau's career guidance and counseling program is a major initiative of the school district; its aim is to develop positive attitudes toward lifelong learning and skills which meet the personal, social, career and educational needs of all students. Upon graduation, students demonstrated a high level of competency in self-assessment, career awareness, career decision making and career planning. The U.S. Department of Education and the National Center for Research in Vocational Education recognized Flambeau's career guidance and counseling program in 1996 as an exemplary career guidance program--exemplifying school

efforts in implementing well-integrated, comprehensive, career guidance programs that are designed to assist all students in transitioning from school-to-work and/or further education.

The instrument was mailed to the site coordinator on May 1, 1997 and was administered by a member of the school's Counseling Department during the week of May 5th. Instructions were provided to the counseling staff person who administered the instrument, along with a set of questions for students to answer about the instrument (See Appendix A). Responses to the questionnaire and follow-up questions were returned on May 10th.

A summary of students' responses to the follow-up questions about the questionnaire showed that: none of the students felt that the questions were hard to understand; none felt that there were words or phrases that they were not familiar with; none felt that there were questions that should not be on the questionnaire; and none felt that the instrument was too long. Students reported that it took 5 to 10 minutes to complete the instrument. Other student comments were: the instrument was easy; that choices provided to answer the questions were good; and that there were important questions on the instrument. Students offered no suggested changes to the instrument. Based on the responses from these students, no changes were made to the instrument.

Data Collection Method

Data were collected from the following sources:

- 1) School records were used to gather grade and attendance data for two school years, the year prior to the student's entrance into the program and the current school year. The site

coordinators worked with school officials to facilitate the collection of these data. A matrix (See Appendix A) was constructed by the researcher and sent to each site coordinator to use in the collection of the data.

2) Copies of the instrument were mailed to the site coordinators on May 12, 1997, along with instructions for administering the instrument. All copies were numbered; numbers were continuous. Numbers 1-19 were sent to the Career Partners/Tulsa School District, numbers 20-65 were sent to the Rochester School District, numbers 66-124 were sent to the Spooner School District/Northwest Wisconsin CEP. Administering the questionnaires was conducted by school staff, which was the preferred process for each site. The site coordinator facilitated this process. Questionnaires were returned to the site coordinator and then mailed back to the researcher.

3) Program materials from each site were used to describe each school district.

4) Follow-up telephone calls were made to each site coordinator to verify and clarify any confusing or contradictory information.

Data Analysis

Data were analyzed for each individual site and in some cases, the aggregate for all three sites, and for subgroups--white, non-white, male and female. Methods used to analyze the data were descriptive statistics (means and percentages) and comparisons (chi-square, t-test, and analysis of variance). The Number Cruncher Statistical System (NCSS) was used to analyze the data. Results were considered statistically significant at the .05 level.

Profile of students' participation in classroom and worksite school-work related activities

Responses to instrument questions 1, 2 and 5 were used to create a profile of students participation in classroom and worksite school-to-work related activities. Students' experiences and the frequency of experiences were analyzed by site and by group (male/female and white/non-white). A comparison between group means for responses to instrument questions 1 and 5, mean participation rate in classroom and mean participation rate in work-site school-to-work activities, was conducted.

Research Question 1: To what extent do student participants in school-to-work programs perceive:

A. that school is relevant to the world of work?

Responses to instrument questions 3 and 4 were used to answer this research question about students' perceptions about the relevance of school to work. Responses were described for each site and for each subgroup. The relationship between race/gender and perception about relevance was investigated.

B. that their academic performance improved due to the program?

Responses to questions 6 and 7 were used to answer this research question. Responses were described as means and percentages for the sample and for each subgroup. The relationship between race/gender and the perception about overall academic performance and change in

academic performance was investigated.

C. that participation in the school-to-work program influenced their future educational and career decisions?

Responses to questions 8, 9, and 12 were used to answer this part of the research question. Responses were presented as percentages for the sample and subgroups. The relationship of the variables, race/gender and perception about the influence of the school-to-work program, was investigated.

D. that participation in the school-to-work program was beneficial to them--overall satisfaction?

Responses to questions 8-11 were used to answer this research question. Percentages were used to describe responses. A Likert summated scale was developed to measure overall satisfaction. The relationship of the variables was investigated.

Research Question 2: To what extent did the following change for students in school-to-work programs?

A. Overall grades from before and after program participation.

B. Overall school attendance from before and after program participation.

Responses provided by school officials on students' actual grade point averages and school attendance before and after (during the current school year) program participation were used to answer this research question. Means and percentages were used to describe the change in grade point average and attendance for the sample and for subgroups. The analysis of variance was

used to test for significant interactions and significant main effects.

Research Question 3: Additionally, how do student participants from different groups, race and gender, differ in their perceptions about the school-to-work program and its influence on them? How do actual grade and school attendance changes differ across groups?

The chi-square test was applied to determine if the difference in the perceptions of males/females and whites/non-whites regarding the school-to-work program and its influence on them was statistically significant. Responses to Instrument Questions 3, 4, 6, 7, 8, 9, 10, and 11 reflected students' perceptions about the school-to-work program and their overall satisfaction with the program.

Pre and post means for grades and attendance were compared for race and gender utilizing the analysis of variance statistical procedure to test for significant interactions and significant main effects.

Presentation of Results

Questionnaire and actual grade and attendance findings are presented in tables that show relationships, comparisons and changes. Descriptive/demographic data on student participants are presented in a comparative table. A comparative analysis of the findings of this study and the findings of earlier research on students' perceptions in applicable areas is presented in side-by-side table.

Chapter Summary

This chapter describes the research design, the population examined during the study, the survey instrument used to collect the data, and the methods used to analyze the data to completely answer the research questions. The data were collected from three school-to-work sites: the Rochester School District; the Spooner School District; and the Tulsa School District. The data were collected by mailing 124 questionnaire instruments to school-to-work site coordinators, who in turn distributed these questionnaires to school-to-work 12th grade participants in their district. Data were also collected from actual grade and attendance records provided by school officials via site coordinators. Programs selected for the study were in existence for two or more years. Student perceptions about school-to-work program participation and its benefits, and the actual pre and post grades and attendance were determined, and examined for differences. The final data analysis and discussions are described in Chapter IV.

CHAPTER 4

FINDINGS

The purpose of this study was to assess the perceptions of student participants of school-to-work programs about the impact of the program in helping them see the relevance of the acquisition of knowledge to the world of work, improving their overall academic success, and influencing both their future career choices and decisions to pursue educational opportunities beyond high school. This study also compared the pre and post grades and attendance of students from two school-to-work sites and compared differences in the perceptions, grades and attendance of students by group (race and gender).

The findings from the analyses of the returned students questionnaires, the actual data on pre and post student grades and attendance from school records are described in this chapter. Specifically, the following sections are included: description of respondents; description of procedure used to transfer data from the questionnaire to the "Data Sheet"; and the statistical analysis of each research question.

Description of the Respondents

The target sample consisted of 124 twelfth grade students from three sites: the Tulsa, Oklahoma School District/Career Partners; Spooner School District/Northwest Comprehensive Employment Program, Spooner, Wisconsin; and the Rochester City School District, Rochester, New York School District. The school-to-work programs in these sites had been in operation for

at least two years and all received federal implementation grants in 1994. Total questionnaires returned were 77 of 124 for a response rate of 62%. All of the questionnaires were usable even though responses to a few questions were omitted or incomplete. The response rate was comparable for all sites; they were all in the 55-65% range. Table 1 presents the number of questionnaires mailed and returned by each site.

Table 1

Questionnaire Response Breakdown

	Number Mailed	Number Returned	Percent Returned
	124	77	62.1
Rochester	46	28	60.9
Spooner	59	38	64.4
Tulsa	19	11	57.9

The site coordinators made a number of follow-up calls and visits to the schools participating in the study in an attempt to collect questionnaires that had not been returned. The researcher made a number of calls to site coordinators to ascertain the probability of receiving additional questionnaires before concluding that all that were coming had been received.

Table 2 presents a summary demographic profile of respondents in terms of gender, race, educational level of parents and education/career plans after high school.

Almost two-thirds of respondents were white (64%). Sixty-one percent of respondents were male and 39% were female. Overall, white males made up the largest group (72%) and non-white males made up the smallest group (28%). Only 8% of respondents planned to work after high school, while 92% planned to continue their education after high school either full-time or part-time.

Respondents came from a range of socio-economic backgrounds--parents with less than a high school education to parents with graduate or professional degrees. A higher percent of mothers (39%) had high school degrees than fathers (26%), but more fathers (43%) had education beyond high school than mothers (35%).

Table 2**Demographic Profile of Respondents (N=77)**

Category	Number	Percentage
Gender		
Male	47	61.0
Female	30	39.0
Race		
White	49	63.6
Non-White	28	36.4
Plans After HS		
Continue Ed FT/PT	71	92.2
Work Only	6	7.8
Mother's Education		
Less Than High School	14	18.2
High School	30	39.0
College Course Work	12	15.6
Two-Year or Tech Degree	5	6.5
Four-Year Degree	8	10.4
Graduate Work	2	2.6
Don't Know	6	7.7
Father's Education		
Less Than High School	14	18.2
High School	20	26.0
College Course Work	14	18.2
Two-Year or Tech Degree	9	11.7
Four-Year Degree	7	9.0
Graduate Work	3	3.9
Don't Know	10	13.0

A higher percent of students' parents in Rochester had less than a high school education, while more students in Tulsa reported that their parents had a high school education. More than 52% of students' parents in Spooner had education beyond high school (technical, vocational, 2-year college degree, 4-year college degree), while less than 10% of students' parents in Tulsa had education beyond high school. Table A, Appendix C provides a detailed description of respondents from individual sites.

Respondents participated in a variety of school-to-work programs--Apprenticeship, Community Service Learning, Cooperative Education, Internship and Tech Prep (see Table 3). The data showed that slightly more than half (52%), of students participated in the Apprenticeship Program, while one-third participated in the Internship and Cooperative Education Programs.

The top three career majors (Table 3) were Health Services, Business/Marketing, and Insurance with participation rates of 18.2%, 14.3%, and 10.4% respectively. Some students, 11.7%, indicated career majors (fire fighter and maintenance) other than those listed and 9% indicated that they had more than one career major.

Finally, 36% of students had participated in the program for one year, 46% for two years, and 18% for three years.

Table 3.

