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Correlation between Marketing Education Student's GPAs and Passing Score on the National Retail Foundation Professional Certification

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CORRELATION BETWEEN MARKETING EDUCATION STUDENT'S GPAS AND

PASSING SCORE ON THE NATIONAL RETAIL FOUNDATION PROFESSIONAL

CERTIFICATION

A Research Project Presented to the Graduate Faculty of the Department of STEM

Education and Professional Studies

at Old Dominion University

In Partial Fulfillment of the Requirements for the Master of Science in Occupational and

Technical Studies

By

Amanda Green
August 2012

Amanda L. Green prepared this research study under the direction of Dr. John Ritz in SEPS 636, Problems in Occupational and Technical Studies, at Old Dominion University. The paper was submitted to the Graduate Program Director as partial fulfillment of the requirements for the degree of Master of Science in Occupational and Technical Studies.

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Amanda Green

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CHAPTER I

INTRODUCTION

In the state of Virginia there are 260,464 students enrolled in Career and Technical Education (CTE) programs from seventh grade to twelfth grade (Virginia Department of Education, 2011). Under the umbrella of CTE are all marketing education courses. Students enrolled in marketing education classes are individuals that will be completing course work in different areas of business. In recent years CTE programs have started having their marketing education students take the National Retail Federation Foundation Customer Service and Profession Sales Certifications tests. The requirements for students to take the certifications vary from district to district except for the age requirement of 16 years old and they must be enrolled in a Marketing Education course. There are no grade point average requirements.

Grade point averages (GPA) are what determine how a student has performed in their area of study. GPAs can also be used as a predictor of how a student will perform on tests. Predictive-validity studies conducted by several colleges and universities have identified that as a predictor of success, GPA is one of the best predictors (Geiser & Santelices, 2007). Engaged students that are actively involved in their own learning perform better because they expect more of themselves (Halbesleben & Wheeler, 2008). Students that expect more of themselves are more likely to try harder on tests to score the best that they can. Study results have shown a significant correlation between standardized tests like the American College Testing (ACT) and grade point averages (Smith, 1993). While NRF Foundation certification tests are not the same as ACT, they

do show a pattern of GPAs and a correlation between standardize tests. One could infer that just as there is a link between ACT and GPA, there probably will also be a link between GPAs and NRF.

National Retail Federation conducts industry research and uses this information to develop certifications that help to better prepare individuals for careers in retail. To help with this division in their businesses, they established the NRF Foundation in 1981 (NRF Foundation, 2012). The Foundation is responsible for administering the certifications and updating the required information on the test. Once the person has scored a strength level in all areas of criteria, they earn a certification for three years. However the individual will not receive the certification if they score a neutral score or show weaknesses on any of the test's areas of knowledge (NRF Foundation, 2012). By identifying a student that will not score strength on the test, and not receiving a certification, schools can eliminate unnecessary testing. This study will seek to use GPAs to identify students who potentially will not pass the NRF certification tests.

STATEMENT OF PROBLEM

The problem of this study was to determine if marketing education students in Virginia, with above average GPAs, are scoring higher on the National Retail Foundation customer service certification and professional sales certification tests than those with average GPAs.

RESEARCH GOALS

To solve this problem the following hypothesis was developed:

H_1: Students who perform well in marketing education courses in Virginia by earning a high GPA will perform well on the National Retail Foundation customer service and professional sales certification tests.

BACKGROUND AND SIGNIFICANCE

"White and Walsh (2008) suggested that an increased investment in career-related experiences for students during the high school years can develop practical labor market skills, thus improving their postsecondary labor market prospects" (as cited in Arnett, Kozlowski, Peach & Varela, 2009, p. 37). Part of preparing students for careers after graduation is identifying professional certifications that will benefit them in their future. Certifications provide prospective employers with assurance that students have the relative proficiencies that are needed for the job (Technical Certifications Give, 2011). The NRF Foundation certifications show prospective employers that students meet the required skills in customer service and sales that will insure their partners those students are ready for careers in these areas. Certifications have set standards that students must meet to obtain them, however students are not just demonstrating the standards for the certifications. They are also meeting the standards established by the Carl Perkins Act of 2006.

After the revisions of the Perkins Act more focus was given to the accountability section (113), which stated that assessments, in CTE must be reliable, valid, and include set academic standards (Foster, 2009). With renewed focus on the standards of

assessment, CTE programs are developing workers that will help the economic recovery efforts by training and preparing students for the workforce (Arnett et al., 2009). The attention to the details is paying off and CTE programs are meeting the challenges. According to a longitudinal study done by the National Occupational Competency Testing Institute (NOCTI), CTE is having a positive impact on various tools and professional development-related services (Foster, 2009). The training that Career and Technical Education programs offer to students is important to their development as workers. A study done by Alfeld and Bhattacharya (2012) of 219 CTE students found that 75% of them agreed or strongly agreed that the educational training they received in their programs is what caused them to continue on a similar path after high school graduation. CTE programs have high standards they must meet to stay current with the Perkins requirements and students are challenged to accomplish the skills being taught. With a more challenging curriculum identifying a correlation between students' grades and certification test scores can be a valuable tool that will set new standards for students enrolled in marketing education courses.

The significance of this study was to determine if there was a relationship between performing well in marketing education courses by earning a high GPA and an individual's performance on the NRF certifications. According to Smith (1993), "Achievement tests can be used as predictors of high school GPA" (p. 8), but can GPAs be used as predictors of achievement tests. While there are many studies that look at the relationship between standardize test scores and high school GPA as predictors for college GPA success, there are few that have studied the correlation of high school GPA and performance on standardize tests (Smith, 1993). Identifying how well a student may

do on a test can provide a better understanding of which students should take the NRF certifications. This might lead schools to have mandatory GPA requirements in the marketing courses before allowing students to participate in taking the test. This might lead schools to set new requirements that state students must have a certain GPA in specific courses prior to paying the fee for them to take the selected certification test.

