2002

Secondary Student Perceptions of Vocational Education

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SECONDARY STUDENT PERCEPTIONS OF VOCATIONAL EDUCATION

By

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A dissertation submitted to the program in Educational Leadership in partial fulfillment of the requirements for the degree of

Doctor of Education in Educational Leadership

UNIVERSITY OF NORTH FLORIDA

COLLEGE OF EDUCATION AND HUMAN SERVICES

December, 2002

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Acknowledgements

There are a number of people whom I would like to thank for helping me through this project. First, I would like to thank God for the blessings and opportunity that He bestowed upon me in allowing me to be in this program.

I would like to thank my bride of 30-plus years for her understanding and encouragement. Without her help in coordinating the conduct of surveys, I could not have completed this project. She is the greatest blessing that God has bestowed on me. I would also like to thank my daughters, Kristie M. Haney (a graduate of Pepperdine and Emory Medical School) and Kathryn M. Haney (a graduate of UNF and the Medical College of Georgia), both of whom were instrumental in encouraging me to finish this project. I would also like to thank my son-in-law, a graduate of Pepperdine and a fourth year medical student at UT Southwestern for his ideas on communication.

I would be remiss if I did not acknowledge all of the wonderful professors in this program. I am particularly grateful to my chairperson, Dr. Bruce Gutknecht, for his mentoring and sage advice along the way. I very much appreciate Drs. Larry Daniel, Joyce Jones, and Robert Drummond for their timely assistance in helping me to muddle through the statistical aspect of this project. I am also grateful to Dr. David Fenner for his timely advice and mentoring.

Lastly, I would like to acknowledge my fellow members of the seventh cohort for the many positive ways they have contributed to my life and the continual flow of e-mail supporting my effort. I sincerely appreciate their willingness to share and help me grow personally and professionally.

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Abstract

The central focus of the present study was to examine the relationship between student personal factors (i.e., gender, race, academic performance, career awareness, and socio-economic factors) and the perceptions of secondary school students regarding vocational education. In recent years, traditional vocational programs have not done well throughout the nation. Enrollment within vocational education has dropped to approximately 10%, while enrollment in college preparation courses has increased to over 50%.

The subjects of this study were secondary school students enrolled in the Duval County Public School system. The research was conducted using a two-part survey instrument containing 24 demographic questions and 76 questions related to vocational education. The survey instrument was subjected to content validity analysis by a panel of experts from various universities. Additionally, a validation panel, consisting of 12 vocational education teacher interns, critiqued the instrument.

This study was helpful in illuminating the contradictions in commonly held perceptions of vocational educators, guidance counselors, school administrators and political decision makers towards secondary students and their declining interest in vocational education. Five hypotheses were tested relative to the relationship between student personal factors and perceptions of vocational education. The five hypotheses sampled were statistically significant, and R squared values indicate that an appreciable amount of variation in perceptions can be accounted for by student background. Demographic factors are related to students' perceptions of vocational education, with socio-economic status most appreciable among the several predictors.

Chapter 1

Introduction and Background

Introduction

Vocational education has been an historical part of American public secondary schools since the early part of the last century due primarily to the availability of federal funding supporting and maintaining vocational education programs. The beginning of federal influence in secondary vocational education programs began with the Smith-Hughes Act of 1917. This act was in response to social, economic, and political forces desiring to prepare America's youth for jobs resulting from the new industrial revolution. This was an alternative to the general curriculum offered by schools of that era (Swanson, 1951). Vocational education prospered through most of the twentieth century. However, as early as 1990, it was reported that there was a nationwide crisis in declining enrollment for vocational education programs in secondary schools (Gray, 1990).

This declining national trend in secondary school student enrollment in vocational education programs has continued through the last decade (Foster, 1997) and currently stands at 4.4% according to the National Center for Education Statistics (2001). This trend, coupled with an increasing national dropout rate and a decreasing national graduation rate, has serious implications for the nation's education administrators and the students that have not earned a diploma. Cardon and Christensen (1998) noted the dropout rate alone could have tremendous economic consequences for our economy. Weber (1987) reported on a study that tried to assess the losses to the nation that could be

associated with male dropouts who were 25 to 35 years old. The results showed estimates of $71 billion in lost federal and state government revenues and $3 billion a year in welfare expenditures. While dropout rates are not the topic of the present study, it is logical to speculate that increasing dropout rates may be linked to failing vocational education programs.

As previously stated, most education was vocational in nature through the greater part of the 20th century. In the early part of the century, most schools were vocational in their orientation, with the larger percentage of students (approximately 80%) enrolled in vocational education courses and a smaller percentage (approximately 20%) enrolled in college preparation courses (Gray, 1996). Since the 1960s, there has been a declining interest in vocational education by students (Gray, 1996). In recent years, enrollment in vocational courses has declined in the United States to the current low of 4.4% of the student population. It is now estimated that less than 1% of secondary schools even have functioning vocational education programs (Foster, 1997).

The impending critical shortage of highly trained and skilled employees throughout many industries, coupled with a declining enrollment in vocational education courses, does not bode well for the future of the American economy. Nor does it bode well for those secondary school students who do not desire to further their education at the college level and who plan to enter the job market after high school. Most of these students will graduate and enter the job market with few or no job skills.

Workforce Trends

One example of an expanding industry is the aerospace industry. A close examination of the aerospace industry will illustrate what other industries are facing. The

Honorable Rodney Slater, U.S. Secretary of Transportation, in a 1997 speech to the Federal Aviation Administration's (FAA) annual forecast conference, concluded that there would be a 70% shortage of trained and certified aviation maintenance technicians (AMT) nationally by the year 2008 (U.S. Department of Transportation, 1997). The Florida Aviation and Aerospace Alliance's (FAAA) annual survey for 1998 estimates 1,500 annual aerospace and related industry job openings in Florida alone (FAAA, 1998). These jobs have a $32,000 to $36,000 annual starting salary but require several hundred hours (1900 hours in the case of aircraft maintenance technicians) of formal vocational education training before one can be certified to work in these areas. This is training that can be accomplished through secondary school vocational education programs and is being accomplished at a limited number of schools throughout the nation. Yet, school boards throughout the nation are failing to meet the challenge of preparing students with entry-level employment skills for aerospace and other critical industries.

Other industries similarly offer highly technical careers with high starting salaries to individuals with skills training. These industries, such as automotive, manufacturing, and computers, are currently experiencing serious shortages of personnel with entry-level skills. Absence of viable vocational education programs and the shortage of workforce preparation for these critical industries will have serious implications for the national economy.

Student High School Success Indicators

The National Center for Education Statistics (2000) reported that in 1988, 34% of the nation's secondary students were enrolled in vocational education programs, a figure that by 1992 had declined to 24%. By 1998, the number of students enrolled in vocational

education programs had declined to 4.4% nationally (National Center for Education Statistics, 2001). In October 2000, some 3.8 million young adults were not enrolled in a high school program and had not completed high school. According to the National Center for Education Statistics (NCES), these youths accounted for 10.9% of the 34.6 million 16- through 24-year-olds in the United States in 2000. Additionally, in the year 2000, only 86.5% of all 18- through 24-year-olds not enrolled in high school had completed high school nationally (NCES, 2001).

However, Greene (2002) asserted that the NCES's data for graduation and dropout rates is flawed, noting that the federal government's normally reliable National Center for Education Statistics in its most recent annual report on dropouts and high school completion rates paints a blurred and falsely cheerful picture of how U.S. schools are performing. According to *Dropout Rates in the United States: 2000* (NCES, 2001), 86.5% of young Americans are completing high school, up from 85.9% the previous year, but according to Greene, these figures are not correct. Greene calculated that the U.S. rate for high school graduation is considerably lower. Using a transparent and easily checked method of comparing 8th grade enrollments in 1993-94 with high school diploma counts in spring 1998 (and adjusting for student-population changes), Greene put the national graduation rate at about 74%. The situation for minority students is far bleaker, with only 56% of African-American students and 54% of Latino students having graduated from high school in 1998. This contrasts with claims by the NCES of an 83.7% completion rate for African-American students and a 64.1% rate for Latino students. Some differences in the NCES numbers can be attributed to the counting of general education development (GED) certificates as full high school graduates. However,

Greene cited a considerable body of research that has suggested that the life outcomes of GED recipients are more like those of dropouts than those of high school graduates. Three States and the District of Columbia were reported as having graduation rates lower than 60%. Five of the nation's 50 largest districts had graduation rates below 50% (Greene, 2002). Data for the State of Florida examined for the present study would suggest that Florida dropout rates are also too high.

Florida, the state in which the present study was conducted, has a total student population of over 2,339,358 students. Florida dropout statistics reflect the plight of urban secondary school districts nationally. The state also has 7 major urban centers with K-12 populations exceeding 100,000 students. These 7 urban centers range in student populations from 111,404 to a high of 360,200 students and reflect much of the nation in their gender, race, academic performance, career awareness, and socio-economic factors (Florida Department of Education, 2002).

In Florida, vocational education enrollment rates are also declining. While two of the state's largest urban districts had a slight increase in vocational education enrollment from school year 1996/1997 to school year 2000/2001, the average for the state and five of its largest urban school districts declined as indicated in Table 1, with Duval County having the largest decline in vocational education enrollment.

Table 1: Percent of Total Enrollment in Vocational Education Programs for Florida's Seven Largest Urban Districts

	1996/97			2000/01			% Of
District	Total K-12	Vocational	Percent	Total K-12	Vocational	Percent	Change
Duval	122,897.35	5,657.53	4.60%	123,676	4,250	3.44%	-1.17%
Palm Beach	134,601.61	7,514.16	5.58%	160,609	7,427	4.62%	-0.96%
Broward	213,644.28	10,272.94	4.81%	246,492	9,598	3.89%	-0.91%
Orange	126,183.73	3,968.17	3.14%	148,137	4,111	2.78%	-0.37%
Dade-Miami	332,525.04	13,441.08	4.04%	361,200	13,892	3.85%	-0.20%
Hillsborough	126,183.73	3,968.17	3.14%	111,404	3,593	3.23%	0.08%
Pinellas	104,974.81	3,930.33	3.74%	151,046	7,532	4.99%	1.24%
Combined	1,161,011	48,752	4.20%	1,302,564	50,403	3.87%	-0.33%
State	2,339,358	97,073	4.15%	2,388,756	97,772	4.09%	-0.06%

(Florida Department of Education, 2002)
Note. This table includes only the districts with an enrollment greater than 100,000 students

Secondary school graduation rates for the state have also been in decline since 1993/1994. For school year 1993/1994 the State had a graduation rate of 74.64%. The rate steadily trended down to a record low of 60.23% in school year 1998/1999. This trend was reversed in school year 1999/2000, and for 2000/2001, it stands at 63.8% or 11.84% below the 1993/1994-graduation rate of 75.64%. In school year 2000/2001, only 9 of 67 school districts had increased their graduation rates above the 1993/1994 graduation rates. These increased enrollment rates occurred in districts with a total student population of less than 100,000 students. Of the 58 of 67 districts reporting a negative trend, Duval County had the largest decline with a 22.3% decline in the district's graduation rate. Duval County is the 6th largest school district in the state.

Table 2 is a comparison of the graduation rates for the 7 largest urban school districts in the State. The combined decline in graduation rates for the 7 largest districts is 14.44%, or 2.6% greater than the state's average.

Table 2: Graduation Rates for Florida's Seven Largest Urban Districts

District	1993/94	2000/01	Decline
Duval	78.16%	55.90%	22.26%
Miami-Dade	75.01%	53.90%	21.11%
Pinellas	83.54%	64.40%	19.14%
Orange	77.78%	59.80%	17.98%
Palm Beach	79.55%	64.90%	14.65%
Hillsborough	78.57%	74.40%	4.17%
Broward	64.05%	62.30%	1.75%
Combined	76.67%	62.23%	14.44%
State Average	75.64%	63.80%	11.84%

(Florida Department of Education, 2002)
Note. This table includes only the districts with an enrollment greater than 100,000 students

Dropout rates for the State have improved slightly from school year 1993/1994 to school year 2000/2001. Some urban centers have shown significant improvement in this critical area. However, Duval and Orange County's dropout rate continues to increase. Greene (2002) suggested that dropout rates are not properly recorded and are much higher than what is reported. Duval County had the highest dropout rate for the state in school year 2000/2001 as indicated in Table 3.

Table 3: Dropout Rates for Florida's Seven Largest Urban Districts

District	1993/94	2000/01	% Change
Duval	5.14%	8.30%	-3.16%
Orange	4.34%	4.90%	-0.56%
Hillsborough	2.94%	2.70%	0.24%
Pinellas	6.51%	4.20%	2.31%
Miami-Dade	8.12%	5.40%	2.72%
Palm Beach	6.09%	2.50%	3.59%
Broward	7.27%	1.60%	5.67%
Combined	5.77%	4.23%	1.54%
State Average	5.63%	3.80%	1.83%

(Florida Department of Education, 2002)
Note. This table includes only the districts with an enrollment greater than 100,000 students

The State's Department of Education readiness for college tables for school year 2000/2001 graduates show that of the combined 63.23% that graduated in that school year from the seven largest urban centers, only 61.59% of those students tested ready for college in the three categories tested by the state, namely, math, reading, and writing. Table 4 shows a comparison of the seven largest urban districts. Miami-Dade had the worst readiness for college rate at 49.3%.

Table 4: Readiness for College Rates for Florida's Seven Largest Urban School Districts 2000/2001

District	Ready For College	Requiring Remedial Courses	Total
Miami-Dade	49.30%	50.70%	100%
Orange	56.90%	43.10%	100%
Duval	63.90%	36.10%	100%
Broward	64.10%	35.90%	100%
Palm Beach	64.60%	35.40%	100%
Pinellas	65.40%	34.60%	100%
Hillsborough	66.90%	33.10%	100%
Combined	61.59%	38.41%	100%

(Florida Department of Education, 2002)
Note. This table includes only the districts with an enrollment greater than 100,000 students

As shown in Table 4, a significant number of graduates in the state's 2000/2001-student cohort (38.41%) required remedial courses before they could take college level coursework. Of a combined student body of 1,302,564 students for the seven urban districts, 500,314 students required remedial programs to continue their education at the college level.

In the urban school district that is the focus of the present study, the situation is similarly discouraging. According to the profiles for all Florida school districts, the participating county's 1998/1999 high school cohort (9th grade through 12th grade) consisted of 31,211 students; of these, 13,943 were non-promotable and 2,684, or 8.6%, of the students dropped out of school (Florida Department of Education, 2002). For school year 1997/1998, the participating county had approximately 8,778 students enter high school in the ninth grade, but only 4,907, or 55.9%, graduated in 2002. This is a net

loss of 44.1% of the original cohort. These students failed to graduate and will have no choice but to enter the job market with few or no job skills.

While only 4,907 students, or 55.9% of the participating district's original 1997/1998 cohort of 8,778 students, graduated from high school, only 2,660, or 54.2%, of that group actually planned to attend college, and only 18.5%, or 1,624, of the original cohort tested ready for college in all three areas tested by the State. These numbers have been trending downward for several years. Based on documented trends and on the even lower graduation rate for school year 2001/2002, one may assume that the readiness for college indicators for school year 2001/2002 might be similar or lower than school year 2000/2001.

The original cohort entering high school consisted of 8,778 students, of which only 2,434 entered college and according to Gray, Wang, & Malizia, (1995). Of these, only 1,363, or 56%, will have graduated college within 6 years after high school graduation. In the county which is the focus of the present study only 63.6% of those students entering college will enter ready in all areas and will not require remedial academic action before taking actual college courses (Florida Department of Education, 2002).

The participating county is a reflection of state and national trends. While national enrollment in secondary school vocational education programs has dropped to approximately 10%, enrollment in college preparation course has increased to over 50% with the remainder enrolled in general education courses (Gray et al. 1995). However, in the participating county, less than 3.4% of secondary school students are enrolled in what

would be categorized as vocational education programs (Florida Department of Education, 2002).

The bottom line is that of a cohort of 8,778 students, approximately 4,907 will graduate from high school, and only 2,434 of that number will actually enter college. Of those entering college, 36.4%, or 886 students, will require remedial training. If, according to Gray et al. (1995), only 56%, or 1,363 students, of the original 2,434 students that enter college graduate college, then of the original hypothetical ninth grade cohort discussed above, 83%, or 7,415 students, will enter the workforce without the benefit of college and with very little skills training. It is also likely that the members of the cohort who do attend college but dropout before college graduation will also enter the workforce with very little skills training. These individuals are very likely destined for low paying jobs.

These numbers should lead national, state, regional, and local policy makers to ask what the nation's system of public schooling is doing for the students who do not graduate high school or fail to complete college and have no skills training. One may also ask, by failing to understand the perceptions of secondary school students towards vocational education and using that understanding to develop and provide options other than college preparation, is the system unknowingly setting these students up for failure? A democratic society should provide an equal educational opportunity of the same quality and quantity for each student (Dewey, 1942). The data suggest that a significant number of students are not being provided with equal educational opportunities.

It is vitally important that leaders in school districts and industry engage in planning for vocational training and workforce development. Meeting the workforce

needs of the nation will depend on the ability of the private sector and education to develop a trained workforce prepared to meet the needs of expanding and emerging industries. Equally, the educational leaders' understanding of secondary school students' perceptions and how differences in gender, race, academic performance, career awareness, and socio-economic factors affect those perceptions will play a critical role in planning and recruiting for the success of vocational education programs. Because vocational education is an important element of the educational system, it is vitally important that educational leaders know the perceptions of secondary students toward vocational education and understand factors affecting the crystallization of those perceptions.

Statement of the Problem

The central focus of the present study was to examine the relationship between student personal factors (i.e., gender, race, academic performance, career awareness, and socio-economic factors) and the perceptions of secondary school students regarding vocational education.

