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Puerto Rican Vocational Students' Experiences Regarding Standardized Tests

Nomara I. Segui
Walden University

Walden University

COLLEGE OF EDUCATION

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Nomara I. Segui

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Dr. Maureen Ellis, Committee Member, Education Faculty
Dr. Michelle Brown, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
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Abstract

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MA, University of Phoenix, 2009
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Doctoral Study Submitted in Partial Fulfillment
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Abstract

Vocational high school students are not passing state tests and are not meeting adequate yearly progress (AYP) requirements in Puerto Rico. Limited qualitative research has been conducted to examine the experiences of vocational high school students regarding mandated standardized tests. Using a qualitative case study, the experiences of Puerto Rican cosmetology and barber vocational high school students regarding mandated standardized tests were examined. The conceptual framework was based on Dewey's theory of experience regarding the influence of continuity and interaction on students' career paths. The sample was 20 vocational students from cosmetology and barber classes who participated in standardized tests. Data were collected via audiotaped face-to-face semi structured interviews and were analyzed using open coding and thematic analysis for emergent themes. The findings revealed learning strategies, experienced by the participants, which help vocational high school students improve their proficiency in cosmetology and barber curricula. Teachers could use the findings to help students improve their standardized test scores and meet AYP. This study has implications for social change, in that it may inform the implementation of learning strategies to help vocational students be successful on standardized tests, graduate from high school, and enter higher education or join the workforce.

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Dedication

I dedicate this study to my family, those special human beings whom God gave in my life, supporting and guiding me. Especially to my husband, Iván Lebrón, and my dear aunt, Patria Medina, who have always helped me reach my academic goals. Of course, my mother, Juanita Medina, who brought me into this world with a clear commitment of responsibility and dedication. My beloved grandmother, Enriqueta Bernard, a visionary and self-taught female; her voice keeps whispering in my ear, "nena estudia." Enriqueta Bernard, with only a third grade education, educated me plentifully before, during, and while life allowed. Another very special aunt, Carmen Medina (RIP), veteran of the U.S. Army, who always showed by her example that being a teacher is honorable, productive, and wonderful. To all of them, I dedicate this doctoral study.

Acknowledgments

I acknowledge the professional help I have received from Dr. Peter Kiriakidis, the chair of my committee, for his content and methodology expertise. Dr. Kiriakidis has been the professional who has given me that emotional support that any doctoral student needs to keep on track. God bless him forever.

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Section 1: Introduction to the Study

Introduction

The No Child Left Behind Act (NCLB) of 2001 applies to students in Puerto Rico because these students participate in standardized tests. Schmidt and Camara (2007) reported that the standardized test scores of Puerto Rican students are very low compared to those of their counterparts in the United States. Pizarro (2010) reported that Puerto Rican students are not meeting the academic standards set forth by the Department of Education of Puerto Rico (PRDE).

On June 2012, the PRDE requested flexibility plans regarding specific requirements of NCLB Act. In 2013, the Puerto Rico Federal Affairs Administration (PRFAA) announced that the U.S. Department of Education had approved the request for an education flexibility plan. Puerto Rico has joined 42 U.S. states and the District of Columbia in receiving an exemption from the NCLB Act while implementing a plan for the improvement of the quality of public education in Puerto Rico (PRFAA, 2014). PRDE needs strategies to be effective as measured by standardized tests (ESEA Flexibility, 2013) because the educational system in Puerto Rico has unique challenges such as improving educational outcomes of vocational high school students (PRFAA, 2014). In Puerto Rico, the range of knowledge (ROK) skills for Spanish-language students is limited (ESEA Flexibility, 2013), and as a result standardized test scores for Puerto Rican students are very low. In the next section, I describe the research problem at the research site.

Problem Statement

Standardized tests are used to measure students' proficiency in academic subjects (Lemon & Watson, 2011). Like students in the United States, Puerto Rican vocational high school students participate in yearly standardized tests. However, Puerto Rican students perform poorly on these tests in comparison to their U.S. counterparts (PRDE, 2009). PRDE (2009) reported that Puerto Rican students may not be successful at standardized tests because of the vocational curriculum not being aligned to the U.S. curriculum for which the standardized tests are prepared. Vocational Puerto Rican students do not reside in the Unites States yet are tested with U.S. standardized examinations, and English is not their first language; these students speak Spanish at the public vocational high schools in Puerto Rico.

According to Hyerle and Alper (2011), Puerto Rican students' scores on the Scholastic Assessment Test (SAT) are low. The Instituto de Estadísticas de Puerto Rico (2013) reported that 87% of schools in Puerto Rico needed to help students in passing U.S. standardized tests written in English and not in Spanish. These students' standardized tests scores are very low in comparison to the scores of students from the Unites States, and these students do not meet adequate yearly progress (AYP). PRDE (2009) reported that since 2007, the proposed research site, a vocational school in Puerto Rico, has not met AYP, and that as a result, students either cannot graduate from this high school or, if they do graduate, do not enter college because they lack academic skills.

Vocational high school students' experiences regarding standardized tests remain relatively understudied at the research site. At the research site, the experiences of vocational high school students regarding mandated standardized tests have not been examined. School and district administrators have needed research-based findings on the experiences of these students regarding mandated standardized testing in order to make decisions on the allocation of human and capital resources for professional development (PD) for teachers and for curricula for vocational high school subjects to prepare these students to pass state tests. The findings of this study include pedagogical strategies for vocational high school teachers and administrators to help students improve their proficiency on standardized tests.

Rationale

Evidence of the Problem at the Local Level

In 2009, Puerto Rico had an enrollment of 493,393 students in public schools, of which 23.7% were in high school and less than 10% were in vocational high schools (Instituto de Estadísticas de Puerto Rico Año Escolar, 2009). The Puerto Rican census bureau identified that over 80% of Puerto Rican high school students between 16 and 19 years old did not graduate from high school. The College Board (2008) examined whether Puerto Rican vocational high school students who attended college completed college-level academic requirements and reported that college-level students either dropped out or needed academic support to graduate from college. Standardized testing is mandatory for all Puerto Rican vocational students who choose to enter a college or university. Vocational Puerto Rican students do not reside in the Unites States but are

tested with U.S. standardized tests written in English and not in Spanish, the first language of the students.