The goal of this study is to identify that GPAs should be used as a requirement along with the age and enrollment in a marketing education course for students to take the professional certifications. Through the data collected the researcher hopes to show a high correlation between GPAs and certification test scores and in turn establish a need for additional requirements in the State of Virginia before allowing students to take the NRF certifications. If there was a GPA requirement the number of students that take the certification may drop and having fewer students take the test will lower the amount of money the district/state is paying for all marketing education students to take them.

LIMITATIONS

The following limitations were identified during the course of the study:

1. Only marketing education students in courses taught by Virginia DECA district leaders were evaluated.
2. The evaluation was done by collecting data through a questionnaire distributed to Virginia DECA district leaders.
3. The questionnaires were distributed through teacher's email addresses.

ASSUMPTIONS

The researcher made the following assumptions:

1. All students enrolled in the marketing education program currently who met the age requirements took the certifications.
2. All marketing education teachers helped prepare students prior to the test date.
3. Students with higher GPAs performed better on the certification tests than students who were not performing as well.

PROCEDURES

The researcher reviewed literature on studies that showed correlations between grades and test performance to identify a need for the research. To identify the grades and test scores for students in marketing education, the Virginia DECA advisors were identified and sent voluntary requests. The emailed requests asked the teachers to participate by completing a composition of all their students that took the NRF certifications and what their test scores and GPAs were. All information gathered about the students' grades and scores was anonymous. Once the questionnaire was returned to the researcher the data were analyzed to identify any relationship between GPA and certification test results.

DEFINITION OF TERMS

The following terms are defined to ensure that the readers of this study understand their meaning:

1. Career and Technical Education (CTE)-Is occupational training that will prepare individuals for a current or future career. Programs are developed by working closely with professional industries to establish curriculum standardizes.

2. The National Occupational Competency Testing Institute (NOCTI)-Delivers certification services for different career and technical industries and has partnered with the CTE community for 45 years (Foster, 2009).

3. Industry Certification-Is an evaluation of the work completed that insures the standards for the particular industry are met.

4. National Retail Federation (NRF)-Is the largest association of retailers in the world. The federation is made up of all types of retailers including department, specialty, apparel, discount, online, independent, and grocery stores and chain restaurants. They offer professional certifications in customer service and sales.

5. NRF Foundation-Was established in 1981and is a research and education section of the National Retail Foundation. The foundation conducts research and develops education and workforce programs, as well as promotes careers in retail with professional certification programs.

6. National Professional Certification in Customer Service-Is a certification that helps employees identify themselves as a qualified and distinguished customer service professional. The industry-driven test helps the individuals establish their knowledge and skills in the work place.

7. National Professional Certification in Sales-The certification is developed to identify the core skills needed to perform sales duties. It establishes a set of standards that cover a range of positions in sales from entry-level to first-line supervisors.

8. Grade Point Average (GPA)-Identifies the students average grade by taking the total number of grade points earned and dividing them by the total credits attempted.

9. Marketing Education-Programs that help students examine the activities involved with a career in the marketing and business industry. The program combines on-the-job training and classroom instruction.

10. Program completers-Is a student that has completed a sequence of CTE courses and met the requirements for graduation as identified by the Virginia Board of Education (CTEresource.org, 2012, para. 3)

OVERVIEW OF CHAPTERS

Chapter I introduced Marketing Education in Virginia and how Grade Point Averages can be used as predictors. Also in this chapter the NRF Foundation certifications were introduced and what the National Retail Federation does for the retail industry was identified. Established in Chapter I were the research goals, the background and significance of the study, the limitations, assumptions, procedures for collecting data, and definition of terms.

For this study Chapter II provided a review of literature that is relevant to identify predictors of how students will score on the NRF Foundation professional certification test and how GPAs can be useful in the prediction of those scores. The literature also covered other material important to the study of Grade Point Averages as predictors of

success. Chapter III focused on the methods and procedures that the researcher used to

collect data for the study. Chapter IV covered the finding of the study. Chapter V

summarize the findings uncovered from the research, drew conclusions, and identified

recommendations based on the findings.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to determine if marketing education students with above average GPAs would score higher on the NRF Foundation professional certifications than students with average GPAs. Literature with relevant information about Grade Point Averages and their calculation, high school GPAs as predictive tools for standardized tests, high school GPAs combined with standardized tests as predictors of college success, information on the NRF Foundation Retail Sales and Customer Service Certification tests, the Virginia Department of Education, and CTE and marketing education are used to provide insight about how grades are valuable tools in predicting possible educational outcomes. The chapter begins with how GPAs are calculated and their predictability of student's achievements.

GRADE POINT AVERAGES

According to Merriam-Webster.com (2012) grades are a mark that indicates a degree of success from students on a particular subject. They show how well that person is doing in the subject, show if he/she will be successful, and indicate if he/she can complete the work given to meet the standards that the instructor has placed on the item. In most cases a lower grade is given to the person if they cannot meet the standards. While grades are subjective and come from the teacher's personal evaluation, they are still a very important factor of assessing a student (Bott, 1996). Teachers are trying to identify what students have learned, by comparing them to the amount of material related to the stated criteria for success, and assign a grade based on predetermined standards

(Bott, 1996). Grades are then assigned based on the student's performance and every course will give that student a grade indicating how the student did to establish their GPA. "Unweighted" GPAs are when there is a cap on the scale of 4.0 and there are no Advanced Placement or honors-level courses used in the calculations (Geiser & Santelices, 2007). Most grading scales are on a 4.0 scale and an A is worth four points, a B is worth three points, a C is worth two points, and a D is worth one point. Grades are given based on the level of work the students turn in and are assigned to all items that the learner completes. There are two steps to identify GPAs: establishing the amount of points for each letter grade and then figuring out the actual GPA.

To establish the total amount of grade points, one multiplies the points for whatever grade was assigned by the number of credit hours for that particular course. GPAs are obtained by taking the total number of grade points and dividing them by the total number of credit hours attempted (Merriam-Webster, 2012). The subjectivity of grades and the lack of set standards across the broad for administering grades led some people to be critical of GPAs as predictors of how well one will perform.