Significance of the Study

There are serious national implications for failing to fully understand why students are not choosing vocational education programs. The declining enrollment trend in vocational education, 4.4% nationally, is exacerbating attempts to eliminate shortages of skilled workers in critical industries that have economic and strategic significance for the nation. A large number of rapidly expanding industries are currently experiencing serious shortages in trained personnel. Concurrently, increasing numbers of secondary school students are dropping out of school. The present study was undertaken to

investigate the perceptions of secondary school students toward vocational education to better understand these alarming trends.

There has been a preponderance of literature in recent years that would indicate traditional vocational education programs are not doing well throughout the nation. Nationally, enrollment for vocational education has dropped to approximately 10%, while enrollment in college preparation courses has increased to over 50% (Gray et al. 1995). Although the participating county's vocational education enrollment level of 3.44% is well below the national average, it is a reflection of the national trend. In the 1998/1999 school year, two prominent vocational academies in the participating county were operating at less than full capacity necessitating a change in curriculum to preserve the schools. This is a significant change from when the academies were first opened. In the beginning, both programs had a waiting list due to popular demand. Therefore, it is vitally important that educational leaders gain an understanding of all secondary school students' perceptions of vocational education in order to permit the design of marketing and recruiting programs that satisfy student aspirations (Hatzios, 1996).

Knowledge of student aspirations and perceptions plays an important role in the education planning process (Conroy, 1998). Without a basic understanding of the factors affecting those aspirations and perceptions and considering the enrollment trends over the last decade, vocational education may cease to exist as an option for students. The loss of this option will have the greatest impact on students at the lowest rungs of the socioeconomic ladder, namely, the urban, at-risk students (Gutknecht & Gutknecht, 1997).

Administrators and vocational educators must recognize the factors contributing to the declining enrollment trend for vocational education programs in secondary schools and the vast gap between those students pursuing college degrees and those that are graduating high school. The present study was an effort to understand the perceptions of secondary school students toward vocational education relative to gender, race, academic performance, career awareness, and socio-economic factors. Additionally, the data collected in the present study may also be used in future studies to determine other interrelated factors that might affect the crystallization of students' perceptions toward vocational education programs.

Background

A thorough review of the literature yielded very few studies that focused on the perceptions of all categories of secondary school students toward vocational education relative to gender, race, academic performance, career awareness, and socio-economic factors. A thorough search of ERIC yielded no studies that looked specifically at the perceptions of all secondary students toward vocational education. There were a few related studies, but they only addressed currently enrolled vocational students or those who had previously graduated from a vocational program. Further, the related studies only evaluated enrolled and graduated student perceptions of specific programs, such as business and marketing.

Vocational education, as a term, is a big umbrella covering a plurality of programs. Hence, the review of the literature explored many different branches that could fall under the rubric of vocational education. The history of vocational education is characterized by many changes. These changes shape the way vocational education is

viewed today. Hence, it was necessary to view the term vocational education as being interchangeable with other terms such as skills training, industrial arts, technology education, and career preparation training in the professional literature.

Vocational Education. During the Middle Ages, and up to recent history, knowledge was transferred to the next generation via apprenticeships. While there were significant advancements in technology during that interval, the people had no reason to question their form of knowledge transfer (apprenticeships), and it remained fixed for several centuries. Up to and throughout the seventeenth century, education retained its classical format (Chafy, 1997).

Things began to change in the late 1700s when Adam Smith published his now famous treatise, *The Wealth of Nations*. Smith used an example of mass production of pins from Diderot's *Encyclopedie* to make his point for a systematic approach to manufacturing (Pannabecker, 1995). Smith's systematic approach to making pins set the stage for the Industrial Revolution. People began to look for more efficient ways to mass-produce more things. The modern day automobile assembly line and the resultant superior product (as compared with the first cars) epitomize this quest for efficiency.

Skills Training. The initial purpose of vocational education in the late nineteenth century was threefold: keep boys in school, develop leisure-time interest, and provide vocational skills (Foster, 1997). By 1907, there appeared to be the beginnings of a differentiation between skills training and manual arts/vocational training (Bennett, 1937).

Industrial Arts. Industrial arts was an outgrowth of the progressive education movement and had a vocational purpose. Originally, industrial arts was about people,

food, clothing, and shelter (Foster, 1995) and was referred to as "manual training" or "manual arts" (Bennett, 1937; Bonser & Mossman, 1924).

Technology Education. The introduction of technology to the human race is not something new. Throughout the Middle Ages, technology was being introduced to the populace. The clock, horizontal axle windmills, and the printing press were all new technologies. However, this new technology did not cause the populace to rethink its understanding of human purpose (Chafy, 1997).

Career Preparation Training. During the 1970s, a career education movement emerged but quickly lost momentum and almost died as a result of infighting about which curriculum was the least effective (Clark, 1989). This movement failed because of an internal articulation problem (Pratzner, 1985).

Research Question

To fully comprehend the perceptions of secondary school students toward vocational education, a series of survey items that would illuminate those perceptions were formulated. A total of 76 items were developed to measure the perceptions of secondary school students toward vocational education relative to their gender, race, academic performance, career awareness, and socio-economic factors. The 76 items were designed around descriptive issues surrounding vocational education. The primary research question was: Are there differences in secondary student's perception of vocational education based on gender, race, academic performance, career awareness, and socio-economic factors?

Research Methodology

The participants of this study were secondary school students enrolled in one of the 7 largest urban districts in Florida. This project had the full support of the superintendent and administrators of the school district. At the suggestion of the assistant superintendent and high school principals, a purposive sampling of clusters from within each high school in the district was used in order to minimize disruption to students and ensure that students from the general, college preparatory, and vocational tracks were represented in the sample.

As previously stated, a comprehensive search of the knowledge base produced only five research studies with similar objectives (Chambliss & Chiariello, 1988; Hatzios, 1996; Jewell, 1987; Jones, Womble, & Searcy, 1997; Womble & Jones, 1995). None of these five studies actually attempted to understand the perceptions of all secondary school students, regardless of their program of enrollment, toward vocational education. Because very little research could be found regarding secondary school student perceptions toward vocational education, the researcher adapted, with the permission of Dr. Larry R. Jewell, an instrument Jewell had used to determine the perceptions of school administrators towards vocational education (Jewell, 1987). The demographic items were modeled after similar items in the instrument used by Womble and Jones (1995).

Research Instrument

After gaining approval of the University of North Florida Institutional Review Board (IRB) for this research project, a two-part survey instrument was developed using a focus group consisting of 12 occupational education interns from Southern Illinois University and 8 high school students--all children of the interns. A panel of vocational

education experts from Hampton University in Hampton, Virginia; Tulsa Tech in Tulsa, Oklahoma; Florida Community College in Jacksonville, Florida; University of North Florida; Southern Illinois University; and the participating county's public school system further examined content validity of the items. The secondary students used in the focus group and the students used for the pre and post-test were from locations not included in the target population. As suggested by Long, Convey, and Chwalek (1985), a focus group used the data from the pre and post-test to establish test-retest reliability estimates by comparing the mean of each item across test administrations. Items exceeding a predetermined delta of .5 were discarded.

The research was conducted using a survey instrument containing 24 demographic items and 76 perception items regarding vocational education. The 76 perception items, from 103 original items (Jewell, 1987), were selected by a focus group based on their importance to issues related to vocational education. This focus group, consisting of 12 interns from Southern Illinois University's (SIU) vocational education undergraduate degree program, helped to develop the instrument and was trained during the pre and post-testing phase to administer the surveys. To eliminate confusion for the students taking the survey, the researcher opted to have students mark their answers directly on the survey rather than "bubbling" a scannable answer sheet. Teams of the SIU interns later converted this information to an Excel spreadsheet for statistical analysis. A total of 803 surveys were obtained from 16 high schools.

All facets of the participants' demographic data as well as other and work-or school-related data are summarized in items 1 through 24 of the instrument. Items 25 through 100 focused on descriptive issues relevant to vocational education programs.

Having the students mark their answers directly on the survey eliminated confusion for the students. However, this required an additional step of verifying the data after it had been manually entered into the database.

Sample

Previous studies have been conducted which examined the perceptions of a specific group or groups of students, such as marketing or business students, toward vocational education. However, a thorough review of the literature yielded no studies that had examined the perceptions of *all* secondary school students enrolled in either academic or vocational programs toward vocational education; hence, the present study was targeted toward all secondary school students regardless of their program of study.

The final research sample consisted of 803 students enrolled in high school courses. A sample size of 357 was required based on the formula for a 90% confidence level for a student cohort of 22,792 students (Isaac & Michael, 1982; Rea & Parker, 1997). However, it became necessary to increase the size of the sample to ensure that a representative number of students were surveyed from the general education, college preparatory, and vocational education tracks. Clusters of students were selected from health, physical education, or computer typing classes to minimize disruption to core academic classes. Treating each selected class within each high school as a cluster provided a cross section of gender, race, academic performance, career awareness, and socio-economic factors needed for this project. If the demographic data did not indicate fair representation, however, the researcher was prepared to return to a specific high school and conduct another random survey within a gender or ethnic group. The survey

instrument was also administered on site to preclude a low response rate. Questionnaires missing only a few datum points were not discarded.

Definition of Terms

Industrial Arts -- Industrial arts was an outgrowth of the progressive education movement and had a vocational purpose. Originally, industrial arts was about people, food, clothing, and shelter (Foster, 1995) and was referred to as "manual training" (Bonser & Mossman, 1924). In the 1920s, Bonser and Mossman introduced a model for industrial education that lasted for about 70 years (Foster, 1997).

Perceptions -- A result of perceiving an observation or mental image, or an awareness of the elements of an environment through physical sensation interpreted in the light of experience. A perception can also be a quick, acute, and intuitive cognition.

Skills Training – The term "skills training" is applied to a form of instruction in which discipline or drill is used to teach so as to make the trainee fit, qualified, or proficient in a given skill.

Technology Education – Technology is a term applied to the practical application of knowledge, especially in a particular area such as engineering, to accomplish a task using highly technical processes, methods, or knowledge. As previously defined, education is the action or process of educating or of being educated. Technology education is education about highly technical processes, methods, or knowledge that may be applied to a career.

Vocational Education or Voc-ed – The term, vocational, is related to, or concerned with, a vocation or being in training in a skill or trade to be pursued as a career. Education is the action or process of educating or of being educated. It is

knowledge and development resulting from an educational process. Hence, vocational education is education for a career.

Limitations of the Study

The population was limited to the one school district in Northeast Florida. Additionally, 3 of 19 schools declined to participate. One school declined because the principal did not consider a survey regarding the perceptions of his students towards vocational education as relevant in that they were all college preparatory students. Two other principals declined to participate because their schools were either an "F" school or bordering on becoming an "F" school. Due to the district's request for cluster sampling, the sample was not truly random. Finally, the population contained only public schools.

Organization of the Study

Chapter 2 of the present study presents a review of the literature related to the perceptions of secondary school students toward vocational education.

Chapter 3 provides an in-depth look at the design of the study. Justification for the design of the instrument is elaborated. The sample is also described as well as the method for conducting the statistical analysis. Issues of external and internal validity are also presented.

Chapter 4 reports the results of the survey instrument and statistical analyses of the data.

In Chapter 5, the conclusions inferred from the data are presented. Implications of the data are discussed, and possible follow-up projects are suggested to further broaden educational leaders' understanding of the perceptions of secondary school students toward vocational education.

Chapter 2

Review of The Literature

Introduction

Marshall and Tucker (1993) reported that the national dropout rate exceeds 25%. The current trends in national, state, and local graduation rates suggest that it may even be higher. The high school dropout rate, along with the decline in enrollment for high school vocational programs and the growing number of technical opportunities for which preparation can occur in secondary schools, indicates that educational leaders would benefit from a better understanding on the perceptions held by students toward these programs. Hence, the researcher conducted an examination of literature related to this topic. The objective of this examination was to gain information and insight into what is known about the perceptions or mental models held by secondary students toward vocational education programs.

The Literature Search Process

The comprehensive literature search conducted by the researcher established a historical frame of reference and, more importantly, it concluded that little research had been directed specifically at secondary school students with the intent of understanding their perceptions or mental models of vocational education programs and the factors supporting the crystallization of those perceptions as determined by gender, race, academic performance, career awareness, and socio-economic factors (Jones, Womble, & Searcy, 1997). Further, if the current national trend of declining enrollment is to be

reversed, it will be vitally important for administrators and planners to have a full understanding of why students choose, or do not choose vocational education programs. Understanding the student's perceptions or mental models toward vocational programs will play a vital role in administrators gaining that understanding (Adams, Womble, & Jones, 2001). While the review of the literature was unable to locate any single study on the perceptions of all categories of secondary school students toward vocational education, it did produce five studies that had been conducted with students that were either enrolled or previously enrolled in a specific vocational program such as marketing. These five studies are reviewed later in this chapter.

Various on-line search engines were employed for this literature search. After a comprehensive search of the University of North Florida's library, Educational Resources Information Center (ERIC), and the Virginia Polytechnic Institute and State University Digital Library and Archives (DLA), it was determined that only a few studies actually focused on the perceptions of secondary school students toward vocational education, thus confirming the findings of Jones, Womble, and Searcy (1997). There were a number of studies that focused on the perceptions of administrators, parents, teachers, and employers.

Using the keywords "perception" and "vocational education," the ERIC search engine produced a total of 1046 possibilities. The term secondary school was added, and this refined search produced 92 possibilities. Different combinations of the search terms were used with no additional possibilities returned. A reading by the researcher of all 1046 titles produced only five studies that focused on the perceptions of secondary schools students toward vocational education. Several of the studies focused on the

perceptions of educators, administrators, employers, and parents toward vocational education programs; however, a reading of the abstracts indicated that these studies were not designed to illuminate the perceptions of secondary school students toward vocational education.

The five most promising studies discovered in the literature search focused on secondary students in marketing or business vocational programs. In general, none of these studies looked specifically at the perceptions of secondary students toward vocational education. While these studies were related to the purpose of the present study, they only addressed currently enrolled vocational education students or those students that had previously graduated from marketing or business vocational education programs.

A comprehensive search was also conducted using the Digital Library and Archives (DLA) at Virginia Polytechnic Institute and State University. This search was conducted as with ERIC. The search term perception returned 714 possibilities. Vocational education was added and the refined search netted 614 possibilities. Further refining the search by adding secondary school returned 51 possibilities. Of the 51, one journal article previously identified in the ERIC search appeared in the DLA search. The remaining 50 were examined but did not produce any studies related to the purpose of the present study. Different combinations of these search terms were tried both in ERIC and DLA with no additional returns.

Five studies (Adams, Womble, & Jones, 2001; Chambliss & Chiariello, 1988; Hatzios, 1996; Jones, Womble, & Searcy, 1997; Womble & Jones, 1995) looked specifically at the perceptions of secondary school students toward a vocational education

program. These studies all focused on marketing and business programs. Because the literature is void of research directed at understanding the perceptions of secondary students in general toward vocational education programs, it was necessary to examine more closely the five studies that had been conducted that were related to the topic question.

Historical Overview of Vocational Education

Vocational education as a term is a big umbrella and can cover numerous programs. Hence, the review of the literature had to cover many different branches that could fall under the rubric of vocational education. The history of vocational education, vocational education as skills training, industrial arts, technology education, and career preparation training are areas in which vocational education leaders must have a frame of reference. Historical factors can have tremendous significance for vocational educational leaders.

The Roots of Vocational Education

During the Middle Ages and up until the beginning of last century, craft or technical knowledge was transferred to the next generation via apprenticeships. While there were significant advancements in technology during that time period, the people had no reason to question their form of knowledge transfer (apprenticeships), and it remained fixed for several centuries. Up to and throughout the 17th century, education retained its classical format (Chafy, 1997). Things began to change in the late 1700s when Adam Smith published his seminal work, *The Wealth of Nations*. Smith used an example of mass production of pins from Diderot's *Encyclopedie* to make his point for a systematic approach to manufacturing (Pannabecker, 1995). Smith's systematic approach

to making pins set the stage for the Industrial Revolution. People began to look for more efficient ways to mass-produce more things. Modern day assembly lines epitomize this quest for efficiency.

Thomas Jefferson also promoted Diderot's work as he encouraged the new American government to pursue uniformity in the manufacture of rifles, as pioneered by the French. By the 1820s, weapons makers were using assembly line techniques and machines to mass-produce gunstocks (Pannabecker, 1995).

Prior to the turn of the century there were few high schools, and only the children of the wealthy could attend them. These high schools offered a classical curriculum. By the turn of the 20th century as the economy grew, however, enrollment in high schools began to swell, and many of the new students were from working class families. As a result, the public began to criticize American public schools for not offering students any education of value. Public schools responded by abandoning the classical curriculum for a new curriculum that began as the "manual training movement" and included vocational education, business education, home economics, and agriculture (Pannabecker, 1995).

This movement away from a classical curriculum toward a career-oriented education is viewed as the beginnings of modern vocational education. In 1917, President Woodrow Wilson signed the Smith-Hughes Act, which provided the initial federal funding for vocational education. By 1926, a merger of the National Society for the Promotion of Industrial Education and the Vocational Association of the Middle West formed the first national vocational teachers association - the American Vocational Association (Foster, 1997). Throughout most of this period, education was vocational in nature. While classical curriculum high schools still existed, the percentage of students

enrolled in vocational programs far outweighed the number of students enrolled in a classical curriculum.

From its inception, vocational education has been an evolving discipline within the education system (Foster, 1997). It is the educator's responsibility to introduce students to the realities of the world of work and the economy (Conroy, 1998). Hence, the primary objective of vocational education was and continues to be education for work or to prepare individuals for the world of work.