At the research site, Puerto Rican vocational high school students' standardized tests scores were very low between 2007 and 2014. Many of these students did not meet AYP and did not enter college or university because they lacked academic skills. Stakeholders such as school and district administrators, high school teachers, policymakers, government organizations, and researchers need research-based findings on the experiences of vocational high school students regarding mandated standardized testing in order to make decisions on (a) how to help these students meet AYP and pass standardized tests and (b) how to help teachers through PD to help these students.

Evidence of the Problem From the Professional Literature

Policymakers have suggested that school administrators revise the vocational curricula as a solution to the problem of poor performance among vocational high school students in Puerto Rico (Uy, 2008). Flexibility in vocational curricula standards may give students the opportunity to acquire knowledge and skills for entering the labor market (Sun, 2010). A new curricular alignment proposal called *The Carnegie Statway Networked Improvement Community* (Carnegie Corporation of New York & Institute for Advanced Studies [CCNY], 2009) has been developed. Statway students have been expected to master the curriculum in high school, an important task for success in the workplace (CCNY, 2009).

Students' experiences with state testing have been documented. Embse, Barterian, and Segool (2012) found that university policies limit access to higher

education for vocational students because these students lack academic skills. Goodwin and O'Connor (2012) found that vocational students are poorly prepared for higher education. Watson, Heigel, and Chesters (2013) reported that higher education practices have an impact on vocational students who seek college entrance. Wheelahan (2009) asserted that competency-based training and assessments have an impact on vocational students. Rothman et al. (2011) used postsecondary tracking surveys and found that vocational students lack higher level skills because these skills are not taught in their high school curriculum. The Open University of Scotland (OUS) reported that "the curriculum is flexible, modular, and credit-based where approximately three-quarters of students are studying to expand their skills in order to improve their careers" (Cannell & Caddell, 2012, p. 11).

In the Unites States, universities should increase access for vocational students (Keller & Hoover, 2009). Aligning state tests to academic content standards is important because state tests place more emphasis on memorization and less emphasis on complex cognitive processes (Polikoff, Porter, & Smithson, 2011). Teachers are under pressure to help students pass standardized tests (Duckworth, Quinn, Lynam, Loeber, & Stouthamer, 2011). Gaylor (2010) recommended that teachers assist high school students in passing standardized tests. Students need to be motivated to achieve their full potential and long-term academic goals (Du, 2009).

Purpose of the Study

The purpose of this qualitative case study was to examine vocational high school students' experiences regarding standardized tests.

Definitions of Terms

Puerto Rican student assessments: Herman (2010) stated that student assessments are used to improve "teaching and learning" and "should not be viewed as a single event" of measures (para. 2). In Puerto Rico, schools need learning goals for vocational students.

Puerto Rican tests of academic achievement (PPAA): Standardized tests designed to assess the academic achievement of students in English as a second language, mathematics, Spanish, and science (Department of Education of Puerto Rico, 2013).

Traditional education system: Gao (2014) asserted that the goal of the current traditional education system is emphasizing academic subjects that are useful in the job market.

Vocational education programs: According to Lagares and Connor (2009), vocational education programs are needed and teachers are expected to help students learn the curriculum.

Significance of the Study

The findings include specific strategies that teachers may use to help students stay in school; if these strategies are employed at the research site, the dropout rate could be reduced. The findings are helpful to vocational teachers seeking to (a) meet AYP, (b) help students improve their higher order thinking skills, and (c) focus on understanding the high school curriculum. The findings are helpful to vocational school administrators in that they indicate strategies to help students and teachers meet AYP. School administrators could use the findings to offer professional development sessions for teachers to improve their pedagogical practices.

Research Question

The research question that guided this study was the following: What are Puerto Rican vocational high school students' experiences regarding standardized tests?

Review of the Literature

I used these databases: Academic Search Premier, ERIC, and Psychology and Behavioral Sciences Collection. I used these keywords for the literature review: *education, vocational curriculum, testing, standardized tests, high school, students' experiences with exams,* and *student achievemen*t. My search included peer-reviewed articles regarding students' experiences with standardized tests.

Conceptual Framework

At the research site, vocational courses such as cosmetology and barber courses are divided into theory and practice. For vocational cosmetology and barber courses and students, Bloom's taxonomy of evaluation applies to this study because during the *theory phase,* students memorize and learn course content. During the *practice phase*, students apply knowledge. Standardized tests measure students' proficiency in certain academic subjects. To examine the experiences of vocational high school students regarding mandated standardized tests, I developed a conceptual framework based on Bloom's taxonomy (1956) of evaluation and Dewey's theory of experience (1952). Bloom's taxonomy is about "learning at the higher levels that are dependent on having attained prerequisite knowledge and skills at lower levels" (Huitt, 2011, p. 2). Dewey's theory of experiences was related to this study because I examined the experiences of students regarding standardized tests. The experiences of vocational high school students

regarding standardized tests helped me to identify strategies for teachers to help these students improve their proficiency in the high school curriculum as measured by state scores.

Vocational Education Historical Overview

The emergence of vocational education in the 20th century revealed two individual points of view on preparing students for occupations and lives as citizens. In 1929, after the collapse of the stock market, the Great Depression began keeping the Unites States and Puerto Rico in a challenging economic status for 10 years. In 1930, New York Governor Franklin Roosevelt asked for the Federal Meeting of Vocational Instruction and sent a commission to evaluate the conditions of Puerto Rico in order to determine whether the Smith-Huge law could be extended to the island. This legislation, which became effective in the Unites States in 1917, assigned minimum standards to the states' departments of instruction to train teachers in the areas of agriculture, commerce, industry, and domestic economy.

The commission that was operational in Puerto Rico in 1930 approved the application of the law to the island. The commission stated that, in the area of domestic economy, these standards could support the programs of agriculture and industry while improving conditions of Puerto Rican family life. According to Zhao (2013), in the Unites States, the education system is dispersed, lacking a national curriculum and having ineffective schools because students score low on international standardized tests. McDonnell (2013) reported that there is an absence of research focusing on the effects of accountability policies on public schools. GAO (2014) stated that the traditional

education system places emphasis on “specific academic subjects such as mathematics, science, and literature” to meet the requirements of industrialism because manufactories need workers to read and calculate without the need to think critically (p. 2). Regarding higher education, Hiss and Franks (2014) asserted that standardized test scores are the best predictor of college-level academic performance.

Standardized Testing in Puerto Rico

As a method to measure academic achievement in every state, standardized testing is used by school districts. Standardized scores are used to determine AYP based on the goals of NCLB Act of 2002. In Puerto Rico, students’ assessments are not aligned with career-ready standards to determine students’ proficiency in core subjects each academic year. Penalties are gradually applied to schools that do not make AYP.