Students' Participation in Different Types of School-to-Work Programs, Career Majors and Length of Time in Program (N=77)

	Number	Percent
Program		
Apprenticeship	40	51.9
Community Service	4	5.2
Cooperative Ed	8	10.4
Internship	17	22.1
Tech Prep	2	2.6
Other Programs	2	2.6
Dual Programs	4	5.2

Career Major		
Automotive	1	1.3
Building Trades	6	7.8
Business/Marketing	11	14.3
Communications	2	2.6
Computer Science	5	6.5
Drafting/Graphic	2	2.6
Finance	1	1.3
Food Service	4	5.2
Health Service	14	18.2
Hotel/Motel	0	0
Insurance	8	10.4
Manufacturing	2	2.6
Printing	3	3.9
Transportation	2	2.6
Other Careers	9	11.7
Dual Careers	7	9.0

Length of Time in Program		
One Year	28	36.0
Two Years	35	46.0
Three Years	14	18.0

Data Transfer Procedure--From Questionnaires to Data Sheets

Questionnaires were numbered in the order in which they were received from the site coordinators. Tulsa questionnaires were numbered 1-11, Spooner questionnaires were numbered 12-49, and Rochester questionnaires were numbered 50-77.

Questionnaire data were transferred to "Data Sheets" manually by the researcher. Data were checked twice by the researcher and twice by an individual with a research background to ensure accuracy. Data were then entered into NCSS databases by the researcher. Each database sheet was printed and checked against the "Data Sheets" to ensure accuracy.

Data provided on the grades/attendance matrix were transferred manually onto subject specific "Data Sheets" (gender, race, site) by the researcher and rechecked twice for accuracy.

Profile of Students' Participation in School-Based and Work-Based Activities

One of the provisions of the School-to-Work Opportunities Act (STWOA) is that students participate in school-based learning--curriculum and instruction that integrate academic and vocational learning, incorporating instruction in all aspects of an industry appropriately connected to the career major of the participant.

Another provision of STWOA is that students participate in work-based learning which provides students with the opportunity to apply abstract concepts and principles at the worksite,

while learning vital workplace skills in a hands-on environment. This includes job training and work experiences that coordinate with classroom learning.

School-based and work-based learning activities will encourage students to see the connection between what they learn in school to the duties at the worksite. Teachers must teach in a manner that assists their students in seeing relevancy, application and value to the future of what they are learning (Hoerner & Wehrley, 1995).

Some of the instrument questions were designed to gather data on students' participation in school-based and work-based learning activities. Questions 1 and 2 were designed to provide data on school-based activities that students participated in and the frequency of this participation, and question 5 was designed to gather data on work-based activities that students participated in at the worksite. Results are presented in Tables 4-12.

School-Based Activities

As shown in Table 4, 97% of students reported that they participated in classroom school-to-work related activities. Two students reported no participation in these activities.

Table 4.

Participation in Classroom School-to-Work Related Activities by Site

	Number	Percent
Rochester (N=28)	27	96.4
Spooner (N=38)	38	100
Tulsa (N=11)	10	90.9
Total (N=77)	75	97.4

Table 5 presents the number and percent of different classroom school-to-work related activities in which students participated. Two-thirds (67%) of the students reported that they participated in one to three activities, and one-third participated in more than three activities (23% participated in 4-6 activities, and 10% participated in more than six classroom school-to-work related activities).

Table 5

Number/Percent of Classroom School-to-Work Related Activities in Which Students Participated

Activities	Number	Percent
1-3	50	67
4-6	17	23
More Than 6	8	10

Table 6 presents a breakdown of the different types of school-to-work related activities in which students participated. The 77 students participated in at least 231 different classroom school-to-work related activities, an average of 3 activities per student. Sixteen percent of the activities that students participated in were oral presentations, 15% were job fairs and 13% were workshops on job search skills. The least participated in activities were business presentations and workshops on workplace behaviors, 12% for each.

Table 6

**Types of Classroom School-to-Work Activities and
Percent of Students Who Participated in Each Activity**

	Number activities (N=231)	Percent all students (N=77)	Percent
Oral Presentation	37	16.0	48.1
Job Fair	35	15.2	45.5
Job Search Wkshops	31	13.4	40.3
Essay	30	13.0	40.0
Career Class	30	13.0	40.0
Bus Presentation	27	11.7	35.1
Workplace Be- haviors Wkshops	27	11.7	35.1

As noted in Table 7, Spooner students averaged greater participation in these classroom school-to-work activities (3.26), followed by Rochester (2.79) and Tulsa (2.64).

The average number of activities for whites was 3.12 and 2.92 for non-whites, for a mean difference of .20 which was not significant. Females participated in more activities (3.66) than males (2.64) for a significant mean difference of 1.02.

Table 7

Average Number of Different Classroom School-to-Work Related Activities Students Participated in by Site/Group

	Mean	SD
Rochester	2.79	1.99
Spooner	3.26	2.10
Tulsa	2.64	2.20
<hr/>		
White	3.12	2.09
Non-White	2.92	1.95
(df = 73, t = 0.40, p = .68)		
<hr/>		
Male	2.64	1.81
Female	3.66	2.24
*(df = 73, t = 2.17, p = .03)		

* Difference is significant

Students were asked to report the frequency with which they participated in school-to-work related activities and/or topics and issues related to the industry in which they worked in the following classes--Computer Science, English, Math, Science, Social Studies/History, Career/Technical and other.

Table 8 presents students' responses about the frequency with which they participated in these activities and/or learned about topics and issues related to the industry in which they worked. Fifty-seven percent of the 70 students who took Math, 60% of the 55 students who took Career/Technical classes, and 52% of the 67 students who took English responded that they frequently participated in school-to-work classroom activities in these classes. Further analysis of

students who reported frequent participation in Math and English revealed that these students were participating in the following career majors: building trades; business marketing; food services; health services; manufacturing; and printing.

For the 67 students who took Social Studies/History, 64% perceived moderate to no participation in school-to-work activities in this class. For the 63 students who took Computer Science, 60% perceived moderate to no participation in school-to-work activities in this class. Of the 67 students who responded that they took Science, 55% perceived moderate to no participation in school-to-work activities in this class.

Table 8

Participation in School-to-Work Activities by Class

	Number	%Frequent	%Moderate	%None
Math	70	57.1	25.7	17.4
English	67	52.2	25.4	22.4
Science	67	44.8	31.3	23.9
Soc. Stu./ History	67	35.8	25.4	38.8
Comp Sci	63	39.7	22.2	38.1
Career/ Technical	55	60.0	16.4	23.6

Work-Based Activities

Students were asked to report the types of experiences provided by the worksite instructor or mentor that allowed them to use their academic skills and knowledge. This aspect of the school-to-work initiative is extremely important because students get the chance to apply what they have learned in school in the work environment. This is applied learning--making the connection between school and work. Tables 9-12 present the responses of students to this question.

Overall, 84% of students reported that the worksite instructor provided experiences that allowed them to use their academic skills and knowledge to complete an assignment; 16% reported that no experiences were provided (see Table 9). Further analysis revealed that students who reported that no experiences were provided were pursuing the following career majors-- Business/Marketing, Health Services, Manufacturing and Printing.

Students from Spooner (74%) reported the lowest participation in worksite activities, 17-22% less than Tulsa and Rochester. An analysis of the ten students (26%) in Spooner who reported no participation in worksite activities revealed that half of these students perceived an improvement in their overall academic performance and half did not.

Table 9

Participation in Worksite Activities Related to Academic Skills/Knowledge By Site

	Number	Percent
All (N=77)	65	84
Rochester (N=28)	27	96
Spooner (N=38)	28	74
Tulsa (N=11)	10	91

Students reported at least 188 activities provided by the worksite instructor that allowed them to apply their academic skills and knowledge in the workplace (Table 10). The average number of worksite activities that students participated in was 2.44. The three most common activities that students used in the worksite were math skills (22%), oral presentation (20%) and analysis of process/procedure (20%). There were less opportunities provided for students to use their knowledge of science principles (15%), to do a written/multi-media report (11%) and to collect research data (11%).

Table 10

Number of Activities Provided at the Worksite, Percent of Activities by Type, Percent of Students Participating in Each Activity

	Number	Percent of All Activities (N=188)	Percent of Students (N=77)
Math Skills	41	21.8	53.2
Analysis of Process	38	20.2	49.4
Oral Presentation	38	20.2	49.4
Science Principles	29	15.4	37.7
Written/Multi-Media	21	11.1	27.3
Data Collection	21	11.1	27.3
Total	188		

Table 11 presents site and group comparisons for worksite activity participation. The mean participation rate for Rochester students was 3.28, for Tulsa 2.09, and 1.94 for Spooner.

Whites participated on average in 2.12 worksite activities while non-whites participated on average in 3.04 activities, a difference of .92 which was significant. Females participated in an average of 2.93 activities and males participated in an average of 2.20 activities, a difference of .73 which was not significant.

Table 11

**Average Number of Different Types of Worksite
Activities Students Participated in by Site and Group**

	Mean	SD
Rochester	3.28	1.69
Spooner	1.94	1.82
Tulsa	2.09	1.44
White	2.12	1.79
Non-White	3.04	1.75
*(df = 75, t = 2.16, p = .03)		
Male	2.20	1.76
Female	2.93	1.92
(df = 75, t = 1.68, p = .09)		

*Difference is significant

A comparison of the number of school-to-work related activities in the classroom and in the worksite is presented in Table 12. On average students participated in more classroom school-to-work related activities (3.08), than worksite activities (2.44) ($t = 2.00, p = .04$). Whites participated in 1.00 more classroom school-to-work related activity than worksite activities ($t = 2.48, p = .01$). Non-whites participation in worksite activities was not significantly different than their participation in classroom activities. Likewise, the difference between participation in the two types of activities was not significantly different for males or for females.

Table 12

**Comparison of Average Classroom/Worksite
School-to-Work Related Activities**

	Classroom	Worksite	Difference
All *(df = 76, t = 2.00, p = .04)	3.08	2.44	.64
White *(df = 96, t = 2.48, p = .01)	3.12	2.12	1.00
Non-White (df = 54, t = 0.49, p = .62)	2.92	3.13	.21
Male (df = 92, t = 1.15, p = .25)	2.64	2.20	.44
Female (df = 58, t = 1.29, p = .20)	3.66	2.93	.73

* difference is significant

Summary:

Overall, students participated in a variety of classroom and worksite activities aimed at helping them make the connection between school and work. Almost all of the students participated in classroom school-to-work related activities, with a large percent reporting moderate to frequent participation in these activities in their classes. Also, most students reported that they were given the opportunity to apply their knowledge and skills at the worksite, e.g., use their math skills, make oral presentations, and conduct an analysis of a process and/or a

procedure. The data showed that teachers and worksite instructors/mentors appeared to be integrating school-based and work-based learning activities to help students understand the relevance of school-to-work. However, this integration appeared to be happening more in the classroom.