GPA AS A PREDICTOR

There are people who believe that grades are unreliable predictors of future success because there are no common grading standards across schools or courses in the same school (Geiser & Santelices, 2007). They believe that one should not infer that assessment results will be consistent over different occasions, because the factors involved with the assessment are ambiguous, the motivation and attention can fluctuate, or a variation in the sample can cause results to vary (Gronlund, 1968). Another argument

people have for not having GPAs as predictor for future outcomes is the theory of grade inflation. According to Woodruff and Ziomek (2004) between 1991 and 2003 there was an average rate of .25 grade inflation each year on a 4.0 grading scale. Showing inflation in grades can lead one to believe that grades are not reliable and they should not be considered when trying to identify trends in how a student will perform. Turnbull argued that "A deep concern developed that a combination of factors such as grade inflation, the proliferation of electives, a reduction in homework, and the simplification of textbooks had led to less demanding high school programs" (as cited in Beecher & Lane, 1999, para. 6), causing there to be a question of reliability of GPAs. Showing the lack of reliability with how GPAs are assigned could be a way to identify a lack of validity for using GPAs to identify how one may do in future academic settings; however there is more evidence supporting the use of grades than there is to disregard them.

Since grades are assigned based on the students' performance on set standards, it stands to reason that grades will indicate how well a student will perform on other objects covering the same material. A study done by Kuncel and Hezlett (2007) found that the combination of standardized test scores and grades were the most accurate predictors of a student's success in graduate school. This same study showed that the combination of standardized tests and undergraduate grades are also important predictors of a student's success beyond GPA in graduate school (Kuncel & Hezlett, 2007). This research shows a correlation between grades and academic success. Although the study is referring to graduate students and is using a combination of standardized tests, like the Graduate Records Examination, the evidence still shows how grades can be used to predict academic success. With correlations being identified between GPAs and success, there

are schools that are taking notice and making adjustments to the use of information to help with their admissions.

One such school, the University of California, has changed their admission requirement to put more of an emphasis on high school grade point averages than on standardized test like the SATs (Geiser & Santelices, 2007). Their requirements were switched to weight GPAs as three quarters of the admissions criteria and the other quarter is how students performed on the standardize test (Geiser & Santelices, 2007). Motivation plays a role in whether or not a student excels, and grades can be affected by this. The more motivated a student is the more likely they are to make good grades. Universities are not the only institutions that use GPAs and standardized tests as admissions for prospective students. Many private schools do as well. Smith (1993) conducted a study that examined the relationship between standardized tests and the high school GPA; he found there was a direct correlation between composition scores of the American College Test (ACT), High School Placement Test (HSPT), and GPA. While these tests are not the NRF certifications, they show a strong pattern of GPA as predictors of how well a student will perform on standardize tests. One could infer that just as there is a link between ACT, HSPT, and GPAs, there will be a connection between the NRF certification test and GPAs.

Halbesleben and Wheeler (2008) stated that "Students that believe they should be more engaged in their learning are expected to have higher grade point averages" (p. 175). This adds motivation as another factor that will affect the correlation of high GPAs and test scores. When students perceive an ownership of their education they become more accountable and have a stronger focus on the material being covered and the grades

received for their work (Halbesleben & Wheeler, 2008). The expectation is that if students are more accountable and engaged in their learning, they are more likely to be motivated to do well on assignments and tests causing them to score higher than students who are not as involved. The study Halbesleben and Wheeler (2008) conducted had students divided into four different groups, each with different levels of ownership in their learning. The results showed that there was a positive correlation between students who identified with a more active role in their education which supported their hypothesis that those students would have higher GPAs. The outcome of this study shows that students who take ownership and believe that their grades are payment for a job well done will try harder to earn a higher grade. If students will work harder to receive higher grades in a course, a conclusion could be drawn that this means the students with higher GPAs will work harder on tests and score better. GPAs are calculations of a student's knowledge and how much information they are able to gather is based on their cognitive ability. A person's cognitive, educational, and work experience have been linked to positive performance on the Situational Judgment Test (Weekley & Jones, 1999) which is used as a predictor of how well a person will perform. While most educators know that assessments are a brief look at what the student knows, CTE teachers realize that the assessments are a valuable tool to assess different educational domains (Foster, 2009). CTE teachers recognizing the importance of assessing the different skills of their students know that professional certifications are another tool to use and identify the levels of subject mastery.

PROFESSIONAL CERTIFICATION

In the current labor market there is an increased need for skilled workers and industry certifications are a way for employers to identify prepared workers (Wilcox, 2006). Wilcox states:

> During the last five years, with an increasing awareness of industry-based certifications as alternatives, or supplements, to more traditional credentialing systems such as postsecondary degrees, state licenses and apprenticeship certificates of completion, the idea of embracing industry-based certifications has generated a great deal of interest among educators. (p.21)

The assessments that businesses are using are meant to identify cognitive and psychomotor skills and workplace readiness of the potential employees. CTE instructors call the workplace readiness skills "soft skills" and are helping students develop them to have better workplace readiness (Foster, 2009). Since January 2008, Virginia has used a combination of industry certifications and assessments to insure that their programs and students are receiving all the benefits available from these NOCTI assessments (Foster, 2009).

Industry based assessments are valuable assets to students that are planning on entering the workforce immediately after graduation (Wilcox, 2006). Significant value is placed on the industry certifications by businesses which gives the student a competitive advantage (Wilcox, 2006). Having the edge over their competition in today's market is important to students who may not be interested in continuing on to a four year degree.

NRF FOUNDATION CERTIFICATIONS

The NRF Foundation certifications are assessments that have been identified by the industry as skills and knowledge that potential employees need (National Retail Federation, 2012). There are several types of certifications. The two that are important for this study are the Certification in Customer Service and Certification in Sales.

> Certification in Customer Service is an industry-driven and endorsed credential that helps employers distinguish and recognize qualified customer service professionals, and help define career advancement opportunities for candidates. By earning the professional certification in customer service, candidates can demonstrate their knowledge and skills in work areas that employers value, and exhibit commitments to professional growth. (NRF Customer Services, 2012, para. 1)
>
> Certification in Sales is an industry-driven and endorsed credential that helps employers identify qualified sales professionals. The certification was designed to capture the core sales duties for a broad range of entry-level through first-line supervisory positions across the sales and service industries. (NRF Sales Certification, 2012, para. 1)

The value of industry certifications is important because it helps identify eligible workers and can give a competitive edge, however there are some concerns regarding the content and the overall expense related to them.

