

A Study Of The Influence Vocational Education Has On Students' Ultimate Academic Success

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A STUDY OF THE INFLUENCE VOCATIONAL EDUCATION HAS ON STUDENTS'
ULTIMATE ACADEMIC SUCCESS

by

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for the degree of Doctor of Education
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ABSTRACT

The purpose of this study is to determine if vocational/business education has an influence on a student's ultimate academic achievement—high school graduation. This study consists of comparing students with no vocational/business education experiences to students with some degree of vocational/business education. The cohort group started high school during the 1999-2000 school year, had earned a GPA of 2.5 or lower at the end of the freshman year (May 2000) and finished high school prior to the start of the 2003-2004 school year. There were 322 students identified in the initial cohort group.

In completing this study, the following procedures were implemented: related literature was reviewed to provide a background of the role vocational/business education plays and the effect vocational/business education has on a student's achievement, data were collected and a survey was taken. The data collected included grade point average, standardized test scores, attendance, discipline and whether or not the student withdrew prior to graduation. The data were analyzed using ANOVA to determine a significant difference. Significance was tested at the .05 level. Data related to withdraws were analyzed using the Chi-Square Test of Independence.

The researcher developed and implemented a survey instrument. The survey was offered to all Lyman graduates in the class of 2003 over the age of 18 who had completed at least two courses in one vocational/business program. These students were asked to describe the significance and relevance of their vocational/business education training to their high school experience and career choice (which may include college education). The survey asked students to list advantages and disadvantages of their vocational/business education training and their

participation in co-curricular organizations. Students were asked to state their perception of the effect that the vocational/business classes had upon their academic achievement.

The following results were obtained from this research. There was not a statistically significant difference in grade point averages, standardized test scores, absences and out-of-school suspensions. There was a statistically significant difference in in-school suspensions and withdraws prior to graduation.

There were 227 students who withdrew prior to graduation. Of the 227 students, 91 had no vocational/business education and 96 had taken some amount of vocational/business education training (one course in one or more vocational/business education programs). Of the 95 students who remained throughout the four years of high school, 84 of the students graduated. Of the 84 students who graduated, 56 of the students completed a vocational/business education program. All graduates who responded to the survey strongly agreed that vocational/business education had a positive effect on their academic achievement.

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I would like to give special thanks Mr. Sam Momary, Principal of Lyman High School, who has allowed my study to take place at Lyman. His support and encouragement has helped me achieve this goal. Also, I appreciate my friends especially Lynore who helped guide my way allowing me to persevere throughout this journey. And most importantly, I am grateful for the support that my family provided me. They gave me encouragement every step of the way. I met my goal with the love and support of dear husband, Jack, my daughters, Meg, Jenny, Krissy, my siblings, Frank, Helen and Donna and my Dad and Mom. Fondly, I thank my mom. This was a journey we started together and in a sense, we have finished together. My mom, a high school graduate, always emphasized the importance of education and the fact that you can achieve whatever you want in this world as long as your heart is there. A person's success can be measured by personal satisfaction. By my side, she always believed in me and supported my accomplishments. With her inspiration, I was able to value and enjoy my education. I know she is by my side today and always.

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CHAPTER ONE INTRODUCTION

Impetus Of Study

For many decades, vocational education has met the needs of students in their efforts to graduate high school with a usable skill or career. The role of education is to ensure that students are prepared for a future no matter what path they choose to follow. Jerome Bruner (1962) states

Education must also seek to develop the processes of intelligence so that the individual is capable of going beyond the cultural ways of his social world, able to innovate in however modest a way so that he can create an interior culture of his own.

Even though schools frequently implement additional programs to prepare students for the future, many students are still at risk of failing. According to Sullivan and Wilson (1995), this burden is not influenced entirely upon the shoulders of education but also upon many demographic variables (i.e., family size, income, parental composition, marital status, family conflict, parental affection, level of supervision, style or harshness of discipline and parental deviance.)

Naylor (1987) reported that students who took more vocational classes were less likely to skip classes or drop out of school than non-vocational students. One reason for this is vocational education gives students a focus. Vocational students who participated in career education are more likely to complete the vocational program they have selected.

According to Kliebard (1999), workplace-focused learning has a long history in American education. In The One Best System, David Tyack (1974) found that during the 19th century, the vocational education movement supported a simple realism that the public schools should prepare some students directly for subordinate roles in the workforce while it screened

out those fit for further training in higher education. In the early 20th century, the purpose of vocational schools was to prepare students for work in an industrialized nation. Modeling the German system of education was necessary for improving America's position; Americans realized in 1905 that youth apprenticeships needed to be developed (Spring, 1990).

Many of the original purposes remain intact. Vocational education maintains the purpose of preparing students for the world of work. However, preparing some students for subordinate roles has changed. Vocational education has become increasingly technical, placing greater demands upon students. While apprenticeships continue as a very important part of training, societal changes serve as the change agent for vocational schools and their mission. Successful vocational students recognize the subject content as relevant and applicable to real life experiences and therefore are more motivated to learn. Programs preparing young people for successful work experiences continue to earn attention and support (Donlevy, 2000).

Purpose Of Study

The purpose of this study is to determine if vocational/business education has an influence on a student's ultimate academic achievement—graduation. This research consists of comparing students with no vocational/business education experiences to students with some degree of vocational/business education. The profile of the identified cohort group includes students who began high school during the 1999-2000 school year and earned a grade point average (GPA) of 2.5 or lower at the end of the freshman year.

Research Questions

The study was guided by the following research questions:

1. Do students who follow a vocational/business education program have a higher GPA than students not enrolled in a vocational/business program?
2. Do students who follow a vocational/business education program score higher on standardized testing than students not enrolled in a vocational/business program?
3. Do students who follow a vocational/business education program have fewer absences than students not enrolled in a vocational/business program?
4. Do students who follow a vocational/business education program have a fewer incidents of administrative discipline action than students not enrolled in a vocational/business program?
5. Is there a relationship between the number of withdraws and vocational status?
6. Do the students who followed a vocational/business education program find relevance in their coursework?

Definition Of Terms

Vocational education includes courses and programs at various educational levels for selected careers in an occupational area. Vocational courses include but are not limited to Electronics, Drafting, Television Production, Graphic Communications, Carpentry, Electricity, Masonry, Automotive Studies and Horticultural Studies. Basic skills in English, Mathematics and Science are reinforced through classroom instruction and applied laboratory practices

Business education includes planned, specialized instructional programs designed to prepare students to enter employment in a cluster of business occupation(s). Business education courses include but are not limited to Business Systems and Technology, Digital Publishing, Accounting, Web Design and Business Software Applications. For the purpose of this study, Marketing Education (which includes Fashion Marketing and Sports/Recreation Marketing) was considered with the business education programs. Basic skills in English, Mathematics and Science are reinforced through classroom instruction and applied laboratory practices.

Academic path—An individual student's course history through high school that does not include any vocational or business education programs.

Academic achievement—A student's ability to remain a part of the initial cohort with which they entered high school. Students were promoted yearly and were able to meet all of the state mandated graduation requirements, including a GPA of 2.0 or greater.

SASI—SASI is a software product of NCS Pearson which maintains the student database for Seminole County Public Schools in Florida. Data includes demographic, academic, attendance, discipline, schedules, schools attended and other education data that is necessary for state reporting.

GPA—GPA is an abbreviation that represents grade point average. The grade point average that was used throughout this study was the cumulative GPA. This means that it represented the student's total grade point average thus far.

Assumptions

When collecting the data, it was assumed that:

1. The data had been entered accurately in the Seminole County Public School district database;
2. All students who were eligible for a free/reduced lunch program returned the application each year of eligibility in order to determine levels of poverty;
3. The graduate answered the questions accurately; and
4. The students who took the vocational/business courses did so with a career exploration or a career goal in mind.

Limitations

This study was limited to the number of students at Lyman High School in Longwood, Florida. The profile group included only those students who began their freshman year during the 1999-2000 school year and who completed their freshman year with a GPA of 2.5 or less.

The data collected were limited by the data collected in Seminole County Public Schools, Florida, and saved in the student database system (SASI). The survey was limited to the size of the population of students in the profile group who graduated from high school, who were part of a vocational/business education program, and who were over 18 years of age. Discipline referrals and attendance records were consistent with school policies, and the interpretation of the policies was consistent across the faculty/staff.

CHAPTER 2 BACKGROUND AND SIGNIFICANCE

Introduction

Jerome Bruner (1962) stated that when we are creating curriculum, we should ask “What is worth knowing about?” and, “is the knowledge worth mastering?” Students who are from low socioeconomic households are unable to comprehend the relevance of many education topics to their life. Focusing on Bruner’s questions would address many doubts students voice regarding learning or school.

Vocational Education

According to Kliebard (1999), workplace-focused learning has a long history in American education. In The One Best System, author David Tyack (1974) found that the 19th century development of vocational education sparked a simple belief that public schools should prepare some students directly for roles in the workforce while screening out those who qualify for higher education. In the early 20th century, the purpose of vocational schools was to prepare students for work in an industrialized nation. To improve America’s position, the German system of education was modeled. In 1905, Americans realized the need to develop youth apprenticeships (Spring, 1990). By the advent of the 21st century, vocational education began another transition. Early vocational education prepared students for entry-level jobs that required less than a four-year college degree. While present-day vocational education prepares students for the world of work, some vocational education policies encourage high school students to continue their studies at the postsecondary level. In addition, two-year postsecondary institutions

support students to pursue four-year credentials through a variety of articulation arrangements (Levesque, et. als. 2000).

Today many of the original vocational education program components remain intact. Apprenticeships are still a very important part of training. However, the emergence of technology has generated significant changes. When students recognize the relevance and application of program content, they are successful. Effective vocational education programs preparing young people for beneficial work experiences continue to earn thoughtful attention and support today (Donlevy, 2000).

Classrooms often reflect historical instruction models which emphasize remediation, workbook exercises, and basic drill and practice. These methods of remediation have proved ineffective because they tend to be broad, repetitive and often fail to motivate those students who are in need of high-interest activities (Texas Education Agency, 1994). If educators are to improve the quality of education to better meet the needs of at-risk students, then changes in curriculum must be made. Initiatives such as “No Child Left Behind” require local and state boards of education to raise the standards of education for all students. Virtually everyone is in favor of the higher standards in education, however, the question *will current reforms lead to success for all students?* remains an issue. If current standards are unreachable and dropout rates increase, then great numbers of students will be unskilled and unprepared (Donlevy, 2000). Crowson, et. als. (2000) cited efforts to integrate academic and vocational education as only a decade old—such a short period of time for change of this complexity. Bohlin (2000) quoting Helen Keller said,

Many people have a wrong idea of what constitutes real happiness. It is not obtained through self-gratification, but through fidelity to a worthy purpose.

Levesque, et. als. (2000) reported academic preparation of high school students who participated in vocational education increased between 1982 and 1994. The number of graduates who followed a college preparatory track had increased 1.4 times from 1982 – 1994. The number of graduates who followed a general track had increased 3 times. The most predominant increase was among public high school graduates who were “vocational concentrators.” This group had increased 6.6 times during the same time period.