Student Perceptions About School-to-Work Programs

Research Question 1 - To what extent do student participants in school-to-work programs perceive:

- A) that school is relevant to the world of work?**
- B) that their academic performance improved due to the program?**
- C) that participation in the school-to-work program influenced their future education and career decisions?**
- D) that participation in the school-to-work program was beneficial to them?**

Part A--Perception of relevance of school to the world of work

A majority of students perceived that the classroom school-to-work related activities that they participated in helped them to understand the relevance of school-to-work. Participation in these activities appeared to positively impact students' perceptions about the relevance of school-to-work.

Students were asked if they felt that the classroom school-to-work activities that they participated in helped them see the relevance of school to the world of work (instrument question

3). Table 13 summarizes students' responses. Most students, 82% responded positively to this question, while 18% responded negatively. Of the 14 students who responded negatively, 13 or 93% participated in at least one classroom school-to-work related classroom and/or topics and issues related to their work and 5 or 38% participated in more than one activity. However, the frequency of participation in these activities was low to no participation. Only one or 7% reported no participation in these activities.

A chi-square analysis was performed to investigate the relationship between gender and perception about relevance, and the relationship between race and perception about relevance. The chi-square value for gender and perception about relevance was 2.12 and 1.37 for race and perception about relevance. Neither was significant at the .05 level, indicating no relationship between the variables.

Table 13**Perception That Classroom Activities Provided Understanding of Relevance of School-to-Work**

	Yes		No		Chi-Square	P-Value
	Num	Per	Num	Per		
Total (N=77)	63	81.8	14	18.2		
Rochester (N=28)	22	78.6	6	21.4		
Spooner (N=38)	32	84.2	6	15.8		
Tulsa (N=11)	9	81.8	2	18.2		
White (N=49)	42	85.7	7	14.3	1.37	.24
Non-White (N=28)	21	75.0	7	25.0		
Male (N=47)	36	76.6	11	23.4	2.21	.13
Female (N=30)	27	90.0	3	10.0		

Instrument question 4 had five agree/disagree statements concerning students' understanding of the relevance of school-to-work. Students were asked to rate each statement, using a scale of 5 for agree to 1 for disagree. These statements provide more information on students' perception about their understanding of the relevance of school-to-work. Fifty percent of the students responded that their teachers knew about their work placement. Fifty-eight percent of the students disagreed with the statement that what they learned was not related to their work placement. Fifty-eight percent agreed that certain school activities helped them

understand how school is related to work. Forty-three percent agreed that they worked in areas related to what they studied in school. Finally, 48% of the students responded that they were not asked to talk or write about their work placement experiences as part of class assignments (see Table 14).

Table 14

Mean Ratings and Percent of Students Rating Each Statement About Relevance of School-to-Work (N=76, One did not answer)

	Mean	%Agree	%Neutral	%Disagree
Teachers know about work placement.	3.44	50	22	28
Things I learn are not related to my work.	2.42	22	20	58
Asked to talk/write work experiences in class assignments.	2.88	43	8	49
Certain school activities helped me understand how what I learn in school relates to work.	3.47	58	17	25
Work in areas related to what I study in school.	3.17	43	24	33

Students' responses to the statements appeared to be consistent. For example, half of the students agreed that their teachers knew about their work placement and what they did at work, and about half disagreed that they were asked to talk or write about their work placement experiences as part of class assignments which is consistent with the percent that feel that their teachers were aware of their work placement.

Another example is that a majority of students disagreed with the statement--that what they learned is not related to their work placement, and a majority, agreed that certain school activities helped them understand how school is related to work.

Looking at group responses, half or more of females and non-whites agreed with all four positive statements while half or more of them disagreed with the one negative statement. There was only one positive statement where half or more of whites and males agreed, while half or more of them disagreed with the one negative statement. (See Appendix C--Chi-Square Analysis)

A chi-square analysis of the relationship of the variables--race/gender to students' perceptions of understanding (statements 1-5), revealed no indication of a relationship between these variables.

Section Summary:

Based on the findings for Part A, Research Question 1, regarding students' perceptions about the relevance of school to the world of work, the data showed that the majority of students saw and understood the relevance of school-to-work. They understand that what they learned in school was related to their work, and that their work assignments were related to their areas of study.

Part B--Perception that Academic performance improved due to the program

Responses to instrument questions 6 and 7 were used to determine the extent that student participants in school-to-work programs perceive that their academic performance improved due to the program. Tables 15 and 16 present the findings for individual sites and groups.

Students were asked if they thought that participating in the school-to-work program improved their overall academic performance. Over three-quarters of students (78%), responded positively to this question while 22% responded negatively (see Table 15).

Table 15

Student Perceptions That School-to-Work Improved Their Academic Performance

	Yes		No		Chi-Square	P-Value
	Num	Per	Num	Per		
Total (N=77)	60	77.9	17	22.1		
Rochester (N=28)	25	89.3	3	10.7		
Spooner (N=38)	24	63.2	14	36.8		
Tulsa (N=11)	11	100		0		
White (N=49)	35	71.4	14	28.5	3.30	.06
Non-White (N=28)	25	89.2	3	10.7		
Male (N=47)	35	74.5	12	25.5	0.83	.36
Female (N=30)	25	83.3	5	16.7		

A lower percent (63%) of Spooner students reported that they perceived an improvement in their overall academic performance. An analysis of the responses of the 14 Spooner students who did not perceive an improvement in their academic performance revealed that most of these students reported that there was no change in their academic performance in the following areas: grades; attitudes toward school; acceptance of responsibility; study habits; self-confidence; motivation; and study time. A few reported a slight increase in some of these areas and a few reported a decrease in some of these areas.

The Spooner students who reported no improvement in their overall academic performance also participated in an average 5.8 classroom school-to-work activities and 1.3 worksite school-to-work activities. Six of these students did not participate in any school-to-work activities at the worksite, but participated in at least one to eight classroom school-to-work activities. Only three of these students reported that classroom school-to-work activities did not help them understand the relevance of school-to-work.

A chi-square analysis of the relationship between race and students' perception that participating in school-to-work programs improved their overall academic performance, and of the relationship between gender and students' perception that participating in school-to-work programs improved their overall academic performance revealed no indication of a relationship between the variables.

Students were asked to rate the change in their overall academic performance (on a scale from 5=considerable increase to 1=considerable decrease) in the following areas--grades, attitudes toward school, accepting responsibility, study habits, self-confidence, motivation, and study time that was due to participation in the school-to-work program.

Table 16 reports the findings for this question. The three areas where two-thirds or more students perceived improvement due to the school-to-work program were: accepting responsibility (71%), increase in self-confidence (66%), and in motivation (66%). About half of the students reported that their attitudes toward school improved (53%), and that their study habits improved (50%). Study time was the one area that remained the same for 46% and decreased for 18% of the students.

Table 16
Perceptions About Changes in Academic Performance
(N=76, one did not answer)

	a Mean	%Increased	%Remained Same	%Decreased
Accepting Responsibility	4.0	71.1	21.1	7.9
Self Confidence	3.9	65.8	27.6	6.6
Motivation	3.9	65.8	25.0	9.2
Attitudes	3.6	52.6	39.5	7.9
Study Habits	3.6	50.0	40.8	9.2
Grades	3.5	47.4	42.1	10.5
Study Time	3.2	35.5	46.1	18.4

a Mean based on scale from 1=considerable decrease to 5=considerable increase.

Half or more of whites perceived an improvement in the areas of responsibility, self-confidence, and motivation. Half or more of non-whites felt that they improved in the areas of grades, study habits, and study time, while two-thirds of them perceived improvement in their attitudes, self-confidence and motivation. Two-thirds or more of males perceived an improvement in responsibility, self-confidence and motivation, while half perceived an improvement in their attitudes and study habits. Finally, half of females perceived an improvement in their attitudes, while about two-thirds perceived an improvement in responsibility, self-confidence and motivation. (See Appendix C--Chi-Square Analysis)

The chi-square analyses of gender/race of subjects by perceptions about academic improvement revealed a significant relationship between race and the perception about change in accepting responsibility (chi-square = 6.51, $p = .03$) and between race and the perception about the change in motivation (chi-square = 7.00, $p = .03$). A higher percent of non-whites perceived that there was an increase in their acceptance of responsibility (89%) and an increase in their motivation (85.2%), as compared to whites (62% and 55% respectively).

Summary:

The findings for Part B of Research Question 1, showed that: a majority of students felt that participating in the school-to-work program improved their overall academic performance; and a majority of students perceived that their overall academic performance increased in the areas of grades, attitudes toward school, acceptance of responsibility, study habits, self-confidence and motivation. There was a statistically significant difference in the perceptions of non-whites and whites in two areas: acceptance of responsibility and increase in motivation.

Part C & D--Overall satisfaction and perceptions about influences on their future education and career decisions

Responses to instrument questions 8-11 were used to answer these two parts of Research Question 1. An overall satisfaction scale was created using the following elements from questions 8-11: beneficial to future education decisions; beneficial to future career plans; would participate in the program again; and would recommend the program to other students. Table 17 presents students' overall satisfaction with school-to-work program participation. Students summated scores were grouped into three categories--satisfied, neutral and dissatisfied. Scores in the 16-20 to eight range were satisfied, scores from 12-15 were neutral and scores from 4-11 were not satisfied.

Overall, most students (65%) were generally satisfied with the program, while 35% expressed a neutral opinion or were not satisfied with the program. More than three-fourths of non-whites and slightly more than two-thirds of males were satisfied with the school-to-work program. Slightly more than half of whites and females were satisfied with the program.

Table 17

**Students' Overall Satisfaction With School-to-Work
Program Participation (N=77)**

	Satisfied	Neutral	Not Satisfied
All	65	22	13
White	56	34	10
Non-White	82	7	11
Male	70	26	4
Female	57	20	23

Table 18 shows group satisfaction with each element of the satisfaction scale. In summary, about two-thirds or more of each group expressed satisfaction with the school-to-work program in each area.

Table 18**Percent of Students Satisfied With School-to-Work Program in Four Major Areas by Group**

	White (N=49)	Non-White (N=28)	Male (N=47)	Female (N=30)
Beneficial to future ed	69.4	82.1	80.6	63.3
Beneficial to future career	67.3	85.7	76.6	70.0
Participate in program again	67.3	75.0	72.3	66.7
Recommend to other students	73.5	85.7	83.0	70.0

Looking at responses to the specific elements of the satisfaction scale (Table 19), almost three-quarters of the students agreed that the school-to-work program was beneficial to their future education and career plans (74% and 73% respectively). More than two-thirds of the students responded that they would participated in the program again, and more than three-quarters of the students responded that they would recommend the program to other students.

A chi-square analysis revealed that there was no indication of a relationship between sex and the perception that participating in school-to-work programs was beneficial to future

education plans and career plan. The analysis also revealed no relationship between gender and these variables.