While vocational education, in some form, has been preparing individuals for work since the Middle Ages, it has failed to formalize a deep philosophical base (Strom, 1996). Strom suggested that there are philosophies, such as those found in human resource development and adult learning, that may be appropriate for education-for-work. Vocational education needs to either adopt or develop a well-defined philosophy that will guide, support and create a practice of change in the workplace and how students perceive the world of work. In order to meet the needs of the workplace of today and the future, vocational practitioners must build on the philosophies that promote both vocational needs and intellectual development of the individual. Vocational educators must identify philosophic foundations for practice and use them to prepare a workforce that will meet the needs of the workplace of the future (Strom, 1996), while enabling the individual to pursue upward mobility, if that is his or her goal.

Skills Training

The initial purpose of vocational education in the late 19th century was threefold: keep boys in school, develop leisure-time interests, and provide vocational skills (Foster, 1997). By 1907, there appeared the beginnings of a differentiation between skills training

and manual arts training (Bennett, 1937). Prior to this transition, vocational education was primarily a culture of manual training or the imparting of skills from one individual to another. Knowledge was transferred from one generation to the next generation initially by apprenticeships (Chafy, 1997) and then through a more-formalized method, such as the St. Louis Manual Training School (Coates, 1923).

Industrial Arts

Industrial arts was an outgrowth of progressive education and had a vocational purpose. The original purpose of industrial arts was about people, food, clothing and shelter (Foster, 1995). Originally, industrial arts was referred to as "manual training" (Bonser & Mossman, 1924). In the 1920s, Bonser and Mossman introduced a model for industrial education that lasted for about 70 years (Foster, 1997).

There has been an ongoing debate as to whether or not industrial education is general or vocational education (Foster, 1997). All attempts to establish a philosophical base for industrial arts education failed, however, because the difference between industrial arts and vocational education was never clearly defined and implemented as a universal practice (Clark, 1989). The bottom line is that industrial education is industry-based (Clark, 1989) and, as such, will provide the student with knowledge of materials and material processes for supporting a vocation.

Bonser and Mossman (1924) defined industrial arts as a study of the changes people make in the forms of material for the purpose of increasing its value (Clark, 1989). One differentiation that may be made between vocational skills training and industrial arts training is that skills' training is generally focused on a given subject, while industrial arts will focus on many fields (Clark, 1989).

Technology Education

The introduction of technology to the human race is not new. Throughout the middle Ages, technology was being introduced to the populace. The clock, horizontal axle windmills and the printing press were all new technologies. This new technology, however, did not cause the populace to reevaluate its understanding of human purpose (Chafy, 1997). As the culture advanced to the present stage of development, with more advanced technologies and bureaucratic political systems, it was a natural process that social development would advance as well, and that education would be the highest form of social development (Condorcet, 1955). Hence, technology education is an emerging paradigm that is viewed by many as an alternative to industrial education. Some view it as a move back toward the general education curriculum, as a program designed to serve the needs of all students (Clark, 1989).

Technology education is extremely broad in scope, but its central interest is education in and about technology (Pannabecker, 1995). Clark (1989) described technology education as a general education course dealing with an understanding of today's technological society. The curriculum in the new technology paradigm is based on values and solid educational goals. It has integrated total experience with problem solving and human relations, all directed toward life-long learning (Clark). The emerging paradigm of technology education is consistent with the characteristics of "effective schools" in that high expectations exist for all students (Brookover & Lezotte, 1979; Clark). Arguably, the ascent of the United States to the economic superpower it has become over the last century is attributable to the expansion of technology education (Chafy, 1997).

Chafy (1997) agreed with Dewey's view that theoretical subjects have become more practical because they are more closely related to the scope of life; practical subjects have become more charged with theory and intelligent insight. Both are vitally and formally unified (Dewey, 1964). Technology education is seen as a melding of theory and practice. As with industrial education, it would be impractical to try to define technology education without an appreciation for the link between industry and education. It is a fact that industry and education have nurtured each other, and it would be difficult to define technology education solely in nonindustrial terms (Chafy, 1997).

There is a scarcity of research in technology education (Pannabecker, 1995) and, as a result, it may be impossible to know all of the social implications surrounding technology education. Those who have examined the transfer of technology education have not always taken into account the social context. As an example, when Dewey (1937) discussed the Russian system of instructing tools, he did not examine the Russian social context or the American social context under which the transfer was conducted (Pannabecker, 1996).

In more recent times, technology education has spawned significant activity and literature addressing needed research in technology education (Cajas, 2000). This study highlighted the fact that there *is* a research base for technology education even though it is not solely focused on technological literacy. Reed (2001) maintained that technology education does have a historical foundation on which to build new studies.

Career Preparation Training

During the 1970s, a career education movement emerged but quickly lost momentum and almost died as a result of infighting about which curriculum could deliver

effective results (Clark, 1989). Pratzner (1985) asserted that this movement failed because of an internal articulation problem. According to Chafy (1997) the lack of agreement on curriculum understandably lessened enthusiasm for career education during an era when equal opportunity was the vanguard of education reform.

Dewey recognized that schools were miniature communities or embryonic models of society and, as such, needed more cultural education combined with theory and practice. Career preparation training can create a more well-rounded, intelligent, and adaptable citizenry (Chafy, 1997).

Nationally, the enrollment data appears to support the idea that today's students are not as interested in vocational education programs as they once were. This has been the trend for over a decade (Gray, Wang, & Malizia, 1995). To date there has not been a systematic examination of secondary student's perception of vocational education.

Declining Interest in Vocational Programs

Lynch (2000) suggested that there are many reasons for the decline in vocational education from 1982-1994 reasoning that:

> (a) Programs were not seen as meeting the needs of students, employers and the community; (b) vocational education competed against other curriculum programs-especially college preparatory-for a shrinking student population; (c) vocational education suffered from an image of a dumbed-down curriculum; (d) programs were often targeted primarily to educationally disadvantaged students; (e) confusion with school-to-work programs which became unpopular with many critics of education; (f) an elitist view that says any formal context of education for work is not appropriate for students aspiring to a four-year college or

university; and (f) a general perception that vocational education will inhibit rather than enhance youth's future career and educational choices. (Lynch, 2000, p. 3)

Vocational teacher training is another indicator of a declining interest in secondary vocational education. While it has been reported that there is a shortage of vocational education teachers, Dykman (1993, p. 3) stated that, "There is little data to support a claim of a vocational teacher shortage." While Dykman points out that anecdotal evidence and some survey data show that some are concerned about the impending retirement of high school vocational teachers, the demand for vocational and technical education courses from high school students continues to decline (Lynch, 1996). Boesel, Hudson, Deich, and Masten (1994) reported that enrollments in all types of vocational courses had declined considerably since the early 1980s while high school students' overall and academic course taking had increased. The report that reduced vocational course taking combined with the cohort decline led to a 33% decline in the demand for vocational courses. Boesel et al. (1994) estimated a 9% decline in the number of vocational teachers, 160,000 in 1987-88 to 146,000 in 1990-91. Over the same period, the number of academic teachers increased 7%, from 667,000 to 714,000. The reduced demand in vocational course taking affected the demand for vocational teachers (Lynch, 1996).

The Drive for Universal Access to Higher Education and College Preparation

There has been a societal push for students to have equal access to higher education, which has resulted in a disinterest in vocational education programs. Conventional thinking is that one must go to college to get a good paying job. Gray,

Wang, and Malizia (1995) noted that the aspirations of high school students have changed dramatically over the last 20 years. In 1972, 63% of high school seniors in a National Center for Educational Statistics (NCES) sample reported that they intended to go to a four-year college and/or graduate school; in 1992, 95% said they planned to continue their education: 84% of those wanted to attend four-year colleges. This change in aspirations has had a predictable effect on the distribution of students among the different high school programs of study. It has resulted in an overall disinterest in vocational education programs. While some attention has been paid to declining vocational education enrollments, the literature is devoid of any questioning of the educational effectiveness of the college prep program for those who, in the past, would have taken vocational education (Gray et al., 1995).

According to Plank (2001), there are two distinct trajectories or paths in secondary education, a vocational concentration and college preparation. Plank postulated that certain trends have altered the landscape of high schools causing a trending away from vocational education and toward academic education or college preparation. These shifts became manifest during the 1980s and into the 1990s. During this period the amount of high school vocational course taking declined while academic course taking increased. Plank reasoned that the shifting balance from vocational education to academic education was complex, citing as major contributing factors changes in high school graduation requirements and changes in the skill sets and training levels demanded by the labor market. Plank further noted that "Abstract academic education not connected to a specific career can be satisfying only to those students who

are certain they will get a four-year college degree that will meet their career-preparation needs" (Plank, 2001, p. 10).

Plank's study suggested that an integration of career technical education (CTE) and academic course taking has significant potential to reduce the likelihood of students dropping out of high school. A ratio of approximately three CTE credits to every four academic credits was associated with the lowest likelihood of a student dropping out of high school. However, there is a continued push of students toward academic or college preparation.

Gambetta (1987) asserted that students at the extreme end of a continuum, students offered only academic courses, will experience pushes away from high school. For students that are already at relatively high risk of dropping out, a high school experience that is purely academic offers courses that do not seem highly relevant to students' goals or worldviews will cause them to dropout. This situation is further exacerbated by a high school experience that is purely academic but aimed at students with low or middle-range achievement. This is often characterized by unengaging, diluted versions of more challenging and inspiring courses offered to higher achieving students (Plank, 2001).

The Perception of Guidance Counselors Toward Vocational Education

There are many factors that contribute to a disinterest on the part of secondary school students toward vocational education and the decline in enrollment. One commonly held belief is that guidance counselors are advising students toward college preparatory programs and away from vocational education programs. This observation often emerges based on formal and informal interviews and conversations with teachers

and administrators. It was an often held view among these individuals (vocational educators and administrators) that guidance counselors tend to push students toward academic or college preparation programs and that they do not fully support vocational education programs, hence, exacerbating the declining interest in vocational programs.

A previous qualitative research project (Haney, 1999) did not support this contention. That study suggested that guidance counselors in Duval County, Florida, are counseling students to pursue vocational training. All guidance counselors in that research project responded favorably in that they all stated that they try to approach guidance from a broad spectrum. In the words of one guidance counselor:

> As far as career goals are concerned, because I'm working in middle school with sixth, seventh and eighth graders, there is only a limited amount of career education that I can offer or assist in effectively at the eighth grade level. I did; however, go to the state wide school-to-work program last year in Orlando, which I thought was very, very valuable, and I came back with a lot of ideas. (Haney, 1999, p. 8)

Otto (1989) suggested that the career choice process of young people can easily be compared to rocks in a rock polisher: "All kinds of people grind away at them but, parents are the big rocks in the tumbler and indeed, parents serve as major influences in the lives of their children" (pp. 2-3). Of all the factors that influence the career choice processes for secondary school students, parents are the most influential determinant of career plans, occupational aspirations, and occupational expectations (Hines, 1997). Otto does not think that guidance counselors will have an impact on students' career choices: "Even if schools had the resources with which to meet young people's career guidance

needs, neither teachers nor counselors can replace the influence parents have on their sons' and daughters' career plans" (Otto, 1989, pp. 1-2).

A declining enrollment in vocational education does not appear to be linked to guidance counselors directing students away from vocational education programs. Conversely, it would appear that guidance recognizes the need for vocational education. Parents have a greater influence on the career choices of students than do career counselors.

The Perceptions of Secondary Students Toward Secondary School Vocational Education

Of the five studies that looked specifically at the perceptions of secondary school students toward a vocational education program, the first study conducted by Chambliss and Chiariello (1988) suggested that literature on vocational education indicated a problem existed in attracting students with an interest in vocational education to vocational programs. A continuing need for vocational education exists; however, a number of factors have suggested a need for a change in the vocational education system. Thus, this study examined the perceptions of secondary school students enrolled in a specific vocational program to identify necessary changes.

The researchers used a self-reporting questionnaire to survey a total of 244 randomly selected secondary students in six states. The survey, designed to determine the beliefs of students about the importance of current trends in vocational education, measured students' opinions of their current vocational/technical education program.

The researchers' findings indicated that students perceived a need for considerable change in the current vocational education programs. The participants indicated that there was a need for change in the quality and diversity of vocational

education programs. They also indicated a desire for more opportunities for work experience. There was strong support for more interdisciplinary and communication skills training in vocational education.

The authors provided suggestions for improving the vocational education curricula with customized and generalized training. These improved vocational education strategies could play a vital role in reducing economic and industrial problems in the United States. Programmatic changes, as indicated by the participants, would provide better preparation for manual or skilled labor jobs. Additionally, the authors discovered that vocational education could have a direct effect on the labor force and economy (Chambliss & Chiariello, 1988).

In the second study, Womble and Jones (1995) examined the perceptions of selected urban business education students toward work and career-related issues. In responding to the era of school reform, their study was designed to provide information to educators that would assist them in enhancing the employment readiness and career preparation of urban youth.

The objective of the Womble and Jones study was to investigate student perceptions toward work and career-related issues. They selected variables that would examine possible influences on student perceptions. However, these variables did not focus on the students' perception of vocational education. Specific objectives for the study were to: describe characteristics of secondary students enrolled in business education courses in urban school settings (e.g., gender, grade level, post-graduation plans); describe perceptions of secondary students enrolled in business courses in urban school settings toward work and career-related issues; identify underlying dimensions

that comprise perceptions of secondary students enrolled in business courses in urban school settings toward work and career-related issues; and examine the relationship between selected variables and secondary students enrolled in business courses in urban school settings toward work and career-related issues. While these variables did not specifically focus on perceptions toward vocational education, they did provide insight into how one can understand one's perceptions.

The researchers' target population for their study included all secondary students enrolled in business education courses in a large urban school district in the southeastern United States. A purposeful sampling of intact classes in four urban high schools was used in order to minimize disruption to students and ensure that a variety of courses were represented in the sample. Their final research sample consisted of 254 students enrolled in business courses.

The authors developed a two-part, self-report questionnaire to obtain descriptive information from students and to determine their perceptions regarding work and career-related issues. The same questionnaire was previously used in a study of secondary students enrolled in vocational courses by Womble and Jones (1995). The instrument's first part asked students to supply demographic and background information such as gender, grade level, reason for enrolling, and plans after graduation. The second part of the questionnaire used a Likert-type scale to establish ranges of difference for responses to statements relating to work and career-related issues.

The findings indicated that 30% of the students believed that the course would help them get a good job. Twenty-three percent believed that this would help them in college. These were the two most important reasons for enrolling in the course. Over half

of the students (57.1%) indicated that their immediate plans were to attend a four-year college or university. Almost one-third of students (32.9%) were employed. It was also found that students with higher grades or academic performance had more positive career awareness. Additionally, the educational level of the mother produced a significant difference in the student's career awareness. Students whose mother had not graduated high school had more positive career awareness than did students whose mothers had graduated.

In the third study, Hatzios (1996) identified how students felt about particular attributes of a vocational program. The research was aimed at providing school administrators better tools to address the decline in enrollment for vocational programs and to develop improved marketing strategies for vocational education programs.

The participants were drawn from 15 secondary schools in Virginia that housed marketing programs. The randomly selected students represented two categories of students, both marketing and non-marketing students. Of the 540 participants, the numbers of students in each category were equally divided.

The author used two attitude-measuring models for comparing the attributes of the marketing education program--tangible and symbolic. The survey instrument measured tangible, symbolic, and overall attitudes of the students. The instrument consisted of 10 questions related to tangible attitudes, 9 questions related to symbolic attitudes, and 4 questions related to global or overall attitudes.

Hatzios found that students' attitudes are more closely related to a program's tangible attributes than to its symbolic attributes, although the relationship to the symbolic attributes was significant. Tangible attributes were defined, as the evaluative

criteria used in decision making that are functional, utilitarian, or performance-oriented. Symbolic attributes were defined, as the evaluative criteria used in decision making that are value expressive. The study determined that tangible attributes explained an appreciable amount of the variance in student attitudes toward marketing vocational education programs. Symbolic attributes also contributed to the variance but not to the degree of tangible attributes. Student attitudes are more closely related to tangible attributes than symbolic attributes.

The researcher concluded that these findings should facilitate developing a promotional campaign, which would incorporate and emphasize the significantly important tangible and symbolic attributes of a vocational education program. The findings also demonstrated the effectiveness of these models in measuring student attitudes in any vocational area.

In the fourth study, Jones, Womble, and Searcy (1997) explored the perceptions of Technology and Industrial (T & I) students toward their T & I courses. The purpose of their study was to explore perceptions of urban T & I students and to empirically identify salient dimensions of perceptions about overall value of courses. Research objectives were to describe perceptions of secondary students in urban school settings toward T & I courses, identify underlying dimensions that comprise perceptions of secondary students enrolled in T & I courses in urban school settings, and examine the influence of select variables on student perceptions toward T & I courses.

Jones et al. reported that urban youth are often characterized as potential high school dropouts or non-college bound and confronted by an environment typified by high unemployment, underemployment, or part-time employment with minimal job security or

benefits. At the same time, projections indicate that, over the next 20 years, employers and the U.S. economy will rely on a workforce drawn from urban communities.

The Jones et al. study was designed to assess urban students' perceptions toward secondary T & I courses in order to provide information necessary to respond to learner needs. The authors reported that current literature (e.g., Carnegie Foundation for the Advancement of Teaching, 1988; Crain, Heebner & Si, 1992; U.S. Subcommittee on Elementary, Secondary, and Vocational Education, 1992) suggested a need to increase urban students' educational potential through school reform measures

Assuming that student input can influence the curriculum (McCutcheon, 1988), it can also be assumed to contribute to the design and implementation of school reform measures. In turn this would contribute to the design and implementation of effective T & I courses that respond to learner needs and increase motivation, interest, and career awareness.

These authors acknowledged that curriculum design issues extend beyond and are more complex than student perspectives, but also they asserted that students provide valuable input into the curricular design process and that learners can serve as sources of information about the value and relevance of T & I courses. The literature suggests a relationship between student perceptions of the courses in which they are enrolled and students' viewpoints of the relevance of those courses to future employment.