The long-term works of William T. Grant and the Carl Perkins Act have given much support to school-to-work efforts (Crowson, et. als. 2000). However, with so much pressure on schools to raise academic standards, the educational system is willing to continue traditional academic courses. Leaders question how to best enable these students to meet increasingly higher academic standards as they are engaged in more demanding technical preparation (Bragg, 2000). Over the last 15 years, the preparation of students for entry-level jobs in occupations requiring less than a baccalaureate degree has shifted toward broader preparation that develops the academic, vocational and technical skills of the vocational education students (Levesque, et. als., 2000). This preparation involves integration of vocational and academic education with emphasis on all aspects of an industry.

Many groups, including policymakers, educators, employers and scholars, advocate vocational education integration. These groups, among others, view vocational education as a passageway to improve the academic content of courses and to better prepare students for employment. Legislators at the federal level vision the integration of vocational education as a way to improve the status of the United States in the world economy. This level of education can

be accomplished by developing the academic and occupational skills needed in a technologically advanced society (Stasz, et. als. 1998).

Today, vocational education legislation and policy encourage high school students to continue their education at the postsecondary level. This shift began in the mid-1980's (after the publication of A Nation at Risk) when educators and school reformers advocated the strengthening of academic learning and the preparation of students for the world of work. In 1983, the National Commission for Excellence in Education published A Nation at Risk which provided much of the basis for school reform. Hayward and et.als. (1998) cited from the report

More and more young people emerge from high school ready neither for college nor for work . . . this predicament becomes more acute as the knowledge base continues its rapid expansion, the number of traditional jobs shrinks and new jobs demand greater sophistication and preparation.

Therefore, the recommendations of the Commission focused on improving the quality of the college prep curriculum. Initially, vocational education was not included as part of the solution. Throughout the 1980's, there was a drastic decline in the number of vocational education programs. Many districts opted to push vocational education out of the curriculum and focus more on traditional academic courses.

This movement changed with the 1985 publication of The Neglected Majority by Dale Parnell. He condemned the lack of attention paid to students who were not college bound and referred to this group as the "neglected majority." Parnell estimated that approximately 75% of high school graduates would not attain a four-year college degree.

The first phase of his system was "Careers Education," which provided students with the opportunity to develop skills to function in real society as a "learner, wage earner, citizen, consumer, family member, leisure-time pursuer and individual." Parnell (1985) believed that

“unfocused learning remains one of the prime barriers to achieving excellence for a host of high school students.” As part of his comprehensive program, all facets of basic education were infused with practical examples for work and life roles. A rigorous approach to career exploration took place in the middle grades. Then, all adolescent students explored clusters and families of occupations. In the beginning years of high school, students developed a common core of learning which included communication skills, mathematics, physical/biological sciences and social sciences with emphasis on career education. In the final two years of high school education, students chose whether they would be college prep, seeking a four-year degree or whether they would pursue an associate degree or concentrate on a vocational cluster.

Groups of educators and reformers believed that integrating academic and vocational education as well as developing tech prep programs could achieve a more comprehensive curriculum. Integration was designed as a means to make education more meaningful for all students, to provide a broader training for employment, to improve student engagement and learning, and to improve the academic content of vocational courses. This pedagogy was first passed into federal law in the 1990 Perkins Act and again confirmed in the 1998 Perkins Act. States were required to develop performance measures and standards for assessing local vocational programs. The 1998 Perkins Act emphasized integration, secondary-postsecondary articulation and “all aspects of the industry” and required a measure of academic performance (Levesque, et. als., 2000).

In 1990, the 101st Congress included the Tech-Prep Education Act in the reauthorization of the Perkins Vocational and Applied Technology Act. Initiatives such as Tech Prep, School-to-

Work and Workforce Development were put in place. Programs of this nature were designed to give relevance to academic learning as their core concepts showed.

In the work of Hayward, et. als. (1998) Tech Prep models were described as including a common core of course work for all students in the first two years of high school leading to the junior year when each student was asked to decide between a college prep (four-year degree), vocational program or an associate degree program of study. The core concepts of a Tech Prep program included: 1) grounding in integration and authenticity; 2) a formal articulation agreement between secondary and post-secondary levels; 3) integrating theory and application—drawn upon the community where the students lived and worked; 4) standards-driven—making sure the content was rigorous and relevant; 5) an educational medium that was accessible to all; and 6) operating in a highly collaborative manner, utilizing joint planning, developing and implementing processes that involve a variety of stakeholders (Bragg, 2000). The 1994 School-to-Work Opportunities Act reinforced the call for integration of academic and vocational education as well as an articulation process between secondary and post-secondary education. The underlying belief in the act was that students had a better understanding of a purpose to their studies and applied their academic skills to real-world activities.

Levesque, et. als. (2000) viewed vocational education as evolving into a multipurpose enterprise that sought to include occupational skills for as well as academics skills believed to provide students with better preparation for both careers and post-secondary education. Originally, vocational classes were developed for those who did not plan on attending college. However, today's high-skill job market requires all graduates to have advanced academic

knowledge and workplace skills. Technical careers require the ability to analyze and diagnose problems, and professional careers require technical and teamwork skills.

Factors That Influence Academic Success

Several academic and non-academic factors affect a students' academic success. These factors include socio-economic status, truancy, discipline and classroom management.

Socio-Economic Status/Family Issues

Shaker (2001) stated that in the United States, the least controversial purpose for schooling is to prepare students for economic productivity for themselves and for the whole of society. This mission was attempted through vocational education and practical application of knowledge in the academic curriculum. However, when the development of personal economic skills was neglected from this curriculum, the socio-economic status had an effect on the educational success of the child. Many at-risk children live in socially and/or economically disadvantaged situations that significantly affected their academic growth and development. (Bauer, Sapp, Johnson, 2000).

Cottle (1998) cited several facts from a variety of sources related to socio-economic status of American children. According to statistics from the U.S. Bureau of Census, one in five children grows up in poverty. One of four girls and one in seven boys report some form of abuse. Statistics related to infant mortality, child abuse, child poverty, teenage drug abuse, suicide and high school dropouts revealed American children faring far worse than they did fifteen years ago. He continued to report statistics from the U. S. Bureau of Census. Sixty-seven children will

perish before their first month of life, 2,800 teenagers will get pregnant, 135,000 youths will bring a weapon to school, 1,850 will be abused or neglected, six will commit suicide and 3,300 will run away from home. Students need to find relevance in their education, and schools needed to provide a safe haven for students. In many cases, the job of parenting switched from the home to the school to help inspire students with a life purpose.

Renzulli and Park (2000) acknowledged the problem of high school dropouts had generated increased interest from researchers, educators and policy makers. Statistics from the National Center for Education in 1997 showed that, each year, approximately 300,000 to 500,000 students left high school in the United States without completing their program. Students' personal backgrounds, including sex, race, socioeconomic status, family background and personal problems had been considered to affect students' decisions to drop out of high school. Renzulli and Park cited that almost 60% of the dropping out took place during the first two years of high school, and blacks were likely to drop out later than other groups. They also pointed out that family factors are significantly related to the decision of students to drop out. Families of dropouts were less solid, less influenced by a father and less likely to interact in leisure activities.

Although young people constituted only 25% of the population, they represented almost 40% of those persons classified as poor. Most of these impoverished children are black or Hispanic. Renchler (1993) cited studies that indicate low socio-economic children who lived in inner cities were more likely to experience circumstances that were educationally damaging than students from a higher socio-economic household. Any one of the factors that consider a child to be of lower socio-economic status put the students at great risk for having substandard levels of

academic achievement. As expected, these factors lead low socio-economic students to drop out of school far more frequently than their higher counterparts. Cottle (1998) stated that the children who experienced abuse were found in disproportionate numbers in special education classes. Abused children were forced to repeat a grade or grades in school. National test scores showed the results of abused children to be drastically lower than those who were not abused.

Renchler (1993) continued to state the correlation that children who lived in "persistent poverty" for the first five years of their life had lower I.Q.'s than children who did not live in "persistent poverty." He continued to point out that those family beliefs, values and attitudes among low socio-economic status households are rigid and authoritarian in regards to rearing and educating children. These beliefs, values and attitudes had a strongly negative influence on their children's achievement levels. Also, these families tend to cluster around schools that are grossly under funded. Furthermore, variances in I.Q. scores may be more accurately attributed to socio-economic status than race (Tyler-Wood and Carri, 1993).

Educators must make sure that students, regardless of their socioeconomic status or family situation, do not fail and are prepared for a future no matter what path they choose to follow. Jerome Bruner (1962) states

Education must also seek to develop the processes of intelligence so that the individual is capable of going beyond the cultural ways of his social world, able to innovate in however modest a way so that he can create an interior culture of his own.

According to Sullivan and Wilson (1995), this burden does not fall entirely upon the shoulders of education but also upon many demographic variables (i.e., family size, income, parental composition, marital status, family conflict, parental affection, level of supervision, style or harshness of discipline, and parental deviance). Sullivan and Wilson stated that students from

a lower socioeconomic background are the “head of the household.” Whether a student is in early childhood or in the last year of high school, moral and ethical values need to be instilled. Lasch (1977) identifies the home as “where the heart was and where people went for nurturing, emotional support, and relief from the pressures of factory life.” Lasch believes this is no longer true, and that this role is shifting to the schools.

School Related Issues

According to the Office of Educational Research and Improvement (1997), truancy is a major problem that negatively affects the future of our youth in the educational system of the United States. Thousands of students skip school each day in urban areas. Truancy is often due to alienation from school, which has resulted from tracking practices that traditionally marginalize poor and minority students.

Hence, the school climate is an important factor that contributes to truancy rates. School climate is defined as the mindset that students and staff have about the school environment over a period of time. These feelings determine how comfortable someone feels in a supportive learning (teaching) situation. Positive and negative feelings regarding the school environment are also affected by the climate of the school. Hypothetically, if a negative feeling (concern, fear, frustration, or loneliness) about school exists, then this would negatively affect learning and behavior (Peterson and Skiba, 2001).

Students who are enrolled in school on a general track are more alienated from school and are less focused than those in either the academic or vocational tracks. Schools attempt to provide opportunities for them to participate in extracurricular activities according to Damico

and Roth (1991). Learners who are academically and/or socially engaged in school programs are likely to achieve graduation. Students, who are not engaged, whether academically or socially, are more likely to drop out. Vocational and business education programs provide plenty of opportunities for students to be academically and socially engaged through co-curricular organizations (i.e. Distributive Education Club of America –DECA, Future Business Leaders of America—FBLA, Business Professionals of America—BPA and Vocational-Industrial Club of America—VICA SkillsUSA).

Damico and Roth stated students cut class or were continuously absent or tardy to classes in which they felt their attendance was not relevant. Relevancy was deemed either by the fact that the teacher did not care, or so little instruction was going on that they were not going to miss anything by being late. Students were selective in the classes that they “cut” or to which they arrived late. These choices depended upon the importance of being in class to learn new material, evaluations of the quality of instruction and the relationship with teachers. The study indicated that students were very bored in certain classes.