While the majority of the assessments are developed for educational purposes, various markets have been focusing on the industry's needs (Wilcox, 2006). Industry

standards do not always align with the department of education's standards and the content on the certification can then become inappropriate for use within the school system. In cases where the content of the professional certifications and CTE course content are not compatible, students then receive the material needed to prepare them for the certification (Wilcox, 2006). Once the material is adapted to incorporate the industry content, students gain the benefits of the knowledge and certification for that industry. The partnerships with the industry help to maintain the information being distributed and keeps both sides informed on what the others needs are.

CTE is responsive to the needs of industry and helps prepare students for the workforce (Arnett et al., 2009). To have properly trained and educated workers exposing them to the industry in high school, it is important to help them navigate through the different career pathways (Arnett et al., 2009). One of the ways to insure that students are being exposed to the different career pathways that CTE offers is by having set standards that are established and maintained by the school board. Virginia is being proactive in their maintenance and development of the CTE programs throughout the state.

VIRGINIA CAREER AND TECHNICAL EDUCATION PROGRAMS

Virginia is taking control of their CTE program and being proactive with the systems they are setting up to further the advancement of the area. They developed an online system of professional presentations to go through and explain the different assessment types and the use of the available programs offered (Foster, 2009). They then used the data they identified from the industry certifications and assessments to further professional development by adding or deleting appropriate assessments and

certifications (Foster, 2009). The Commonwealth of Virginia sets high standards for its educators and the courses that are offered in their schools. The standards that the Virginia Board of Education (2011) has set stem from their vision statement which "is to create an excellent statewide system of public education that derives strength from our diversity and that ensure equality of opportunity for each student" (VDOE, 2011, para. 1). Every student is faced with different opportunities and is able to make choices that are appropriate for them to grow throughout their education. For their educators they have set up Verso within the Virginia CTE Resource website to help them be more prepared to teach students. Within the Verso website there is a link that is specifically for marketing education teachers and it outlines the state's expectations and standards that the courses must meet.

Under the marketing education umbrella there are a variety of courses for students to explore and achieve success. Virginia's public schools offer 37 courses in marketing education ranging from travel and tourism, to introduction to marketing, to fashion marketing (CTE Resource Center, 2012). The programs are developed to prepare students for opportunities after high school that cover a range of career options that are under the marketing education cluster (VDOE, 2011). These courses are not just about having fun and learning new skills; they are designed to challenge students by having set requirements. The marketing education programs have set standards that require students to have strong academic competences in English, mathematics, science, and history/social sciences that promote academic success (VDOE, 2011). Success is an important aspect of the program and Virginia expects its students and teachers to excel

and master the set standards, but they help them reach this goal by reworking and developing their current curriculum.

Every year the CTE resource center partners with the state board and helps to further the development of the course content (CTE Resource Center, 2012). Having the collaboration between the school broad and the CTE resources is essential to continuing the advancement of the programs. Part of the process is making sure that the task list is appropriate, the curriculum is formatted, there are available instructional aids, and the program has marketing and recruitment aids to drive enrollment.

CARL D. PERKINS ACT

The Carl D. Perkins Act of 2006 was signed into law to provide increased focus on CTE programs and improve state and local accountability of program standards and achievement (Carl D. Perkins Act, 2006). This was an important act because it set the expectations of what schools must accomplish (CTE Resource Center, 2012). Constant improvement and evaluation helps to better the programs and keeps them in line with the national standards. The standards were set by the Perkins Act and were established to produce educated and skilled workers.

The act will help strengthen the connection between high schools and colleges, helping students transition easier to the next level. The act is building on a previous act and was established to increase the level of academic and career and technical skills at the high school level (Carl D. Perkins Act, 2006). One important part of the act is that it allows the state to develop activities and practices that will improve the program (Carl D. Perkins Act, 2006). This part of the act is what gives students the opportunity to take the

NRF certifications which is an important part of the CTE program in Chesapeake, VA. The certifications also fall under the part of the act that supports the relationships among the industry and the CTE programs to provide lifetime development to students (Carl D. Perkins Act, 2006). The development of students is not the only reason the act is important; it is also helping to develop the United States workforce.

Having training programs that produce knowledgeable and skilled workers is keeping the United States competitive in the labor market (Carl D. Perkins Act, 2006). The United States is trying to stay competitive with other countries that have skilled laborers and the way to do this is by setting standards for the training that the workforce is receiving. The Perkins Act was designed to provide students with an ability to accomplish achievements that will lead to proficiency, through a credential, certification, or a degree in the area of study that will help the United States workforce to be competitive like they want to be (Carl D. Perkins Act, 2006). The act also allows students who are currently in high school to contribute to the economy by setting up provisions that state attendance at a job can be on alternating schedules like half days of class and work combinations (Carl D. Perkins Act, 2006). By letting students attend classes half days, the government is allowing them to contribute by being productive members to society and working to stimulate the economy. The CTE community has been embracing a continuous process of improvement to their programs established when the Carl D. Perkins Act was signed into law. The improvements are allowing programs to move forward and have course work that covers many areas including marketing education. Change is an important part of growth and having the ability to change and adapt will help the CTE community continue on the road to improvement.

Improvements to the CTE community from the Perkins Act have helped them to incorporate the use of industry certifications into the curriculum.

> The Carl D. Perkins Act (2006) states that CTE courses offer a sequence of courses that-provides individuals with coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions. It includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of an industry. (p. 4)

Increasing the relevance and expectations of the program are helping the CTE community move forward with a renewed focus. The act was an important piece of legislation that is challenging teachers to provide a higher level of instructions to students and to set standards that have students engaged in more complex activities.