The target population for Jones et al.'s study included all secondary students enrolled in T & I courses in a large urban school district in the southeastern United States. The state in which this study was conducted delivered most T & I education

instruction via the "cluster approach," with one occupational program to prepare students for several jobs.

A purposive sampling of intact classes in four urban high schools was used in order to minimize disruption to students and ensure that a variety of courses were represented in the sample. The final research sample consisted of 284 students enrolled in T & I courses. Teachers distributed questionnaires to students enrolled in T & I classes (e.g., mass communication, graphic arts, and construction) throughout 9th-12th grades.

The researchers developed a two-part, self-report questionnaire to obtain descriptive information from students, and determine their perceptions regarding the overall value of the courses in which they were enrolled. The first part provided a sample profile and asked students to supply demographic data and information about employment and future career plans. The second part of the questionnaire, which provided most of the data for the study, used a Likert-type scale (4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree) to assess responses to 20 statements related to overall value of the course.

These authors, in order to ensure independence on students' response to the questionnaire and to prevent influence from students that might have previously taken the survey, distributed the questionnaires and collected them on the same day. To eliminate student concerns related to teacher knowledge of responses, completed surveys were sealed in envelops after completion thus ensuring confidentiality.

Both descriptive and inferential statistics were used to analyze the data. Factor analysis was used to identify latent dimensions underlying the 20 statements that measured student perceptions. The scree plot and the number of eigenvalues greater than

one were used to determine the number of factors underlying item responses. The factor structure was required to approximate simple structure; items were required to correlate at least .30 on one factor, while demonstrating low correlations with any additional factors. Analysis of variance (ANOVA) was utilized to determine if statistically significant differences existed between or among select demographic and background variables on identified dimensions of student perceptions. A .05 level of statistical significance was established for all analytic procedures.

The stated primary purpose of the study was to explore perceptions of urban students toward their T & I courses. The authors cautioned that the sample consisted of students enrolled in T & I courses in one large urban school district and that many students in the sample were freshmen or sophomores with limited work experience, limiting generalization of results of this study to larger populations of urban youth.

The report of findings began with student perceptions and included the influence and comparison of select variables. The results suggested that students' perceptions of T & I courses differed depending on their immediate plans upon graduation, reason for taking the course, and educational level of their parents. Students having parents with 2 or more years of post-secondary education rated the personal relevance of the course higher than students whose mother had no post-secondary education. Students planning to enter a four-year college or the military rated the personal relevance of the course higher than students who had no such plans. Students believed their parents were also more helpful in providing career information than teachers or counselors.

The Jones, Womble, and Searcy study represents one exploratory approach to attempt to clarify the function and value of T & I courses in the urban high school

environment. Findings provided a better understanding of the characteristics of students enrolled in T & I courses in urban school settings. A significant number of students in this study indicated that they had career plans, expected to continue their education, made good grades, and valued their T & I courses. They suggested that additional information about how to improve the overall value of T & I courses and, thus, the preparation of urban youth for employment, could be gained through similar studies in other urban school districts.

In the study reviewed, Adams, Womble, and Jones (2001) asserted that numerous documents prepared during the last decade of the 20th century demanded educational reform, especially in the area of high school vocational programs. Lynch (1996) had previously discussed this idea. They also stated that a majority of those documents acknowledged that it would be teachers and their classroom practices that ultimately will transform education. They reported that in this new century, marketing teachers would be critical in initiating and implementing changes to improve marketing education and marketing education programs. They concluded that the catalyst for vocational education reform would be in the hands of classroom teachers. However, they believe that a study of student perceptions compared with exemplary teaching practices will help determine effective or ineffective program components and inform decision making about program changes.

Adams et al. examined and explored marketing students' perceptions of their marketing courses using the five propositions set forth by the National Board for Professional Teaching Standards (NBPTS), which are: "(1) Teachers are committed to students and their learning, (2) Teachers know the subjects they teach and how to teach

those subjects to students, (3) Teachers are responsible for managing and monitoring student learning, (4) Teachers think systematically about their practice and learn from experience, and (5) Teachers are members of learning communities" (NBPRS, 1997).

The target population for their study included all secondary students enrolled in marketing education courses taught in eight intentionally-selected high school programs located in a southeastern state in the United States. They used a purposeful sampling of intact classes in order to minimize disruption of students and ensure that a variety of marketing education programs was represented in the sample. The final research sample consisted of 406 students enrolled in Marketing Education courses.

The instrument was a student perceptions instrument originally used by Womble, Ruff, and Jones (1995) and Jones, Womble, and Searcy (1997) to assess the perceptions of students enrolled in vocational courses. The survey was a two-part survey. The first part developed a profile of student respondents and requested demographic, employment, and career plans information. The second part of the survey consisted of topical questions.

Their study included characteristics of marketing education students as related to students' enrollment, employment, and educational and career characteristics. A large percentage of the students reported that the most important reason for enrolling in marketing courses was that the program allowed them the opportunity to participate in cooperative on-the-job training, which aided them in getting out of school and on the job earlier. The students also believed that taking a marketing course would help them get a good job after high school. Three fourths of students (75.9%) reported having plans to obtain some form of post-secondary education with over half (52.8%) having plans to

attend a 4-year college or university. They also reported that most of the students obtained their career information from their parents.

This study represents one exploratory approach to attempting to clarify the function and value of marketing education courses offered at the high school level using the responses of students enrolled in those marketing courses. It was determined that comparing student perceptions about their marketing courses with standards for quality teaching could help marketing teachers undertake appropriate course and program modifications necessary to enhance overall marketing education programs as well as meet the educational and career aspirations of their students and reverse the trend of declining enrollment in marketing programs.

In summary, because of the limited target populations, the empirical research base provides only a penumbra around the problem of understanding student perceptions toward vocational education and does not fully illuminate the core of the problem--declining enrollment in vocational education programs and the relationship of secondary school student's perceptions to that decline. A thorough search of ERIC and other sources, such as the Journal of Technology Education's online search engine and all vocational related journals, failed to identify any additional studies that examined how the perceptions of students affect their choosing or not choosing a vocational programs.

The Perception of Secondary School Administrators Toward Vocational Education

One other study related to the topic or that could contribute to an understanding of the perceptions of all secondary school students toward vocational education programs was conducted by Jewell (1987). Jewell's descriptive study provided the model for the

instrument used in the present study. The demographic data model from the Womble and Jones study provided the model for the demographic section of this study.

Jewell (1987) examined the perceptions of school administrators toward agricultural education programs. Jewell's theoretical framework and study design sought evidence of another factor that influenced student enrollment in vocational education. That factor was the perception of school administrators. The theoretical framework for Jewell's (1987) study focused on school administrators and the authority and influence they have on vocational programs and curricula at the school and school system level and the knowledge that changes in vocational education required their approval and support. Jewell (1987) recognized that administrators' opinions are very important since administrators' decisions often drastically affect program operations and directions. He quoted a number of studies that reveal that the influence of administrators can and do have profound affect on vocational education programs. As an example, Jewell quoted a study by Parmley (1982) that concluded rural residents and agribusiness representatives wanted programs in agriculture. However, when school administrators did not want these programs they would cite a lack of student interest, inadequate facilities, inadequate funding, and the lack of a need for agricultural education as reasons for not implementing the programs. Jewell also reported that a 1979 national study found that a significant number of school administrators did not support programs providing high school students opportunities to develop marketable job skills through vocational programs and that it is these same administrators that will determine whether or not vocational education is available in the secondary schools (United States Department of Education, 1979).

Jewell (1987) asserted that a systematic instructional program for agricultural or vocational education should begin in kindergarten and continue through the twelfth grade. He recommended that consideration be given to increasing the number of general and introductory agriculture vocational courses and that this recommendation might be accomplished by expanding agricultural vocational offerings to the middle and elementary schools. Frantz, Strickland, and Elson (1988) recommended that polices should be established at the local and state levels to protect the comprehensiveness of schools and student access to vocational education programs.

The purpose of Jewell's study was to determine building-level administrators' perceptions toward programs in vocational agricultural education at their schools. He hypothesized that administrators, as the instructional leaders in their schools and/or school systems, were the leadership that would ultimately determine what curriculum and instructional reforms were enacted. Administrators with negative attitudes toward vocational education and reform recommendations would probably not be successful in implementing these initiatives in their schools or school systems. The study provided vocational educators with evidence that could be used to influence administrator's decisions that would have a negative effect on vocational education.

The population for this study included the building-level administrators in North Carolina who had agricultural education as a part of their school curricular offerings during the 1992-93 academic years. The population was selected by first identifying the schools that offered agricultural education and then the principals of those schools from which a random sample was drawn from that population.

The instrument used for data collection was developed by Jewell to address the administrators' perceptions toward agricultural education course offerings and programs. He used a committee of experts to investigate content validity. His committee of experts consisted of agricultural education consultants from the North Carolina Department of Public Education and teacher educators at North Carolina State University. After development, his instrument was field tested to determine clarity. He used the same sample of school administrators selected for the field test to determine the reliability of scores on the research instrument, using a test-retest reliability procedure.

Jewell used descriptive statistical analysis of the data. He reported frequencies, means, standard deviations, and percentages for all of the items in his study and used these descriptive statistics to answer the research topic question.

A significant percentage of the administrators surveyed had taken at least one vocational education course other than agricultural education during high school. A small number of administrators had attended a national convention for a vocational organization. A large percentage said they would attend if invited by the teacher in that area.

The research question was addressed by categorizing 64 statements used to obtain the perception data into seven categories: Curriculum Issues, Program Accountability Issues, Descriptive Program Issues, Program Image, Academic Integration, Vocational Student Organizations, and Teacher Performance. The administrators were asked to rate each of the statements on the data collection instrument on a Likert scale.

Jewell concluded that, in general, principals were very supportive of the vocational agricultural education programs being offered in the public schools and

provided good insight into their perceptions for the seven categorical areas of the study. Based on the participant's response, he recommended a number of changes that remain relevant 15 years after his study in view of the declining trend in vocational education.

It is possible that the problem of declining enrollment in vocational education may be rooted in students' perceptions of vocational education. Research in this area will aid educational leaders in developing programs that will attract students and, hopefully, reverse the trend of declining enrollment in vocational education. Also, this research will provide the participating county and other district administrators, education planners, teachers and industry with an understanding of student perceptions and the interrelated factors affecting the crystallization of those perceptions toward vocational education.

The Perception of Secondary School Students' Parents Toward Vocational Education

Research indicates that parents have an important influence, perhaps the single most important influence, on the career and job choices their children make (Kotrlik & Harrison, 1989). While parents have the most influence on youth, they may be restrained by factors beyond their control such as culture and economics (Reagor & Rehm, 1995). The way parents view the world of work influences the formation and development of their children's values and attitudes about work. If parental needs, values, and attitudes are positive toward work, children are likely to adopt positive perspectives (Reagor & Rehm, 1995).

Results from Reagor and Rehm's (1995) study indicate that parents' perceptions of work, their children and work, and their role in guidance vary according to different

levels of educational attainment. Parents with less education were more likely to consider work as hard and to fear the hardships of work for their children. Parents with some college or vocational training focused more on the meaningfulness of work. All parents tried to instill desires to do the best one can in a job one likes.

The Perception of Industry Toward Vocational Education

In our global economy representatives from industry and education collaborating together play an important role in determining the focus of vocational education. This partnership was forged to assure that entry-level workers are prepared with relevant entry-level skills (Bunn, 1998). The advent of new technologies in service and manufacturing businesses has led to increased skill requirements needed to perform a variety of tasks in the high performance workplace (Flynn, 1988).

The U. S. government has also come to recognize that human capital development is important for the economic success of our country (Bunn, 1998). Wooldridge (1992) postulated the existence of a skills deficit and predicted a fall in demand for unskilled laborers and an increase in demand for skilled workers. There has been a realization that training and education of workers are critical and an industry's success is embodied in the collective skills and knowledge of its employees (Bunn, 1998). Industry is looking for the school system to provide the training and knowledge needed by the next generation of employees.

While there is a need in this critical time for the U.S. economy for skilled workers being trained in secondary schools, the words of Dewey are as relevant today as they were 100 years ago. "The great waste in the school comes from the child's inability to utilize the experiences he gets outside of school in any complete and free way within the

school itself; while, on the other hand, the child is unable to apply in daily life what he is learning at school. That is the isolation of the school -- its isolation from life" (Dewey, 1899, p. 109). In some countries such as Germany, the predominant delivery mechanisms for vocational education are company-based and financed by industry.

While Dahlgren and Stone (1990) were addressing training at the post-secondary level, what they found would also apply at the secondary level. They found that industry is concerned about the quality of the technical instructors who deliver technical training. Jacobs (1989) also stated that many teachers do not have the skills necessary to educate the modern workforce. Although many schools have spent large amounts of money on state-of-the-art equipment, they have not developed staff that can use it or teach students about it. Unless the U. S. adopts a system similar to the German system, industry will continue to look to the school system to provide skilled employees. However, if the decline in interest and enrollment in vocational education continues, industry may be forced to take a more active roll in funding vocational education.

Summary

This review began by examining a number of programs normally covered under the umbrella term *vocational education.* The review of the literature covered five different branches that fall under the overall umbrella of vocational education. The first part of this section reviewed the history of vocational education. The second part covered vocational education as skills training. Industrial arts were briefly reviewed in the third section, and technology education was reviewed in the fourth section. The fifth section summarized the relationship of all of the branches of vocational or career preparation training and the historical significance of vocational education.

The literature is somewhat barren of empirical research that would illuminate how secondary school students' perceptions factor into their choices of programs of study or any of the interrelated factors, such as gender, race, academic performance, career awareness, and socio-economic factors that affect the crystallization of their perceptions. Therefore, it was necessary to undertake a study such as this to better understand the perceptions of secondary school students toward vocational education. Knowing student perceptions may illuminate the reasons contributing to a declining interest in vocational education by secondary school students as manifest by a decline in enrollment.

In Chapter 3 the design of the study is presented. Justification for the study, statistical analysis, setting, and research population are discussed as well.

Chapter 3

Research Methodology and Procedures

Statement of Purpose

The purpose of the present study was to explore the perceptions of secondary students toward vocational education and, to the extent possible, determine the demographic factors that might affect the crystallization of those perceptions, (i.e., gender, race, academic performance, career awareness, and socio-economic factors). The study has significant implications for those interested in vocational education, namely, policy makers, education administrators, parents, students, and members of the business community. The information gained from this research can be used to develop and implement marketing and recruiting strategies in support of programs. The data can also be used in support of the national and state vocational programs and workforce development projects.

Perceptions are deeply ingrained assumptions, generalizations, or even pictures or images that influence how people understand the world and take action (Senge, 1990). For example, two people looking at a picture of the sun on the earth's horizon might have a very different perception or mental model of that picture. One may see it as a sunrise and the other may see it as a sunset. People are often not aware of these mental models and how they affect their choices (Haney & Cohen, 1994). In order to determine one's perception within the present study it was necessary to use words as the primary symbols for constructing a picture of reality (Clark, 2000). Understanding perceptions will of

necessity require the use of words as the primary symbols; therefore, any communication filters applied to a survey item by the participant will bias any answer given by a participant.

This chapter presents an in-depth look at the design of the study. The setting, population, instrumentation, data collection and statistical procedures are presented. This chapter also describes the process used to assure external and internal validity and reliability.

Methodology

Survey research methodology was used to determine the perceptions of secondary school students toward vocational education relative to gender, race, academic performance, career awareness, and socio-economic factors. Secondary school students in a large urban Florida school district were asked to respond to a survey developed by a focus group and subjected to content validity analysis by a panel of experts.

The school district office provided the researcher with a list of secondary schools located in the district. To ensure independence or freedom from control or influence by other participants responding to the survey, every effort was made to distribute the questionnaires and collect them on the same day. However, not all schools could participate on the same day; therefore, a new plan was developed. Most surveys were collected within 10 days of the initial distribution. Students were instructed to use as much time as they needed to respond to all of the items and to complete the entire questionnaire. None of the students surveyed required more than a single 50-minute class period.

To eliminate student concerns related to the teacher's knowledge of responses, the assisting SIU interns administered the survey and collected the documents after the students completed them. Students were instructed not to write their names on the survey instruments. Additionally, the survey did not ask for the student identification number or any other data that might be used to identify the student, thus ensuring confidentiality. Students were instructed in the use of and given oral and written examples of Likert-type questions.

The objective of this portion of the study was to identify the perceptions held by secondary students toward vocational education using verbal symbols or words (Clark, 2000). However, the instrument contained enough dependent and independent variables to make it impractical to examine all combinations of data in the time constraints of this study. Therefore, the independent variables were constrained to gender, race, academic performance, career awareness, and socio-economic factors. The study attempted to identify the degree to which gender, race, academic performance, career awareness, and socio-economic factors are related to secondary students' perceptions of vocational education.

Study of Guidance Counselors

The researcher (Haney, 1999) conducted a previous study with guidance counselors in the Duval County school district. This qualitative study determined that there was a high degree of interest in counseling students toward vocational education programs.

The Haney (1999) study identified counselors' vision for expanding vocational education to a point well beyond what has been seen in the past. It also hinted at the possibility of an enhanced amalgamation of vocational education and classic academics.

In that Duval County's problem of declining vocational education enrollment cannot be attributed to the guidance counselors, one must look elsewhere for the contributing factors. Therefore, the following research questions focused on descriptive issues in vocational education and should provide a point of focus for understanding the problem of declining enrollment in vocational education programs.

Research Questions

Thirty-four survey items were formulated to illuminate specific descriptive issues surrounding vocational education. The primary research question was:

Are there differences in secondary students' perceptions of vocational education based on gender, race, academic performance, career awareness, and socio-economic factors?