DeKalb (1999) stated that students cited boredom and loss of interest in school, suspensions, poor relationships with teachers and non-relevant courses as major factors in their decision to skip school. However, most school staff believed truancy to be related primarily to student problems with family and peers. Peers have an undeniable influence in truancy decisions made by students.

Another major reason for truancy is the lack of parental involvement. McNeal (2001) acknowledged that because parental involvement predominantly affects behavioral outcomes, it

has significant positive effects on academic achievement and negative effects on truancy and dropping out.

The family's ethnicity, income and education profoundly affect the status of the child's health and use of health services. Parents affected by disparities in health statutes and utilization of health and social services struggle with providing an enriched environment for their children. The conditions of the child's environment outside the classroom affect the child's growth and development. Students who struggle with these disparities have increased possibilities of academic failure (McMahon, Browning, Rose-Colley, 2001). Failure in academics leads to an increase of truancy.

Similarly Levine, Pollack and Comfort (2001) found that children of teenage mothers (first birth at age 17 – 18) were apt to have problems with truancy. Also, children whose mothers scored lower on the Armed Forces Qualifying Test (AFQT), which measured reading comprehension, vocabulary and mathematics skills, had significant problems with truancy and other social issues. One rationale was young mothers are immature and lack the life experiences or social supports necessary for parenting skills. Lacking these skills, young mothers may not be able to shape their children's behavior and activities.

Ascher (1987) stated "the ninth grade, difficult for most students, is particularly hard for students who are at-risk." This age group is at an uncomfortable stage of adolescence. Ninth graders face less scheduling and rule flexibility, and are tempted to indulge in the antisocial behavior. Therefore, many students have a tendency to choose not to attend as early as the ninth grade.

Many students feel that they need to be employed in order to afford those items necessary to keep their social status. When work and school obligations conflict, the majority will give priority to their jobs. Lantos (2001) noted that there is nothing wrong with minors working to earn extra money and to learn the value of work. However, on the average, when the number of work hours exceeds 15, grades go down and truancy increases.

Matus (1999) stated many urban students must work to support their families. Other students do not live at home with their family and are quite independent. Conflicts arise between school and job and are demonstrated in chronic absenteeism and tardiness, lack of class preparation, and lack of interest in learning. When conflicts arise, students make a choice; and the choice is not to attend school any longer.

Discipline and Classroom Management

An old adage reads "An idle mind is a devil's workshop." These words are true in classrooms on a daily basis. Backes and Ellis (2003) stated that a good lesson for teachers to learn early is to "keep them busy." A key focus in assuming leadership of a classroom is to communicate to students that they are important and that the teacher believes that the students can master the material.

Backes and Ellis (2003) cited the 1999 report of the 34th Annual Phi Delta Kappa/Gallup Poll of Public's Attitudes Toward the Public Schools. The Kappan listed the lack of discipline as the greatest dilemma facing public schools. Other studies since the 1999 report indicated the same findings and revealed that in many instances more than 50% of class time is spent dealing with discipline problems.

Teaching methods that include hands-on or applied learning are a normal part of daily instruction in vocational classes. Teachers try to involve students in their learning as much as possible (Matus, 1999). Vocational education provides students with relativity to learning, which keeps students focused. In turn, having students focused reduces the number of discipline and safety issues in a classroom. Once in the workforce, students will be exposed to numerous safety and workplace policies.

Often, issues pertaining to classroom management are due to circumstances happening outside the classroom, creating a dilemma for teachers. In addition, many homes do not provide a quiet place to study. Little privacy and many distractions prevent the student from completing assignments. All too frequently home environments do not have the proper resources available, and additional family obligations and lack of transportation often prevent students from doing schoolwork. Students see very few examples of success in their lives. Family members do not provide academic support. Consequently, students feel a sense of inadequacy and perform below expected grade level.

Educational Success Due to Vocational Education Programs

Education, particularly vocational education, can play a major role in deterring juvenile delinquency. Millions of our nation's at-risk youth are involved in crime and violence, substance use and abuse, unsafe sex, school failure, lack of job preparedness, and the problems associated with living in poverty (Ostrom, 1995). Baker (1991) stated:

School performance is by far the most single predictor of delinquency and future criminality—more accurate than race or economic level or social class, more accurate than any of the sociological variables commonly considered to have an effect on the rate of delinquency . . . Today, a boy with poor grades in high school

is more than six times as likely to be in trouble with the law as is the youth earning above-average grades.

Juvenile delinquency is related to other factors such as truancy, tardiness, poor relations with peers, and low respect for authority. (Empey & Lubeck, 1971; Lewis, Schwartz, & Ianacone, 1988).

Keeping in line with an academic perspective, Naylor (1987) reported "students with low motivation toward school showed improvement in school attendance and retention after participating in career education." Vocational students who participated in career education were more likely to complete a vocational program. Naylor reported students who took more vocational classes were less likely to skip or drop out of school. Vocational education gave students a focus. According to Asche, et. als. (1998), vocational education is a catalyst for the reform of public education.

Training and informing students about the numerous technical career fields available to them is imperative in today's world of technology. There is a very high demand for high school graduates to begin positions in the vocational and technical fields (Clatterbaugh, Z and De Miranda, M. 2000). Jonsson (2000) reported that this country still believed (as it did in the 60's) that 75% of the population needed to have a four-year degree to gain profitable employment. However, 65% to 70% of the careers in the 21st century do not require a four-year degree. Consequently, more high school students seek public high schools that teach the practical and not the "preppy" (academics). Jonsson continued that one-third fewer students quit vocational/technical high schools compared to regular high schools.

Levesque, et. als. (2000) explained that vocational education is offered in three primary public school settings.

1. The traditional American high schools—a comprehensive high school—offer a full range of academic and vocational education.
2. Some states have area vocational schools that offer a wide range of occupational programs where students attend for a part of the day to take their vocational coursework.
3. Other states have full-time vocational high schools that provide students with all of their academic preparation in addition to their vocational programs. Some of these schools may function as a magnet/theme school organizing around occupational or industry themes. Magnet/theme schools differ from a comprehensive school because students are required to choose and finish an occupational “major.” In a comprehensive high school, students are permitted to take vocational courses from a variety of choices.

Some states require all students to complete a minor amount of vocational courses.

However, a study completed by Levesque, et. als. (2000) found that the majority of public high school graduates took more than one credit of vocational education, and more than half took equivalent of three or more year-long courses. In 1994, 97 % of public high school students took at least one vocational education course. Participation in more traditional “industrial arts” declined over the 1982-1994 period, while participation in the newer “technology education” increased.

The Peninsula Academies (a school-business partnership in California's Silicon Valley) provided a program with three years of instruction in computers or electronics. The partnership encouraged parental involvement in the career counseling and planning. The program focused on a highly work-related curriculum with exposure to real jobs through paid work experiences. In

many cases, there was a job waiting upon graduation from the program and high school. Local firms contributed funding, equipment, expertise and mentors.

Andrews and Davis (2003) discussed an “academic marriage between college and high school.” Many high school students suffered from “senioritis.” For some, this may have started as early as their junior year. These students may have been smart and talented, yet, found the high school coursework did not keep them interested and challenged. They were overwhelmed with the desire to move out of high school and into college. Some of these students believed the curriculum pace was too slow.

According to Davis and Andrews (2003), Bard College’s President Leon Botstein argued that children should graduate from high school at age 16. At that point, students would choose to start work or attend a community or four-year college to satisfy the need for options beyond honors classes and Advanced Placement courses. However, he agreed that his view is a bit radical. A bit more practical was the dual-credit course option. These classes were an exceptional articulation and were held at a nearby college. Students were released to take these college classes either during the normal school hours or evenings or weekends. In addition to satisfying secondary school and college/university requirements, these courses filled a vital need for vocational and technical training. State laws, administrative guidelines and local policies ensured that these dual-credit programs met the required standards for transfer to colleges and universities. School districts needed to have “buy-in” from the school board, superintendent, principals and counselors. Faculty participated from college staff as well as secondary teachers.

There were four types of dual credit options in several high schools in the southeastern section of Illinois. In collaboration with the Hella Electronics plant in Flora, Illinois, students

were prepared to be industrial maintenance workers. The need for this field had increased in recent years, and the company attracted and oriented workers to enter this field. Students received lecture time and observed operations firsthand on the plant floor. Students were encouraged to consider employment upon graduation or after additional technical training. Students emphasized that the class allowed them to apply mathematics. While exploring the work, students learned about applied engineering.

A second opportunity was the technical/vocational on-campus option at Olney Central College because many secondary schools trimmed their programs in recent years. Students were enrolled in the semester-long segments, and transportation was provided. College faculty taught the classes. Courses included Collision Repair Technology, Automotive Service, Cisco Networking, Web Designer Certification and Woodworking. More than 100 students participated in this option each year while enrollment and interest increased over the year.

The third dual-credit option included college transfer courses such as Calculus I, U.S. History I and II, World Literature, General Psychology, Business Law and General Biology I. High school teachers were carefully selected and met the college's hiring qualification guidelines. Teachers were required to have a minimum of 18 graduate credits in the major being taught.

The fourth type of dual-credit option was two-way telecommunications. Distance-learning courses included Economics, English Composition I and II, and Fundamentals of Speech. Full-time members of the faculty at Olney Central College taught these classes. Dual-credit offerings increased throughout the country due to the success of these programs and to meet the needs of high school juniors and seniors who wished to jump-start their college careers.

Other successful programs that were coupled with vocational education include:

1. In New York City Middle College High School at La Guardia College exposed high-risk 10th- to 12th-grade students to career options through internships and work placement.
2. In Washington D.C., the Cities in Schools multi-sponsored program focused on youth and their families. This program coordinated efforts linking social and business services to the educational system.
3. In the Philadelphia High School Academies Program, a combined opportunity of vocational education with actual work experience provided disadvantaged inner-city high school students with marketable job skills in various job-related programs (i.e. electrical occupations, business, health care and auto mechanics).

Another program (within a juvenile detention center) incorporated vocational education skills to simulate real-world business and to build self-confidence, hope and the ability to overcome their despair and accomplish the Secretary's Commission on Achieving Necessary Skills (SCANS) skills. This center had set up a screen-printing workshop. Trainees learned all aspects of the business: art design, color separation, printing, packaging and shipping as well as inventory, scheduling and quality control. The venture was self-supporting. Residents of this center had to apply and go through an interview prior to being employed. The evaluation was based on their employable skills as well as their technical ability. Within the same center, the "job" opportunities included maintenance on local housing for the elderly and making wood clocks for the state department of transportation. Depending on the opportunity the students chose, they had to go through the job-hunting process. According to Weeden (1995), half the

battle of helping these young people return to the community as responsible citizens and productive workers was to make them realize they had talent and worth.