According to Gregory (2007), state tests should supply information about students' precise knowledge or skills within the curriculum as compared to norm-referenced tests that provide information about students' performance relative to an external norm group. Salge (2011) wrote that amendments to standardized tests are required to provide feedback to educational organizations. The use of standardized testing in the Unites States began in the 20th century, with its origins in the Army alpha and beta tests developed by Yerkes and his colleague (Rivera, 2007). Efforts to review the current testing requirements have been made by The Race to the Top (RTTT) Assessment Program.

Low Achievement and Standardized Testing in Puerto Rico

On October 2, 1990, the Association of University Presidents and PRLAO agreed to support a complete study addressing the low achievement rates of new college students. Researchers surveyed more than 2,528 college students and 3,100 high school students and conducted individual interviews and focus groups, which included students, counselors, and other professionals in college and high school settings. The results indicated that there was (a) a major deficiency in counseling in high school and college, (b) lack of up-to-date information for vocational selection, and (c) fragile curricular articulation between K-12 and college freshman courses (PRLAO, 2008).

The work of the PRO between 1963 and 1969 had a very important and perhaps significant impact on admissions policies and practices in Puerto Rico. Because of the dislocation between curriculum and teaching, the Federal Department of Education told the Puerto Rico Department of Education (PRDE) that it needed to have new Title I tests or risk losing federal funding. During the summer of 1994, a new proposal to develop assessment tests was accepted by the Department of Education, and preparation began for Spanish and English tests for all students from first to ninth grade who received Title I support. The system was called SENDA, for Sistema de Evaluación Normativa del Aprovechamiento Académico, which translates as “norm-referenced achievement evaluation system” (PRLAO, 2008).

Pruebas Puertorriqueñas de Aptitud Academica (Puerto Rican Tests of Academic Achievement [PPAA]) are the existing local standardized tests used in Puerto Rico. During the months of February and March, The College Board and the Office of Puerto

Rico and Latin America administer the PPAA. Educational Testing Service (ETS) developed the tests by commission from the Department of Education.

The Puerto Rico Institute of Statistics developed a school profile for public and private schools in Puerto Rico (Instituto de Estadísticas de Puerto Rico, 2011). The number of Grade 9-12 students in Puerto Rico in the 2009-2010 year was 140,785. Of these, 9,834 were in Grade 11. The Puerto Rico Institute of Statistics report did not specify how many of these students belonged to vocational education programs (Instituto de Estadísticas de Puerto Rico, 2011). According to Lagares and Connor (2009), vocational education programs were needed, and teachers were expected to help students learn the curriculum.

Regarding educational outcomes, Hodara, Jaggars, and Karp (2012) stated that a number of states have redesigned their curriculum and course structures to accelerate students' progression through developmental requirements. According to PRDE (2014), Grade 11 students who achieve three advanced scores and one proficient score on the Pruebas Puertorriqueñas and obtain a minimum of 3,000 points on the College Board can request a graduate certificate and go to the post secondary level. Regarding the effects of performance-approach goals on achievement, Hulleman and Harackiewicz (2011) found that student achievement was affected by promoting enthusiasm and better cognitive approaches.

Puerto Rico Vocational Students and Standardized Tests

Vocational students in Puerto Rico need to understand the curriculum for the classes they take. For example, if students do not take biology, they do not know the

terminology and vocabulary and may fail in the test in that subject. Recently, The College Board began offering review and practice classes online to help students become familiar with the test.

Integrating vocational education into general education is essential. Exemplary initiatives have resulted in high-achieving students, enthusiastic teachers, excellent academic achievement, integrated communities, and achievements on the social end of education. The Antonio S. Pedreira Elementary School and Manuel Elzaburu Intermediate School are consistent with the interests of the students and are examples of high-achieving schools (Teresa, 2010). Teresa (2010) pointed out that the Juan Ponce de León School in Barrio Juan Domingo de Guaynabo inserted work experiences from the elementary school and the Federico Asenjo School integrated technological skills into the curriculum.

In 2008, 318 students in a South Bronx middle school refused to take a 3-hour practice exam that was to prepare them for a statewide social studies test. The students left the exams blank and submitted a petition to the principal of the school. One student said, “The school is oppressing us too much with all these tests. They don't think we have brains of our own, like we're robots” (Gonzalez, 2008, p. 3). This is an example of how students’ emotions and thoughts affect their accomplishments on tests.

Failure on a test may not solely be due to a student’s lack of content knowledge; it may also reflect anxiety resulting from negative thoughts about taking the test (Boyacioglu & Kucuk, 2011). To date, limited research exists on the feelings, thoughts, and anxiety of vocational students in relation to standardized tests. Sadler (2010)

emphasized that students can use their experiences to better understand course content and that students learn by using their previous experiences.

The government of Puerto Rico sent out a public notice stating that the Department of Federal Education (USDE) is reviewing vocational technical programs as part of a approved process. The state approving agency is responsible for giving approval to programs and courses of the technical-vocational institutes of Puerto Rico. Standards and processes within the agency manuals and the statutes of the advisory committee are publicly available. Schleicher (2011) emphasized that policy regarding collaborative partnerships and leadership is needed at schools.

Students' Experiences and Achievement

Early research on goal theory revealed that mastery goals are developed through improved learning methods (Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). Venezia, Bracco, and Nodine (2010) emphasized that there is a need for research examining students' experiences and achievement. According to Bradley, McCraty, Atkinson, Tomasino, Daugherty, and Arguelles (2010), reviewing students' experiences with assessments prepares them to cope with different types of tests. Scoles, Huxham, and McArthur (2012) noted a need to study the variance between feedback in present education research and standardized tests. Federici and Skaalvik (2014) recognized the need for research to explore students' perceptions regarding standardized tests. Pekrun, Goetz, Daniels, Stupnisky, and Peny (2010) reported that students' experiences in the classroom have received slight theoretical or empirical attention.