Supporting questions were:

(1) Do secondary school students' images of vocational education differ based on gender, race, academic performance, career awareness, and socio-economic factors?

Ho: Secondary school students' images of vocational education do not differ on the basis on gender, race, academic performance, career awareness, and socio-economic factors.

Ho: Secondary school students' perceptions of primacy of core academics do not differ based on gender, race, academic performance, career awareness, and socio-economic factors?

Each of the original 76 perception items in the instrument focused on a specific descriptive issue in vocational education. However, for the purposes of analysis, the original pool of items was further narrowed to 34 perception items and 5 demographic items. All null hypotheses were tested against a critical alpha criterion of .05.

Research Instrument

Approval for a self-reporting survey was requested and permission granted by the Institutional Review Board (IRB) for the University of North Florida. The questionnaire was developed from a pair of studies that focused on the perceptions of urban students toward vocational courses (Jewell, 1987; Womble & Jones, 1995). The Womble and Jones study looked specifically at students enrolled in vocational course work or who had recently graduated from vocational programs. The study did not consider students enrolled in other than vocational courses. Jewell looked at the perceptions of secondary school administrators to vocational education.

A review of the literature suggested that a two-part, self-reporting survey questionnaire for data gathering should be developed (Rea & Parker, 1997). The first part of the survey asked for demographic data on the sample. The second part assessed the sample's attitudes and perceptions toward vocational education.

This questionnaire was developed to obtain descriptive information from students in order to identify their perceptions regarding vocational education and the demographic factors that might affect the crystallization of those perceptions (gender, race, academic

performance, career awareness, and socio-economic factors). The first part of the questionnaire provided a sample profile by asking students to supply demographic data and information about themselves and their future education or career plans. The second part of the questionnaire provided the dependent variables for this study. The survey employed a Likert-type scale to assess responses to statements related to the sample's perceptions of vocational education in which 5 = "strongly agree," 4 = "agree," 3 = "unsure," 2 = "disagree," and 1 = "strongly disagree."

The two-part self-reporting survey instrument was validated by a panel of vocational education experts from Hampton University in Hampton, Virginia; Tulsa Tech in Tulsa, Oklahoma; Florida Community College in Jacksonville, Florida; University of North Florida; Southern Illinois University; and the participating county's public school system. The instrument was constructed using a focus group consisting of 12 vocational education teacher interns from Southern Illinois University (SIU) and 8 secondary school students from outside the target population.

Using Jewell's (1987) instrument as a model, 126 items were developed to focus on descriptive issues used in his original instrument. From this list, 103 items were selected and administered to the focus group of 8 secondary schools students. The focus group participants were asked to provide feedback on readability, concept understanding, and term and word recognition. The students, all children of the interns, completed their assignment over the course of one week. Using the feedback provided by this group of students, the teacher members of the focus group further narrowed the item bank to 76 items related to the descriptive issues in vocational education covered in Jewell's original instrument.

The same SIU focus group used an instrument developed by Womble and Jones (1995) and further refined by Jones, Womble, and Searcy (1997) as the model to develop the demographic items. A bank of 24 items was provided to the student focus group for their input. The greatest discussion in both focus groups centered on the terms used for reporting race followed by definitions of parents' career field. Two thirds of the adult focus group were minorities, while only one student from the student focus group was a minority.

The secondary students used in the focus group were selected because they were outside of the target population, which should ensure independence or freedom from control or influence for those participants responding to the survey. It was also determined that a secondary school outside of the target population should be used for the pilot and post-test for the same rational. The pilot and post-test were conducted in an out-of-district secondary school located in an adjacent county. The principal of this high school permitted the focus group to use the computer training class for the pilot and post-test, advising that this class contained a cross section of the student body with regards to race, socio-economic factors, gender, and academic performance. The pilot and post-test were also used to train the Southern Illinois University interns in administering the test to the target population. The survey instrument is included as Appendix A.

Reliability and Validity

As suggested by Long, Convey, and Chwalek, (1985) content validity was established through a review process using a focus group of 12 Southern Illinois University occupational education interns, 8 secondary school students, and a panel of vocational educators from various universities, colleges, and the public school system.

This field of experts examined factors that might cause items to be misunderstood by respondents (Fowler, 1993). After a review for content validity and a critique by a panel of vocational education experts, the initial draft statements were revised and administrated to a focus group of eight high school students who provided feedback concerning statements that might otherwise be misinterpreted or left unanswered.

The test and post-test were conducted in a secondary school (using computer class students) outside of the sample population. The initial test consisted of 10 males and 21 females. The post-test consisted of the original group plus two additional males and two additional females. A manual review of the means for the 31 completed instruments identified items that needed to be reframed or discarded.

Population Sample and Procedures for Data Collection

The target population for this study included secondary students enrolled in a large urban school district. The school district is in the state's top 7 districts by student population.

The assistant superintendent of the participating district school system requested that whole classes or clusters be used for the survey to prevent disruptions created by pulling randomly selected student from various classes. This is consistent with sampling procedures in the Womble and Jones (1995) study. It was decided that whole classes or clusters would need to contain a cross section of the school's population. After discussions with the participating principals, it was determined that computer, health, and physical education class clusters would contain the diversity needed for the survey.

A purposive sampling of clusters of students from each high school in the participating district was used in order to minimize disruption to students and ensure that

students from the general, college preparation, and vocational tracks were adequately represented in the sample. The original, final target research sample needed for this study was to consist of at least 357 students enrolled in high school courses. This sample size was based on the formula for a 90% confidence level for a student cohort of 22,792 students (Isaac & Michael, 1982; Rea & Parker, 1997). In order to minimize classroom disruption, however, clusters of students were selected by school administrators. Therefore, it became necessary to increase the size of the sample to 803 students to ensure that a representative number of students were surveyed from the general education, college preparatory, and vocational education tracks.

Treating each of the selected high school classes as a cluster and conducting a survey within each high school provided the study with a cross section of gender, race, academic performance, career awareness, and socio-economic factors. The demographic data did indicate fair representation, and it was not necessary to return to any specific high school to conduct another random survey within a gender, race, grade, or socio-economic group.

The questionnaire was administered on site to preclude a low response rate. With the exception of one survey, incomplete questionnaires were not discarded. The one discarded survey contained several obscene remarks and pictures drawn by the student. Additionally, the student had made no effort to respond to any of the items.

Confidentiality

The Institutional Review Board (IRB) approved the research to be conducted as an anonymous survey. A copy of the IRB request is included as Appendix B. A copy of the school entry request is included as Appendix C.

Interns from Southern Illinois University were trained in administering the survey as an anonymous survey and had a list of instructions to be read before administering the survey. The students were instructed that they did not have to participate and that there would not be a penalty for not participating. If they agreed to participate they were instructed not to write their names on the instrument or identify themselves in any way on the survey. They were also instructed that if they did not feel comfortable with an item that they did not have to answer it. The Southern Illinois University interns collected the instruments face down and placed all surveys from a given group in an envelope. This precluded the teacher from handling or seeing the completed instruments. A different team of interns removed the completed surveys and transferred the data form the instrument to an Excel spread sheet.

Section 1 of the questionnaire summarized all facets of the target subjects' characteristics as well as other demographic and work-related data. The second section contained the 76 items focusing on descriptive issue in vocational education relative to gender, race, academic performance, career awareness, and socio-economic factors.

Procedures for Treatment of Data

A pre-existing data structure was not assumed for the purposes of the present study. Exploratory principle axis factor analytic procedures were used in this study to synthesize key themes or constructs representative of the perceptions of secondary school students toward vocational education. This process allowed the researcher to identify a concise list of explanatory constructs from the responses collected. This procedure was similar to that used in a studies by Daniel, Blount, and Ferrell (1991) and Wicklein and Hill (1996). Factor analysis was used to achieve parsimony by identifying the smallest

number of descriptive terms to explain the maximum amount of common variance in a correlation matrix (Tinsley & Tinsley, 1987). The factors developed embody the meaning of the 34 original items within a more concise and useable list.

Principal-components analysis was used to extract the initial factors identified in the statistical treatment of the data. Orthogonal varimax rotation using a Kaiser normalization procedure was then used to minimize the number of salient items on a factor, thus simplifying the structure and making the solution more interpretable. Potential factor solutions with from four to seven factors were examined after a solution with all factors having an eigenvalue greater than one was consulted. The factor structure was required to approximate simple structure, and items were required to correlate at least |.40| on a factor, while demonstrating low correlations on any other factors as evidence of factor saliency. Additional inspection of factor solutions also considered the number of items correlated with each factor, with preference to solutions with more than four items loading on a factor. Careful consideration was given to each factor solution that met all of these criteria, and the final solution was selected to provide the most parsimonious and meaningful representation of the data collected.

By using squared multiple correlations as the initial communality estimates, principal-components analysis of the data was completed followed by varimax orthogonal rotation. A five-factor solution provided eigenvalues greater than |.40| for all factors. Additionally, a scree test supported a five-factor solution. The factor matrix produced by this process provided a meaningful and concise list of constructs representative of the secondary school students' perceptions being studied and also serves as an indicator of construct validity of the data.

This process of factor analysis yielded 5 subscales related to perceptions of secondary school students toward vocational education. These subscales were identified as (a) images of vocational education, (b) perceptions of preparation for continued pathways beyond vocational education, (c) vocational education teacher quality, (d) secondary school requirements for vocational education courses, and (e) primacy of core academics. Scores on each subscale were subjected to alpha reliability analysis.

In order to learn more about the relationship between the several independent or predictive variables and the dependent or criterion variable, multiple regression procedures were used. The multiple regression analyses helped to determine efficacy of the predictor variables in predicting perceptions toward vocational education by secondary school students as measured by each of the identified subscales based on the factor analytic results. Analyses were conducted using Microsoft Excel and SPSS software.

This methodology allowed the researcher to investigate and analyze secondary school student perceptions toward secondary vocational education programs. The selected variables within the questionnaire also enabled the researcher to determine possible interrelated factors that might affect the crystallization of those perceptions (i.e., gender, race, academic performance, career awareness, and socio-economic factors).

It is important to note that items 29, 35, 53, 57, 59, 60, 61, 62, 63, 64, 65, 66, and 78 were recoded (i.e., reverse scored) to reflect positive responses. For example, item 61 originally read: Vocational education courses are not for smarter students. Assigning a lower number to this question would indicate disagreement with the statement. A

possible statement that corresponds to the recoding would read positively: Vocational education courses are for all students.

Limitations of the Study

The population was limited to one large urban school district in a southeastern state. Three of the 19 schools consulted declined to participate. One school did not participate because the principal did not consider a survey regarding perceptions of his students toward vocational education as meaningful in that all were college preparatory students. Two other principals declined to participate because their schools were low performing schools and they felt that the time would be better spent teaching. Due to the district's request for cluster sampling, the samples were not truly random. Additionally, the instrument itself was a self-reporting survey and is subject to the biases inherent in that method. Finally, the population contained only public school students.

External validity refers to the ability to generalize findings across different settings (Hoepfl, 1997). The present study contained two limitations that limit generalizations to a broader population. The first limitation is that it was a self-reporting study of students' behaviors. A self-reporting study raises the issue of accuracy of the data (Johnston & Pennypacker, 1993). The second limitation was the generalizability of the specific findings. The specific findings identified in this study may not be generalized to other student populations.

Finally, understanding perceptions of necessity requires the use of words as the primary symbols (Clark, 2000). Therefore, any communication filters applied to the survey questions by the participants may have created bias for any answer given by the participant.

Summary

In this chapter, the researcher has described the research methodology, survey instrument, and methods used to treat the study's data, including statistical procedures for examining the reliability and validity of the data and testing the study's substantive hypotheses. The processes for securing the University's Internal Review Board (IRB) approval, selecting the sample, and collecting the data were also described.

In the next chapter (Chapter 4), the results of the statistical analyses of the data are presented.

In Chapter 5, conclusions are drawn from the treatment and analyses of the data and the implications drawn from the analyses are postulated. The researcher also suggests follow-up studies that might be conducted to further the understanding of secondary school students toward vocational education.

Chapter 4

Study Findings

Findings

Within Chapter 4, the results of the study will be presented. Initially, information will be provided about the study participants and the sample demographics. This will be followed by a presentation of the study's findings associated with each of the 7 research questions underlying the study. Subsequently, the findings emerging from the exploratory principal axes factor analytical statistical procedures conducted within the study will be presented. After this, the results associated with the multiple regression procedures to further examine the relationship between demographic variables that served as independent or predictive variables and the five factors (i.e., those factors determined through the principal component analysis) representing perceptions of secondary school students toward vocational education that served as dependent or criterion variables will be presented.

The purpose of this study was to examine the perceptions of all secondary school students in Duval County towards vocational education, the descriptive issues about vocational education, issues of accountability in vocational education, curriculum issues in vocational education, the image of vocational education, and the integration of vocational education and academic course offerings. The primary research question guiding the study was directed towards examining the perceptions of secondary school students regarding vocational education as related to students' gender, race, academic

performance, career awareness, and socioeconomic background. The five supporting research questions underlying the study were designed to assist in addressing the primary question and were as follows:

1. Do secondary school students' images of vocational education differ based on gender, race, academic performance, career awareness, and socio-economic factors?
2. Do secondary school students' perceptions of preparation for continued pathways beyond vocational education differ based on gender, race, academic performance, career awareness, and socio-economic factors?
3. Do secondary school students' perceptions of vocational education teacher quality differ based on gender, race, academic performance, career awareness, and socio-economic factors?
4. Do secondary school students' perceptions of high school requirements for vocational education courses differ based on gender, race, academic performance, career awareness, and socio-economic factors?
5. Do secondary school students' perceptions of primacy of core academics differ based on gender, race, academic performance, career awareness, and socio-economic factors?

Research Instrument

The survey instrument was a two-part survey subjected to content validity analysis by a panel of experts and practitioners in the field of vocational education. Additionally, a validation panel of 12 vocational education teacher interns (with extensive military and work experience in the field of training) critiqued the instrument.

Secondary students outside of the target population reviewed the instrument for understanding and ease of completion. Finally, a pilot test and post-test were conducted in an out-of-district secondary school.

The first part of the survey, items 1 through 24, was demographic in nature and was used to determine the socio-economic makeup of the sample and other mitigating factors such as race, gender, class standing and educational track. Section 2 contained 76 items specifically relevant to vocational education. The researcher used a Likert-type scale to obtain responses to statements related to the student perceptions of vocational education. The students were requested to rate each statement on a scale as follows: 5 = "strongly agree," 4 = "agree," 3 = "unsure," 2 = "disagree," 1 = "strongly disagree." To eliminate confusion for the students taking the survey, they were asked to mark their answers directly on the survey instead of a grade sheet. As was discussed within the methodology section of the study, items 29, 35, 53, 57, 59, 60, 61, 62, 63, 64, 65, 66, and 78 were recoded (reverse scored) to reflect positive responses.

Study Sample

The population of interest consisted of secondary school students enrolled in all Duval County high schools. According to the Florida Department of Education profiles of Florida school district student and staff data for 1998-1999, the Duval County secondary school cohort consisted of 31,211 students, of which 13,943 were nonpromotees and 4,735 where dropouts.

The final research sample consisted of 803 students enrolled in high school courses. This sample size exceeded the 357 required by the formula for a 90 % confidence level for the school year 2000/2001 student cohort of 22,792 students (Isaac

& Michael, 1982; Rea & Parker, 1997) Clusters of students were selected from physical education or computer typing classes to minimize disruption to other academic classes. It became necessary to increase the size of the sample to ensure a representative number of students were surveyed from the general education, college preparatory, and vocational education tracks. Treating each selected class within each high school as a cluster helped insure that there was an accurate cross section of gender, race, and socioeconomic status employed for this project.

The questionnaire was administered on site at each high school to preclude a low response rate. Of the total number of surveys returned, only one had to be discarded. Incomplete surveys or questionnaires with a few missing data points were not discarded considering each item could be answered as a stand-alone item. Three high schools declined to participate.

Demographics

There were 24 items related to demographic characteristics of the sample. The frequencies for the demographic variables are presented in Table 5. The purpose of this section of the survey was to gather demographic data that might be important in understanding the perceptions of secondary students concerning vocational education.

Of the 803 Duval County secondary students completing surveys 49 % were male, and 51 % were female. Thirty-nine percent were African-American, while 36 % of the students were Caucasian. The remainders were Hispanic (6%), Asian (5%), or Other (14%). The number reporting as "Other" could be a significant factor, however, the meaning was undetermined in this study.

Only 51 % of the students reported living with both parents. Additionally, 47 % and 58 %, respectively, reported the occupation of either the father or mother as "Other." Fifty-six percent did not know the general range of the total household income.

Many of the students reported specific career objectives, with the greater percentage (46%) interested in professional careers such as health services, lawyers, teachers, and pilots. When given specific career choices, such as professional, technical, trades or other, the students were more likely to select professional or other. Likewise, when given a choice of different career fields, such as professional, technical, service, or other, the students were more likely to select the professional field or other. It is important to note that 75 % of the sample had a favorable view towards vocational education.

A significant number of the students (96%) reported that they planned to graduate high school. Only 2 % reported that they intended not to graduate. Also, 83 % reported that they planned to attend college after graduation, while only 49 % indicated that earning a college degree was an appealing educational or career choice. However, some 59 % did believe that they had career and educational choices other than attending college.

Forty-five percent of the students reported average grades of "B" in mathematics and English. Forty-one percent reported a "B" in science. Only 2 % reported an "F" grade. Percentages of students reporting an "A" grade in math, English, and science, respectively, were 17, 23, and 28, while the percentages of students reporting a "C" grade in math, English, and science, respectively, were 31, 25, and 25. Summaries of responses to demographics items are presented in Table 5.