SUMMARY

The Review of Literature noted information on Grade Point Averages and how they can be used to predict the achievement of students in different areas. The chapter identified different aspects of industry certifications and CTE programs in Virginia. Chapter II concluded with important information about the Carl D. Perkins Act of 2006 and the role it plays in the development of the CTE programs. There was little research

that found a direct correlation between GPAs and how students will score on tests; however there was information to provide a background and significance to pursue further research.

In Chapter III, the researcher will provide information regarding the methods and procedures used in the collection of data. The instrument that the research will be using is described as a questionnaire.

CHAPTER III

METHODS AND PROCEDURES

This chapter contains a description of the methods and procedures used to conduct a study to determine if marketing education students in Chesapeake, Virginia, with above average GPAs in marketing education are scoring higher on the National Retail Foundation customer service certification and professional sales certification tests than those with average GPAs. This chapter includes a description of the population, a description of the questionnaire, methods of data collection, and data analysis. The chapter will conclude with a description of the type of statistics used to analyze the data collected.

POPULATION

The population was marketing education students across the state of Virginia, who took the NRF Customer Service and Sales Certification for the 2011-2012 school year. The students needed to be enrolled in a marketing education course for the academic school year of 2011-2012 and have met the age requirements to complete the professional certifications. Additional requirements varied from district to district. Some of the district required that the students be program completers; this mean that they had to complete at least two semesters of marketing education courses. For this study the researcher identified the population by emailing the twelve district DECA leaders for Virginia. The potential population for this study was 320 students and came from the students enrolled in the courses being taught by the 12 district DECA leaders.

INSTRUMENT DESIGN

Information was gathered from Virginia district DECA advisors, who volunteered to provide data on the student's marketing education GPAs and their scores on the NRF Customer Service and Professional Sales Certification tests. The items in the questionnaire addressed the number of students enrolled in a marketing education course for the academic year 2011-2012, the number of students that took each certification tests, and what their grades were as well as what they scored on the certifications. A sample of the instrument was attached to Appendix A.

METHODS OF DATA COLLECTION

The open-form questionnaire was emailed to all twelve of the Virginia district DECA advisors. Along with the questionnaire a cover letter asking the district DECA leaders to participate was emailed. A sample of the cover letter is attached see Appendix B. To protect the privacy of the responding educators, the responses were anonymous to the researcher. To protect the privacy of the students no names were asked to be included on the questionnaire, just the matching marketing education GPA and the certification scores.

The questionnaires where emailed to the respondents the week of June 1st, 2012. The respondents were given 15 days to compile the information needed and email responses back to the researcher. The educators were asked to return all questionnaires by June 15th, 2012. A follow-up email was sent on June 12, 2012, to the DECA advisors with a reminder about the due date of the questionnaire.

STATISTICAL ANALYSIS

The purpose of this study was to determine if marketing education students in Virginia, with above average GPAs are scoring higher on the National Retail Foundation customer service certification and professional sales certification test than those with average GPAs. The statistical method used to analyze the data was a t-test to determine if there was a significant difference in the scores between students with passing scores and students who received non-passing scores on the NRF Professional Certification tests. Further statistical analysis done using Pearson's r, product moment correlation, to identify if there was a relationship between above average marketing GPAs and passing scores on the NRF Professional Certification test.

SUMMARY

The purpose of Chapter III was to discuss the methods and procedures used to collect and analyze data to complete this study. This chapter presented information on the population of the study and why that particular population was chosen. To acquire the necessary data, a voluntary questionnaire was e-mailed to the twelve Virginia DECA district leaders. Once the questionnaires were returned, the GPAs and NRF certification scores were analyzed using Pearson's r linear method of correlation and the results are presented in Chapter IV.

CHAPTER IV

FINDINGS

The purpose of Chapter IV is to present the reader with the information collected from the research questionnaire. The problem of this study was to determine if marketing education students in Virginia, with above average GPAs, are scoring higher on the National Retail Foundation customer service certification and professional sales certification tests than those with average GPAs. The information obtained from the questionnaire distributed to the Virginia district DECA leaders was used to identify the GPAs of the marketing education students and their scores on the NRF certification tests. GPAs and scores were current as of June 15, 2012.

RESULTS

The results were analyzed using the individual student's marketing GPAs and NRF scores for either the Customer Service or the Professional Sales certification tests. Twelve Virginia DECA leaders were sent the questionnaire electronically. Of the twelve DECA leaders, six responded back, of the respondents two of the leaders did not have students take either of the certification tests. Three of the DECA leaders had students who took only the NRF customer service certification test, and one had students who took both the NRF customer service and professional sales certification tests. The total number of students enrolled in the responding district DECA leaders marketing education courses for the school year 2011-2012 was 366. There were a total of 130 students that took the NRF Customer Service Certification and 20 students that took the NRF Professional Sales Certification for a total population of 150. The population response

questionnaire data are presented in Table 1. The marketing education student population

data are presented in Table 2.

Table 1

Population Responses

Virginia	Total Sent	Total Response	Percentage of Response
District DECA Leaders	12	6	50

Table 2

Marketing Education Population

Total Marketing Education Population	366
Total NRF Certification Population	150
Total NRF Customer Service Certification Population	130
Total NRF Professional Sales Certification Population	20
Percentage of Marketing Education Students	41

DATA ANALYSIS

The questionnaire contained six questions to identify the total number of

marketing education students in their courses, the number of total students that took the

certification tests, the number of students that took each certification test, and what the

student's marketing GPA was, as well as their score on the certification. To analyze the

data, the researcher used a t-test and the Pearson r method of linear correlation. The

research goal of the paper was established as a predictive hypothesis.

H_1: Students who perform well in marketing education courses in Virginia by earning a high GPA will perform well on the National Retail Foundation customer service and professional sales certification tests.

Using a t-test, the researcher analyzed the data of students with passing scores on the NRF Professional Certification tests and students with non-passing scores to determine if there was a significant difference between the two GPAs. The computation is shown in Table 3.