You, Hong, and Ho (2011) examined the effects and perceptions of academic achievement and concluded that educational researchers are considering students' self-beliefs and attitudes, including motivation, personal activity, and commitment, as keys to improving student learning. Fay, Bickerstaff, and Hodara (2013) used interviews and survey data to clarify students' experiences and perspectives in an eastern state system implementing new customized placement exams. Efforts to get students' feedback had been made by the Carnegie Foundation's Networked Improvement Communities (NICs). Bryk et al. (2013) examined students' educational experience to improve curriculum and instruction but did not address students' attitudes and their feelings about standardized tests. In terms of students' voice, Adams (2012) said that students' academic skills are important to their academic success. Morgan, Leenman, Todd, and Weeden (2012) concluded that students' expectations while still in high school impact their future. In addition, Komarraju, Ramsey, and Rinella (2013) asserted that focusing on cognitive and noncognitive factors impacts students' achievement. Komarraju et al. (2013) suggested the need to examine the effectiveness of both cognitive and non cognitive factors to support students in standardized tests as predictors of academic performance and retention.

Furthermore, Valentine et al. (2011) explained that non cognitive qualities are based on individual uniqueness. Ward and Parker (2013) observed that there is a need to give to students the opportunity to be consulted about their contributions, thinking, perceptions, and experiences in relation to any educational process.

Implications for Social Change

Implications for social change include strategies for teachers of vocational students to help these students be successful on standardized tests and graduate. If more vocational students graduate from high school, more of these students will be able to enter higher education or the workforce. The learning experiences of the vocational students who participated in this study could improve teachers' understanding of the challenges these students experience and help them pass state tests. The findings may be published in journals and reports at the district level. These findings may inform policymakers with regard to policy changes such as mandating teaching strategies for these students to pass state tests. Administrative support can help teachers in assisting students to pass standardized tests. The findings have professional application for teachers to improve their teaching practices. School and district administrators could design a professional development program for these teachers.

Transition Statement

I examined the experiences of vocational high school students regarding mandated standardized testing using a qualitative case study design. In Section 2, the methodology, sample, design, ethical treatment of participants, and data analysis are presented. In Appendix A, I present the project, which is a white paper outlining the research, findings, and recommendations. In the remaining sections, I present my project reflections and conclusions.

Section 2: Methodology

Introduction

I conducted this qualitative case study to examine the experiences of vocational high school students regarding mandated standardized tests taken by students in Puerto Rico. This study was conducted at a vocational high school in Puerto Rico where students are required to participate in standardized tests and pass those tests in order to enter a college or university. I describe the methodology in this section.

Design and Approach

The case study design was employed. Other qualitative methods were considered but not chosen. I discuss each of these designs below. I did not use a quantitative study design to compare the means of state scores that are quantitative data. I did not collect numerical data because I had no independent and dependent variables. I did not generate a theory about the arrangement of career and technical education with academic content courses to improve the achievement of vocational students. I did not employ ethnography or phenomenological design because I did not focus on an entire cultural group. I examined what vocational high school graduates experienced in relation to standardized testing.

I examined the experiences of vocational high school graduates regarding mandated standardized testing because vocational students in Puerto Rico do not meet basic requirements on local and national standardized tests. My goal was to understand the experiences of vocational education students who participated in state exams written in the United States and taken by the students at the research site.

Setting, Population, and Sample

The setting for this case study was a vocational high school in a metropolitan area in Puerto Rico. The high school offers vocational courses in cosmetology, barber, carpentry, and culinary arts. The high school population in Grades 10, 11, and 12 for the 2009-2010 and 2013-2014 academic years was over 1,600 students taught by 25 teachers. All students were born in Puerto Rico. The sample consisted of 20 Puerto Rican vocational high school students who participated in standardized tests in English and took either cosmetology or barber courses. Students who met the participant selection criteria were invited to participate in the study. Thus, the sample size depended on how many potential participants agreed to participate in the study. For the purpose of this study, I interviewed the first 20 participants who signed the informed consent form.

Participant Selection Criteria

In order to meet selection criteria, participants needed to be Puerto Rican vocational high school students who (a) were at least 18 years old, (b) attended Grades 10 to 12 at the high school at the research site, (c) participated in standardized tests in English, and (d) were registered in either cosmetology or barber courses. All potential participants meeting the selection criteria were invited to participate in the study and were asked to complete and submit to me their consent forms. Those participants who returned the signed consent forms were invited to face-to-face interviews.

Procedures for Gaining Access to the Participants

Upon IRB approval from Walden University (IRB #10-30-2014-A00173474), I signed a (a) confidentiality agreement at the research site after I met in person with the

administrator responsible for research and (b) a letter of cooperation from the Puerto Rico Department of Education (PRDE). I gained access to the research site by contacting the administrators responsible for research, with whom I requested an in-person meeting to discuss the purpose of the study and seek approval to conduct it. During the meeting, I explained my role and responsibilities as the researcher. I requested lists of names of those students meeting the aforementioned selection criteria in order to invite them to face-to-face interviews with me. As an interviewer, I made every effort to respect the participants' time and to keep the interviews to the agreed-upon timeframe. An interview protocol was used.

Role of the Researcher

I am a school director in an elementary school in a public school district in Puerto Rico. I am concerned about the lack of research regarding vocational students' low scores on standardized tests. When addressing the selected school director for the IRB administrator at the research study, I discussed my role as a vocational teacher and vocational coordinator of several years in another school district. I stated to the participants that no personally identifying information would be revealed in my study.

Ethical Protection of Participants

The participants were Puerto Rican vocational high school students. I obtained IRB approval from both Walden University and the research site. I did not reveal the names of the vocational high school participants in my findings. All documents will be kept in a locked file cabinet that can only be accessed with lock and key at my home office. The electronic interview transcripts have been stored on my personal computer,

which is password protected. I will keep all data for at least 5 years.

Data Collection

For this case study, I conducted face-to-face interviews with the participants to understand their experiences on state exams written in the U.S. and taken by the participants at the research site. Using a case study, the participants provided me with their historical information about standardized testing. I listened to the views of the participants and asked them open-ended questions from the interview protocol to elicit their opinions.

Using the list of potential participants that was given to me by the administrators responsible for research, I telephoned each potential participant to invite him or her to meet with me at the library of the school in a private room to talk about the study. I provided each potential participant with a copy of the consent form and invitation letter. I requested that participants indicate their willingness to participate in the study by signing the consent form after the initial meeting. Those participants who signed the consent form were invited to meet with me twice at the library in a private room for a one-on-one interview (i.e., first meeting) and member checking (i.e., second meeting) at a future date/time convenient to each participant. Thus, each one-on-one interview was held in a private room in the library of the school for approximately 1 hour. After meeting with each potential participant to explain my study and seek participation, I had gathered signed consent forms and had a list of potential participants to interview, with a date/time for each interview.