Table 19

Students' General Satisfaction With the School-to-Work Program in Four Major Areas by Percent (N=77)

	%Agree	%Neutral	%Disagree
Beneficial to future ed	74.0	15.6	10.4
Beneficial to future career	72.7	16.8	10.4
Participate in program again	70.1	19.5	10.4
Recommend to other students	77.9	11.7	10.4

Students were asked if they would be planning to continue their education beyond high school if they had not participated in the school-to-work program. Seventy-two students responded to this question. Of those who responded, 13% stated that they would not be planning to continue their education if they had not participated in the program, while 87% would be planning to continue their education regardless of program participation. This is important because 13% decided to continue their education after high school because they participated in

school-to-work programs.

Summary:

Overall, the findings for Parts C & D of Research Question 1, showed that a majority of students were generally satisfied with the school-to-work program, and felt that participation in the school-to-work program was beneficial to their future education and career plans. A majority stated that they planned to continue their education beyond high school. In fact, participation in the school-to-work program was instrumental in changing the minds of some students who were not planning to continue their education beyond high school.

Changes In Students' Pre and Post Grades and Attendance

Research Question 2--To what extent did the following change for students in school-to-work programs:

A. Overall grades from before and after program participation?

B. Overall school attendance from before and after program participation?

Actual data on pre and post grade point averages (GPAs) and attendance were provided for 47 students in two sites--Rochester and Tulsa. Tulsa provided data for the 11 students who completed the questionnaires, and Rochester provided data for 36 students, 8 more than the 28 students who completed questionnaires. The Spooner School District did not provide data on grades and attendance for any of its students. Tables 20-25 present the findings for actual pre and post grade and attendance.

Part A--Overall change in grades

The data showed that all but three students experienced some change in their grade point average (GPA); slightly more than half had an increase in their GPA (see Table 20). A majority of all groups experienced no change or a positive change in their GPA.

Table 20

Change in Students' Grade Point Average

	% Positive Change	% No Change	% Negative Change
All (N=47)	51.1	6.4	42.5
White (N=19)	52.6	5.3	42.1
Non-White (N=28)	50.0	7.1	42.1
Male (N=27)	55.6	0	44.4
Female (N=20)	45.0	15.0	40.0

Looking at mean GPA group scores, Table 21, all groups experienced an increase in their GPA: White .17; Non-White .13; Male .24; and Female .03. The net GPA gain was highest for males and lowest for females.

Table 21

Mean Pre and Post GPA Group Scores and Differences

	Pre GPA	Post GPA	Difference
All (N=47)	3.12	3.27	.15
White (N=19)	3.04	3.22	.17
Non-White (N=28)	3.18	3.31	.13
Male (N=27)	3.05	3.29	.24
Female (N=20)	3.22	3.25	.03

Two-way ANOVAs were conducted, using pre and post GPAs for whites and non-whites and for males and females (see Appendix C). There was no significant interaction and no significant main effect for race, gender or time.

Part B--Overall change in attendance

The analysis of actual pre and post attendance data showed that all but three of the 47 students experienced some change in attendance (see Table 22). About half of whites and females experienced a positive change in their attendance rate and more than two-thirds of non-whites and males experienced a positive change in attendance.

Table 22

Change in Students' Attendance

	% Positive Change	% No Change	% Negative Change
All (N=47)	61.7	6.4	31.9
White (N=19)	52.6	10.5	36.8
Non-White (N=28)	67.9	3.6	28.6
Male (N=27)	70.4	3.7	25.9
Female (N=20)	50.0	10.0	40.0

Overall, there was an increase in the average attendance of students by 3.6 days with all groups experiencing an average increase in attendance (see Table 23). Prior to program participation, non-whites had the highest absentee rate. Whites had the lowest pre absentee rate. The absentee rate for males and females was about the same prior to program participation. For post attendance, females had the highest absentee rate and males had the lowest. The attendance rate for non-whites increased by 4.8 days, for whites by 1.9 days, for males by 4 days and for females by 3.2 days.

Table 23

Pre-Post Attendance Group Means and Differences

	Pre	Post	Difference
All (N=47)	7.3	3.7	3.6
White (N=19)	5.6	3.7	1.9
Non-White (N=28)	8.4	3.6	4.8
Male (N=27)	7.0	3.0	4.0
Female (N=20)	7.7	4.5	3.2

A two-way ANOVA was conducted using pre and post absences for race (white and non-white). No significant interaction and no significant main effect for race were observed. There was, however, a significant main effect for time $F(1,45) = 7.30, p = .009$. The mean pre absentee rate was 7.3 and the mean post absentee rate was 3.7, which was a decrease in the absentee rate by 3.31 days.

A two-way ANOVA was also conducted for pre and post absences for gender (males and females). No significant interaction and no significant main effect for gender were observed. There was, however, a significant main effect for time $F(1,45) = 8.20, p = .006$.

Summary:

Overall, the findings for Research Question 2 were positive. The data showed that slightly

more than half of the students experienced an increase in their GPA and nearly two-thirds experienced an increase in their attendance rate. All groups experienced a gain in their GPAs and attendance rate. Therefore, grades and attendance appeared to have been positively influenced due to school-to-work program participation.

Differences Across Gender and Race

Research Question 3--Additionally, how do student participants from different groups (male/female and white/non-white) differ in their perceptions about the school-to-work program and its influence on them? How do actual grades and school attendance differ across gender and racial groups?

Although this question has been answered throughout prior sections that dealt with students' perceptions and their pre and post grades and attendance, this section is provided to specifically address the research question.

Part A--Gender and racial group differences in their perceptions about the school-to-work program and its influence on them

The difference between males/females and whites/non-whites regarding their perceptions about the school-to-work program and its influence on them were compared and analyzed in the following areas: relevance of school-to-work; improved academic performance; changes in overall academic performance (grades, attitudes toward school, accepting responsibility, study habits,

self-confidence, motivation and study time); general satisfaction with the program being beneficial to their future education and career plans; general satisfaction with the program in that they would participate in the program again and recommend the program to other students; and overall satisfaction with the program.

A chi-square test, using a .05 level of significance, was used to determine whether significant differences in the perceptions regarding school-to-work program participation and its benefits existed between males/females and whites/non-whites. The research sample was not a true random sample and the findings of the study cannot be extended to the school-to-work population as a whole. However, the findings are of interest to policymakers, educators, researchers and other stakeholders as the school-to-work initiative unfolds.

The results (see Appendix C) revealed that the differences between whites and non-whites were statistically significant in only two areas of perception--perceptions about the change in accepting responsibility and increase in motivation. Non-whites perceived a greater change in these two areas. For other areas, there were no statistically significant differences in the perceptions of whites and non-whites regarding the school-to-work program and its benefits. The differences between males and females were not statistically significant in any of the areas.

B. How do actual grades and attendance differ across gender and racial groups?

ANOVAs were conducted for pre and post grades and absences for race and gender (see Appendix C). No significant interaction was observed between race and time and between gender and time, and no significant main effect was observed for race or gender. In addition, the main effect for time was not significant for GPAs. However, the main effect for time was

significant for absences. There was no statistical significant difference in grades and attendance across gender and racial groups.

Summary:

In summary, the differences in grades and attendance were not statistically significant across race and gender.

There was a statistically significant difference in the perceptions of whites and non-whites regarding school-to-work and its benefits in two areas of academic performance--accepting responsibility and motivation, with non-whites perceiving a greater change in these areas; there was no statistically significant difference between males and females.

Comparison of Study's Findings with Earlier Research

Findings on Student Perceptions in Major Areas

Some findings of this study were compared with some of the findings of research conducted by Hollenbeck (1996), Paulus (1995) and Kopp et al (1994). Since this study did not replicate any of the earlier research on students' perceptions on school-to-work participation, only the findings on certain aspects of the earlier research could be compared with the findings of this study. Comparisons were made in the following areas: general satisfaction with the program; future education and career plans; benefits of program participation to post-secondary education and career goals; classes where topics/issues related to the industry in which they work were taught; teacher awareness of their work placement; importance of classroom learning to students'

work placement; and improvement in the areas of grades, study habits, self-esteem or self-confidence, attitudes toward school, and acceptance of responsibility. These comparisons are presented in Table B, Appendix B.

Overall, the findings in these areas for this research were similar to the findings in earlier research. The following summarizes the major comparisons:

◆ **General Satisfaction:**

A majority of students in this study and the Paulus and Kopp studies reported that they were satisfied with the school-to-work program (70%, 94% and 79% respectively). Hollenbeck reported that student participants of the Employment for Education (EFE) programs had a positive attitude toward the programs. It appears that the findings in this area are consistent in all of the studies--students were generally satisfied with the school-to-work program or had a positive attitude toward the program.

◆ **Future Education Plans:**

A majority of students in three of the studies (current research, Paulus and Kopp) planned to continue their education after high school (92%, 89% and 95% respectively). However, Hollenbeck (1996) found that 100% of the students in his study planned to continue their education after high school. This evidence is quite convincing and should allay the concerns of critics of the school-to-work initiative who believe that post-secondary education will be de-emphasized for students who participate in school-to-work programs.

◆ **Classes where topics/issues related to their work industry were taught:**

In this area, the findings of this study were compared with the findings of the Kopp study. Both studies found similar results--students reported that topics and issues related to the industry

in which they work were taught in English, Math, Career Technical, Science and Social Studies/History. In these classes school-to-work related activities were integrated, thus making students' experiences more meaningful.

◆ **Teacher awareness of student's work placement:**

The findings of this study were compared to the findings of the Kopp study. The Kopp study found that a majority (67%) of students agreed that their teachers were aware of their work placement, while the results of this study showed that half of the students felt that their teachers were aware of their work placement. However, the Hollenbeck study found that a majority of students felt that teachers outside of the EFE programs had very little awareness of the programs and their benefits. Teacher awareness of a student's work placement is extremely important in facilitating the connection between the classroom and the worksite, thus helping students make the connection between school-to-work.

◆ **Classroom learning is not important to their work placement:**

The findings of this study in this area were compared with the findings of the Kopp study. Only 22% of the students in this study agreed that what they learned in the classroom was not important to their work placement, while 26% of the students in the Kopp study agreed. This means that a majority of students in both studies felt that what they learned in the classroom was related to their work placement. This is important because it shows that the teachers of these students were providing learning experiences to help students make the connection between school and work.

◆ **Students asked to write/talk about work experience in class:**

In this area, the results of this study were compared with the results of the Kopp study.

Forty-three percent of the students in this study agreed that they were asked to write and/or talk about their work experience in class, while a higher percentage (55%) in the Kopp study agreed. Writing and/or talking about their work experience in class was a way to integrate school-to-work related activities and enforce students' skills and knowledge.