There have been many efforts to incorporate academic and vocational education, and this integration has only been used for about a decade. The long-term works of William T. Grant and the Carl Perkins Act give much support to school-to-work efforts (Crowson, et. als. 2000). However, with so much pressure on schools to raise academic standards, educational systems were reluctant to steer away from traditional academic courses. These acts encouraged faculties to continue with standard academic content but to teach it in more interesting and engaging ways, using real-world problems and applications. Leaders questioned how best to enable vocational students to meet increasingly higher academic standards as they were engaged in more demanding technical preparation. (Bragg, 2000).

Like Tech Prep, the School-to-Work Opportunities Act of 1994 provided funding to communities to enhance student achievement and prepare students for careers and post-secondary education. This initiative was designed to promote universal progress in the programs and services that connect school to future work and higher education. The most common features of the School-to-Work program were career awareness and exploration activities, job shadowing, school-based enterprises, mentoring and internships. The activities were related to the students' coursework that promoted strong transitions to future education and training. They had to provide opportunities for high-skill, high-wage careers. Over 1,500 partnerships across the country were formed to plan and implement the School-to-Work initiative. (The Public Forum Institute, 2000)

Perez (1998) noted that effective programs integrated skills training into the other experiences of the student. Strategies (including special programs) attempted to help students overcome barriers that might keep them from achieving their potential as a student. These strategies kept the students focused on graduation. Vocational education provides students with a focus to continue their learning and achieve academic success. As educators continue to refine curriculum, we should continuously ask the questions that Bruner poses “What is worth knowing about?” and “is the knowledge worth mastering?”

CHAPTER 3 METHODOLOGY

Introduction

The purpose of this study was to determine if vocational/business education has an influence on a student's ultimate academic achievement—high school graduation. This study consisted of comparing students with no vocational/business education experiences to students with some degree vocational/business education. The cohort group started high school during the 1999-2000 school year, had a GPA of 2.5 or lower at the end of the freshman year (May, 2000) and finished high school prior to the start of the 2003-2004 school year.

Statement Of The Problem

Data drawn from the Florida Department of Education website revealed that the state graduation rate over the four-year period beginning with the 1999-2000 school year was 62.3%, 63.8%, 67.9% and 69% respectively. Included in the study by Damico and Roth (1993), current trends reveal poor attendance, misbehavior and low GPAs had an effect on students' academic success. Another study by Damico and Roth (1991) found students were “excruciatingly bored” in school which caused a lack of student motivation. Motivation is a critical factor in school performance. Regardless of what the academic ability is for a student, the student must be motivated by the school program content to achieve academic success. Jerome Bruner (1962) stated that when we are creating curriculum the question “What is worth knowing about?” must be answered and, “is the knowledge worth mastering?” Not all students are college bound, thus it

is important for curriculum to meet the needs of all students. Vocational education relates learning to life goals and experiences and is likely to fulfill these needs.

The study was guided by the following research questions:

1. Do students who follow a vocational/business education program have a higher GPA than students not enrolled in a vocational/business program?
2. Do students who follow a vocational/business education program score higher on standardized testing than students not enrolled in a vocational/business program?
3. Do students who follow a vocational/business education program have fewer absences than students not enrolled in a vocational/business program?
4. Do students who follow a vocational/business education program have fewer incidents of administrative discipline action than students not enrolled in a vocational/business program?
5. Is there a relationship between the number of withdraws and vocational status?
6. Do the students who followed a vocational/business education program find relevance in their coursework?

Based upon these questions, the following hypotheses were posed:

H₁—There is no statistically significant difference in the GPA between students who follow a vocational/business program and those who were not enrolled in a vocational/business program.

H₂—There is no statistically significant difference in the standardized test scores between students who follow a vocational/business program and those who were not enrolled in a vocational/business program.

H₃—There is no statistically significant difference in the total number of period absences between students who followed a vocational/business program and those who were not enrolled in a vocational/business program.

H₄—There is no statistically significant difference in the total number of discipline referrals between students who followed a vocational/business program and those who were not enrolled in a vocational/business program.

H₅—There is no statistically significant relationship between the number of withdraws and vocational status.

Study Setting

This study was conducted at Lyman High School in Longwood, Florida of the Seminole County Public School system. Approval to complete the research was granted through Seminole County Public Schools and the University of Central Florida Institutional Review Board. During the final year of the study (the school year 2002-2003), Lyman High School enrolled 2,326 students from local communities that included Longwood, Altamonte Springs, Casselberry, Maitland, Winter Springs and Fern Park. Lyman High School has a program of emphasis that draws from the entire community of Seminole County, Florida. The population included 51% male and 49% female students. The ethnic breakdown at Lyman High School was 12% Black, 20% Hispanic, 3% Pacific Asian, less than 1% Indian, 1.7% Multiracial and 63% White. There were 27.6% students on a free or reduced price lunch program.

Lyman High School is a comprehensive high school. Based on the 2002-2003 data, there were 25 Advanced Placement courses that enrolled 881 students. Lyman High School served 206

students in exceptional education programs, including Physically Impaired, Hearing Impaired, Speech/Language, Autistic, Emotionally Handicapped and Specific Learning Disabilities. The Fine Arts Department, which includes Drama, Stagecraft, Chorus, Band, Keyboarding and Dance classes, served 751 students. The high school offered a comprehensive selection of vocational education classes including Electronics, Drafting, Television Production, Graphic Communications, Carpentry, Electricity, Masonry, Automotive Studies and Horticultural Studies. The school offers a wide selection of business education programs including Digital Publishing, Accounting, Web Design, Business Software Applications and Marketing Education (which includes Fashion Marketing and Sports/Recreation Marketing). Over the four years of this study, the vocational and business education curriculum served 1,600 students (2002-2003); 1,453 students (2001-2002); 1,451 students (2000-2001); 1,401 students (1999-2000). These figures show an increase in enrollment over the years.

The researcher explored high school graduation rates across the state of Florida targeting schools similar to Lyman High School based on size, demographics and statewide rating. However, when other districts were contacted, their data were not documented to the extent of Lyman's.

In completing this study, the following procedures were implemented: related literature was reviewed to provide a background of the role vocational/business education plays and the effect of vocational/business on a student's achievement and the collected data were analyzed. Upon graduation a survey was sent to all Lyman graduates over the age of 18 who had completed at least two years in one vocational/business program.

Population

The initial population of this study was taken from the students who were enrolled as freshman during the 1999-2000 school year and had earned a final GPA of 2.5 or lower at the end of their freshman year. After collection of the data, students were categorized in 3 different groups—vocational completers (two or more consecutive courses in the same program), vocational mismatch (a single class in any vocational/business education program) and non-vocational students (no classes in any vocational/business education program). Because Business Systems and Technology 1 is a course that benefits vocational and non-vocational students, students who took only Business Systems and Technology 1 were classified as non-vocational students. Data were collected at the site of Lyman High School via the SASI. (SASI is a student database software product used in Seminole County Public Schools. SASI is an NCS Pearson product.) During the 1999-2000 school year, there were 598 students enrolled in the ninth grade. There were 322 ninth grade students who earned a GPA of 2.5 or lower at the end of their freshman year. The freshman class consisted of 44% female and 56% male students. The ethnic breakdown included 3% Asian students, 13% Black students, 19% Hispanic students, 1% Multiracial students and 64% White students. There were 2.2% of the students who were classified as ESSS (special education) students. The primary language for 87% students was English while 10% spoke Spanish and 3% had another primary language. There were a total of 192 (32%) freshman students on the free/reduced lunch program.

During the final year of the tracking, 2002-2003, there were 544 students enrolled in the twelfth grade. The senior class consisted of 47% female and 53% male students. The ethnic breakdown included 2% Asian students, 12% Black students, 21.9% Hispanic students, 2%

Multiracial students and 62.1% White students. There were 11.4% of the students classified as ESSS students. The primary language for 82% of the students was English while 14.8% spoke Spanish and 3.2% had another primary language. There were 27% senior students on the free/reduced lunch program.

The initial profile group consisted of 322 students. The profile group consisted of 43% female and 57% male students. The ethnic breakdown included 2% Asian students, 17% Black students, 24% Hispanic students, 2% Multiracial students and 55% White students. Twenty-four percent were classified as ESSS students. The primary language for 85% of the students was English while 11% spoke Spanish and 4% had another primary language. Thirty-seven percent of the profile group qualified for the free/reduced lunch program.

Similar data were collected for students in the original cohort group for each subsequent year of high school.

At the end of the school year 2003, there were 95 of the original profile group remaining—84 graduated prior to the start of the 2003-2004 school year. The population of the profile was subdivided into three groups—students who took more than one course in a specific vocational program; students who took only one course in one or more vocational/business programs; and students who took no vocational/business courses.

Data Collection

After determining what factors affected a student's academic achievement, queries were developed and executed for the profile group's four years of high school beginning with the 1999-2000 school year. Data collection included demographic information, cumulative GPAs at

the end of each year, which (if any) vocational/business education classes were taken, attendance data and discipline data.

In addition to the data collection from the student database, a telephone survey was done for the 48 students who graduated after taking more than one vocational/business education course in one specific program. The survey contained open-ended questions. In addition, if the student was reached, a Likert-style survey was sent with an addressed return envelope. If the student was not reached after several attempts, both sections of the survey, open-ended and Likert were sent to the student.

The Survey Instrument

The survey instrument was developed based upon the type of data that were available (Appendixes B and C). It gathered students' perception of the effect of Lyman High School's vocational/business education classes had on them. Section one of the survey was administered by a personal telephone call to graduates over the age of 18 who had completed two or more classes in one vocational/business education program. The survey format allowed the graduates to expand upon their opinions and discuss the advantages and disadvantages of taking vocational/business education classes. The students also answered questions regarding their involvement in vocational/business co-curricular organizations (i.e. Distributive Education Club of America –DECA, Future Business Leaders of America—FBLA, Business Professionals of America—BPA and Vocational-Industrial Club of America—VICA SkillsUSA).

Section two of the survey was sent to students who graduated, who were over the age of 18 and who had taken one or more vocational/business education classes. The survey was sent in

October 2003. Students were asked to state their perception of the effect that the vocational/business classes had upon their academic achievement. A 5-point Likert-type scale response model was utilized. Numerically scores were assigned to responses as follows: 5—Strongly agree; 4—Slightly agree; 3—Neither agree nor disagree; 2—Slightly disagree; 1—Strongly disagree.

After four failed attempts to reach those graduates selected to participate in the survey via telephone, both sections of the survey were mailed to the graduates.

Data Analysis

Before the data were analyzed, descriptives were used to assess quality of responses and size of groups. Data were analyzed by running a One-Way ANOVA to determine if there were differences between curriculum groups relative to GPA, standardized testing, absences and the number of discipline referrals. Data were analyzed by running a Chi-square Test of Independence to determine if there were a relationship between curriculum groups who withdrew from school prior to graduation and those who graduated. Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) for windows, Version 7.0.

A two-part survey was offered to 48 students of the initial cohort group. The participants of the survey had graduated as vocational/business education program completers and were 18 years old or older. The first attempt to conduct part one of the survey was by telephone. The telephone survey asked specific questions about the relevance of the student's vocational/business education coursework. After three attempts to reach the students by the telephone, sixteen students had been reached. With their permission, a follow-up survey (part

two) in Likert style was mailed to each of these students. The responses for the qualitative questions on the survey were reported using a logical analysis.