Due to the number of signed consent forms I received, I did not need to contact the school administrators to provide me with more names of potential participants who met the selection criteria. I did not repeat this process until I had a sample size appropriate for a case study. Thus, those students who agreed to participate in this study by signing the consent form were asked to attend an interview.

During the one-on-one interviews, participants were asked open-ended questions relating to the research question about their experiences regarding standardized testing. The interviews were conducted in a private room at the library at the research site, which promoted a quiet, private environment. All interviews were audio taped for accuracy, with the permission of each participant, and transcribed by me. At the conclusion of each interview, I invited each participant to meet with me at the library in a private room for member checking at a convenient future date/time. During member checking, participants were asked to review their transcribed interviews and the findings of the study with me. During the interviews and member checking, I maintained a reflective journal about my impressions. I recorded my own thoughts and observations in the reflective journal in an effort to be engaged in ongoing and continual reflection on the interview data to control possible researcher bias.

Data Analysis

Merriam (2009) stated that data analysis and collection occur at the same time. Merriam stated that data analysis is “a process of organization, reduction, alliance, judgment, and reconfiguration” (para. 5). Yin (2009) stated that case studies are useful for clarifying recognized fundamental links between variables. I collected all interview

responses. I transcribed the audio tapes within 10 days of the completion of each interview. I maintained a research log to document all communications with the participants, as well as a reflective journal. The collected data included interview transcripts, my reflective journal, and my research log. These data were saved on a jump drive and hard drive that has been secured with password protection. I will keep the jump drive and hard drive under lock in my home office.

I listened to each recording multiple times for data accuracy. I kept a research log to document all communications with the participants. I used a reflective journal to save my field notes throughout each semi-structured interview. Thus, I used the log and reflective journal to catalog the collected data.

As a researcher, I was the key instrument of data collection through interviews using the interview protocol. I reviewed each interview question in preparation to evaluate the transcripts for accuracy. Interview transcripts were coded to identify a way to sort or group the data as well as maintain privacy for the participants (Merriam et al., 2002). I coded each interview transcript to find recurring categories, themes, and patterns. For coding, I included abbreviations such as ST (standardized test) + positive to represent students' personal positive experiences with standardized tests or ST– negative to represent negative experiences with standardized tests.

I used open coding to analyze the interview data (i.e., line-by-line coding) by examining the raw interview data consisting of words, phrases, sentences, or paragraphs and assigning codes. I grouped similar ideas and continued to create codes for new ideas (e.g., concepts) to identify categories and patterns. I looked for distinct concepts and

categories in the interview data by breaking down the data into concepts (e.g., headings) and categories (e.g., subheadings). I created a table to allow me to contain the final concepts and categories and explain each concept and category in presenting the findings.

I created the categories, known as *themes*, by grouping the codes I assigned to words, phrases, sentences, or paragraphs found in the interview data (i.e., axial coding). I grouped the responses in a hierarchical manner (i.e., hierarchical coding).

The interview transcripts were analyzed for emergent themes (Creswell, 2003) using thematic analysis. The transcripts were loaded into Atlas.ti 7 and coded to find recurring categories, themes, and patterns. I used a qualitative analysis coding program to help me in identifying potential categories, themes, and patterns.

In order to triangulate the data, I used the interview transcripts, the research log that I kept during all communications with the participants, and my reflective journal, in which I took field notes throughout each semi structured interview, for a fuller understanding of the interview data. Thus, data from the interviews were organized, summarized, and synthesized in order to make meaningful connections through thematic analysis (Merriam, 2009). Emergent themes were noted, and codes were developed as themes emerged. Data were presented as a complete study of the participants' experiences in relation to standardized tests.

Evidence of Quality, Reliability, and Validity

One type of triangulation, according to Merriam (2002), involves collecting multiple forms of data. Aforementioned documents were collected to help me ensure validity and to "build a coherent justification for themes" (Creswell, 2003, p. 196). I

sought assistance from a professional colleague to ensure that data were coded and analyzed correctly. This colleague was a teacher from another school district. As a subject matter expert, the colleague had the knowledge and expertise needed to ensure validity. Because the colleague was unaffiliated with the district under study, neither the colleague nor this study's participants experienced a conflict of interest due to the colleague's assistance in interpreting data. Participants were consulted in person for member checking in the library at the research site; the member-checking process took approximately 1 hour for each participant.

Reliability, according to Merriam (2002), refers to "the extent to which research findings can be replicated" (p. 27). I used "member checking to determine the accuracy of the qualitative findings through taking the final report or specific descriptions of themes back to participants and determining whether these participants fe[lt] that they are accurate" (Creswell, 2012, para. 1). Member checking was used to contribute to the credibility of my findings (Stake, 1995), and transferability was used to ensure a comprehensive description of the context of the school in which the study was conducted.

Discrepant cases were considered and presented in the findings. For example, participants revealed their opinions regarding the nature and quality of the vocational courses. I made notes concerning contrasting ideas within the interview transcripts as well as aligned comments that the participants made.

Member checking contributed to the credibility of my findings (Stake, 1995), and transferability was ensured through a comprehensive description of the context of the school in which the study was conducted. Triangulation of the data occurred in reviewing

the interview transcripts, member checking, and maintaining a research log and reflective journal; I performed triangulation a second time by reviewing each participant's data in a compare-and-contrast manner in a search for themes.

Process to Collect, Analyze, and Record Data

I set up a meeting with the school director to present the purpose and goals of the study. I also explained and described the goals, objectives, and procedure to conduct the study to the school director. I received approval from the director. I also received approval from the IRB at Walden University.

I asked the school director for permission to use the private reading rooms at the library. I also asked the school director for a list of possible participants who met the selection criteria. The selection criteria specified that participants needed to be Puerto Rican vocational high school students who (a) were at least 18 years old, (b) attended Grades 10 to 12 at the research site, (c) participated in standardized tests in English, and (d) were registered in either cosmetology or barber courses. The director identified 31 potential participants. I made phone calls to the individuals who met the selection criteria and invited them to participate in the study. I informed them about the study's goals, objectives, and data collection process. I asked the four participants who signed the consent form for their schedule in order to arrange a meeting for the first interview. I confirmed the face-to-face interview with each participant. I met with each participant in the reading room at the school library. The interview protocol was used for each interview. Each interview took about 45 minutes. At the end of each interview, I scheduled a second meeting for member checking. I reminded the participants of the

second meeting for member checking. I met with each participant in a private room at the school library.