◆ **Program impact on grades:**

This study and the Paulus study asked students if they felt that their grades increased/improved due to program participation. In this study, 48% felt that their grades increased compared to the 74% in the Paulus study who perceived an improvement in their grades. A higher percentage (42%) in this study felt that their grades remained the same, while only 26% in the Paulus study felt that their grades remained the same. None of the students in the Paulus study felt that their grades decreased, while 10% in this study felt that their grades decreased. Overall, 90% of the students in this study perceived no change or an increase in their grades, while 100% of the students in the Paulus study perceived no change or an improvement in their grades.

◆ **Impact on study habits:**

The findings of this study were compared to the findings of the Paulus study in this area. In this study, half of the students felt that there was a positive increase in their study habits due to participation in the program compared to the 46% in the Paulus study who perceived an improvement in their study habits. The percent who perceived no change in their study habits were similar for both studies, 41% for this study and 48% for the Paulus study. Only 9% in this study perceived that there was a decrease in their study habits, while 6% in the Paulus study perceived a decrease.

Overall, most students perceived a positive impact on their study habits due to program participation while only a small percent perceived a negative impact on their study habits.

◆ **Impact on self-esteem or self-confidence:**

This research and the Paulus research asked students if they perceived a change in their self-esteem or self-confidence due to program participation. The findings for the two studies are consistent. Seventy-two percent of students in the Paulus study perceived an improvement in their self-esteem, while 66% in this study perceived an increase in their self-confidence. In this study, only 7% perceived a decrease in their self-confidence compared to 4% in the Paulus. Twenty-four percent perceived no change in their self-esteem in the Paulus study and 27% perceived no change in their self-confidence in this study.

Overall, most students in both studies perceived a positive change in their self-esteem/self-confidence due to program participation which is important in motivating student to strive to succeed in their post-secondary education and career activities.

Program impact on attitudes toward school:

This research, along with the Paulus and Kopp studies asked students about the impact of program participation on their attitudes toward school. In all three studies, a majority of students felt that their attitudes toward school positively increased, improved or were better due to program participation (53%, 68% and 56% respectively). Only 8% in this study, 4% in the Paulus study and 2% in the Kopp study felt that there was a negative impact on their attitudes toward school due to participation in the school-to-work program. In this study 39% of the students reported no change in their attitudes, while 28% reported no change in the Paulus study and 42% reported no change in the Kopp study.

These findings showed that in all three of these studies, the involvement of these students in school-to-work programs positively impacted their attitudes toward school.

◆ **Program impact on acceptance of responsibility:**

In this area of the research, the findings of this study were compared to the findings of the Paulus study. A majority in both studies reported an increase or improvement in their acceptance of responsibility, 71% in this study and 78% in the Paulus study. Twenty-two percent reported no change in acceptance in responsibility in the Paulus study, while 21% reported no change in this study. In the Paulus study, none of the students reported a decrease in their acceptance of responsibility while 8% reported a decrease in this study.

Overall, a majority of students in both studies perceived that their acceptance in responsibility increased or improved due to participation in the program.

Summary:

The findings of this study were consistent with the findings of the three earlier studies in the areas compared. The current findings reinforced earlier research findings and added to the body of literature about students' perceptions about school-to-work program participation in certain areas. Taken as a whole, these findings provide a body of evidence that suggest that the majority of students in these studies had a positive attitude about the school-to-work program that they participated in and were generally satisfied with the program.

Chapter Summary

Results of the data analyses for the three research questions of this study are reported in this chapter. Data are organized around the three research questions and describe the experiences of student participants in school-to-work programs.

The findings indicated that, overall, a majority of students were satisfied with the school-to-work program that they participated in and perceived that participation in the program had a positive impact on their future education and career plans. Most students also felt that their experiences helped them to understand the relevance of school-to-work and that their academic performance improved.

Actual pre and post grades and attendance rates showed that a majority of student experienced an increase in their grades and attendance rates. All groups in the study (males/females and whites/non-whites) showed an increase in grade point average and attendance. Mean differences were not statistically significant in the majority of areas analyzed but were significant in a few areas.

The findings of this study were compared with the findings of three earlier studies on student perceptions about school-to-work program participation in specific areas. The findings of this study were consistent with the findings of the earlier studies.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

It is important to assess the perceptions of students who are currently participating in school-to-work programs because they are the major focus of the school-to-work initiative, and information that they provide can be used by program administrators and policymakers in making future decisions about school-to-work programs. Such assessment should seek to determine their perceptions about the impact of the program on their overall academic success and future postsecondary education and career choices. It is also important to assess the impact of the program on students' grades and school attendance.

The purpose of this study was to assess the perceptions of student participants of school-to-work programs about the impact of the program in helping them see the relevance of the acquisition of knowledge to the world of work, improving their overall academic success, and influencing both their future career choices and decision to pursue educational opportunities beyond high school. The study also compared students' pre and post grades and attendance and compared differences in the perceptions, grades and attendance of males and females and whites and non-whites. Finally, the findings of the study were compared to findings of earlier research on students' perceptions about school-to-work programs.

Data were collected and analyzed regarding students' perceptions about their understanding of the relevance of school to the world of work as a result of participating in the program, the benefits of school-to-work program participation to their future education and career plans, the program's impact on their overall academic success and career plans, and their

general satisfaction with the program. Data were also collected and analyzed on actual grades and attendance prior to program participation and after program participation. In addition, the findings of this study were compared to specific aspects of three earlier studies on student perceptions about school-to-work program participation.

Summary of Findings

A majority of students perceived the following about school-to-work program participation and its benefits.

- ◆ Participation in classroom school-to-work related activities helped them see the relevance of school-to-work, with three-quarters or more of each group perceiving that these activities helped them see the relevance of school-to-work.
- ◆ They perceived that their overall academic performance improved due to program participation.
- ◆ The program was beneficial to their future education and career plans.
- ◆ They were generally satisfied with the school-to-work program.

An examination of the impact of school-to-work participation on students' academic performance and school attendance revealed the following.

- ◆ A majority of students experienced a positive change in their GPA and attendance rate, and all groups experienced a gain in their attendance rate. It should be noted that the students in this study had achieved on average a 3.0 GPA.

- ◆ There were no statistically significant differences between the pre and post GPAs and absences for race and gender.
- ◆ There was no statistically significant difference between pre and post GPAs for the sample but there was a statistically significant difference between pre and post absences for the sample.

The analyses of differences in perception by groups revealed the following.

- ◆ The differences in the perceptions of males and females regarding school-to-work program participation and its influence on them were not statistically significant in any area.
- ◆ The differences in the perceptions of whites and non-whites regarding school-to-work program participation and its influence on them were statistically significant in only two areas--perceptions about the change in accepting responsibility and change in motivation.
- ◆ The analyses of actual grades and attendance revealed no statistically significant differences between males and females and between whites and non-whites.

Comparison of Present Findings with Three Earlier Studies. The findings of this study were consistent with the findings of the earlier research conducted by Hollenbeck (1996), Paulus (1995), and Kopp et al (1995) in the major areas compared--student perceptions about: satisfaction with the program; teacher awareness of their work placement; relevance of classroom learning to work placement; and impact on grades, study habits, self-confidence, attitudes toward school, and accepting responsibility. In addition, the findings on students' future education plans were consistent in all four studies--a majority planned to continue their education beyond high

school.

Conclusions

Based on the findings of this study, the following conclusions were made.

- ◆ The findings on students' perceptions that school-to-work program participation improved their overall academic performance, increased their acceptance of responsibility, increased their self-confidence and motivation can be an indicator of the success of the school-to-work program.
- ◆ The positive attitudes of students regarding the school-to-work program as being beneficial to their future education and career plans is important in promoting the concept of "life-long" learning.
- ◆ The use of measures to determine students' perceptions about understanding the relevance of school-to-work, improvement in academic performance, and overall satisfaction with the school-to-work program can be used as measures to evaluate the success of a school-to-work program.
- ◆ School-to-work program participation can be instrumental in influencing students to continue their education beyond high school.
- ◆ School-to-work program participation does not appear to negatively impact any group (gender or race).

Recommendations

This study focused on students' perceptions about school-to-work program participation and its benefits, improvement in students' grades and attendance, and differences across gender and race. Assessing students' perceptions and student outcomes are important in evaluating the success of the school-to-work initiative. It is recommended that:

- ◆ This study be replicated on a national level with larger sample sizes.
- ◆ A study of the perceptions and labor market experience (using Unemployment Insurance wage records) of graduates of school-to-work programs be conducted to determine the actual effectiveness of school-to-work programs.
- ◆ A study to measure the success of school-to-work programs that have been implemented for two or more years, using the measures of relevancy, improvement in academic performance and satisfaction identified in this research be conducted.
- ◆ A study be conducted on how teachers and worksite instructors work together to integrate classroom and worksite experiences.
- ◆ A survey of employers be conducted regarding their perceptions about how well the school-to-work program is working and the effectiveness of student participants at the worksite. In addition, employers should provide suggestions for improvement.
- ◆ A study be conducted comparing the outcomes of school-to-work program participants with the outcomes of participants in traditional vocational education programs.
- ◆ The Federal government appoint a "School-to-Work Research Advisory Board" to review all of the research conducted on the implementation of school-to-work and its impact on

student outcomes to determine the need for continued federal support (beyond the sunset date) for this initiative, with the goal of ultimately transferring financial responsibility to the local level.

- ◆ School districts should provide more workshops and training activities for classroom teachers and other school personnel (guidance counselors) to increase their awareness about the school-to-work programs being implemented in their district.
- ◆ School-to-work related activities should be incorporated in the curriculum of all classes and on a frequent basis.
- ◆ Classroom teachers need to work with worksite instructors to ensure that opportunities are provided at the worksite that allow students to apply their knowledge and skills on a regular basis.

Policy Implications

This study, although small in scope, has produced some interesting and important findings that have policy implications for developing educational strategies that improve labor market performance. The findings indicate that school-to-work programs have the potential to address many of the problems that were cited in the literature review. For example, the recommendation that policy analysts made regarding the need to invest in human capital, training and education to upgrade the skill level of the workforce to transform the American workplace can be facilitated by the more extensive use and refinement of the school-to-work initiative. The ability of the school-to-work initiative to produce a positive attitude regarding the need for life-long learning will

ensure a workforce in-tune with the need to continually upgrade their education and skills to meet the changing demands of the labor market.

The results of this study imply that the school-to-work initiative has the potential for reversing the decline in wages, the decrease in the participation of low-skill workers, provide higher level skills for higher skill level jobs and prepare new entrants to the job market to meet the projected technological changes. The fact that school-to-work program participation is causing students to see the relevance of school to the world of work means that these students will see the connection between acquiring higher skills to obtain the higher wage jobs. Students thus have an economic incentive to do well in school.

The study's results also have implication for alleviating the high cost American taxpayers and employers pay for unemployment, welfare and many of the ills associated with a poorly trained, uninspired labor force. Providing students with a set of job ready skills and the motivation to continuously upgrade their skills will translate into shorter unemployment spells, shorter welfare rolls and produce citizens who contribute to society.