Table 3

t-test results

Raw Data	Computation of t
$M_1 = 3.390$	
$M_2 = 3.041$	$t = \dfrac{M_1 - M_2}{\sqrt{\left(\dfrac{\Sigma d_1{}^2 + \Sigma d_2{}^2}{N_1 + N_2 - 2}\right)\left(\dfrac{N_1 + N_2}{N_1 * N_2}\right)}}$
$\Sigma d_1{}^2 = 1514.299$	
$\Sigma d_2{}^2 = 229.368$	
$N_1 = 126$	
$N_2 = 23$	
	$t = 2.050 \qquad df = 147$

The t value was 2.05. The level of significance at the .05 level was p>.05=1.65. ($t = 2.05$, $N_1 = 126$, $N_2 = 26$, $p = .05$).

ADDITIONAL STATISTICS

Using Pearson's r to further analyze the data, the researcher computed the

analysis of the students that took the NRF Customer Service and the students NRF

Professional Sales Certification combined and separately. The linear method of

correlation was used to determine if there was a relationship between marketing

education GPAs and scores on the NRF Professional Certifications. The computations are

shown in Table 4, Table 5, and Table 6.

In Table 4 the researcher analyzed the data combined from both NRF Customers

Service and Professional Sales Certification tests to determine if there was a correlation

between the marketing education GPAs and passing scores on the two tests.

Table 4

NRF Professional Certification Computation

Raw Data	Computation of r
$\Sigma X = 499.13$	
$\Sigma X^2 = 13912.38$	$r = \dfrac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\left[N\Sigma x^2 - (\Sigma x)^2\right]\left[N\Sigma y^2 - (\Sigma y)^2\right]}}$
$\Sigma Y = 277$	
$\Sigma Y^2 = 531$	
$\Sigma XY = 928.3$	
$N = 150$	$r = +0.1599 \qquad df = 148$

The r value was +0.16. The level of significance at the .05 level was $p > .05 = 0.16$.

(r=+0.16, n=150, p=.05).

In Table 5 the researcher analyzed the data from the NRF Customer Service certification test to identify if there was a correlation between the marketing education GPAs and passing scores NRF Customer Service Certification.

Table 5

NRF Customer Service Computation

Raw Data	Computation of r
$\Sigma X = 427.94$	
$\Sigma X^2 = 1525.0602$	$r = \dfrac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\left[N\Sigma x^2 - (\Sigma x)^2 \right]\left[N\Sigma y^2 - (\Sigma y)^2 \right]}}$
$\Sigma Y = 239$	
$\Sigma Y^2 = 461$	
$\Sigma XY = 803.35$	
$N = 130$	
	$r = +0.1253 \qquad df = 128$

The r value was +0.13. The level of significance at .05 level was p>.05=0.16. (r=+0.13, n=130, p=.05).

In Table 6 the researcher analyzed the data from the NRF Professional Sales certification test to identify if there was a correlation between the marketing education GPAs and passing scores on the NRF Professional Sales Certification test.

Table 6

NRF Professional Sales Computation

Raw Data	Computation of r
ΣX= 65.19	
ΣX^2= 222.6067	$r = \dfrac{N\Sigma XY-(\Sigma X)(\Sigma Y)}{\sqrt{\left[N\Sigma x^2-(\Sigma x)^2\right]\left[N\Sigma y^2-(\Sigma y)^2\right]}}$
ΣY= 34	
ΣY^2= 62	
ΣXY= 47.76	
N= 20	
	r= +0.3263 df= 18

The value of r was +0.33. The level of significance at .05 level was p>.05=0.38 (r=+0.33, n=20, p=.05).

SUMMARY

In Chapter IV, data were analyzed using a t-test to determine if there was a significant difference in GPAs between marketing education students with passing scores and those with non-passing scores on the NRF Professional Certification test. Additional statistical analysis was done using Pearson's r to determine whether there was a correlation between marketing GPAs and scores on the NRF Customer Service and Professional Sales Certification tests. Tables were used to identify the total population of the study as well as the percentage of marketing education students that took either NRF Professional Certification tests and identified the computations used when analyzing the data. The computations identified that t=2.05 for NRF Professional Certification tests.

The computations identified that r=+0.16 for both NRF Certification tests, r=+0.13 for the NRF Customer Service Certification test and r=+0.33 for the NRF Professional Sales Certification test.

Chapter V will address what has been presented in the first four chapters and summarize the research. The chapter will also contain the researcher's conclusions drawn from the data obtained from the questionnaire, and the recommendations for future research involving marketing education students and NRF certifications.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECCOMENDATIONS

The problem of this study was to determine if marketing education students in Virginia, with above average GPAs, are scoring higher on the National Retail Foundation customer service certification and professional sales certification tests than those with average GPAs. This chapter summarized why and how the study was conducted, the conclusions that can be derived from the questionnaire data, and recommendations for future studies involving marketing education students and NRF certifications.

SUMMARY

The research goal was to identify a correlation between marketing education GPAs and scores on the NRF Customer Service and Professional Sales certification tests. The focus of this study was Virginia marketing education students that took the certification tests during the 2011-2012 school year. The researcher identified three limitations of this study that have to do with the sampled population.

The limitations of this study included:

1. Only marketing education students in courses taught by Virginia DECA district leaders were evaluated.

2. The evaluation was done by collecting data through a questionnaire distributed to Virginia DECA district leaders.

3. The questionnaire was distributed through teacher's email addresses.

A questionnaire was electronically distributed to the DECA district leaders for the state of Virginia to identify the number of students that participated in the NRF certifications, the number of total marketing education students, and what the student's GPAs and test scores were. The data were collected from the questionnaires returned by the district leaders. Once the data were collected, the researcher analyzed the information using a t-test and Pearson's r method of linear correlation.

CONCLUSIONS

The research hypothesis for this study was:

H_1: Students who perform well in marketing education courses in Virginia by earning a high GPA in these classes will perform well on the National Retail Foundation customer service and professional sales certification tests.