I reviewed all transcripts for accuracy. I transcribed the audio taped interviews within 10 days of the completion of each interview. I maintained a research log to document all communications with the participants and a reflective journal to save my field notes throughout each semi structured interview. I used the researcher log and reflective journal to catalog the collected data. These data were saved on a jump drive and hard drive with secure password protection, which I have kept under lock in my home office. All data will be kept for 5 years upon completion of this study and then will be destroyed.

Data Analyses

The transcripts were loaded into Atlas.ti 7 and coded to find recurring categories, themes, and patterns. I created a table to catalog concepts and categories and to explain each concept and category. Interview transcripts were coded to identify a way to sort or group the data as well as maintain privacy for the participants (Merriam et al., 2002). I coded each interview transcript to find recurring categories, themes, and patterns. For coding, I included abbreviations such as ST (standardized test) + positive to represent students' personal positive experiences with standardized tests or ST– negative to represent negative experiences with standardized tests. I used open coding by examining raw interview data consisting of words, phrases, sentences, or paragraphs and assigning codes. I grouped similar ideas and continued to create codes for new ideas (e.g., concepts) to identify categories and patterns. I considered distinct concepts and categories

in the interview data by breaking down the data into concepts (e.g., headings) and categories (e.g., subheadings). I created a table to contain the final concepts and categories and explain each concept and category in presenting the findings.

I created the categories, known as themes, by grouping the codes I assign to words, phrases, sentences, or paragraphs found in the interview data (i.e., axial coding). I grouped the responses in a hierarchical manner (i.e., hierarchical coding). The interview transcripts were analyzed for emergent themes (Creswell, 2003) using a thematic analysis. The transcripts were loaded into Atlas.ti 7 and coded to find recurring categories, themes, and patterns. I used a qualitative analysis coding program to help me in identifying potential categories, themes, and patterns. Discrepant cases were considered. The participants' responses unrelated to the interview questions were reviewed by me and are included in the findings. I used the interview transcripts, member checking, my research log were used for all communications with the participants, and my reflective journal included field notes throughout each semi-structured interview for a fuller understanding of the interview data, in order to triangulate the data.

Findings

Interview Question 1

Interview Question 1 was the following: "Tell me how you felt when you participated in standardized testing." Participant 1 stated, "I feel horrible, my stomach was upside dawn, feel nervous and anxious. I thought I will never do this." Participant 2 stated, "I was relax, I took reviews, my mother pay for it and I know a lot about what will come into the test. This test is very important to me." Participant 2 also stated, "I am

taking advance courses to get into college. I am looking to get into the medicine college and know this test will raise my expectative."

Participant 3 stated, "I was very nervous, I feel that this is it- I am always get nervous when taking a test, but this time, I was very anxious, I do not feel prepared to take this test." Participant 3 stated, "Test was very long, there were exercises I never seen before. I knew that this test is not necessary to be a barber but compulsory to get my high school diploma, but I feel it is not necessary." Participant 4 stated, "I have no idea what was this, I feel very confuse and stressed, I feel lost, I never seen before those mathematics items, I never know anything about pre-calculus. I was very lost and anxious."

Interview Question 2

Interview Question 2 was the following: "Tell me how your teachers could have prepared you before your participation in standardized testing." Participant 1 stated, "Well, my teachers never ask me if I know something about the College Board, they just tell us that there were some practices online." Participant 1 stated, "As vocational students, no one ever takes care about us; the counselor does not pay attention to us, because she said that if some time we get in to the college that was luck!" Participant 1 stated, "I am already graduate and at this moment I know how important was to take the College Board. At college, the counselor tells me that I have the opportunity to take the test again."

Participant 2 stated, "As vocational student, I have to tell you that there was no help to us. The counselor at the high school was very busy. In my case I was running

behind her because I want to get into the medicine program." Participant 2 also stated, "I took cosmetology for my self-knowledge and to get a par time job at the same time I study medicine. But really, vocational students are alone."

Participant 3 stated, "Vocational curriculum it is very extensive, teacher have no time to help us with the College Board. Some of my classmates just pay for tutoring courses to get prepare with the College Board." Participant 3 also stated, "I have no choice, have no help with the test, and have no money to pay individual reviews."

Participant 4 stated, "I know that vocational teachers have no extra time to help us, academic teachers nether. I think that if the vocational curriculum extend hours of class, maybe can teachers help us a little more." Participant 4 stated, "If the vocational classes were cut in time, some of about 45 minutes, teachers could have more time to help us within the College Board test or more of mathematics and science class."

Interview Question 3

Interview Question 3 was "Tell me how your vocational school administrators could have prepared you before your participation in standardized testing." Participant 1 stated, "Well I think that the academic classes have to be arranged with the vocational courses, I mean, must have to take all those classes we are not taking at the moment." Participant 3 stated, "Administrators must see that there is something wrong with the classes we take and the courses we need to take the College Board. OR! Give us, vocational students remedial courses to take the test."

Participant 2 stated, "Well if I can say, even dough, I just take the test previews, could be useful to others to take more courses to reach out what's coming in the test. I

mean, arrange the vocational courses with the academic courses." Participant 2 stated, "Vocational students do not take pre-calculus and in science, we do not take physical science. Administrators must add those courses if they see that vocational students are in disadvantage with the academic general students."

Participant 3 stated, "For me, at this moment it is not important to tell administrators how to prepare vocational students. They must know that the regular and vocational curriculum is not aligned." Participant 3 stated," they push us out to take those test- College Board and pruebas Puertorriquenas, without knowledge. There is no sense for me, because I am a barber and I am not excited to go to college."

Participant 4 stated, "At this moment, I really don't know how administrators could help vocational students with standardize test." Participant 4 stated, "I think that they must prepare us, maybe taking additional courses or shrinking the actual schedule to be fixed with the academic courses we do not take."

Interview Question 4

Interview Question 4 was "What strategies did you use to before your participation in standardized testing technology into the math curriculum?" Participant 1 stated, "I know that there were some reviews online to practice math and science items. In the school at the library there was some computers to use, lack of computers do not permit to all students to practice." Participant 2 stated, "Well, my mom just paid for tutoring at a private place. There were computers and the teacher give us online practicing exercises." Participant 2 also stated, "I try to reach those math exercises on my

home computer, but time and some extracurricular activities do not permit me to do so at home."

Participant 3 stated, "Because at that time I was working part time, I do not practice on the school library computer. I have to work after school to afford my economical needs." Participant 3 also stated, "If I could make an effort to do so, I know can be useful to me. Now it is too late, I must make an effort to do so at that time when I was at school!"