The positive findings on grades and attendance have implications for more productive and conscientious workers--increased attendance at work and higher productivity.

Overall, the findings of this study provide more justification to continue the implementation of the school-to-work initiative on a wide-scale basis. This will ultimately increase the productivity of the nation's workforce and decrease the cost associated with an uninspired, poorly directed group of youth who flounder in the labor market and fail to find stable, high paying jobs. While school-to-work is not the panacea for all of the nation's social and economic problems, it will provide many answers to such problems as low-wage jobs, high youth

unemployment, high school dropout rates, high rate of youth crime, scarcity of skills required for new technology jobs, and our decrease in international competitiveness.

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APPENDICES

APPENDIX A
QUESTIONNAIRE PACKAGE

May 12, 1997

Dear Site Coordinator:

Enclosed are:

- ◆ Student Questionnaires, along with instructions for staff who will administer the questionnaire.
- ◆ Matrix for collecting data on grades and attendance.

Completed questionnaires should be returned to me by May 31, 1997 and the matrix by June 12, 1997, as indicated in the instructions to staff administering the questionnaire.

Thank you for your assistance in this research effort. Your support has been most valuable. A copy of the final research paper will be sent to you in September 1997.

Sincerely,

Esther R. Johnson
Researcher
7406 Acacia Court
Clinton, Maryland 20735

INSTRUCTIONS FOR QUESTIONNAIRE ADMINISTRATOR

General Information: This study--Benefits of School-To-Work Program Participation: Perceptions of Students and Comparison of Pre and Post Grades and Attendance--is being conducted as part of my dissertation requirements. The three sites are: Career Partners, Oklahoma--Tulsa School District; and Rochester School District, Rochester, New York; and Northwest CEP, Wisconsin Spooner School District. Data gathered from this questionnaire will be compiled to answer research questions in the following areas: relevance of school to work; school-to-work participation and academic success; school-to-work participation and school attendance; and general satisfaction. General demographic questions are also included. The results of this study will be available in September 1997.

General Instructions for Questionnaire:

- ◆ If at all possible, please administer the questionnaire to all students on the same day. This should take no longer than 10-15 minutes.
- ◆ Emphasize to students that this questionnaire is part of a research project and that their answers are confidential. They should not put their names on the survey.
- ◆ Collect all questionnaires and return them to the Partnership Representative the following day.

General Instructions for Collecting Data on Grades and Attendance:

- ◆ Please use the Matrix to record data on students' grades and attendance prior to entering the program and during the current school year. (Only students who fill out questionnaire)
- ◆ For pre-program participation grades/attendance, please use data for the year prior to the student's participation in the school-to-work program. For example, if the student started participating in the program in 1995-96 school year, use data on grades and attendance for the 1994-95 school year.
- ◆ For current grades and attendance, use the most recent GPA and the number of days missed during the current school year to date.
- ◆ Please mail this matrix to the researcher once it is completed, no later than June 12, 1997 to the following address: Esther R. Johnson, 7406 Acacia Court, Clinton, Maryland 20735.

Thank you for your assistance in this research effort.

STUDENT QUESTIONNAIRE

MAY, 1997

ANONYMITY

1. We are asking these questions to gather information about your perceptions regarding participation in a school-to-work program (apprenticeship, co-op education, community service learning, internship, or tech prep) which will help in the completion of this research project.
2. If there are questions that you do not wish to answer, you may skip them; however, we hope that you answer as many questions as you can.
3. The answers that you give will never be identified as yours. Please do not put your name on the survey.

May 1, 1997

Dear Student :

We are researching students' perceptions on the benefits of school-to-work participation to their future career and educational choices, and would like to get your opinions on this subject.

Your answers will be kept confidential and they will never be identified with you. Your answers will be compiled, along with the answers given by students in two other states, to describe what high school seniors participating in school-to-work programs think about their participation in these programs.

The results of this study will be available in September 1997 and a copy will be sent to each school district participating in the study. We really appreciate your assistance in this study. Thank you for your cooperation and time.

Sincerely,

Esther R. Johnson
Researcher

STUDENT QUESTIONNAIRE ON SCHOOL-TO-WORK PARTICIPATION

Relevance of School-to-Work

1. What type of classroom school/work related activities did you participate in? (Check all that apply)

- 1 ___ Essay on my career choice
- 2 ___ Oral presentation on my career choice
- 3 ___ Presentation from business representatives
- 4 ___ Workshop on acceptable behaviors for the workplace
- 5 ___ Workshop on job search skills
- 6 ___ Career Class
- 7 ___ Job Fair
- 8 ___ Other (Explain) _____

2. To what extent (**from 4 = frequently to 0 = never**) did you participate in the above activities and/or learn about topics and issues related to the industry in which you work (for example, auto, business, finance, health, manufacturing) in the classes listed below?

	Frequently = 4			Never = 0	
1 ___ Computer Science	4	3	2	1	0
2 ___ English	4	3	2	1	0
3 ___ Math	4	3	2	1	0
4 ___ Science	4	3	2	1	0
5 ___ Social Studies/ History	4	3	2	1	0
6 ___ Career/ Technical class	4	3	2	1	0
7 ___ Other _____	4	3	2	1	0

3. Did these activities provide you with an understanding of how what you learn in school is related to work?

1 ___ Yes 2 ___ No

4. To what extent (**from 5 = agree to 1 = disagree**) do you agree or disagree with each of the following statements?

	Agree = 5			Disagree = 1	
1. My teachers know about my work placement and what I do at work.	5	4	3	2	1
2. The things I learn in class are not related to my work placement.	5	4	3	2	1
3. I am asked to talk about or write about my work placement experiences as part of class assignments.	5	4	3	2	1
4. Certain school activities helped me understand how what I learn in school relates to work.	5	4	3	2	1
5. I work in areas related to what I study in school.	5	4	3	2	1

5. At the worksite, which of the following experiences did your instructor or mentor provide that allowed you to use your academic skills/knowledge to complete an assignment? Check all that apply.

- 1 ___ None were provided.
- 2 ___ Written or multi-media report
- 3 ___ Oral presentation
- 4 ___ Math skills to problem-solve
- 5 ___ Science principles to problem-solve
- 6 ___ Analysis of some process and/or procedure
- 7 ___ Research or data collection
- 8 ___ Other (Explain) _____

School-to-Work Participation/Academic Success

6. Do you think that participating in the school-to-work program (apprenticeship, co-op ed, community service learning, internship, tech prep, school supervised work experience) has improved your overall academic performance?

1 ___ Yes 2 ___ No

7. How have each of the following changed due to your being in the program, where:

5=Increased Considerably; 4=Increased Slightly; 3=Remained the Same; 2=Decreased Slightly; 1=Decreased Considerably

Grades	5	4	3	2	1
Attitudes Toward School	5	4	3	2	1
Accepting Responsibility	5	4	3	2	1
Study Habits	5	4	3	2	1
Self-Confidence	5	4	3	2	1
Motivation	5	4	3	2	1
Study Time	5	4	3	2	1

General Satisfaction

Using the rating (**5 = Agree to 1 = Disagree**) to answer questions 8-11.

	Agree = 5				Disagree = 1
8. Overall, the school-to-work program was beneficial to my future educational plans.	5	4	3	2	1
9. Overall, the school-to-work program was beneficial to my future career plans.	5	4	3	2	1
10. If I had to go through high school again, I would participate in this program again.	5	4	3	2	1
11. I would recommend this program to other students.	5	4	3	2	1

12. If you had not participated in this program, would you be planning to continue your education beyond high school?

1 ___ Yes 2 ___ No

13. If you don't plan to continue your education or training right after high school, check all of the following reasons that apply.

- 1 ___ I do not like school
- 2 ___ I applied but was not accepted
- 3 ___ I did not apply because I did not think that I would get accepted
- 4 ___ I will not need more education for the career I want
- 5 ___ I can't afford financially to continue my education or training at this time
- 6 ___ I plan to take time off before furthering my education or training
- 7 ___ I plan to become a full-time homemaker
- 8 ___ Other (Explain) _____

General Demographic Questions

14. What type of school-to-work program are you participating in or have you participated in?

- 1 ___ Apprenticeship
- 2 ___ Community Service Learning
- 3 ___ Cooperative Education
- 4 ___ Internship
- 5 ___ Tech Prep
- 6 ___ Other _____

15. What career major(s) are you participating in?

- 1 ___ Automotive
- 2 ___ Building Trades
- 3 ___ Business/Marketing
- 4 ___ Communications
- 5 ___ Computer Science
- 6 ___ Drafting/Graphic Arts
- 7 ___ Finance
- 8 ___ Food Services
- 9 ___ Health Services
- 10 ___ Hotel/Motel
- 11 ___ Insurance
- 12 ___ Manufacturing
- 13 ___ Printing
- 14 ___ Transportation
- 15 ___ Other

16. How long have you been participating in the program?

- 1 ___ 1 Year
- 2 ___ 2 Years
- 3 ___ More than 2 Years

17. What are your career plans after graduation from high school?

- 1 ___ Go to work in your chosen career
- 2 ___ Go to work in a different career than the one you trained for
- 3 ___ Military
- 4 ___ Other _____
- 5 ___ Do not plan to go to work

18. If you plan to continue your education, what type of institution will you attend?

- 1 ___ Two-year community college or junior college
- 2 ___ Four-year college/university
- 3 ___ Technical College
- 4 ___ Business school
- 5 ___ Vocational school
- 6 ___ Will not attend school

19. Which category best describes your ethnicity or race?

- 1 ___ White
- 2 ___ African American/Black
- 3 ___ American Indian or Alaska Native
- 4 ___ Hispanic or Latino
- 5 ___ Asian or Pacific Islander
- 6 ___ Other-Specify _____

20. What is your gender?

- 1 ___ Male
- 2 ___ Female

21. How far in school did your mother or female guardian go?

- 1 ___ Did not finish high school
- 2 ___ Graduated from high school or completed GED
- 3 ___ Some college, vocational, trade or technical courses
- 4 ___ Degree from a four-year college
- 5 ___ Degree from a two-year college
- 6 ___ Degree from a technical or trade school
- 7 ___ Graduate or professional courses
- 8 ___ Graduate or professional degree
- 9 ___ Don't know

22. How far did your father or male guardian go in school?

- 1 ___ Did not finish high school
- 2 ___ Graduated from high school or completed GED
- 3 ___ Some college, vocational, trade or technical courses
- 4 ___ Degree from a four-year college
- 5 ___ Degree from a two-year college
- 6 ___ Degree from a technical or trade school
- 7 ___ Graduate or professional courses
- 8 ___ Graduate or professional degree
- 9 ___ Don't know

PILOT TEST--FOLLOW-UP SURVEY QUESTIONS

1. Were there any questions that were hard to understand? If so, please provide the question number.
2. Are there any words or phrases that you were not familiar with? If yes, please list them.
3. Are there questions on the survey that you feel should not be on the survey? If yes, please list the question number.
4. What did you like most about the survey? Least about the survey?
5. Was the survey too long?
6. If you could change this survey, what would you change?