Table 5: Sample Demographics

Demographic Variable	Category	n	%
Gender	Male	393	49
	Female	410	51
Current grade level	8th	8	1
	9th	280	35
	10th	177	22
	11th	177	22
	12th	161	20
Father's level of education	Did not complete high school	80	10
	Graduated high school	208	26
	Attended some college	137	17
	Graduated college	217	27
	Not sure	161	20
Mother's level of education	Did not complete high school	72	9
	Graduated high school	226	28
	Attended some college	193	24
	Graduated college	232	29
	Not sure	80	10
Father's occupation	Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.)	145	18
	Humanitarian (Minister, Law Enforcement, Nonprofit Group, etc.)	40	5
	Military (Air Force, Army, Marines, Navy)	88	11
	Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.)	153	19
	Other	377	47
Mother's occupation	Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.)	257	32
	Humanitarian (Minister, Law Enforcement, Nonprofit Group, etc.)	32	4
	Military (Air Force, Army, Marines, Navy)	16	2
	Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.)	32	4
	Other	466	58

Demographic Variable	Category	n	%
Living arrangement	Lives with both parents	417	51
	Lives with mother only	264	33
	Lives with father only	46	6
	Lives with other relative or guardian	52	7
	Lives alone	22	3
	No Report	2	0
Total household income	Less than $30,000	48	6
	$30,000 to $60,000	128	16
	$60,000 to $90,000	104	13
	Over $90,000	72	9
	I don't know	451	56
Race	African American	314	39
	Asian	40	5
	Caucasian	289	36
	Hispanic	48	6
	Other	112	14
Career objective	Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.)	370	46
	Humanitarian (Minister, Law Enforcement, Nonprofit Group, etc.)	40	5
	Military (Air Force, Army, Marines, Navy)	64	8
	Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.)	56	7
	Other	273	34
Plan to graduate high school	Yes	771	96
	No	16	2
	Undecided	16	2
Plan to attend college after graduating high school	Yes	667	83
	No	40	5
	Undecided	96	12
Believed classmates will graduate high school	All will graduate high school	112	14
	Most will graduate high school	410	51
	Some will graduate high school	185	23
	Few will graduate high school	32	4
	Not sure	64	8

Demographic Variable	Category	n	%
Believed classmates will attend college	All will attend college	32	4
	Most will attend college	201	25
	Some will attend college	329	41
	Few will attend college	137	17
	Not sure	104	13
Believed they had educational and career choices other than attending college	Yes	473	59
	No	145	18
	Not sure	185	23
Believed classmates have educational and career choices other than attending college	Yes	345	43
	No	80	10
	Not sure	378	47
Educational choice or career choice most appealing to student	Earn a high school diploma	48	6
	Earn a high school diploma and obtain job skills in high school	96	12
	Obtain a skill after graduating high school	64	8
	Earn a college degree	394	49
	Obtain a skill after graduating college	201	25
Average grade in mathematics	A	137	17
	B	361	45
	C	249	31
	D	40	5
	F	16	2
Average grade in English	A	185	23
	B	361	45
	C	201	25
	D	40	5
	F	16	2
Average grade in science	A	225	28
	B	329	41
	C	201	25
	D	32	4
	F	16	2

Demographic Variable	Category	n	%
Belief about vocational education	It teaches nontechnical skills	56	7
	It teaches skills that do not require a high school diploma	145	18
	It teaches highly technical skills	201	25
	It teaches skills that require a high school diploma	120	15
	It teaches academic and technical skills	281	35
Job closest to what student prefers doing after completing educational goals	Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.)	370	46
	Humanitarian (Minister, Law Enforcement, Nonprofit Group, etc.)	48	6
	Military (Air Force, Army, Marines, Navy)	64	8
	Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.)	72	9
	Other	249	31
Student's personal strengths and abilities	Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.)	354	44
	Humanitarian (Minister, Law Enforcement, Nonprofit Group, etc.)	56	7
	Military (Air Force, Army, Marines, Navy)	72	9
	Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.)	88	11
	Other	233	29
Job closest to what student prefers doing after completing educational goals	Customer Service Representative	72	9
	Professional/Engineering	265	33
	Maintenance Technician	56	7
	Aviation	32	4
	Other	378	47

Within this section of Chapter 4, the study findings associated with measurement integrity analyses (factor analysis and reliability data) are presented followed by multiple regression analysis associated with each of the five research questions underlying the study.

Factor Analysis

For the purposes of synthesizing key themes and/or constructs representative of the perceptions of secondary school students toward vocational education, exploratory principle axis factor analyses were conducted. The results of the factor analyses provided a concise list of explanatory constructs on the basis of study participant responses and served to provide construct validity evidenced for the data in hand. Principal-components analysis was used to extract the initial factors identified in the statistical treatment of the data. Orthogonal (varimax) rotation with Kaiser normalization was then used to minimize the number of salient items on a factor, thus simplifying the structure and making the solution more interpretable. Potential factor solutions with from four to seven factors were examined following initial examination of a solution with all factors having eigenvalues greater than one extracted. The factor structure was required to approximate simple structure, and items were required to be salient with at least |.40| on a factor, while demonstrating low correlations with other factors. Additional inspection of factor solutions also considered the number of items correlated with each factor, with preference to solutions with at least four items identifying a factor. Careful consideration was given to each factor solution that met all of these criteria and the final solution was selected to provide the most parsimonious and interpretable representation of the data collected. A five-factor solution provided meaningful constructs with at least four items correlated greater than |.40| with each factor. Additionally, a scree test supported a five-factor solution. The factor matrix produced by this process provided a meaningful and concise list of constructs representative of the secondary school students' perceptions being studied.

The related five-factor solution matrix resulting from the principal component analysis as described above is displayed in Table 6. As evidenced within the table, there were five themes identified that were found to relate to perceptions of secondary school students toward vocational education. These themes were (a) images of vocational education, (b) perceptions of preparation for continued pathways beyond vocational education, (c) vocational education teacher quality, (d) secondary school requirements for vocational education courses, and (e) primacy of core academics.

Table 6: Related Factor Matrix: Five Factor Solution Structure (Principal Component Analysis)

	Image	Preparation	Teacher Quality	H.S. Requirement	Academic Primacy
Not for Middle Class Students	.782*	-.015	-.041	.110	-.023
For Students from Poor Families	.753*	-.015	.023	.065	-.031
Not Important in a H.S. School Setting	.752*	-.080	-.101	-.068	.081
Not for Students Desiring College Degree	.744*	.045	.021	-.097	-.010
Benefits are Not Important	.698*	-.065	-.116	-.011	.082
No Longer Needed in Public Schools	.694*	-.125	-.086	-.017	.191
Not for Smarter students	.659*	.196	.069	-.141	.027
Offered Only in Community Colleges	.569*	-.226	-.096	.255	.267
Less Importance in H.S.	.482*	-.063	.122	-.035	.434
Not Helpful for General Education	.461*	.036	-.046	.066	.352
Decrease in Social Status	.412*	-.201	-.129	.251	.391
Job Training Focus in VE Course	.141	.642*	.071	.169	.050
Accreditation of VE Courses	-.018	.616*	.148	.147	-.122
Job Preparation Purpose	-.041	.611*	.081	.097	.277
Employment Focused Goals	-.119	.588*	.068	.283	.109
Facilitate Community College Enrollment	-.070	.482*	.146	.188	.188
Academic Base of College Bound	-.040	.477*	.145	.371	.122
Very Good Job of Teaching	-.048	.109	.742*	.167	.024
Helpful Advice	.032	.132	.734*	.164	-.033
Good Job Connecting with Students	-.071	.068	.643*	.208	.099
Need for VE Student Organizations	-.038	.326	.567*	.110	.107
Requirement of One VE Course	-.057	.016	.163	.664*	.145
Enrollment Work Experience Programs	.065	.223	.060	.588*	.128
Community Value	.168	.129	.253	.565*	-.035
Motivates Post H.S. Education	-.078	.306	.201	.524*	.010
All Schools Should Have VE	-.041	.215	.062	.513*	-.017
VE Satisfy Science Requirement	.213	.227	.139	.460*	.036
VE Organizations Part of School Activities	-.116	.254	.398	.419*	.105
VE Students Should be Job Focused	.174	.073	.076	.055	.665*
Direct Funding for Academic Programs	.222	.220	-.071	.055	.519*
Basic Academic Skills	-.043	.352	.371	-.032	.433*
Focus on Math, English, Social Studies, and Science	.068	.235	.351	.180	.401*
Science and Technology a major part of H.S. VE	-.128	.379	.376	.179	.282
VE ensure students grad w/job skills	-.073	.369	.200	.088	.050

*Eigenvalues greater than .40. Note: Items are sorted by factor.

Reliability Analysis

Internal consistency reliability analyses were conducted on the 34-item scale and each of the subscales associated with the five-factor solution matrix (i.e., images of vocational education, perceptions of preparation for continued pathways beyond vocational education, vocational education teacher quality, secondary school requirements for vocational education courses, and primacy of core academics). Corrected item-total correlations were assessed following the recommendations of Henryson (1971) who noted that the "item-to-total-test correlation" (i.e., corrected item-total correlation) should fall between .3 to .7 for inclusion in a survey test. Nunnally's (1978) recommended minimum coefficient alpha of .70 was also used to evaluate the resulting alpha associated with each of the subscales. The results of each of the reliability analyses will now be presented.

34-Item Scale

Item analyses were conducted on the 34 items hypothesized to assess vocational education perceptions of secondary students. Initially, each of the 34 items was correlated with the total score for the scale (with the item removed). As reflected in Table 7, all the correlations were greater than .3 except for five items (i.e., 57, 60, 65, 66, and 100). Based on these results and after assessing the degree to which Alpha would be increased if each of the items were deleted as depicted within Table 7, it would appear that elimination of these items would not make a significant difference in the size of alpha.

Coefficient alpha for scores on the 34-item scale was .84. Therefore, scores on the 34-item scale can be said to be reliable in measuring vocational education perceptions of

secondary students. Because the same sample was used to conduct the item analyses and to assess coefficient alpha, the reliability estimate is likely to be an overestimate of the population coefficient alpha.

Table 7: Reliability Analysis: 34-Item Scale

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected-Item Total Correlation	Alpha if Item Deleted
026	102.0118	209.7609	.3295	.8386
027	101.9408	210.4490	.3037	.8403
029	102.4890	207.7927	.3373	.8394
020	101.8156	207.4286	.3974	.8377
031	102.0677	209.9073	.2844	.8409
032	101.9137	209.3807	.3473	.8391
034	102.0169	206.1014	.4299	.8368
039	102.2555	208.5160	.3634	.8387
045	101.7225	207.7466	.2217	.8452
049	101.9120	209.5617	.3395	.8393
051	102.2250	206.1544	.3896	.8378
052	102.3316	207.2017	.3463	.8391
053	102.8917	208.3137	.3421	.8392
054	101.9695	208.4092	.3637	.8387
055	102.3147	207.4330	.4435	.8368
056	102.3283	206.4412	.4301	.8368
057	102.6836	209.9251	.2668	.8415
059	102.5178	210.3484	.3372	.8394
060	102.8240	211.1249	.2729	.8411
061	102.5516	207.2817	.3387	.8394
062	102.6311	209.1485	.3040	.8403
063	102.9036	207.2907	.3429	.8392
064	102.8545	206.8059	.3629	.8386
065	102.7682	211.2462	.2517	.8418
066	102.9120	210.6804	.2625	.8415
068	101.9052	208.4486	.3826	.8382
070	102.0626	206.2486	.4143	.8372
077	101.9679	208.3634	.3652	.8386
078	102.4975	208.4640	.3473	.8391
081	102.0135	208.8574	.3846	.8382
084	102.0068	208.8033	.3820	.8383
090	102.0998	209.7375	.3429	.8393
094	102.0914	209.0459	.3695	.8386
100	102.1218	210.4699	.2840	.8408

Alpha = .8433

Image Subscale

Item analyses were conducted on the 11 items hypothesized to assess image of vocational education perceptions of secondary students. Initially, each of the 11 items was correlated with the total score for the scale (with the item removed). As reflected in Table 8, all the correlations were greater than .3.

Coefficient alpha for scores on the 11-item subscale was .8683. Thus, it would appear that scores on each of the 11-items and the subscale are reliable. Because the same sample was used to conduct the item analyses and to assess coefficient alpha, the reliability estimate is likely to be an overestimate of the population coefficient alpha.

Table 8: Reliability Analysis: Image Subscale

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected-Item Total Correlation	Alpha if Item Deleted
053	26.9194	56.1677	.5480	.8583
057	26.7694	57.3505	.4347	.8667
059	26.5757	58.8282	.4541	.8642
060	26.8685	55.3410	.6230	.8532
061	26.5926	55.6554	.5191	.8607
062	26.6638	55.1283	.5949	.8550
063	26.9505	54.0839	.6276	.8525
064	26.8868	53.4348	.6784	.8487
065	26.8119	54.4731	.6615	.8504
066	26.9250	54.7210	.6073	.8541
078	26.5431	57.2457	.4953	.8619

Alpha = .8683

Preparation Subscale

Item analyses were conducted on the 6 items hypothesized to assess perceptions of vocational education and preparation for continued pathways beyond vocational education. Initially, each of the 6 items was correlated with the total score for the scale (with the item removed). As reflected in Table 9, all the correlations were greater than .3.

Coefficient alpha for scores on the 6-item subscale was .7103. Thus, it would appear that scores on each of the 6 items and the subscale are reliable. Because the same sample was used to conduct the item analyses and to assess coefficient alpha, the reliability estimate is likely to be an overestimate of the population coefficient alpha.

Table 9: Reliability Analysis: Preparation Subscale

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected-Item Total Correlation	Alpha if Item Deleted
026	17.2507	11.5695	.2396	.6749
027	17.1814	11.7160	.4139	.6796
030	17.0332	11.2694	.4515	.6682
032	17.1745	11.1595	.4938	.6550
034	17.2479	11.0605	.4675	.6630
049	17.1385	11.7894	.3928	.6860

Alpha = .7103

Vocational Education Teacher Quality Subscale

Item analyses were conducted on the 4 items hypothesized to assess perceptions of vocational education teacher quality. Initially, each of the 4 items was correlated with the total score for the scale (with the item removed). As reflected in Table 10, all the correlations were greater than .3.

Coefficient alpha for the 4-item subscale was .6831. This value is slightly below Nunnally's minimum threshold of .70. Thus, it would appear that scores on the subscale do not reliably measure perceptions about vocational education teacher quality. Because the same sample was used to conduct the item analyses and to assess coefficient alpha, the reliability estimate is likely to be an overestimate of the population coefficient alpha. However, the low alpha coefficient may be the result of the small number of items identified with the subscale.

Table 10: Reliability Analysis: Teacher Quality Subscale

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected-Item Total Correlation	Alpha if Item Deleted
084	9.8358	5.8847	.3938	.6610
090	9.9512	5.2721	.5131	.5867
094	9.9159	5.3000	.5092	.5895
100	9.9851	5.1696	.4513	.6293

Alpha = .6831

High School Requirements Subscale

Item analyses were conducted on the 7 items hypothesized to assess perceptions of secondary school requirements for vocational education courses. Initially, each of the 7 items was correlated with the total score for the scale (with the item removed). As reflected in Table 11, all the correlations were greater than .3.

Coefficient alpha for scores on the 7-item subscale was .7055. Thus, it would appear that scores on each of the 7 items and the subscale are reliable as a measure of perceptions regarding high school requirements and vocational education. Because the same sample was used to conduct the item analyses and to assess coefficient alpha, the reliability estimate is likely to be an overestimate of the population coefficient alpha.

Table 11: Reliability Analysis: H.S. Requirements Subscale

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected-Item Total Correlation	Alpha if Item Deleted
031	19.5082	15.7056	.3268	.6962
051	19.6456	14.5840	.4526	.6622
052	19.7651	14.6256	.4322	.6682
054	19.4176	15.0991	.4644	.6598
055	19.7376	16.0177	.3930	.6781
081	19.4560	15.2250	.4853	.6558
084	19.4231	16.1206	.3633	.6847

Alpha = .7055

Primacy of Core Academics Subscale

Item analyses were conducted on the 4 items hypothesized to assess perceptions of vocational education and primacy of core academics. Initially, each of the 4 items was correlated with the total score for the scale (with the item removed). As reflected in Table 12, only two of the correlations were greater than .3.

Coefficient alpha for scores on the 4-item subscale was .4966. Thus, it would appear that scores on the subscale are not reliable as measures of primacy of core academics. Because the same sample was used to conduct the item analyses and to assess coefficient alpha, the reliability estimate is likely to be an overestimate of the population coefficient alpha. Obviously, the small number of items identifying this subscale is problematic and is likely at least one contributing factor to the low reliability coefficient.

Table 12: Reliability Analysis: Primacy Subscale

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected-Item Total Correlation	Alpha if Item Deleted
029	9.8633	5.0363	.2375	.4781
039	9.6300	5.0549	.3244	.3953
070	9.4598	5.0219	.2891	.4261
077	9.3673	5.0918	.3172	.4018

Alpha = .4966

Based on the factor analytic and reliability results, it was decided to proceed to the present study's substantive analyses with the understanding that the 34-item perceptions instrument was measuring five distinct constructs that collectively measure students' perceptions of vocational education. This decision was made despite the somewhat low reliability coefficients for scores on two of the subscales considering that (a) the factor analytic evidence spoke to the validity of the data underlying the subscales and (b) that lower reliability coefficients are not uncommon for scores on subscales identified by a

small number of items. This decision is further corroborated by Pedhazar and Schmelkin's (1991) admonition that lower levels of reliability may be tolerable in early psychometric integrity studies of a given instrument as is the case with the present 34-item instrument.

Multiple Regression Analysis

In an effort to further examine the five themes that had emerged from the factor analysis, multiple regression analyses were conducted to study the relationship between several independent or predictive variables (i.e., gender, race, career awareness, socio-economic status, and performance) and the dependent or criterion variables (image, preparation, teacher quality, high school requirement, and academic primacy).