Participant 4 stated, "I do not think that making some practices at that moment could mean any differences. I remember that there were computers at the school library to get the online practice in math and Spanish." Participant 4 also stated, "I do not think that making those practices makes a differences because in math I never seen some of the items like chemistry or physics." Participant 3 stated, "How do I learn making practices in a computer if I never see a pre-calculus exercise? I don't even know what pre-calculus its!"

Interview Question 5

Interview Question 5 was "What resources did you use to before your participation in standardized testing technology into the math curriculum?" Participant 1 stated, "The only resource we had at that time at school was books and the math teacher, and also the little period on the regular school period to get in to the library." Participant 1 also stated, "Trying to get a computer to be used and get the online practices that the Department of Education give us is almost impossible. The vocational schedule does not give us free time to do anything else."

Participant 2 stated, “As I expressed before, my mom pay for the private reviews, I used all resources from the preview practices. There we have so many practices on paper and using online resources, we also have practices with the same timeline.” Participant 2 also stated, “In mathematics, students have to finish class in about 70 minutes; so the practice takes 70 minutes at all.”

Participant 3 stated, “I have to work after school hours, the only think I have was some of others classmates that bring me out their note books and try to practice with that.” Participant 4 stated, “I am not interested on the College Board test; I just try to get some of the practices at the school library. I try my best but I never feel that this kind of test could help me in my future.”

Themes

Theme 1: Students’ Personal Positive Experiences with Standardized Tests

The general and vocational programs are not the same, because general-course students take different classes than vocational students. Participant 1 had no positive experiences with standardized tests. Participant 2 stated, “I was relax, I took reviews, my mother pay for it, and I know a lot about what will come into the test.” Participant 2 stated, “I feel confidence because I know this test is very important to me, I am taking advance courses to get into college.” Participants 3 and 4 had no positive experiences with standardized tests.

Theme 2: Negative Experiences with Standardized Tests

Participant 1 stated, “I feel horrible, my stomach was upside dawn, feel nervous and anxious. I thought I will never do this.” Participant 2 stated, “I recognized that the

general and vocational program it is not the same, the school must do something to fix this big differences." Participant 3 stated, "I was very nervous, I feel that this is it- I am always get nervous when taking a test, but this time, I was very anxious." Participant 3 also stated, "I do not feel prepared to take this test, It was very long, there was vocabulary and exercises I never seen before." Participant 4 stated, "I was very nervous, I feel that this is it- I am always get nervous when taking a test, but this time, I was very anxious, I do not feel prepared to take this test."

Summary of Themes

Puerto Rico vocational students' experiences regarding standardized tests themes are divided into three groups: (a) ST+ (standardized test positive) to represent students' personal positive experiences with standardized tests, (b) ST– (standardized test negative) to represent negative experiences with standardized tests, and (c) PS (participants' suggestions). ST- comments included: (a) lack of help from vocational teachers and school administrators, (b) general students take different courses than vocational students, (c) students receive no help at the school, (d) reviews offered by the College Board need to be more pragmatic, (e) vocational students are not offered compulsory courses, (f) there is a difference between vocational education and general education curricula, and (g) students are stressed when participating in standardized tests.

ST+ comments included: Only one participant expressed a positive view concerning standardized test. ST+ comments included: (a) relax, (b) the student took private reviews, (c) student recognized the importance of the College Board, and (d) feel confidence because take private reviews and feel prepared. Recommendations included:

(a) align vocational curriculum to the general curriculum, (b) provide professional development for teachers to help vocational students, (c) provide vocational students with after school educational programs to improve their English skills, (d) provide students with practice standardized tests.

Regarding ST-, all participants stated that the general and vocational programs are not the same because general courses students' takes different classes than vocational students. The participants stated that there is no help in the school for them, they adduce that all the reviews offered by the College Board out of school hours and some have to be paid and have to be out of school hours in other place than the school. Some of the participants need to work on after school hours and have no time to get out of the site to get the reviews.

From four interviews, three participants expressed that there was no help from vocational teachers, because teachers do not know how to help them. Furthermore, all participants expressed that teachers need strategies to address their anxious and stress of the test. The participants stated that they do not take necessary courses as the general students and cannot answer some of the mathematics and science exercises because of lack of help from teachers.

Another emergent theme was the level of stress and anxiety the participants felt. Three participants expressed their feeling of stress and anxiety and said that they feel in stress when taking the standardized test. All participants said that no one helped them to manage their feelings (Appendix C). These participants recommended strategies such as stress management sections. Recommendations included that teachers shall develop

strategies to manage students' stress to help vocational students manage test time and resources at school. The participants' suggested courses on stress management and revision of the vocational curriculum.

The participants recommended that teachers should attend professional development to develop educational strategies to help vocational students. Professional development for teachers could help high school students pass standardized tests and enter college. The aforementioned recommendations are in line with the suggestions made by scholars. Gaylor (2010) recommended for teachers to assist high school students in passing standardized tests. Du (2009) asserted that students need to be motivated to achieve their full potential and long-term academic goals.

Professional Development Plan for Teachers of Vocational Students

The purpose of the vocational education professional development (PD) plan is to help vocational education students pass standardized tests. The focus of VEPD is Puerto Rican cosmetology and barber vocational high school students regarding mandated standardized tests. VEPD will be offered to teachers teaching cosmetology and barber classes. The VEPD sessions will include strategies to help vocational high school students improve their proficiency in cosmetology and barber curriculum, and pass standardized tests. Strategies outlined in the VEPD should help vocational students to be successful on standardized tests. VEPD will be offered at each school within the school district where vocational students attend after school hours and/or weekends. Every vocational teacher will be invited to participate in the VEPD. I am both excited and proud that my VEPD will create vocational teacher communities. I plan to use the findings as an

action research at the research site to help senior district administrators develop or evaluate vocational education policies to help teachers better prepare students. After 2-3 years, the VEPD will be evaluated and dialog between local department of education, state universities, and policymakers will be encouraged. Educational stakeholders will be encouraged to revise the vocational curriculum to be aligned to the general curriculum and for teachers to attend professional development to help vocational students with standardized tests. My suggestions to policymakers and school administrators would be to revise the vocational curricula for high school students in Puerto Rico to help these students acquire knowledge and skills. I plan to work with the research site administrators and instructional coaches to visit vocational education classrooms during barber and cosmetology instruction and help teachers with instructional practices.