Once the data were calculated the researcher identified the value of t=2.05 which was above the level of significance, p>.05=1.66. This indicated that there was a significant difference for students with passing scores on the NRF Professional Certification Tests and students with non-passing scores GPAs. Accepting the hypothesis the researcher concluded that students who perform better in marketing education by earning a higher GPA will also perform better on the NRF Professional certification tests. Using Pearson's r, the research calculated additional statistical analysis and found that for the combination of both NRF certification tests the r value was +0.16, which was below the .05 level of significance, p>.05=0.16 (r=+0.16, n=150, p=.05). The researcher also found that for the NRF Customer Service Certification the r value was +0.13. It was below the .05 level of significance, p>.05=0.16 (r=+0.13, n=130, p=.05). After calculating the data for a combination of the two NRF certification tests and the NRF

Customer Services Certification test the researcher calculated the data for the NRF

Professional Sales Certification. The value of r was +0.33, it is below the level of

significance at .05 level at the p>.05=0.38 (r=+0.33, n=20, p=.05). The Pearson's r

statistical analysis indicate that there is not a correlation between marketing education

GPAs and passing scores on the NRF Professional certification tests.

GPAs have been used as predictors of future success in several studies. Rhodes

(1994) used a sample of 347 students from a graduate program and stated "based on their

findings, graduate nursing program success may be better predicted using UGPA

(Undergraduate GPA) as opposed to GRE (Graduate Record Exam) scores" (as cited in

Newton & Moore, 2007, p. 329), showing how GPAs can be an indicator of success.

Further analyzing the data collected the researcher identified that the mean GPA of the

marketing education students with non-passing scores on the NRF Customer Service

Certification was a 3.05 and the mean GPA of the students with non-passing scores on

the NRF Professional Sales Certification was a 2.68. The mean GPA of the marketing

education students that passed the NRF Customer Services Certification was 3.41 and the

mean GPA of the marketing education students that passed the NRF Professional Sales

certification was 3.41. By calculating the mean GPAs of all marketing education students

that took the NRF Professional Certification test, the researcher identified that there was a

.36 difference in the mean GPA of students that received passing scores and students who

received non-passing scores on the NRF Customer Service Certification. The researcher

also identified that there was .68 difference between mean GPA of students that received

passing scores and students who received non-passing scores on the NRF Professional

Sales Certification. The calculations from the t-test showed a difference between the

GPAs of students with passing scores and non-passing scores leading the researcher to identify a significant difference of marketing education GPAs and the NRF Professional Certification scores. By identifying predictors of success on the NRF certification tests the school districts can prevent unnecessary spending. Currently the school districts pay for the students to take the NRF certifications and the only requirements for some students is that they are enrolled in a marketing education course. It is important that studies like this are conducted to help set more requirements before school districts pay for students to take the certification and then have the outcome of the students not passing.

RECOMMENDATIONS

The data collected for this study shows a significant difference between marketing education students who earn higher GPAs and those students who have lower GPAs scores on the NRF professional certification tests. While GPAs can be used to identify a significant difference there may be other factors that affect the successfulness of students on the NRF certification tests such as the student's age, the current work experience, the amount of preparation time, or the student's interest in the material being covered. Another factor to consider is whether or not the student is a program completer. Further research can be conducted using these factors to identify additional relationships.

While the data does support using GPAs as predictors, the researcher recommends identifying additional factors that can be used to help predict how marketing education students will perform on the NRF certification tests to eliminate unnecessary spending on the part of the state. As part of the Carl D. Perkins Act states are given funds for CTE

programs "allowed for administrative costs for the support and development" (Carl D. Perkins Act, 2006) the funds that CTE programs receive are limited making considerate spending is important.

Additional research could be conducted to identify if there is a relationship between passing scores on the NRF customer service and professional sales certification tests and marketing education students with jobs and experience in customer service. A follow-up study to this research could be used to identify a correlation between the NRF customer service and professional sales certification tests scores for marketing education students with jobs and marketing education students without jobs. This type of study would make the assumptions that all other variables are equal except for the employment of the students.

Another study could be conducted that compares program completers NRF customer service and professional sales certification test scores and non-program completers NRF customer services and professional sales certification tests scores. A follow-up study to this research could be identifying if there is a relationship between being a program completer and obtaining a passing score on the NRF customer service and professional sales certification tests.

Further studies could be conducted to look at the in class preparation done for the NRF certification tests. Lastly, a future study of the benefits of the students obtaining the NRF certification tests could be done to identify if this is the appropriate assessment tool for marketing education courses to use.

REFERENCE

Alfeld, C., & Bhattachary, S. (2012). Programs of study: What mature sites tell us. *Techniques: Connecting Education & Careers, 87*(1), 32-35. Retrieved from http://web.ebscohost.com.proxy.lib.odu.edu/ehost/pdfviewer/ pdfviewer?sid=adfaf4b3-dd13-48fc-836f 64834d2ebade%40sessionmgr115&vid=5&hid=125

Arnett, S., Kozlowski, P., Peach, P., & Varela, E. (2009, September 1). Career and technical education: Pursuing a pipeline for the new green collar workforce. *The Free Library*. Retrieved from http://www.thefreelibrary.com/ Career and technical education: pursuing a pipeline for the new green...-a0207349559

Beecher, M., & Fischer, L. (1999). High school courses and scores as predictors of college success. *Journal of College Admission*, (163).

Bott, P. (1996). *Testing and assessment in occupational and technical education*. Needham Heights, MA: Allyn & Bacon.

Chesapeake Public Schools. (2009, August 13). Career and Technical Education. Retrieved from http://www.cpschools.com/departments/career/voced/ default.htm

Department of Education Virginia. (2011). Information summary of career and technical education programs (CTE): Prepared for Virginia's state special education advisory committee. Retrieved from http://www.doe.virginia.gov/boe/ committees_advisory/special_ed/meetings/2011/feb_2011/ information_summary_cte.pdf

Foster, J. (2009). Improving technical competences: How the CTE community is Responding. *Techniques: Assessments, 84*(8), 28-32. Retrieved from

http://136.165.122.102/UserFiles/File/techniques/nocti_foster.pdf

Geiser, S., & Santelices, M. (2007). Validity of high-school grades in predicting student

    success beyond the freshman year. *Research & Occasional Paper Series: CSHE*,

    6.07. Retrieved from http://chse.berkeley.edu

Grade Point Averages. (2012). In *Merriam-Webster dictionary online*. Retrieved from

    http://www.merriam-webster.com/dictionary/gradepoint%20averages

Gronlund, N.(1968). *Assessment of student achievement*. Needham Heights, MA: Allyn

    & Bacon.