APPENDIX B

**TABLE A: DESCRIPTIVE DATA ON
RESPONDENTS BY SITE**

**TABLE B: COMPARISON OF STUDY'S
FINDINGS WITH EARLIER
RESEARCH**

TABLE A. DESCRIPTIVE DATA ON RESPONDENTS BY SITE

	ROCHESTER		SPOONER		TULSA	
	NUM	PER	NUM	PER	NUM	PER
MALE	12	42.8	25	65.8	10	90.9
FEMALE	16	57.1	13	34.2	1	9.1
WHITE	5	17.9	36	94.7	8	72.7
NON-WHITE	23	82.1	2	5.3	3	27.3
ED PLANS AFTER HS						
2-YR INSTITUTION	11	39.3	12	31.6	7	63.6
4-YR INSTITUTION	12	42.9	12	31.6	2	18.2
TECH COLL	1	3.6	7	18.4		
VOC SCHOOL			1	2.6	1	9.1
NOT ATTEND SCHOOL	2	7.1	3	7.9	1	9.1
DUAL ED PLANS	2	7.1	3	7.9		
CAREER PLANS AFTER HS						
WORK/CHOS CAR	9	32.1	13	34.2	7	63.6
WORK/DIFF CAR	1	3.6	1	2.6		
MILITARY	1	3.6	3	7.9		
NO WORK	16	57.1	19	50.0	4	36.4
DUAL PLANS			2	5.3		
OTHER	1	3.6				
MOTHER'S ED						
LESS THAN HS	9	32.1	2	5.3	3	27.3
HS	12	42.9	13	34.2	5	45.4
COLLEGE COURSES	3	10.7	9	23.6		
TWO-YEAR/TECH DEG	1	3.6	4	10.5		
FOUR-YEAR DEG	2	7.1	6	15.8		
GRAD WORK			1	2.7	1	9.1
DON'T KNOW	1	3.6	3	7.9	2	18.2
FATHER'S ED						
LESS THAN HS	8	28.6	4	10.5	2	18.2
HS	10	35.7	9	23.7	1	9.1
COLLEGE COURSES	4	14.3	7	18.4	3	27.3
TWO-YEAR/TECH DEG	1	3.6	7	18.4	1	9.1
FOUR-YEAR DEG			6	15.9	1	9.1
GRAD WORK			2	5.3	1	9.1
DON'T KNOW	5	17.9	3	7.9	2	18.2
TYPE STW PROGRAM						
APPRENTICESHIP	21	75.0	10	26.3	9	81.8
COMM SER LEARN			4	10.5		
COOPERATIVE ED			8	21.1		
INTERNSHIP	5	17.9	12	31.6		
TECH PREP					2	18.2
OTHER			2	5.3		
DUAL PROGRAMS	2	7.1	2	5.3		

	ROCHESTER		SPOONER		TULSA	
	NUM	PER	NUM	PER	NUM	PER
CAREER MAJOR						
AUTOMOTIVE			1	2.6		
BUILDING TRADES	4	14.3	2	5.2		
BUS/MARKETING	3	10.7	8	21.1		
COMMUNICATIONS			2	5.2		
COMPUTER SCI			5	13.2		
DRAFTING/GRAPHIC			2	5.2		
FINANCE			1	2.6		
FOOD SERVICE			4	10.5		
HEALTH SERVICES	12	42.9	2	5.2		
HOTEL/MOTEL						
INSURANCE					8	72.7
MANUFACTURING	2	3.6				
PRINTING			3	7.9		
TRANSPORTATION			1	2.6	1	9.1
OTHER	5	17.6	2	5.2	2	18.2
MORE THAN ONE	2	3.6	5	13.2		
LENGTH OF TIME IN PROGRAM						
1 YEAR	6	21.4	17	44.7	5	45.5
2 YEARS	19	67.9	11	28.9	5	45.5
3 YEARS	3	10.7	10	26.3	1	9.0

TABLE B: COMPARISON OF STUDY'S FINDINGS WITH EARLIER RESEARCH

Area	Johnson	Paulus	Hollenbeck	Kopp et al
Number in	124 Mailed 77 Returned 62% Return (Seniors)	74 Mailed 51 Returned 68% Return (Juniors & Seniors)	60 in 10 Focus Group Sessions (Juniors & Seniors)	226 in Student Views Survey (Seniors)
Sites in Study	3	2	1	8
General Satisfaction With Program	65%	94%	Positive Attitude Toward Program	79%
Future Ed Plans	92% Continue ed	89% Continue ed (Seniors) 71% Continue ed (Juniors)	100%	95%
Future Career Plans	8% Continue to Work	11% Continue to Work (Seniors) 29% Continue to Work, don't Know or con- tinue w/program (Juniors)		
Recognize Benefits of Participation to Post-secondary Education & Career Plans	74% Beneficial to Future Ed Plans 73% Beneficial to Future Career Plans		Valuable in acquiring Employability & personal Development skills; Valuable in facilitating Post-secondary ed or Career transition; Encourage some to continue Ed beyond high school that Were not planning to do so	

TABLE B: COMPARISONS OF STUDY'S FINDINGS WITH EARLIER RESEARCH

Research Aspect	Johnson Study	Paulus Study	Hollenbeck Study	Kopp et al Study
Classroom learning not important to their work	22% Agreed 20% Neutral 58% Disagreed			26% Agreed
Classes where topics/issues related to industry in which they work	Math English Career/Tech Science			English, Math Science Social Stud/His Career/Tech
Teachers aware of student's work placement	50% Agreed 22% Neutral 28% Disagreed		Majority felt that teachers outside of EFE programs had very little awareness of programs/benefits	67% Yes
Asked to write/talk about work in class	43% Agreed 8% Neutral 49% Disagreed			55% Yes
Impact on grades	48% Increase 42% No change 10% Decrease	74% Improvement 26% Remained Same		
Impact on study habits	50% Increase 41% No change 9% Decrease	46% Improvement 48% Remained Same 6% Decrease		
Impact on self-esteem or self-confidence	66% Increase 27% No Change 7% Decrease	72% Improvement 24% Remained Same 4% Decreased		
Impact on attitudes toward school	53% Increased 39% No Change 8% Decreased	68% Improvement 28% Remained Same 4% Decreased		56.4% Better 1.8% Worse 41.8% No Chg
Impact on acceptance of responsibility	71% Increased 21% No Change 8% Decreased	78% Improvement 22% Remained Same		

APPENDIX C

CHI-SQUARE AND ANOVA RESULTS

APPENDIX C--CHI SQUARE AND ANALYSIS OF VARIANCE RESULTS

CHI-SQUARE:

Instrument Question 3: Did the classroom school-work related activities provide you with an understanding of how what you learn in school is related to work?

	1 = Yes	2 = No		1 = Yes	2 = No
M	76.6%	23.4%	W	85.7%	14.3%
F	90%	10%	NW	75%	25%
Chi-square = 2.21, 1 df, p = .13 difference is not significant			Chi-square = 1.37, 1 df, p = .24 difference is not significant		

Instrument Question 4: To what extent do you agree or disagree with each of the following statements?

1. My teachers know about my work placement and what I do at work.

	Agree	Neutral	Disagree
M	40.4%	23.4%	36.2%
F	65.5%	20.7%	13.8%
Chi square = 5.56, 2 df, p = .06 difference is not significant			
	Agree	Neutral	Disagree
W	43.8%	20.8%	35.4%
NW	60.7%	25.0%	14.0%
Chi square = 4.01, 2 df, p = .13 difference is not significant			

2. The things I learn in school are not related to my work placement.

	Agree	Neutral	Disagree
M	27.7%	21.3%	51.1%

F	13.8%	17.2%	69.0%
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Chi square = 2.68, 2 df, p = .26
difference is not significant

	Agree	Neutral	Disagree
W	18.8%	22.9%	58.3%

NW	28.6%	14.3%	57.1%
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Chi square = 1.43, 2 df, p = .48
difference is not significant

3. I am asked to talk about or write about my work placement experiences as part of class assignments.

	Agree	Neutral	Disagree
M	38.3%	8.5%	53.2%

F	51.7%	6.9%	41.4%
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Chi square = 1.31, 2 df, p = .51
difference is not significant

	Agree	Neutral	Disagree
W	33.3%	8.3%	58.3%
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NW	60.7%	7.1%	32.1%
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Chi square = 5.57, 2 df, p = .06 difference is not significant			

4. Certain school activities helped me understand how what I learn in school relates to work.

	Agree	Neutral	Disagree
M	53.2%	17.0%	29.8%
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F	65.5%	17.2%	17.2%
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Chi square = 1.60, 2 df, p = .44 difference is not significant			

	Agree	Neutral	Disagree
W	58.3%	12.5%	29.2%
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NW	57.1%	25.0%	17.9%
<hr/>			
Chi square = 2.54, 2 df, p = .28 difference is not significant			

5. I work in areas related to what I study in school

	Agree	Neutral	Disagree
M	36.2%	27.7%	36.2%
F	55.2%	17.2%	27.6%
Chi square = 2.71, 2 df, p = .26 difference is not significant			
	Agree	Neutral	Disagree
W	35.4%	31.3%	33.3%
NW	57.1%	10.7%	32.1%
Chi square = 5.07, 2 df, p = .07 difference is not significant			

Instrument Question 6: Do you think that participating in the school-to-work program (apprenticeship, co-op ed, community service learning, internship, tech prep, school supervised work experience) has improved your overall academic performance?

	1 = Yes	2 = No		1 = Yes	2 = No
M	E = 74.5%	25.5%	W	71.4%	28.6%
F	E = 83.3%	16.7%	NW	89.3%	10.7%
Chi square = 0.83, 1 df, p = .36 difference is not significant			Chi square = 3.30, 1 df, p = .06 difference is not significant		

Instrument Question 7: How have each of the following changed due to your being in the program?