CHAPTER 4 PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this research was to determine if vocational/business education has an effect on a student's ultimate academic achievement. This research consisted of tracking students who either had no vocational/business education classes or had vocational/business education classes during their four years of high school. The cohort group started high school at the same time, had a GPA of 2.5 or lower at the end of the freshman year (May, 2000) and finished high school on track. There were 322 students in the initial cohort group. Of the initial cohort group, 84 students graduated prior to the 2003-2004 school year.

Results of the statistical analysis of data and the personal responses from the graduates of the cohort group are presented in this chapter. Varying methods of statistical analysis were used in the tabulation of the data and responses. Methods of tabulation included use of the Statistical Package for the Social Sciences for Windows (SPSS 7.5) as well as hand tabulation by the researcher.

General

A total of 322 students were in the initial cohort group (those students who started their freshman year in 1999 and school ended the year with a GPA of 2.5 or lower). A total of 227 students in the initial cohort group withdrew prior to the expected graduation date of May 2003. The type of data analyzed determined whether the total number of students was used or the total number of graduated students was used.

A survey was designed and presented to the 48 graduates in the initial cohort group who were at least 18 years old and completed a vocational/business education program. These students were asked to describe the significance and relevance of their vocational/business education training to their high school and career choice (which may include college education). The survey asked students to list advantages and disadvantages of the vocational/business education training and their participation in co-curricular organizations (i.e. Distributive Education Club of America –DECA, Future Business Leaders of America—FBLA, Business Professionals of America—BPA and Vocational-Industrial Club of America—VICA SkillsUSA).

The survey which was conducted in two parts (part one of the survey conducted over the telephone and part two of survey mailed) is contained in Appendix A. The Survey that was sent to graduates who were not reached by telephone is contained in Appendix B.

Data Analysis

H₁—There is no statistically significant difference in the GPA between students who follow a vocational/business program and those who were not enrolled in a vocational/business program at the .05 significance level.

Based on the results of the study, the null hypothesis cannot be rejected. There is no statistically significant difference ($F=.535$, $df = 2,81$, $p >.05$) of the final senior year GPA generated by the students who did not participate in any vocational/business education courses (2.45), the students who took only one vocational/business course in a program (2.63) and the students who completed a vocational program (2.61). Approximately 1.3% of the variance in

grade point average (GPA) can be accounted for by the group. These results are shown in Table 1.

Table 1
Mean and Significance of Final Cumulative Grade Point Average

Vocational Status	Number of Students	Mean GPA
No Vocational/Business	8	2.45
Some Vocational/Business	20	2.63
Complete Vocational/Business	56	2.61

H₂—There is no statistically significant difference between the standardized test scores of students who follow a vocational/business program and those who were not enrolled in a vocational/business program.

These results were based on students who took one or more of the following standardized tests: ACT (composite score), SAT Math, SAT Verbal, FCAT Reading and FCAT Math.

Based on the ACT, the results from the study indicate the null hypothesis cannot be rejected. There is no statistically significant difference ($F=3.847$, $df = 1,10$, $p>.05$) of ACT composite scores generated by the students who took only one vocational/business course in a program (22.00) and the students who completed a vocational program (17.70). Students who did not take any vocational/business education courses did not take the ACT. Group can account for 27.8% of the variance in ACT scores.

Based on the SAT Math, the results from the study indicate the null hypothesis cannot be rejected. There is no statistically significant difference ($F=1.132$, $df = 2,25$, $p>.05$) of SAT Math

scores generated by the students who did not participate in any vocational/business education courses (370.00), the students who took only one vocational/business course in a program (525.00) and the students who completed a vocational/business education program (470.44). Group can account for 8.3% of the variance in SAT Math scores. Although, the results of this study indicate that students who took some amount of vocational/business education classes scored higher on the SAT Math test than students who had not taken any vocational/business education classes, the difference was not significant statistically.

Based on the SAT Verbal, the results from the study indicate the null hypothesis cannot be rejected. There is no statistically significant difference ($F=.377$, $df = 2,25$, $p>.05$) of SAT Verbal scores generated by the students who did not participate in any vocational/business education courses (410.00), the students who took only one vocational/business course in a program (510.00) and the students who completed a vocational program (454.800). Group can account for 2.9% of the variance in SAT Verbal scores. Although, the results of this study indicate that students who took some amount of vocational/business education classes scored higher on the SAT Verbal test than students who had not taken any vocational/business education classes, the difference was not statistically significant. Table 2 shows the comparison of ACT, SAT Math and SAT Verbal mean scores.

Table 2
Mean of Standardized Test Scores

Standardized Test	No Vocational/ Business Classes		Some Vocational/ Business Classes		Vocational/ Business Education Completer	
	No. Students	Mean Score	No. Students	Mean Score	No. Students	Mean Score
ACT	2	22.00	10	17.70	12	18.41
SAT Math	1	370.00	2	525.00	25	470.44
SAT Read	1	410.00	2	510.00	25	454.80

Based on the FCAT Reading, the results from the study indicate the null hypothesis cannot be rejected. There is no statistically significant difference ($F=.412$, $df = 2,80$, $p>.05$) of FCAT Reading scores generated by the students who did not participate in any vocational/business education courses (324.38), the students who took only one vocational/business course in a program (317.30) and the students who completed a vocational program (313.29). Group accounted for 1% of the variance in FCAT Reading scores. The results indicate that students who took some amount of vocational/business education classes scored lower on the FCAT Reading than students who had not taken any vocational/business education classes.

Based on the FCAT Math, the results from the study indicate the null hypothesis cannot be rejected. There is no statistically significant difference ($F=.844$, $df = 2,80$, $p>.05$) of FCAT Math scores generated by the students who did not participate in any vocational/business

education courses (317.75), the students who took only one vocational/business course in a program (323.60) and the students who completed a vocational program (323.84). Group accounted for 2.1% of the variance in FCAT Math scores. The results indicate that students who took some amount of vocational/business education classes scored higher on the FCAT Math than students who had not taken any vocational/business education classes. The results of the FCAT Reading and FCAT Math are shown in Table 3.

Table 3
Mean and Significance of State Standardized Test Scores

Standardized Test	No Vocational/ Business Classes		Some Vocational/ Business Classes		Vocational/ Business Education Completer		Significance (p=.05)
	No. Students	Mean Score	No. Students	Mean Score	No. Students	Mean Score	
FCAT Read	8	327.38	20	317.30	55	313.29	.664
FCAT Math	8	310.75	20	323.60	55	323.84	.434

H₃—There is no statistically significant difference between the total number of period absences of students who followed a vocational/business program and those who were not enrolled in a vocational/business program.

Based on the average of absences over four years, the results from the study indicate the null hypothesis cannot be rejected. There is no statistically significant difference (F=.062, df = 2,81, p>.05) of the percentage of period absences by the students who did not participate in any vocational/business education courses (6.51%), the students who took only one

vocational/business course in a program (6.28%) and the students who were completed a vocational program (6.13%). Group accounted for .2% of the variance of in the percentage of period absences. Although, students who took some amount of vocational/business education classes had fewer absences over the four years than students who did not participate in any vocational/business education classes, the difference was not significant statistically. Table 4 shows the percentage of periods absent.

Table 4
Mean and Significance of Percentage of Periods Absent

	No Vocational/ Business Classes		Some Vocational/ Business Classes		Vocational/ Business Education Completer		Significance (p=.05)
	No. Students	Mean %	No. Students	Mean %	No. Students	% Mean	
Percentage of Periods Absent	8	6.5%	20	6.3%	56	6.1%	.940

H₄—There is no statistically significant difference between the total number of discipline referrals of students who followed a vocational/business program and those who were not enrolled in a vocational/business program.

Based on the average of in-school suspensions over four years, the results from the study indicate the null hypothesis can be rejected. There is a statistically significant difference (F=3.41, df = 2,81, p<.05) of the average of in-school suspensions by the students who did not participate in any vocational/business education courses (.031), the students who took only one vocational/business course in a program (.142) and the students who completed a vocational

program (.323). Group can accounted for 7.8% of the variance in the number of in-school suspensions. The students who had not taken any vocational/business education classes had a lower number of in-school suspensions than the students who had taken some amount of vocational/business education classes.

Based on the average of out-of-school suspensions over four years, the results from the study indicate the null hypothesis cannot be rejected. There is no statistically significant difference ($F=2.30$, $df = 2,81$, $p>.05$) the average of out-of-school suspensions by the students who did not participate in any vocational/business education courses (.031), the students who took only one vocational/business course in a program (.013) and the students who completed a vocational program (.128). Group accounted for 5.4% of the variance in the number of out-of-school suspensions. Students who had not taken any vocational/business education classes had a lower number of out-of-school suspensions than the students who had taken some amount of vocational/business education classes. Results of the ISS and OSS ANOVA are shown in Table 5.

Table 5

Means of the annual average number of times students were assigned ISS and OSS

	No Vocational/ Business Classes		Some Vocational/ Business Classes		Vocational/ Business Education Completer		Significance (p=.05)
	No. Students	Mean	No. Students	Mean	No. Students	Mean	
ISS	8	.0313	20	.1415	56	.3229	.038
OSS	8	.0313	20	.0125	56	.1280	.106

H₅—There is no statistically significant relationship between the number of withdraws prior to graduation of students and vocational status.

The results from the study indicate the null hypothesis can be rejected. There is a statistically significant relationship between the number of withdraws prior to graduation among the students who did not participate in any vocational/business education program (91), the students who took only one vocational/business course in a program (96) and the number of students who completed a vocational/business education program (40). ($x^2 = .79$, $df = 2$, $p > .05$).

The number of students who did not withdraw and did not take any vocational/business education classes was 8 when 29 students were expected (SR = -3.9). The number of students who did not withdraw and took one or more vocational/business education classes in one or more vocational/business education programs was 23 when 35 students were expected (SR = -2.0). The number of students who did not withdraw and took two or more vocational/business

education classes in one specific vocational/business education program was 64 when 31 were expected (SR = 6.0).

The number of students who did withdraw and did not take any vocational/business education classes was 91 when 70 students were expected (SR = 2.5). The number of students who did withdraw and took two or more vocational/business education classes in one specific vocational/business education program was 40 when 73.3 were expected (SR = -3.9). Therefore, students who had not taken any vocational/business education classes and students who did not complete a vocational/business education classes, withdrew from school more frequently than students who completed a vocational/business education program.

On the other hand, the number of students who graduated and did not take any vocational/business education classes was 8 when 26 were expected (SR = 3.5). The number of students who graduated and took one or more vocational/business education classes in one or more vocational/business education programs was 20 when 31 were expected (SR = 2.0). The number of students who graduated and took two or more vocational/business education classes in one specific vocational/business education program was 56 when 27 were expected (SR = 5.5).

The number of students who did not graduate and did not take any vocational/business education classes was 91 when 73 were expected (SR = 2.1). The number of students who graduated and took two or more vocational/business education classes in one specific vocational/business education program was 48 when 77 were expected (SR = 3.3). The results of this analysis indicate that students who completed a vocational/business education program graduated from high school at a higher rate than those who did not take any vocational/business

education classes and those who did not complete a vocational/business education program. The results are shown in Table 6.