Halbesleben, J., & Wheeler, A. (2008, June 18). Student identification with business

    education models. *Journal of Management Education*, *33*, 166.

    doi:10.1177/1052562908320658

Kuncel, N. R., & Hezlett, S. A. (2007, February, 23). Standardized tests predict graduate

    students' success. *Science Magzine*, *315*(5815), 1080-1081.

    doi: 10.1126/science.1136618

National Retail Federation. (2012). National retail federation: the voice of retail

    worldwide. Retrieved from http://www.nrf.com/

    modules.php?name=Pages&sp_id=146&pmenu_id=1&mn_type=1

National Retail Federation. (2012). NRF Foundation: Training & certifications. Retrieved

    from http://www.nrffoundation.com/content/training-certifications

National Retail Federation. (2012). NRF Foundation: Certification in customer service.

    Retrieved from http://www.nrffoundation.com/content/

    certification-customer-service

National Retail Federation. (2012). NRF Foundation: Certification in sales. Retrieved

    from http://www.nrffoundation.com/content/certification-sales

Newton, S., & Moore, G. (2007). Undergraduate grade point average and Graduate

    Record Examination scores: the experience of one graduate nursing program.

    Nursing Education Perspectives, *28*(6), 327-331.

Rojewski, J. W., & National Dissemination Center for Career and Technical Education.

    (2002). Preparing the workforce of tomorrow: A conceptual framework

    for career and technical education. Retrieved from http://www.eric.ed.gov/

    PDFS/ED461771.pdf

S. 250--109th Congress: Carl D. Perkins Career and Technical Education Improvement

    Act of 2006. (2005). In GovTrack.us (database of federal legislation). Retrieved

    from http://www.govtrack.us/congress/bills/109/s250

Smith, M. (1993). The relationship between high school placement test scores, act

    scores, and gpa's for central catholic high school students. Retrieved from ERIC

    database. (ED 379311)

Table of critical values of pearson's r. (2012). Retrieved from http://www.radford.edu/

    ~jaspelme/statsbook/Chapter%20files/Table_of_Critical_Values_for_r.pdf

Technical certifications give students a career edge. (2011, October).

    Techniques: Common core state standards, *86*(7), 21. Retrieved from

    http://www.avaonline.org/

Virginia CTE resource Center. (2012). Verso: Marketing. Retrieved from

    http://www.cteresource.org/verso2/

    results?program_area=marketing&document_type=all&course_codes=&text=

Virginia Department of Education. (2011). Virginia board of education: Vision.

    Retrieved from http://www.doe.virginia.gov/boe/index.shtml

Virginia Department of Education. (2011). Information summary of career and technical

    education programs (CTE): Prepared for Virginia's state special education

    advisory committee. Retrieved from http://www.doe.virginia.gov/boe/

    committees_advisory/special_ed/meetings/2011/feb_2011/

    information_summary_cte.pdf

Weekley, J. & Jones, C. (1999). Further studies of situational tests. *Personnel*

    Psychology, *52*(3), 679–700. doi: 10.1111/j.1744-6570.1999.tb00176.x

Weekley, J. & Ployhart, R. (Eds.). (2006). Situational judgment tests: Theory,

    measurement, and application. Mahwah, NJ: Lawrence Erlbaum Associates,

    Publishers.

Wilcox, D. (2006, January). The role of industry based certifications in career and

    technical education. *Techniques Magazine: The Certification Advantage, 81*(1),

    21-23. Retrieved from http://web.ebscohost.com.proxy.lib.odu.edu/

    ehost/pdfviewer/pdfviewer?sid=66be82e7-5907-4390-

    8a890b2a49e76f71%40sessionmgr110&vid=3&hid=125

Woodruff, D.J., & Ziomek, R.L. (2004). High school grade inflation from 1991 to 2003

    (ACT Research Report 04-4). Iowa City: The American College Testing Program.

APPENDICES

APPENDIX A-COVER LETTER

Dear Virginia DECA Advisors,

My name is Amanda Green; I am a graduate student at Old Dominion University. Part of the requirements of my degree is to conduct a research study and analyze the data collected.

The study being conducted is of marketing education students to determine if there is a correlation between GPAs and passing scores on the National Retail Foundation Customer Service Certification and the Retail Sales Certification. Attached is a questionnaire that is voluntary, confidential, and very important to the successful completion of my graduate research paper.

I understand that as an educator you are extremely busy, so your participation is greatly appreciated. To make this more efficient for you the questionnaire is attached to this email. Once you have completed the questionnaire please just attach and email it back to me at agree056@odu.edu.

Sincerely,

Amanda Green

APPENDIX B-QUESTIONNAIRE

Correlation between Marketing Education Student's GPAs and Passing Scores on the
NRF Professional Certification

Dear Virginia DECA Advisors,

I am conducting a study of marketing education students to determine if there is a
correlation between GPAs and passing scores on the National Retail Foundation
Customer Service Certification and the Retail Sales Certification. Completion of the
research is a component of my master's program at Old Dominion University. Please take
the time to fill out the questionnaire completely and email it back to me. Your
participation is voluntary, confidential, and very important to the success of the research.
Thank you for your time.

Please answer the following question completely based on your knowledge.

What was the total number of students enrolled in your marketing education courses for
the year 2011-2012? _____

_____

How many students did you have take both NRF Professional Certification tests for the
2011-2012 school year? _____

How many students took the NRF Sales Certification test? _____

How many students took the NRF Customer Service Certification test? _____

Please list the grades of the students in the marketing education course and their score on
the NRF Customer Service certifications or attach a copy with the grades and scores.
Please no student names.

Marketing Education Grade   NRF Customer Service Certification Score

Please List the grades of the students in your marketing education course and their score on the NRF Retail Sales Certification or attach a copy with grades and scores. Please no student names.

<u>Marketing Education Grade</u>   <u>NRF Sales Certification Score</u>