To assess perceptions among secondary school students, 34 items from the survey instrument were used. The survey items consisted of 34 items divided into five subscales based upon the factor analytic results: (a) image, (b) preparation, (c) teacher quality, (d) high school requirements, and (e) academic primacy. All items meeting the saliency criterion for a given factor were included in the corresponding subscale. Participant response options for the 34 items were made using a 5-point, Likert-type scale (5 = strongly agree, 4 = agree, 3 = unsure, 2 = disagree, 1 = strongly disagree) to assess responses to 34 statements related to overall perceptions of vocational education. For each subscale, item scores were summed, and the result was divided by the number of items included in the subscale so that all subscale scores would fall into the range of 1 to 5. Descriptive data for the subscales are shown in Table 13.

Table 13: Descriptive Statistics for the Five Dependent Variables

	N	Minimum	Maximum	Mean	Std. Deviation
IMAGE	707	1.00	5.00	2.6774	.74129
Preparation	722	1.00	5.00	3.4342	.65731
Teacher quality	737	1.00	5.00	3.3073	.73711
Vocational requirement	728	1.00	5.00	3.2608	.63731
Academic primacy	746	1.00	5.00	3.1934	.69325
Valid N (list wise)	598				

On the basis of the findings of each multiple regression analysis, it was possible to determine the degree to which the several predictor variables are related to student perceptions of vocational education and thereby to answer the present study's research question. Although predictor variables were entered consistently in five steps within each regression analysis (gender, race, career awareness variables, socio-economic status, performance), the concern was the magnitude of the overall model R squared for each analysis. Because several of the predictor variables were categorical in nature, it was necessary to convert data for these variables into "dummy" coding columns prior to conducting the regression analyses. Table 14 illustrates the coding schema used in creating these conversions of the original data. The results of each regression analysis will be presented.

Table 14: Conversion of Predictor Variables for Regression Analyses

Original Variable (Survey Item Text)	Original Values	Conversion (Dummy Variables/Values)			
Gender (What is your gender?)	1-Male 2-Female	No conversion needed for dichotomous data			
		Cauca.	Asian	Hispa.	Other
Race (What is your race?)	1-African American	0	0	0	0
	2-Asian	0	1	0	0
	3-Cuucasian	1	0	0	0
	4-Hispanic	0	0	1	0
	5-Other	0	0	0	1
Career Awareness Variables					
		Fprof	Fhuma	Fmili	Ftech
Father's Occupation (What is your father's occupation?)	1-Professional	1	0	0	0
	2-Humanitarian	0	1	0	0
	3-Military	0	0	1	0
	4-Technician	0	0	0	1
	5-Other	0	0	0	0
		Mprof	Mhuma	Mmili	Mtech
Mother's Occupation (What is your mother's occupation?)	1-Professional	1	0	0	0
	2-Humanitarian	0	1	0	0
	3-Military	0	0	1	0
	4-Technician	0	0	0	1
	5-Other	0	0	0	0
		Obprof	Obhuma	Obmili	Obtech
Career Objective (What type of Career field would you like to be in ten years from now?)	1-Professional	1	0	0	0
	2-Humanitarian	0	1	0	0
	3-Military	0	0	1	0
	4-Technician	0	0	0	1
	5-Other	0	0	0	0

Original Variable (Survey Item Text)	Original Values	Conversion (Dummy Variables/Values)
Career Choice (Select the educational or career choice that is most appealing to you.)	1-Earn a high school diploma 2-Earn a high school diploma and obtain job skills in H.S. 3-Obtain a skill after graduating H.S. 4-Earn a college degree 5-Obtain a skill after graduating College	No conversion needed as data approximate interval scale

Socio-economic Variable

		Fnoths	Fgrahs	Fatcol	Fgrcol
Father's Education (What is your father's level of education?)	1-Did not complete H.S.	1	0	0	0
	2-Graduated H.S.	0	1	0	0
	3-Attended some college	0	0	1	0
	4-Graduated college	0	0	0	1
	5-Not sure	0	0	0	0

		Mnoths	Mgrahs	Matcol	Mgrcol
Mother's Education (What is your mother's level of education?)	1-Did not complete H.S.	1	0	0	0
	2-Graduated H.S.	0	1	0	0
	3-Attended some college	0	0	1	0
	4-Graduated college	0	0	0	1
	5-Not sure	0	0	0	0

		Less30	30to60	60to90	Over90
Income (What is the approximate total household income?)	1-Less than $30,000	1	0	0	0
	2-$30,000 to $60,000	0	1	0	0
	3-$60,000 to $90,000	0	0	1	0
	4-Over $90,000	0	0	0	1
	I don't know	0	0	0	0

		Monly	Fonly	Guard	Alone
Living Arrangement (Which of the following best reflects your living arrangement?)	1-I live with both parents	0	0	0	0
	2-I live with mother only	1	0	0	0
	3-I live with father only	0	1	0	0
	4-I live with other relative or guardian	0	0	1	0
	5-I live alone	0	0	0	1

Original Variable (Survey Item Text)	Original Values	Conversion (Dummy Variables/Values)
Performance Variables		
Math Achievement (Select the answer that best describes your average grade in math.)	A(4) B(3) C(2) D(1) F(0)	No conversion needed for interval data
English Achievement (Select the answer that best describes your average grade in English.)	A(4) B(3) C(2) D(1) F(0)	No conversion needed for interval data
Science Achievement (Select the answer that best describes your average grade in science.)	A(4) B(3) C(2) D(1) F(0)	No conversion needed for interval data

Image of Vocational Education (Supporting Research Question # 1)

Within Table 15, the model summary resulting from multiple regression analysis examining the relationship of gender, race, career awareness, socio-economic status, and performance (i.e., predictive variables) with image of vocational education (dependent or criterion variable) is presented.

Table 15: Model Summary: Image of Vocational Education

Model	R	R square	Adjusted R Square	Std Error of the Estimate
Gender	.056	.003	.002	.73260
Race	.121	.015	.007	.73072
Career Awareness	.171	.029	.017	.72706
Socio-Economic Status	.238	.057	.024	.72450
Performance	.276	.076	.017	.72674

As evidenced within Table 15, the R-squared value for the predictor variables (gender, race, career awareness, socio-economic status and performance) indicate that about 7.6 % (adjusted R-squared + .017) of the variability of image is accounted for by the model. The R-squared coefficients for each of the variables indicate the amount of change in the R-square at each step of the analysis. The rest of the full model was not statistically significant ($F = 1.298$; $df = 37, 584$; $p = .115$). Therefore, the multiple regression model does not adequately account for a statistically significant amount of variance in students' perceptions regarding image of vocational education on the basis of gender, race, career awareness, socio-economic status and performance, and the null hypothesis associated with the first supporting research question cannot be rejected.

Preparation (Supporting Research Question # 2)

Within Table 16, the model summary resulting from multiple regression analysis examining the relationship of gender, race, career awareness, socio-economic status, and performance (i.e., predictive variables) with preparation (dependent or criterion variable) is presented.

Table 16: Model Summary: Preparation

Model	R	R square	Adjusted R Square	Std Error of the Estimate
Gender	.172	.029	.028	.63546
Race	.203	.041	.033	.63365
Career Awareness	.213	.045	.033	.63373
Socio-Economic Status	.303	.092	.060	.62472
Performance	.375	.140	.087	.61592

As evidenced within Table 16, the R-squared value for the predictor variables (gender, race, career awareness, socio-economic status, and performance) indicate that about 14 % (adjusted R-square = .087) of the variability of preparation is accounted for by the model. The R-squared coefficients for each of the variables indicate the amount of change in the R-squared at each of the analysis. The test of the full model was statistically significant ($F = 2.618$; $df = 37, 593$; $p = <.001$). Therefore, the multiple regression model does adequately account for an appreciable amount of the variance in perceptions regarding preparation and vocational education on the basis of gender, race, career awareness, socio-economic status and performance, and the null hypothesis associated with the second supporting research question was rejected.

High School Teacher Quality (Supporting Research Question # 3)

Within Table 17, the model summary resulting from multiple regression analysis examining the relationship of gender, race, career awareness, socio-economic status, and performance (i.e., predictive variables) with high school teacher quality (dependent or criterion variable) is presented.

Table 17: Model Summary: High School Teacher Quality

Model	R	R square	Adjusted R Square	Std Error of the Estimate
Gender	.105	.011	.010	.71349
Race	.176	.031	.021	.70852
Career Awareness	.193	.037	.025	.70782
Socio-Economic Status	.248	.062	.030	.70608
Performance	.283	.080	.024	.70817

As evidenced within Table 17, the R-squared value for the predictor variables (gender, race, career awareness, socio-economic status, and performance) indicates that about 8 % (adjusted R-square = .024) of the variability of teacher quality is accounted for by the model. The test of the full model is statistically significant ($F = 1.434$; $df = 37, 608$; $p = .0490$). Therefore, the multiple regression model can be said to account for an appreciable amount of the variance in students' perceptions regarding teacher quality and vocational education on the basis of gender, race, career awareness, socio-economic status and performance, and the null hypothesis associated with the third supporting research question was rejected.

High School Requirement (Supporting Research Question # 4)

Within Table 18 the model summary resulting from multiple regression analysis examining the relationship of gender, race, career awareness, socio-economic status, and performance (i.e., predictive variables) with high school teacher quality (dependent or criterion variable) is presented.

Table 18: Model Summary: High School Requirement

Model	R	R square	Adjusted R Square	Std Error of the Estimate
Gender	.115	.013	.012	.62579
Race	.205	.042	.034	.61860
Career Awareness	.208	.043	.031	.61966
Socio-Economic Status	.286	.082	.050	.61340
Performance	.318	.101	.046	.61501

As evidenced within Table 18, the R-squared value for the predictor variables (gender, race, career awareness, socio-economic status, and performance) indicates that about 10 % (adjusted R-square = .046) of the variability in high school requirement as a criterion variable is accounted for by the model. The test of the full model was statistically significant ($F = 1.822$; $df = 37, 601$; $p = .003$). Therefore, the multiple regression model does adequately account for an appreciable amount of the variance in perceptions regarding high school requirement and vocational education on the basis of sex, race, career awareness, socio-economic status and performance, and the null hypothesis associated with the fourth supporting research question was rejected.

Academic Primacy (Supporting Research Question # 5)

Within Table 19, the model summary resulting from multiple regression analysis examining the relationship of gender, race, career awareness, socio-economic status, and performance (i.e., predictive variables) with academic primacy (dependent or criterion variable) is presented.

Table 19: Model Summary: Academic Primacy

Model	R	R square	Adjusted R Square	Std Error of the Estimate
Gender	.127	.016	.015	.68005
Race	.192	.037	.030	.67482
Career Awareness	.201	.041	.029	.67514
Socio-Economic Status	.228	.052	.020	.67798
Performance	.256	.066	.010	.68176

As evidenced within Table 19, the R-squared value for the predictor variables (gender, race, career awareness, socio-economic status, and performance) indicate that about 6.6 % (adjusted R-square = .010) of the variability in academic primacy is accounted for by the model. The test of the full model was not statistically significant (F = 1.169; df = 37, 615; p = .230). Therefore, the multiple regression model cannot be said to adequately account for an appreciable amount of variance in the perceptions regarding academic primacy and vocational education on the basis of gender, race, career awareness, socio-economic status and performance, and the null hypothesis associated with the final supporting research question cannot be rejected.

Summary of Data Analysis

Chapter 4 examined the results of the written survey instrument. In this chapter, the statistical data and results were presented for analysis. A description of the sample demographics was also presented. The research instrument and data collection were described, and the research questions were presented. The research data were analyzed and presented for the research questions being investigated.

The target population for this study included all secondary students enrolled in the Duval County school district. The population size was 22,792 students. A research sample size consisting of 357 students enrolled in high school courses was needed for a confidence level of 90 %. That sample size is based on the formula for a 90 % confidence level for a student cohort of 22,792 students. Forty-nine percent of the respondents were male, and 51 % were female. Forty percent of the respondents were African American, 36 % were Caucasian, 5 % were Asian, 6 % were Hispanic, and 13 % were "other." Eighty-two percent of the respondents reported that they intended to attend college after high school.

The final sample size of 803 was determined to be adequate due to the method of sampling. Data were gathered using a purposive sampling of clusters with a random sampling of students from each high school in the district. Treating each high school as a cluster and conducting a random sample within each high school provided a cross section of gender, race and socioeconomic status. The demographic data do indicate a fair representation of all students. The researcher administered the questionnaire on site to preclude a low response rate. Incomplete questionnaires were not discarded. The completed questions on the questionnaire were used.

The purpose of this instrument was to determine the perceptions of secondary school students toward vocational education. Additionally, descriptive issues about vocational education, issues of accountability in vocational education, curriculum issues in vocational education, the image of vocational education and the integration of vocational education and academic course offerings were examined.

The results of this research project seem to indicate that a low to moderate interest in vocational education exists for Duval County secondary school students. The drop in enrollment throughout the county for vocational education programs in recent years appears to validate this assumption. While a previous unpublished study indicated a high degree of interest for vocational education with guidance counselors (Haney, 1999), this does not appear to be the case with the total population of secondary school students.

The factor analytic results yielded a 5-factor solution. Themes emerging from the analysis included images of vocational education, perceptions of preparation for continued pathways beyond vocational education, vocational education teacher quality, secondary school requirements for vocational education courses, and primacy of core academics. On the basis of the analysis, the five themes appeared to offer a concise means of constructing and explaining secondary student perceptions on vocational education.

The results of the reliability analysis incorporated within the study indicated that scores for the 34-item scale constructed to measure student perceptions on vocational education were reliable. As evidenced within the results, in the future, consideration may need to be directed to eliminating 6 of the items yielding scores found to have less than adequate reliability. Additionally, scores on three of the five subscales that were developed from the results of the factor analysis were also found to be reliable, including the image subscale, the preparation subscale, and the secondary school requirement subscale. Scores on both the teacher quality subscale and the primacy subscale were found to be less reliable (coefficient alpha less than .70) indicating the possible need to strengthen the subscale through the inclusion of additional and relevant items.

As was evidenced in the multiple regression analyses, when using gender, race, career awareness, socio-economic status and performance as predictive variables with image, preparation, teacher quality, high school requirement, and academic primacy as criterion variables, three of the five criterion variables (i.e., preparation, teacher quality and high school requirement) were found to be adequately explained by the regression models that emerged. On this basis, the study's primary research question positing a relationship between the demographic factors and students' perceptions of vocational education is supported.

Chapter 5

Summary, Conclusions And Recommendations

Within Chapter 5, the major findings of the study will be reviewed. This will be followed by a discussion of the findings, conclusions, and recommendations. Finally, the contributions of the study will be identified.

Overview of Major Findings of the Study

The pilot research project for this study illuminated a vision for expanding vocational education to a point well beyond what has been seen in the past. It also hinted at the possibility of an enhanced amalgamation of vocational education and classic academics. In the words of one interviewee from an unpublished pilot study:

> I see it (vocational education) as a really big place, a major place. I think children need to get introduced to this in a way that good career programs are doing it, before they even go to school. They need to know what their parents' work is. Lots of kids in the sixth and seventh grades don't know what their mom and dad do. They need to know what the people closest to them are doing. What kind of work, not just for money, but what do you spend your time and your energy doing. Where do you create besides at home? I think that from the time kids enter school they need exposure to the world of work. Yes, they need to be in some academic subject, but they also need exposure to the other side, of what work and creativity really is, that kind of thing. (Haney, 1999, p. 9)

The findings of the present study appear to indicate that a low to moderate interest in vocational education exists for the participating county's secondary school students. This is validated by a drop in vocational educational program enrollment in recent years

throughout the county. The pilot study indicated a high degree of interest for vocational education on the part of guidance counselors, but this does not appear to be the case with the participating county's secondary school students.

As evidenced within the results, the instruments used in the study for the purposes of measurement offer future utility to others interested in further studying secondary student perceptions regarding vocational education. On the basis of the factor analysis, factors were identified that appear to offer a concise means of conceptualizing and narrowing the field of constructs to be studied regarding student perceptions. While some support was found to indicate that the factors identified can serve as good subscales of secondary student perceptions, the findings did not indicate that we, as of yet, fully understand the influences that operate to predict these factors. As well, while scores on the 34-item questionnaire that emerged from the factor analysis were found to be reliable, not all subscale scores associated with the larger scale were found to be reliable measures of secondary student perceptions.

Discussion and Conclusions

This study has identified contradictions in commonly held perceptions of vocational educators, guidance counselors, school administrators and political decision makers toward secondary students and their interest in vocational education. The findings of the study help to clarify the perceptions of students regarding vocational education programming and courses while highlighting the need for the direction of ongoing efforts to improve and strengthen vocational education within Duval County.

Recommendations

Predicated on the findings and conclusions of this study, the following recommendations for practice and research are suggested:

1. It is important that administrators, counselors and teachers understand the historical significance and the role vocational education has in this nation's economy and the impact it will have on a student's career choices (Pannabecker, 1995). It is important to note that secondary students participating in this study were not particularly aware of career options available to them after graduation from high school. School systems must do a better job of instilling in them the importance of careers and an awareness of the economic impact on the students' future.
2. A pilot study conducted by the researcher (Haney, 1999) indicated that guidance counselors do direct their students toward vocational programs and that they can have a positive effect on the school's vocational education program by working closely with vocational education teachers to encourage all students, regardless of their academic track, to enroll in these courses. However, the present study suggested that students in this same school district have only a moderate interest in vocational education. Administrators should encourage guidance counselors to participate in vocational education programs and activities to gain a better understanding of the opportunities available to students. Counselors should also work at communicating the viability of the vocational education option to students. However, as suggested by the present study, students' lack significant interest in vocational

education; thus schools must involve others (e.g., parents and teachers) in their efforts to communicate with students about the importance of vocational education.