Table 6
Relationship between the number of withdraws prior to graduation and vocational status

Vocational Status	Withdraws					
	Yes			No		
	Observed	Expected	Standard Residual	Observed	Expected	Standard Residual
None	91	70	2.5	8	29	-3.9
Some	96	84	1.3	23	35	-2.0
Completer	40	73	-3.9	64	31	6.0

Figure 1 illustrates the number of students who did or did not withdraw sorted by each subgroup (vocational completers, some vocational and no vocational). Of the original 322 students in the original cohort group, 227 students withdrew. Of those students who withdrew, 91 had no vocational/business education courses, 96 had some vocational/business education courses and 40 had completed a vocational/business education program (2 or more courses in the same program). Of those who did not withdraw, 8 had no vocational/business education, 23 had some vocational/business education and 64 were vocational/business education completers.

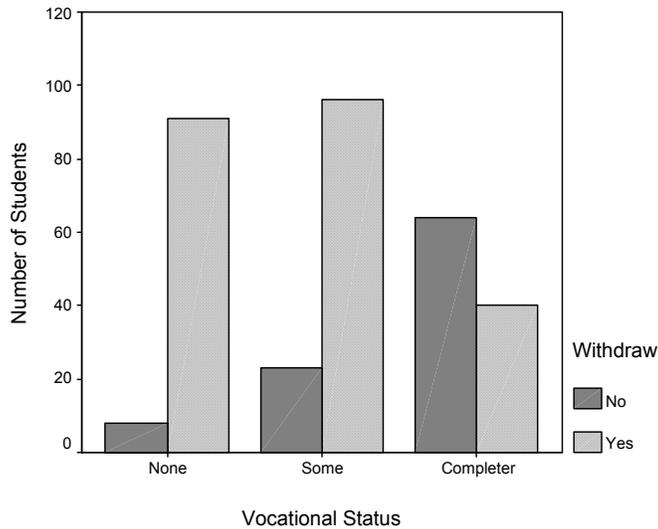


Figure 1. Number of students who did or did not withdraw sorted by subgroups

Figure 2 illustrates the number of students who did or did not graduate sorted by each subgroup (vocational completers, some vocational and no vocational). Of the original 322 students in the original cohort group, 84 graduated. Of those that graduated, 8 had no vocational/business education, 20 had some vocational/business education and 56 had completed a vocational program (2 or more courses in the same program). Of those that did not graduate, 91 had no vocational/business education, 99 had some vocational/business education and 48 were vocational/business education program completers.

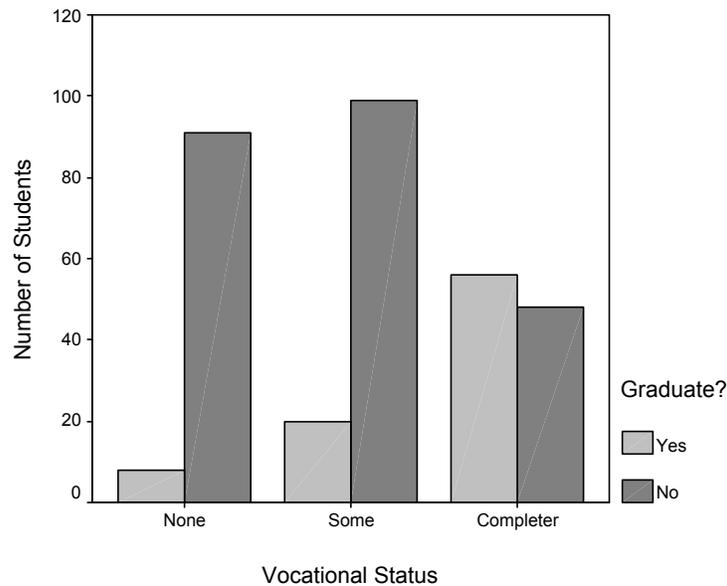


Figure 2. Number of students who did or did not graduate sorted by subgroups

Results of the Survey

A total of 48 graduates over the age of 18 were selected to participate in a survey. The first attempt to contact the graduate was by telephone. After a maximum of four attempts, 19 graduates were reached. The graduates that were reached were asked 9 questions which pertained to the vocational/business education classes that they had taken in high school. Permission was obtained for a second part of the survey, which contained 11 questions, to be mailed and addresses were verified. The 29 graduates, who were not reached by the telephone, were sent the entire 20-question survey. All mailed surveys included an addressed and stamped envelope in order to return the survey. Of the 19 graduates, who participated in the telephone survey, 3 responded to the second part of the survey, which was mailed to them. Of the 29 graduates, who were not reached by telephone, only 2 responded to the survey.

The results of the survey are encapsulated into three major themes: What are graduates presently pursuing? What were the advantages of their vocational/business education coursework? Was the coursework relevant to their career goal?

Results of the survey are illustrated in Table 7. Participants were asked what they are presently pursuing. Of the 21 responses, 12 students were attending college—7 were working part time while attending school. Seven reported working full-time. Two had reported doing nothing under “other,” and no participant reported military.

Table 7
Responses about the graduates’ present path

Presently pursuing:	
College	12
College and working part/time (included in 12 above)	7
Full time work	7
Other	2
Military	0

Participants were asked to “What were the advantages of their vocational/business education coursework?” All graduates who returned the survey responded to this question. The most outstanding answer was the fact that the vocational/business education courses provided the students with “real-life” experiences and were found to be challenging and fun. One respondent

stated, “I learned a lot of skills that can be applied throughout life.” Another participant stated, “Vocational classes teach you things you can benefit from in the real world even if you don’t pursue higher education.” Other responses stated that the skills learned in the vocational/business education courses provided the student with a variety of better job opportunities. The graduates stated that the vocational/business education courses offered them career insight. As a student, they were able to learn skills of the trade as if they were in a real-world situation. This opportunity enabled them to make a career choice.

As shown in Table 8, eight students responded that they had been involved in one of the co-curricular organizations offered through their vocational/business education classes. One student held an office, and four had competed at the local level.

Table 8
Responses about the graduates’ co-curricular involvement in high school

Co-Curricular Organization Involvement:

Membership in a co-curricular organization	8
Held a leadership position in the organization	1
Participated in competition	4

Eight students responded that they had taken honors level courses. These courses covered all of the four core academic areas (English, math, science and social studies). Five students

responded that they had taken two or more Advanced Placement courses. These courses included European History, Statistics, Economics, Biology, Spanish and American Government. The results are shown in Table 9.

Table 9
Responses about the graduates' academic level in high school

Academic Level of Classes	
Enrolled in Honors classes	8
Enrolled in Advanced Placement classes	5

Graduates responded in many ways about their career goals. Of the 21 responses, 13 graduates responded that their vocational/business education was relevant to their career goal, 4 responded that their vocational/business education was not relevant to their career goal, and 4 did not respond. One respondent, who participated in the TV Production program, indicated that he wanted to pursue a career in photography. The respondent stated, “The program may not have helped me directly, but in many ways the courses helped me make a career choice and provided many skills that are necessary for any career.” Several responses indicated that the keyboarding skills they learned in their business education program were very helpful in their post-secondary choice.

Because there were only five mailed surveys (part two) returned, the results will not be discussed in detail. However, all five returned surveys indicated that they “strongly agreed” on a 5-point Likert scale that:

1. The vocational/business education classes were beneficial;
2. I obtained valuable skills in the vocational/business education classes; and,
3. I obtained valuable life skills in the vocational/business education classes.

Four of the five respondents agreed that the vocational/business classes

1. Motivated them to stay in school;
2. Had a positive effect on their attendance at Lyman High School; and,
3. Contributed to their ultimate academic achievement at Lyman High School—graduation.

All five of the respondents strongly agreed that they would recommend that all students take vocational/business classes while in high school.

Summary

The results of the statistical and logical analysis of this study have been described in detail in this chapter. The findings and discussion of those findings, including the implications for further study are discussed in Chapter 5.

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study is to determine if vocational/business education has an influence on a student's ultimate academic achievement—graduation. This research consists of comparing students with no vocational/business education experiences to students with some degree of vocational/business education.

The profile of the identified cohort group includes students who began high school during the 1999-2000 school year and earned a grade point average (GPA) of 2.5 or lower at the end of the freshman year. A total of 322 students were identified in the cohort group. Data were collected during the four years they attended high school, beginning August 1999. Data related to students who left school prior to graduation are not included in all the statistics and findings.

Summary of Findings

The major objective was to determine if vocational education influenced high school graduation. The following six research questions were posed in this study:

1. Do students who follow a vocational/business education program have a higher GPA than students not enrolled in a vocational/business program?
2. Do students who follow a vocational/business education program score higher on standardized testing than students not enrolled in a vocational/business program?
3. Do students who follow a vocational/business education program have fewer absences than students not enrolled in a vocational/business program?

4. Do students who follow a vocational/business education program have fewer incidents of administrative discipline action than students not enrolled in a vocational/business program?
5. Is there a relationship between the number of withdraws and vocational status?
6. Do the students who follow a vocational/business education program find relevance in their coursework?

This chapter summarizes the major findings of the study through data analysis and the logical analysis of the responses to the survey of the graduates. Following this presentation, suggestions for future research will be discussed.

Results

Grade Point Average

In response to the research question, “Do students who follow a vocational/business education program have a higher grade point average (GPA) than students not enrolled in a vocational/business program?” the one-way analysis of variance was used to analyze the data. The results were not statistically significant as shown in Figure 6. An ANOVA table records the significance of .588 ($p = .05$). However, the mean GPA of 2.63 for students who took some degree of vocational/business education was higher than the students who took no vocational/business education. The students who took no vocational/business education had a mean GPA of 2.45 while students who had taken two or more vocational/business education classes in the same program had a mean GPA of 2.61. The mean GPA for all of the 84 graduates was 2.60. The GPA used for this study was the cumulative GPA for the entire high school record

upon graduation. Therefore, the GPAs averaged represented the students who graduated from high school and not those who withdrew prior to graduation. A review of the student's entire transcript is necessary to determine the reason for higher GPAs among students who took some amount of vocational/business education over those who did not. However, students who took a vocational course might have met with greater success in their vocational/business education classes because of their relevancy. Vocational/business education classes kept the students interested and focused. Students, who only took the first level course, had the highest grade point average. Advanced level courses are more demanding of the required skill level and students may not have been as successful.

Scores on Standardized Tests

In order to answer the question, "Do students who follow a vocational/business education program score higher on standardized testing than students not enrolled in a vocational/business program?" the one-way analysis of variance was used to analyze the data. An ANOVA was run for each type of identified standardized test (ACT, SAT Math, SAT Verbal, FCAT Reading and FCAT Math).

Compared to other students who graduated in 2003, the national average for the ACT was 20.8 and the state average for the ACT was 20.5. The results of this study indicate that students who had some vocational/business education courses had a mean score of 22.0. Students who had taken more than one vocational/business education course in a particular program had a mean score of 17.7. Only 12 students took the ACT test. Therefore, no conclusion will be made.