Grades:

	Increase	Same	Decrease
M	46.8%	40.4%	12.8%

F	48.3%	44.8%	6.9%
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Chi square = 0.67, 2 df, p = .71
 difference is not significant

	Increase	Same	Decrease
W	42.9%	46.9%	10.2%

NW	55.6%	33.3%	11.1%
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Chi square = 1.37, 2 df, p = .50
 difference is not significant

Attitudes Toward School:

	Increase	Same	Decrease
M	53.2%	36.2%	10.6%

F	51.7%	44.8%	3.4%
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Chi square = 1.52, 2 df, p = .46
 difference is not significant

	Increase	Same	Decrease
W	42.9%	46.9%	10.2%

NW	70.4%	25.9%	3.7%
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Chi square = 5.38, 2 df, p = .06
difference is not significant

Accepting Responsibility:

	Increase	Same	Decrease
M	74.5%	14.9%	10.6%

F	65.5%	31.0%	3.4%
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Chi square = 3.59, 2 df, p = .16
difference is not significant

	Increase	Same	Decrease
W	61.2%	28.6%	10.2%

NW	88.9%	7.4%	3.7%
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Chi square = 6.51, 2 df, p = .03
difference is significant

Study Habits:

	Increase	Same	Decrease
M	57.4%	34.0%	8.5%

F	37.9%	51.7%	10.3%
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Chi square = 2.80, 2 df, p = .24
difference is not significant

	Increase	Same	Decrease
W	44.9%	42.9%	12.2%
<hr/>			
NW	59.3%	37.0%	3.7%
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Chi square = 2.24, 2 df, p = .32 difference is not significant			

Self Confidence:

	Increase	Same	Decrease
M	66.0%	25.5%	8.5%
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F	65.5%	31.0%	3.4%
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Chi-square = 0.89, 2 df, p = .64 difference is not significant			

	Increase	Same	Decrease
W	57.1%	34.7%	8.2%
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NW	81.5%	14.8%	3.7%
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Chi-square = 4.58, 2 df, p = .10 difference is not significant			

Motivation:

	Increase	Same	Decrease
M	68.1%	21.3%	10.6%
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F	62.1%	31.0%	6.9%
<hr/>			
Chi-square = 1.05, 2 df, p = .59 difference is not significant			

	Increase	Same	Decrease
W	55.1%	32.7%	12.2%
NW	85.2%	11.1%	3.7%
Chi-square = 7.00, 2 df, p = .03 difference is significant			

Study Time:

	Increase	Same	Decrease
M	34.0%	48.9%	17.0%
F	37.9%	41.4%	20.7%
Chi-square = 0.42, 2 df, p = .80 difference is not significant			

	Increase	Same	Decrease
W	26.5%	53.1%	20.4%
NW	51.9%	33.3%	14.8%
Chi-square = 4.90, 2 df, p = .08 difference is not significant			

Instrument Question 8: Overall, the school-to-work program was beneficial to my future educational plans.

	Agree	Neutral	Disagree
M	80.9%	10.6%	8.5%

F	63.3%	23.3%	13.3%
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Chi-square 3.06, 2 df, $p = .21$
 difference is not significant

	Agree	Neutral	Disagree
W	69.4%	18.4%	12.2%

NW	82.1%	10.7%	7.1%
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Chi-square = 1.50, 2 df, $p = .47$
 difference is not significant

Instrument Question 9: Overall, the school-to-work program was beneficial to my future career plans.

	Agree	Neutral	Disagree
M	76.6%	14.9%	8.5%

F	70.0%	20.0%	10.0%
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Chi-square = 0.43, 2 df, $p = .80$
 difference is not significant

	Agree	Neutral	Disagree
W	67.3%	22.4%	10.2%

NW	85.7%	7.1%	7.1%
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Chi-square = 3.46, 2 df, p = .17
 difference is not significant

Instrument Question 10: If I had to go through high school again, I would participate in this program again.

	Increase	Same	Decrease
M	72.3%	21.3%	6.4%

F	66.7%	16.7%	16.7%
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Chi-square = 2.14, 2 df, p = .34
 difference is not significant

	Increase	Same	Decrease
W	67.3%	26.5%	6.1%

NW	75.0%	7.1%	17.9%
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Chi-square = 5.94, 2 df, p = .05
 difference is not significant

Instrument Question 11: I would recommend this program to other students.

	Increase	Same	Decrease
M	83.0%	12.8%	4.3%
<hr/>			
F	70.0%	10.0%	20.0%
<hr/>			
Chi-square = 4.88, 2 df, p = .08 difference is not significant			

	Increase	Same	Decrease
W	73.5%	16.3%	10.2%
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NW	85.7%	3.6%	10.7%
<hr/>			
Chi-square = 2.82, 2 df, p = .24 difference is not significant			

ANALYSIS OF VARIANCE (REPEATED MEASURES) RESULTS:

Table A: Analysis of Variance of Pre-Post Absences by Gender

Source Term	DF	SS	MS	F	P
<u>Between Subjects</u>					
Gender	1	27.48	27.48	0.52	0.47
Error 1	45	2378.76	52.86		
<u>Within Subjects</u>					
Time	1	290.65	290.65	8.20	0.006*
Gender x Time	1	3.80	3.80	0.11	0.75
Error 2	45	1595.76	35.46		
Total (Adjusted)	93	4313.23			

*Term is significant at alpha=0.05

Table B: Analysis of Variance of Pre-Post Absences by Race

Source Term	DF	SS	MS	F	P
<u>Between Subjects</u>					
Race	1	39.70	39.70	0.75	0.39
Error	45	2366.54	52.59		
<u>Within Subjects</u>					
Time	1	251.30	251.30	7.30	0.009*
Race x Time	1	50.24	50.24	1.46	0.23
Error	45	1549.32	34.43		
Total (Adjusted)	93	4313.23			

*Term is significant at alpha = 0.05

Table C: Analysis of Variance of Pre-Post Grade Point Averages by Gender

Source Term	DF	SS	MS	F	P
<u>Between Subjects</u>					
Gender	1	.0752	.0752	0.15	0.70
Error 1	45	21.96	0.49		
<u>Within Subjects</u>					
Time	1	0.41	0.41	1.64	0.21
Race x Time	1	0.25	0.25	0.99	0.33
Error 2	45	11.23	0.25		
Total(Adjusted)	93	34.04			

Table D: Analysis of Variance of Pre-Post Grade Point Averages by Race

Source Term	DF	SS	MS	F	P
<u>Between Subjects</u>					
Race	1	0.23	0.23	0.48	0.49
Error 1	45	21.78	0.48		
<u>Within Subjects</u>					
Time	1	0.66	0.66	2.55	0.18
Race x Time	1	.0348	.0348	0.13	0.72
Error 2	45	11.71	0.26		
Total (Adjusted)	93	34.38			

VITA

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EDUCATION

<i>Ed. D</i>	<i>Virginia Polytechnic Institute & State University</i>	<i>Educational Administration</i>	<i>1997</i>
		<i>Cognate: Public Policy</i>	
<i>MA</i>	<i>Virginia Commonwealth University</i>	<i>Education</i>	<i>1978</i>
		<i>Minor: Library Science</i>	
<i>BS</i>	<i>Virginia Commonwealth University</i>	<i>Education</i>	<i>1975</i>

EXPERIENCE

11/97 *U. S. Department of Labor*

Chief, Division of Research & Policy, Unemployment Insurance Service--Manages and leads the Division in conducting operational UI research, formulating policy options based on data and research findings, and maintaining a reporting system of both economic and performance data. Incumbent maintains contacts with the Bureau of Labor Statistics and others in the development and evaluation of a body of knowledge used for originating and executing research projects that evaluate the objectives, policies and goals of the UI system and related programs. The incumbent is also responsible for ensuring the integrity of the data, maintaining a UI database, disseminating and publishing UI research findings and UI program data.

11/91 - 11/97 *U. S. Department of Labor*

Special Assistant to the Director of Unemployment Insurance--The Unemployment Insurance Service is the second largest income maintenance program in the Federal Government. The tax collection and benefit payment functions of the program provide as much as \$22 billion annually to 8 million unemployed citizens. The Director is responsible for managing and directing, through the national office and field staff, the Federal-State UI system. The program is carried out by a workforce of over 45,000 State employees. The Special Assistant collaborates with, advises and participates with the Director on all planning and policy matters, assuming critical and sensitive assignments and represents the Director on program

and management matters which require executive level coordination. I also served as the "Designated Federal Official" for the Advisory Council on Unemployment Compensation that was appointed by the Congress and the President to evaluate the unemployment compensation program and make recommendations to the Congress and the President.

1995-Present Bowie State University/Thurgood Marshall Library

Educational Consultant (Part-time)--I conduct workshops and library instructional classes on a variety of topics that are aimed at increasing patrons' knowledge of available library resources and increasing their knowledge of public interest topics. I develop assessment tools to measure patrons' utilization of library resources and satisfaction with services, compile and analyze data and prepare graphics for major reports e.g., annual report of the Library. Also, I develop marketing strategies to promote library resources and services.

1986--1990 Arlington County Public School

Library Administrator--I administered all aspects of the Media Center program within the school. In areas of administration and operations, I directed personnel ; planned educational programs; scheduled use of the Media Center; developed circulation procedures; selected and ordered materials and supplies; maintained records; prepared written and oral reports; prepared budgets; handled controversial material problems; controlled services appropriate to the user's needs; maintained systems that delivered the necessary materials and related equipment; performed reference and bibliographic services; promoted special activities; conducted tours of the Media Center for visitors; made oral presentations; served on various committees; analyzed and evaluated existing programs; and provided public relations activities such as special displays and informational boards.

Computer Coordinator-- I planned and conducted training sessions and workshops for instructional staff on a broad array of topics relating to computer literacy, software utilization, and database management. I attended conferences and training sessions; conducted annual inventory; coordinated the acquisition and distribution of software and hardware; and served as liaison between the Office of Academic Computing, building principal and instructional staff.

1976-1986 U.S. Department of Navy, Naval Surface Weapons Center

Instructor/Librarian/Director of Gifted and Talented Program--I taught 7th grade American History and 8th grade Government, leading students in numerous discussions and educational experiences that allowed them to explore and to draw conclusions about historical events and legislation passed as a result of these events. As the librarian at the Dahlgren School, I provided library instruction to students and staff in the use of the library's resources; prepared reading lists and bibliographies; developed curriculum; established and maintained effective communication, both oral and written with officials involved in school

programs and other related activities; developed budget proposals; and organized special events. Recognizing the need to serve our population of gifted and talented students, I designed and implemented the Gifted and Talented Program. I visited other educational institutions with programs for the gifted and talented, communicated with local, state, and federal officials concerning guidelines for such programs, attended workshops and training sessions held by national organizations concerned with gifted education, and created the curriculum for the program.

PUBLISHED MATERIALS

Short-Time Compensation: A Handbook of Basic Source Material, 1987

Reemployment Services for Unemployed Workers Having Difficulty Becoming Reemployed, 1990

SPECIAL RECOGNITION

*1996 Recipient of Secretary of Labor's Career Service Award
(1-year paid sabbatical to pursue study related to the Department--School-to-Work Initiative)*

Special Act Awards--1992, 1995, 1996

Performance Awards--1992, 1993, 1995, 1996

AFFILIATIONS

*National Associate, Smithsonian Institution
Member, American Vocational Association (AVA)
Member, National Association of Female Executives*