3. The resistance to this research by three principals indicates that additional research must be conducted to determine the perceptions of school-level administrators toward vocational education programs and the obstacles they may unknowingly present to the students who are perceived to be college track or too advanced for vocational education.
4. Research for this study alluded to the high dropout rate for the participating county. Additional research should also be conducted to determine the effect of vocational education course offerings on the school dropout rate. Do schools with vocational education courses have a higher or lower dropout rate? Are vocational education course offerings a deterrent to students dropping out? Also, it would be important to know if students who have had vocational education courses are more likely to continue their education after graduating high school than students that do not take these courses.
5. As the results of the study suggest, while it is possible to investigate and examine the perceptions of secondary education students regarding vocational education, as of yet, the factors that most concisely represent such perceptions remain not fully known. As well, while some evidence was found to support further understanding of possible predictors of student perceptions, at this point, further research is necessary to understand and develop a full explanation of student perceptions regarding vocational education. As future

research is directed to the study of vocational education, it will be important to recognize the need for greater clarity in understanding the perceptions of students in order to respond more effectively to student need for meaningful and useful vocational education programming, curriculum development, and course offerings. This can be accomplished through ongoing efforts to identify the factors that can be used most effectively in identifying student perceptions as well as the factors that most adequately explain and account for the perceptions that students hold regarding vocational education.

6. Finally, the extensive demographic data set supplied by this study may contain additional insights to the issues contained in the survey instrument. Further analysis based on specific demographic information may produce additional information that would be useful to school administrators, principals and teachers.

Contributions of the Study

The findings of the study as well as the recommendations for future research and practice in the field of vocational education are believed to contribute extensively to the knowledge base on vocational education. The study offers future direction for vocational education programming as well as policy directives and initiatives. It helps to further emphasize the importance of recognizing and responding to the voices of students in decision-making efforts regarding vocational education. It also helps to illuminate the need to further clarify and more fully understand the perceptions that students hold regarding vocational education and its influence in their present and future lives. The findings of the present study help to emphasize that students can help to identify both the

strengths as well as problem areas in vocational education as it currently exists within secondary school programming.

While the sample for the study was relatively large, it is important to note that the findings of the study as well the conclusions and recommendations are generalizable primarily to vocational education, as it currently exists in a single school district. Therefore, in order to more fully understand the national context of vocational education on the basis of student perceptions, a more nationally representative sample would need to be included in future research efforts. In such efforts, the study and the methodology utilized offer a basis for future researchers to further design and implement investigations regarding the perceptions of secondary students regarding vocational education.

Appendix A

Demographic Information for Importance Scale Survey

Do not write your name on this survey form.

For each question below, circle the number to the right on the line next to the question that best describes your answer.

Question	Select One Best Answer	Circle Answer				
1. What is your gender?	1 - Male 2 - Female	**1**	**2**	**3**	**4**	**5**
2. What is your current grade level?	1 - 8th 2 - 9th 3 - 10th 4 - 11th 5 - 12th	**1**	**2**	**3**	**4**	**5**
3. What is your father's level of education?	1 - Did not complete high school 2 - Graduated high school 3 - Attend some college 4 - Graduated college 5 - Not sure	**1**	**2**	**3**	**4**	**5**
4. What is your mother's level of education?	1 - Did not complete high school 2 - Graduated high school 3 - Attend some college 4 - Graduated college 5 - Not sure	**1**	**2**	**3**	**4**	**5**
5. What is your father's occupation?	1 - Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.) 2 - Humanitarian (Minister, Law Enforcement, Non-Profit Group, etc.) 3 - Military (Air Force, Army, Marines, Navy) 4 - Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.) 5 - Other	**1**	**2**	**3**	**4**	**5**
6. What is your mother's occupation?	1 - Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.) 2 - Humanitarian (Minister, Law Enforcement, Non-Profit Group, etc.) 3 - Military (Air Force, Army, Marines, Navy) 4 - Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.) 5 - Other	**1**	**2**	**3**	**4**	**5**

Question	Select One Best Answer	Circle Answer				
7. Which of the following best reflects your living arrangement?	1 - I live with both parents 2 - I live with mother only 3 - I live with father only 4 - I live with other relative or guardian 5 - I live alone	**1**	**2**	**3**	**4**	**5**
8. What is the approximate total household income?	1 - Less than $30,000 2 - $30,000 to $60,000 3 - $60,000 to $90,000 4 - Over $90,000 5 - I don't know	**1**	**2**	**3**	**4**	**5**
9. What is your race?	1 - African American 2 - Asian 3 - Caucasian 4 - Hispanic 5 - Other	**1**	**2**	**3**	**4**	**5**
10. Career objective (What type of career field would you like to be in ten years from now?	1 - Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.) 2 - Humanitarian (Minister, Law Enforcement, Non-Profit Group, etc.) 3 - Military (Air Force, Army, Marines, Navy) 4 - Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.) 5 - Other	**1**	**2**	**3**	**4**	**5**
11. Are you planning to graduate high school?	1 - Yes 2 - No 3 - I am undecided	**1**	**2**	**3**	**4**	**5**
12. Are you planning to attend college after graduating high school?	1 - Yes 2 - No 3 - I am undecided	**1**	**2**	**3**		
13. Do you believe that your classmates will graduate high school?	1 - All will graduate high school 2 - Most will graduate high school 3 - Some will graduate high school 4 - Few will graduate high school 5 - Not sure	**1**	**2**	**3**	**4**	**5**

Question	Select One Best Answer	Circle Answer				
14. Do you believe that your classmates will attend college?	1 - All will attend college 2 - Most will attend college 3 - Some will attend college 4 - Few will attend college 5 - I am not sure	**1**	**2**	**3**	**4**	**5**
15. Do you believe that you have educational and career choices other than attending college?	1 - Yes 2 - No 3 - I am not sure	**1**	**2**	**3**		
16. Do you believe that your classmates have educational and career choices other than attending college?	1 - Yes 2 - No 3 - I am not sure	**1**	**2**	**3**		
17. Select the educational choice or career choice that is most appealing to you.	1 - Earn a high school diploma 2 - Earn a high school diploma and obtain job skills in high school 3 - Obtain a skill after graduating high school 4 - Earn a college degree 5 - Obtain a skill after graduating college	**1**	**2**	**3**	**4**	**5**
18. Select the answer that best describes your average grade in math.	1 - A 2 - B 3 - C 4 - D 5 - F	**1**	**2**	**3**	**4**	**5**
19. Select the answer that best describes your average grade in English.	1 - A 2 - B 3 - C 4 - D 5 - F	**1**	**2**	**3**	**4**	**5**
20. Select the answer that best describes your average grade in science.	1 - A 2 - B 3 - C 4 - D 5 - F	**1**	**2**	**3**	**4**	**5**

Question	Select One Best Answer	Circle Answer				
21. Select the answer that best describes your belief about vocational education.	1 - It teaches non-technical skills 2 - It teaches skills that do not require a high school diploma 3 - It teaches highly technical skills 4 - It teaches skills that require a high school diploma 5 - It teaches academic and technical skills	**1**	**2**	**3**	**4**	**5**
22. Select the answer that <u>best</u> describes the job that is closest to what you would prefer doing after you complete your educational goals.	1 - Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.) 2 - Humanitarian (Minister, Law Enforcement, Non-Profit Group, etc.) 3 - Military (Air Force, Army, Marines, Navy) 4 - Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.) 5 - Other	**1**	**2**	**3**	**4**	**5**
23. Select the answer that <u>best</u> describes the category for your personal strengths and abilities.	1 - Professional (Health Services, Pilot, Lawyer, Teacher, Engineer, etc.) 2 - Humanitarian (Minister, Law Enforcement, Non-Profit Group, etc.) 3 - Military (Air Force, Army, Marines, Navy) 4 - Technician (Airplane or Automobile Mechanic, Food Preparation, Construction, etc.) 5 - Other	**1**	**2**	**3**	**4**	**5**
24. Select the answer that <u>best</u> describes the job that is closest to what you would prefer doing after you complete your educational goals.	1 - Customer Service Representative 2 - Professional/Engineering 3 - Maintenance Technician 4 - Aviation 5 - Other	**1**	**2**	**3**	**4**	**5**

Importance Scale Survey

Do not write your name on this survey form.

Strongly Disagree	**1**
Disagree	**2**
Unsure	**3**
Agree	**4**
Strongly Agree	**5**

For each question below, circle the number to the right that best fits your opinion on the importance of the issue. Use the scale above to match your opinion.

Question	Scale				
25. Future courses in vocational education should consider job openings in the areas related to the planned course.	1	2	3	4	5
26. Vocational courses provide good academic base for college bound students.	1	2	3	4	5
27. Vocational education courses should be accredited in order to allow me to meet admission requirements for the university system.	1	2	3	4	5
28. Vocational education teachers should have smaller classes than other teachers because of extra work with vocational student organizations, laboratory, and equipment management.	1	2	3	4	5
29. Only students who want to pursue a career or job immediately after graduation from high school should enroll in vocational education courses.	1	2	3	4	5
30. The main purpose of vocational education programs should be to prepare students for a job.	1	2	3	4	5
31. Each school, including elementary, middle, and high schools, should have a vocational education program.	1	2	3	4	5
32. One goal of my school should be the employment of graduates in jobs requiring skills learned in its vocational courses.	1	2	3	4	5
33. The school should track the progress and achievements of each vocational student.	1	2	3	4	5
34. Job training should be the primary focus of high school vocational education.	1	2	3	4	5

Question	Scale				
35. School counselors, teachers, and principals should all have a good knowledge and understanding of vocational education programs and courses.	1	2	3	4	5
36. Vocational education programs should focus on individual courses and not on two-year certification programs	1	2	3	4	5
37. School counselors, teachers, and principals should be held accountable for the success of students enrolled in vocational education programs.	1	2	3	4	5
38. The number of students being hired in related jobs should not be a major factor in determining if a vocational program should be continued.	1	2	3	4	5
39. Current funding for vocational education programs could be better spent on academic programs.	1	2	3	4	5
40. Automotive Technician courses should be offered in high school.	1	2	3	4	5
41. Aircraft Maintenance Technician courses should be offered in high school.	1	2	3	4	5
42. Heavy Equipment Technician courses should be offered in high school.	1	2	3	4	5
43. Computer Technician courses should be offered in high school.	1	2	3	4	5
44. Manufacturing Equipment Technician courses should be offered in high school.	1	2	3	4	5
45. Vocational education courses should ensure students graduate with specific job skills needed to get a job or continue training after graduating high school.	1	2	3	4	5
46. Vocational education courses should be included with academic courses so I will be provided with good academic skills to enhance my vocational education courses.	1	2	3	4	5
47. Only certified vocational education instructors should teach vocational education courses	1	2	3	4	5
48. Cooperative training and internships for vocational education students should be increased in high school.	1	2	3	4	5
49. High school vocational education programs should enable students to enroll in community college programs.	1	2	3	4	5
50. World trade and Internet trade should be an important part of the high school vocational education programs.	1	2	3	4	5

Question	Scale				
51. High school students should be required to enroll in programs requiring work experience before graduating high school.	1	2	3	4	5
52. All high school students should be required to complete at least one vocational course in order to meet graduation requirements.	1	2	3	4	5
53. Vocational education courses should be taught only in community colleges.	1	2	3	4	5
54. Vocational education motivates students to graduate and continue their education beyond high school.	1	2	3	4	5
55. My community regards vocational education as an important part of high school.	1	2	3	4	5
56. Vocational courses should be allowed to satisfy science course requirements for graduating high school.	1	2	3	4	5
57. My social status with my peers (that are not enrolled in vocational education) will go down if I enroll in a vocational education course.	1	2	3	4	5
58. Vocational education courses have kept pace with changes in technology.	1	2	3	4	5
59. Vocational instruction does not help the goals of a general high school education.	1	2	3	4	5
60. Vocational education is no longer needed in public schools.	1	2	3	4	5
61. Vocational education courses are not for smarter students.	1	2	3	4	5
62. Vocational education courses are not for students desiring a college degree.	1	2	3	4	5
63. Vocational education courses are for students from poor families.	1	2	3	4	5
64. Vocational education courses are not for middle class students.	1	2	3	4	5
65. Vocational education courses are not important in a high school setting.	1	2	3	4	5
66. The benefits from vocational education are not important.	1	2	3	4	5
67. Vocational education is for any student desiring good job skills.	1	2	3	4	5
68. Science and technology should be a major part of high school vocational education courses.	1	2	3	4	5
69. Vocational education teachers should focus on hands-on learning.	1	2	3	4	5

Question	Scale				
70. Math, English, Social Studies, and Science should be a major focus of vocational education courses.	1	2	3	4	5
71. Efforts should be made to expand and upgrade the technology content of vocational courses.	1	2	3	4	5
72. Vocational education courses should put together academic and vocational education skills.	1	2	3	4	5
73. Vocational education programs should provide for the needs of all students.	1	2	3	4	5
74. Vocational education courses are helpful in learning basic computer skills.	1	2	3	4	5
75. Vocational education teachers should have a say in the selection of math and science teaching materials.	1	2	3	4	5
76. Math and science teachers should have a say in the selection of teaching materials for vocational education.	1	2	3	4	5
77. The importance of high school should be on teaching and developing basic academic skills.	1	2	3	4	5
78. There should be less importance on the teaching of technical and vocational skills in high school.	1	2	3	4	5
79. Vocational student organizations should focus on contests and activities in new categories of technologies.	1	2	3	4	5
80. Vocational student organizations should focus on contests and activities in new categories of leadership.	1	2	3	4	5
81. Vocational student organizations should be part of my high school's activities.	1	2	3	4	5
82. Vocational student organizations should encourage membership of all students even if they are not enrolled in a vocational education program.	1	2	3	4	5
83. Buying, selling, and customer service should be a part of vocational education courses.	1	2	3	4	5
84. All schools with vocational education programs should have vocational student organization chapters like Skills-USA (similar to Beta Club and Junior Honor's Society).	1	2	3	4	5
85. Vocational student organizations should be part of every high school's student activities.	1	2	3	4	5

Question	Scale				
86. The primary purpose of vocational student organizations is to develop leadership.	1	2	3	4	5
87. The names of the student organizations in vocational education should reflect a positive image.	1	2	3	4	5
88. Vocational education teachers place too much importance on contests and activities and place too little importance on instruction in vocational course material.	1	2	3	4	5
89. Student organizations, (like Skills-USA), are the main reason students enroll in vocational education courses.	1	2	3	4	5
90. I believe vocational teachers do a very good job of teaching students.	1	2	3	4	5
91. I believe vocational teachers do a very good job of managing the behavior of the students.	1	2	3	4	5
92. I believe vocational teachers do a very good job of performing non-teaching duties (such as networking with business, industries, and local community).	1	2	3	4	5
93. I believe vocational teachers do a very good job of talking with employers and keeping students informed on what is happening in the work force.	1	2	3	4	5
94. I believe vocational teachers do a very good job of providing students with helpful advice.	1	2	3	4	5
95. I believe vocational teachers do a very good job of presenting their instructional materials.	1	2	3	4	5
96. I believe vocational teachers do a very good job of observing student performance.	1	2	3	4	5
97. I believe vocational teachers do a very good job of making instruction simple.	1	2	3	4	5
98. I believe vocational teachers do a very good job of managing instructional time.	1	2	3	4	5
99. I believe vocational teachers do a very good job of keeping the classroom and laboratory organized and clean.	1	2	3	4	5
100. I believe vocational teachers do a very good job of connecting with the students and knowing their needs.	1	2	3	4	5

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Division of Sponsored Research and Training

MEMORANDUM

TO: Randall M. Haney
Curriculum and Instruction Department

VIA: Dr. Bruce Gutknecht
Curriculum and Instruction Department

FROM: James L. Collom, Institutional Review Board

DATE: May 7, 2001

RE: Review by the Institutional Review Board–
"What are the perceptions of secondary school students towards vocational education?"

This is to advise you that your project "What are the perceptions of secondary school students towards vocational education?" has been reviewed on behalf of the IRB and has been declared exempt from further IRB review. This approval applies to your project in the form and content as submitted to the IRB for review. Any variations or modifications to the approved protocol and/or informed consent forms as they relate to dealing with human subjects must be cleared with the IRB prior to implementing such changes.

If you have any questions or problems regarding your project or any other IRB issues, please contact this office at 620-2455.

dch

Attachments

c: Dr. Phil Riner

Appendix C

Introduction Letter

May 3, 2001

Danny Burns
General Director
Applied Technology and Career Development
Frank H. Peterson Academy
7450 Wilson Blvd.
Jacksonville, FL 32210

Mr. Burns,

I am in the process of completing a dissertation research project as a requirement for the doctoral program at the University of North Florida. In order to obtain the data I need for this research project I will need to survey approximately 760 senior high school students from Duval County.

This research project is directed at understanding the perceptions of secondary school students towards vocational education. Interest in vocational education has been declining for several years. Additionally, this is an area that has not received much attention by researchers in recent years. I am convinced that if we can better understand the perceptions of our students we will be able to better design successful marketing and recruiting programs for our vocational programs and reverse the trend towards declining interest.

For the data to be valid, we will need to survey approximately 40 students in each of the 19 high schools. Obtaining data from all 19 high schools will help to ensure that we have a higher degree validity. I would like to conduct the survey in such a way that it will not be disruptive to the students or teachers. Ideally, I would like to have a classroom of students in each high school that represent a cross-section of students across the full demographic range. The survey consists of about 100 questions and will take less than 40 to 50 minutes to complete. We conducted the pilot test of the survey instrument at Middleburg High School and most students completed the survey in approximately 35 minutes.

Your assistance and suggestions for conducting this survey will be greatly appreciated.

Sincerely,

Randall M. Haney
Doctoral Candidate
University of North Florida

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VITA

Randall McGarey Haney

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