The national average for the SAT Math was 519 and the state average was 498. The results of this study indicate that students who had some vocational/business education courses had a mean score of 525. Students who had taken more than one vocational/business education course in a particular program had a mean score of 470.44. Yet, students who did not participate in any vocational education had a mean score of 370.00. Because only 28 students took the test and 25 of those students had completed a vocational program, no conclusion will be made.

The results of the FCAT Reading were found by analyzing the data in the one-way analysis of variance. The results were not statistically significant. An ANOVA table records the significance of .664 ($p = .05$). However, the mean FCAT Reading score of the 20 students who had taken one or more vocational/business education classes in more than one vocational/business education program was 317.3. The mean FCAT Reading score of the 55 students who had taken more than one vocational/business education class in one specific program was 313.29. Even though the mean FCAT Reading score of those students who had not taken any vocational/business education classes was 324.38, this group included only 8 students. The state average for the FCAT reading in 2001 (the mean score when these students were 10th graders) was 302. All students included in this study scored above the state average.

The results of the FCAT Math were found when analyzing the data in the one-way analysis of variance. The results were not statistically significant. An ANOVA table records the significance of .434 ($p = .05$). However, the mean FCAT Math score of the 8 students who had not taken any vocational/business education classes was 310.75, and the mean FCAT Math score of the 20 students who had taken one or more vocational/business education classes in more than one vocational/business education program was 323.60. The mean FCAT Math score of the 55

students who had taken more than one vocational/business education class in one specific program was 323.84. The state average for the FCAT Math in 2001 was 320. All students who had taken vocational/business education courses to some extent score above the state average. One graduate was not required to take the test due to the fact that she transferred to the state of Florida during her senior year.

The results of this study indicate that there is an emphasis on academic skills in the entry-level courses in vocational/business education. However, the advanced level curriculum does not match the reading format tested. With the close guidance of the vocational/business education teacher, basic math skills are incorporated into the lessons. Vocational/business education classes allow them to apply mathematics, providing them with a better understanding of the concepts.

In contrast to the results of the Math section of the standardized tests, students without any vocational/business education had a higher average score on the Reading or Verbal sections than students who had any degree of vocational/business education. The reading in vocational/business education classes has a tendency to be more technical. Reading for comprehension should be incorporated in the vocational/business education curriculum. For example, entry-level students should participate in the school wide programs such as “Accelerated Reader” or “Newspapers In Education.” In the advanced level classes, students are given more independence and course work becomes project oriented. Hence, the emphasis on basic skills is not as prevalent. Advanced level courses should require readings that may include biographies of people who have been successful in a related career. Advanced level courses should also require written reports to accompany their projects with cited references.

Attendance

To answer the question, “Do students who follow a vocational/business education program have fewer absences than students not enrolled in a vocational/business program?” the one-way analysis of variance was used to analyze the data. The average percentage of periods absent for all four years of high school was used. The results were not statistically significant. An ANOVA table records the significance of .940 ($p = .05$). The students who took no vocational/business education had a mean percentage of absences of 6.51% while students who had taken two or more vocational/business education classes in the same program had a mean percentage of absences of 6.1%. The mean percentage of absences for students who had taken one or more vocational/business education classes in more than one program was 6.3%. The mean percentage of period absences for all of the 84 graduates was 6.2%.

Students in vocational programs were interested in the material being taught, motivating them to attend school. The results of this study agree with Damico and Roth who stated students were continuously absent or tardy to classes they felt were not relevant. Relevancy was deemed by the fact that so little instruction was going on that they were not going to miss anything. Students were selective in the classes they did not attend. These choices depended upon the importance and relevance of the class. The vocational/business education classes give students a focus. When students are focused and are able to find relevancy in their schoolwork, they are more likely to attend.

Discipline

Results of the research question “Do students who follow a vocational/business education program have fewer incidents of administrative discipline action than students not enrolled in a vocational/business program?” were found by running the one-way analysis of variance was used to analyze the data. Data related to in-school suspensions (ISS) and data related to out-of-school suspensions (OSS) were analyzed.

In regard to ISS, there was a statistically significant difference. An ANOVA table records the significance of .038 ($p = .05$). When analyzing the means of in-school suspensions served (averaged over four years), students who had taken more than one vocational/business education class in one specific program had the greatest amount of ISS. The 8 students who had no vocational/business education classes had a mean of .03 of in-school suspensions assigned. The 20 students who had some vocational/business education classes had a mean of .14 of in-school suspensions assigned. The students who were completers of a vocational/business education program had a mean of .32 of in-school suspensions assigned. The total group of students who graduated served an average of .25 times of in-school suspension.

In regard to OSS, there was no statistically significant difference. An ANOVA table records the significance of .106 ($p = .05$). When analyzing the means of the out-of-school suspensions served (averaged over four years), the students who had taken more than one vocational/business education class in one specific program had the greatest amount of OSS. The 8 students who had no vocational/business education classes had a mean of .03 of out-of-school suspensions assigned. The 20 students who had some vocational/business education classes had a mean of .01 of out-of-school suspensions assigned. The students who were completers of a

vocational/business education program had a mean of .13 of out-of-school suspensions assigned. The total group of students who graduated served an average of .09 times of out-of-school suspension.

These results are contrary to what is found in literature. Most of the vocational/business education teachers of Lyman High School have entered the teaching profession directly from industry and practice good work ethics. Within the vocational/business classes, students are treated as employees or business associates with policies in place. Attendance, punctuality and attentive behavior play an important role in the management of the class. Even though attendance and punctuality do not have a direct effect on the student's grade, teachers in the vocational/business education departments adhere to the policies and procedures of the school. Therefore, when an infraction occurs, teachers who follow the policies of the school send the student to administration with a discipline referral. The ascension of consequences on the matrix is as follows: verbal reprimand, one-hour detention, three-hour detention, in-school suspension, out-of-school suspension (maximum of 3) and recommendation of expulsion. Following the district's consequence matrix, the receiving administrator assigns the appropriate consequence. It is the enforcement of attendance and tardies by teachers that reflects the higher amount of ISS and OSS for vocational program completers not necessarily the students' lack of behavioral discipline.

A study completed by Matus (1999) states issues pertaining to classroom management are often due to circumstances happening outside the classroom, creating a dilemma for teachers. Furthermore, that vocational education provides students with relativity to learning, keeping

them focused, and having students focused reduces the number of discipline and safety issues in a classroom.

Withdraws Prior to Graduation

In response to the research question, “Is there a relationship between the number of withdraws prior to graduation and vocational status?” data was analyzed by completing a Chi-Square Test of Independence. The results of the test indicate that there was a statistically significant relationship between the number of students who withdraw prior to graduation and vocational status. The Pearson Chi Square indicates a significance of .000. Based on the standard residuals, there is a relationship between the number of students who withdraw prior to graduation and vocational status. These results were based on the initial cohort group of 322 students.

Ninety-one students who had no vocational/business education classes chose to withdraw prior to graduation when only 70 were expected to withdraw (SR = 2.5). However, only 8 students who had no vocational/business education classes chose to not withdraw when 29 were expected to not withdraw (SR = 3.9). Ninety-six students who had some vocational/business education classes chose to withdraw when only 83.9 were expected (SR= 1.3). However, only 23 students who had some vocational/business education chose to not withdraw when 35 were expected to not withdraw prior to graduation. Most importantly, only 40 of the students who had completed a vocational/business education program chose to withdraw prior to graduation when 73 were expected. Sixty-four of the vocational/business education completers chose to not withdraw prior to graduation when only 31 were expected to do so.

Supporting what was found in the literature review, vocational/business education deters students from withdrawing prior to graduation. Students who are enrolled in school on a general track are more alienated from school and are less focused than those in the vocational tracks. Students who are engaged in the school's co-curricular and extracurricular programs are more likely to achieve graduation. Students, who are not engaged in class work, whether academically or socially, are more likely to drop out prior to graduation. Vocational and business education programs provide plenty of opportunities for students to engage academically and socially through co-curricular organizations (i.e. Distributive Education Club of America –DECA, Future Business Leaders of America—FBLA, Business Professionals of America—BPA and Vocational-Industrial Club of America—VICA SkillsUSA).

Students who took more vocational classes were less likely to not attend or drop out of school. The vocational/business education program gave students a focus. This study found that five times as many students who did not complete a vocational/business education program withdrew from high school prior to graduation. Seventy-four high school students began to lose interest and withdrew at the end of their sophomore year. Of these withdraws, 37 had no exposure to vocational/business education and 30 had only taken an entry-level course. (This is the year that many of the students turn 16 and understand that they are not required to attend school by law. However, this does affect the status of their driver's license.) Research reveals that this type of student finds the high school coursework did not keep them interested and challenged. Some students believe the curriculum pace was too slow. Thus, they were overwhelmed with the desire to move out of high school and obtain a job or a GED or standard diploma at an accelerated rate.

Lyman High School is a comprehensive vocational school and is able to provide many opportunities to the students. Many of the vocational/business education programs gave students the opportunity to apply their academic knowledge to real-world situations. Students were taught marketable skills that would make them assets in the world of work. Students who were enrolled in the vocational/business education programs of Lyman High School were interested in the subject matter and had a sense of belonging to the school.

Survey

The 48 graduates who were over 18 years old were selected to participate in a survey. An attempt to reach these graduates was made by telephone. The 19 graduates who were reached by telephone were asked 11 questions over the phone and mailed the second part of the survey. After several unsuccessful attempts, the entire survey was mailed to the other 29 graduates. A total of five surveys were returned.

The results of the survey revealed that the students found a great deal of relevancy in their vocational/business education coursework. Students were able to relate real-life experiences to their studies. The courses the students took provided insight to what a career would be like and allowed each student to make the decision to pursue or not to pursue a particular career prior to committing to further education. This study supports the parts of the literature review that indicates vocational education not only provides real-life experiences, but also has a tendency to build self-confidence in students. The vocational/business education programs of Lyman High School allow the students to participate in the community as productive workers and responsible citizens. Strategies (including special programs such as Tech Prep) attempt to help students

overcome barriers that might keep them from achieving their potential as students. Many of the vocational/business education programs of Lyman High School provide opportunities to students to earn college credit through Tech Prep. A variety of assessments are used to measure the student's skill and knowledge. The assessments include, but are not limited, to portfolios and examinations. These programs assisted in keeping the students focused on graduation and moving toward life goals.

Conclusions

Although this study was limited to the size of the initial cohort of students, who earned a GPA of 2.5 or lower in their freshman year, and those that graduated, there are some generalities about vocational/business education that can be made.

Vocational/business education provides students with a focus for staying in school. Vocational/business education allows students to apply their knowledge of basic skills through the projects assigned. Courses in vocational/business education provide students with hands-on training. Due to career and life goals, students find relevancy in their education. Because teachers have participated in the field professionally, students are able to learn from real-world experiences. Vocational/business education provides them with opportunities to learn about various careers as well as gain the skills they need. This allows the students to make choices about which career or education path they may need to follow. Emulating the strategies of the vocational/business education classroom, courses in the academic curriculum should provide students with related career education. Also students should be exposed to more hands-on/application learning. More than 10 years ago, the staff of Lyman High School was exposed to

in-depth training related to School-To-Work and Tech Prep. This training emphasized application learning within the academic classroom. Due to faculty turnover, these strategies should be revisited with the teachers.

Students are granted opportunities to enrich themselves academically and socially at school through co-curricular organizations. Hence, they are not alienated in school and are driven to complete their high school education. In addition to learning and practicing skills that are necessary for the job market, students are provided experiences through vocational education that can be used as citizens in our society.

The responses to the survey indicate that the students are pleased with the vocational/business education classes that they took at Lyman High School. Due to the relevance of the material in their vocational/business education classes, the students found the classes to be beneficial and felt they contributed to their ultimate academic achievement—graduation.

The results of this study indicate that there is a statistically significant relationship between vocational education and withdraws prior to graduation. The administration of Lyman High School should look to implement strategies that guide students toward vocational education and more application learning within the regular education programs.

Based on the results of this study, this researcher has recommended to the administration of Lyman High School that all low-achieving students be placed in a vocational or business education program based on the student's interest. The researcher further recommends to further train academic teachers to incorporate applications learning within their classrooms.

Also, the researcher has recommended to the staff of the vocational and business education departments to acknowledge the successes of their students while they are enrolled in

school through a recognition program. During the registration period for the subsequent school year, these departments should promote their programs to students and staff through the televised announcements, posters and assemblies. Also, a recommendation to include more reading for comprehension within the programs has been suggested. The school system should develop a better means of tracking withdraws and if students enrolled in another school after leaving. The results of this study speak highly of the vocational/business education programs at Lyman High School.

Implications of Further Research

The results and conclusions of this study present the following implications for further research:

1. To further understand whether vocational education has an effect on the academic achievement of all students, this study should be reproduced with an entire graduating class and not just those who earned a 2.5 or less at the end of their freshman year.
2. This study should be replicated throughout Seminole County, the state of Florida and the United States and include studying the individual programs.
3. More focus should be given to the demographics (i.e. gender, ethnic code, poverty level, Exceptional Student Support Services classification, etc.) of the students and how this impacts their decisions and achievements based on their vocational status.
4. Data should be collected as to why the students withdrew prior to graduation.
5. A survey of the teachers should be conducted to study their interpretation of conduct policies and procedures.

APPENDIX A
SURVEY ADMINISTERED VIA THE TELEPHONE

PART ONE—Conducted via telephone

Name:

Phone Number:

Date: _____ Time: _____

Call status: No answer Left message on machine Left message with person
Completed survey

1. What are you presently doing? (Place an X next to one.)
 - a. College/Trade School _____ Do you work part-time while attending school? _____
 - b. Work (full-time/no college) _____
 - c. Military _____
 - d. Other (please explain) _____
2. What were the advantages of taking vocational/business classes?
3. What were the disadvantages of taking vocational/business classes?
4. Were you involved in any DECA, FLBA, BPA or VICA SkillsUSA? Please list the organization(s).
5. If so, did you compete? At what level? What event?
6. If so, were you an officer? Which position? Which level (local, state, national)?
7. Did you take any honors classes? If yes, which subjects and in which grade?
8. Did you take any Advanced Placement? If yes, which subjects and in which grade?
9. What is your career goal in life? Does it relate to the coursework you took at Lyman High School?

PART TWO—Mailed to graduates who participated in telephone survey

Mrs. Maggie Gunderson
Lyman High School
865 S. Ronald Reagan Blvd.
Longwood, FL 32750

March 26, 2004

Dear :

Because of your academic success at Lyman High School and your participation in a recent phone survey, you have been selected as a potential candidate in a research project. Presently, I am a student at the University of Central Florida completing my doctorate degree in Educational Leadership. I am looking at the academic success of vocational students.

This survey will be used to gather your opinion of the effect of the vocational and/or business education classes that you took while at Lyman High School. If you agree to participate in this research, please continue with the survey. If you have any questions regarding this survey, please call me at 407-320-2246 or Mr. Chris Grayson at 407-823-3299 (University of Central Florida).

Please mail the survey back in the enclosed envelope at your earliest convenience. I wish you continued success as you pursue your life goals. Thank you for your support.

Sincerely,

Mrs. Maggie Gunderson
Doctoral Student
407-320-2246

START HERE

		1. Strongly Disagree	2. Somewhat Disagree	3. Neither Agree Nor Disagree	4. Somewhat Agree	5. Strong Agree
Please read each statement and indicate the extent to which you agree or disagree with 5 being strongly agree and 1 being strongly disagree. Circle your responses.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.	The vocational/business education classes were beneficial.	1	2	3	4	5
2.	I obtained valuable skills in the vocational/business education classes.	1	2	3	4	5
3.	I obtained valuable life skills (i.e. teamwork, punctuality, quality of work, etc.) in the vocational/business education classes.	1	2	3	4	5
4.	The vocational/business education classes provided skills necessary for standardized testing (i.e. SAT, ACT, FCAT).	1	2	3	4	5
5.	My college major relates to the same vocational/business classes I took at Lyman High School.	1	2	3	4	5
6.	My job relates to the same vocational/business classes I took at Lyman High School.	1	2	3	4	5
7.	Vocational/business classes had a positive effect on my attendance at Lyman High School.	1	2	3	4	5
8.	Vocational/business classes kept me motivated to stay in school.	1	2	3	4	5
9.	Vocational/business classes contributed to my ultimate academic achievement at Lyman High School—graduation.	1	2	3	4	5
10.	It is my recommendation that all students take vocational/business classes while in high school.	1	2	3	4	5
11.	What type of vocational program(s) did you complete? <i>Mark an X next to all that apply.</i>					
	<input type="checkbox"/> Business					<input type="checkbox"/> Construction Trades
	<input type="checkbox"/> Computer Animation					<input type="checkbox"/> Aerospace
	<input type="checkbox"/> Drafting					<input type="checkbox"/> Communication Technology
	<input type="checkbox"/> Hospitality					<input type="checkbox"/> Agricultural/Landscaping Operations
	<input type="checkbox"/> Medical Occupations					<input type="checkbox"/> Marketing
	<input type="checkbox"/> TV/Radio Productions					<input type="checkbox"/> Culinary Operations
	<input type="checkbox"/> Early Childhood					
	<input type="checkbox"/> Family & Consumer Sciences					<input type="checkbox"/> Other _____

Thank you so much for taking the time to complete this questionnaire. Your response will assist in the proof that vocational education classes have a positive effect on the student's ultimate academic achievement. If you have any suggestions or other information, that you would like to share, please do so in the space provided below.

Please return your completed questionnaire to:

Mrs. Maggie Gunderson
Lyman High School
865 S. County Road 427
Longwood, FL 32750

APPENDIX B
SURVEY SENT TO GRADUATES NOT REACHED BY TELEPHONE

Mrs. Maggie Gunderson
Lyman High School
865 S. Ronald Reagan Blvd.
Longwood, FL 32750

March 26, 2004

Dear :

Greetings from Lyman High School! Because of your academic success at Lyman High School, you have been selected as a potential candidate in a research project. Presently, I am a student at the University of Central Florida completing my doctorate degree in Educational Leadership. I am looking at the academic success of vocational students.

This survey will be used to gather your opinion of the effect of the vocational and/or business education classes that you took while at Lyman High School. If you agree to participate in this research, please continue with the survey. If you have any questions regarding this survey, please call me at 407-320-2246 or Mr. Chris Grayson at 407-823-3299 (University of Central Florida).

Please mail the survey back in the enclosed envelope at your earliest convenience. I wish you continued success as you pursue your life goals. Thank you for your support.

Sincerely,

Mrs. Maggie Gunderson
Doctoral Student
407-320-2246

START HERE

		1. Strongly Disagree	2. Somewhat Disagree	3. Neither Agree Nor Disagree	4. Somewhat Agree	5. Strong Agree
		◆	◆	◆	◆	◆
Please read each statement and indicate the extent to which you agree or disagree with 5 being strongly agree and 1 being strongly disagree. Circle your responses.						
1.	The vocational/business education classes were beneficial.	1	2	3	4	5
2.	I obtained valuable skills in the vocational/business education classes.	1	2	3	4	5
3.	I obtained valuable life skills (i.e. teamwork, punctuality, quality of work, etc.) in the vocational/business education classes.	1	2	3	4	5
4.	The vocational/business education classes provided skills necessary for standardized testing (i.e. SAT, ACT, FCAT).	1	2	3	4	5
5.	My college major relates to the same vocational/business classes I took at Lyman High School.	1	2	3	4	5
6.	My job relates to the same vocational/business classes I took at Lyman High School.	1	2	3	4	5
7.	Vocational/business classes had a positive effect on my attendance at Lyman High School.	1	2	3	4	5
8.	Vocational/business classes kept me motivated to stay in school.	1	2	3	4	5
9.	Vocational/business classes contributed to my ultimate academic achievement at Lyman High School—graduation.	1	2	3	4	5
10.	It is my recommendation that all students take vocational/business classes while in high school.	1	2	3	4	5
11.	What type of vocational program(s) did you complete? Mark an X next to all that apply.					
	<input type="checkbox"/> Business					<input type="checkbox"/> Construction Trades
	<input type="checkbox"/> Computer Animation					<input type="checkbox"/> Aerospace
	<input type="checkbox"/> Drafting					<input type="checkbox"/> Communication Technology
	<input type="checkbox"/> Hospitality					<input type="checkbox"/> Agricultural/Landscaping Operations
	<input type="checkbox"/> Medical Occupations					<input type="checkbox"/> Marketing
	<input type="checkbox"/> TV/Radio Productions					<input type="checkbox"/> Culinary Operations
	<input type="checkbox"/> Early Childhood					
	<input type="checkbox"/> Family & Consumer Sciences					<input type="checkbox"/> Other _____

12. What are you presently doing? (Place an X next to one.)

- a. College/Trade School _____ Do you work part-time while attending school? _____
- b. Work (full-time/no college) _____
- c. Military _____
- d. Other (please explain) _____

13. What were the advantages of taking vocational/business classes?

14. What were the disadvantages of taking vocational/business classes?

15. Were you involved in any DECA, FLBA, BPA or VICA SkillsUSA? Please list the organization(s).

16. If so, did you compete? At what level? What event?

17. If so, were you an officer? Which position? Which level (local, state, national)?

18. Did you take any honors classes? If yes, which subjects?

19. Did you take any Advanced Placement? If yes, which subjects?

20. What is your career goal in life? Does it relate to the coursework you took at Lyman High School?

Thank you so much for taking the time to complete this questionnaire. Your response will assist in the proof that vocational education classes have a positive effect on the student's ultimate academic achievement. If you have any suggestions or other information, that you would like to share, please do so in the space provided below.

Please return your completed questionnaire to:

Mrs. Maggie Gunderson
Lyman High School
865 S. County Road 427
Longwood, FL 32750

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