I will make contributions to the VEPD program by teaching its components to teachers. The school district may implement VEPD as professional learning opportunities for vocational teachers. The VEPD program will be offered weekly. The school district administrators would provide human and capital resources to run the VEPD program. The school district has a 10-month school calendar and the VEPD program would be scheduled throughout the school year. My visits to each high school will include meetings with the administration, curriculum resource teachers, and department chairs to discuss the components of the VEPD program. There will also be discussions about specific activities, video segments, and handouts to be distributed during the VEPD program sessions. I will provide teachers with handouts. The school principals will be

responsible for giving permission for the VEPD program sessions. The principal will also be responsible for ensuring that teachers will attend these sessions.

Evidence of Quality

I collected multiple forms of data. I sought assistance from a professional colleague to ensure that data were coded and analyzed correctly. I was the research instrument and used member checking. Discrepant cases were considered and presented in the findings. Triangulation of the data occurred by reviewing the interview transcripts, member checking, and my research log and reflective journal.

Project Outcomes

The experiences of vocational high school students regarding standardized tests helped me identify strategies for teachers to use to help students pass state tests and enter the workforce or higher education. Suggestions include teacher training on the goals and objectives of the vocational education program (Appendix F). The VEPD adhere to professional learning standards when training teachers to help students improve their standardize test scores using techniques to guide students to meet AYP, pass standardized tests, and manage after test anxiety or stress. This project's VEPD serves as a vocational education professional development to prepare teachers for vocational education instruction.

Transition Statement

In this section, the qualitative research method employed in this study was discussed. The population and sample, and data collection and analysis procedures were described. The findings of this study are presented in Appendix A.

Section 3: The Project

Introduction

The educational system in Puerto Rico needs to improve educational outcomes of vocational high school students (PRFAA, 2014). Pizarro (2010) reported that educational programs of the Department of Education of Puerto Rico do not meet the needs of Puerto Rican students. The No Child Left Behind Act (NCLB) of 2001 applies to students in Puerto Rico because these students participate in standardized tests. According to Hyerle and Alper (2011), Puerto Rican students' standardized test scores are low. Puerto Rican students perform poorly on standardized tests in comparison to their U.S. counterparts (PRDE, 2009). Vocational Puerto Rican students do not reside in the United States and are tested by U.S. standardized tests, and these students speak Spanish at the public vocational high schools in Puerto Rico. At the research site, vocational high school students were not passing state tests, and their experiences regarding standardized tests had not been investigated to examine the experiences of vocational high school students regarding mandated standardized tests. Using a qualitative case study, the experiences of Puerto Rican cosmetology and barber vocational high school students regarding mandated standardized tests were examined.

Goals of Project

The goal of this project was to examine the experiences of Puerto Rican vocational students with standardized tests scores because their scores had been very low in comparison to students from the United States. The findings could be useful to vocational education teachers seeking to help these students improve their proficiency on

standardized tests and their higher order thinking skills. The findings could be useful to vocational school administrators seeking information on instructional strategies to meet AYP. School administrators could use the findings to offer professional development sessions for teachers to improve their pedagogical practices.

Rationale

In 2009, Puerto Rico had an enrollment of 493,393 students in public schools, of which 10% were in vocational high schools (Instituto de Estadísticas de Puerto Rico Año Escolar, 2009). The educational system in Puerto Rico needs to improve educational outcomes of vocational high school students (PRFAA, 2014). The Instituto de Estadísticas de Puerto Rico reported that for the academic year 2010-2011, 87% of schools in Puerto Rico needed to help students in passing U.S. standardized tests written in English and not in Spanish. According to Hyerle and Alper (2011), Puerto Rican students' scores on the Scholastic Assessment Test (SAT) are low. In Puerto Rico, the range of knowledge (ROK) skills for Spanish language students is limited (ESEA Flexibility, 2013). At the research site, which is a vocational school in Puerto Rico, many students either cannot graduate, or if they do graduate, do not enter college because they lack academic skills. Additionally, at the research site, no qualitative case study research had been conducted to examine the experiences of vocational high school students regarding mandated standardized tests. The rationale for this project study stemmed from the problem that over 80% of Puerto Rican high school students between 16 and 19 years of age did not graduate from high school because standardized tests scores were very low between 2007 and 2014. In an effort to improve students' graduation rates, the intent of

this study was to examine the experiences of vocational high school students regarding mandated standardized tests.

Literature Review

A literature review relevant to the problem of vocational education students' experiences on standardized test was developed from a search of the following databases: Academic Search Premier, ERIC, and Psychology and Behavioral Sciences Collection. I used these keywords for the literature review: *education*, *vocational curriculum*, *testing*, *standardized tests*, *high school*, *students' experiences with exams*, and *student achievemen*t. My search included peer-reviewed articles regarding students' experiences with standardized tests. I used the Walden University Library database to access current peer-reviewed articles from ERIC, ProQuest, and SAGE. I also accessed additional articles online through the U.S. Department of Education's Office of Vocational and Adult Education (OVAE) to supplement my literature review.

Conceptual Framework

For vocational cosmetology and barber courses and students, Bloom's (1956) taxonomy of evaluation applies to this study because during the theory phase, students memorize and learn course content. To examine the experiences of vocational high school students regarding mandated standardized tests, the conceptual framework was also based on Dewey's (1952) theory of experience. Bloom's taxonomy is about "learning at the higher levels that are dependent on having attained prerequisite knowledge and skills at lower levels" (p. 11). Dewey's theory of experience is "based on continuity and interaction. Continuity refers to experiences of students that influence their career paths"

(p. 3). Interaction refers to situational influences of students' experience. I used these theories to examine the experiences of vocational high school students regarding standardized tests to identify strategies for teachers to use to help these students improve their proficiency in the high school curriculum.

Constructivist classrooms facilitate the connection of existing ideas to new ideas through reflective listening and thinking (Van de Walle et al., 2014). Constructivist approaches emphasize students' conceptual understanding (NCTM, 2009). Constructivist teaching focuses on the process of productive struggle to enable students to mentally modify and replace existing schema to deepen understanding (Van de Walle et al., 2014)

Active participation in a social learning environment is essential to engage all students in developing meaning from mathematical concepts through the use of problem solving grounded in rigorous academic content (Singh et al., 2011, Youngs, 2011). Math students need instructors who are capable of moving beyond the traditional role of dispensing information by modeling great curiosity, passion, and an ability to take risks with mathematical content (Greenes, Teusher, & Regis, 2010). Teachers must be encouraged to allow students to grapple with mathematical concepts through participation in rich tasks during instructional periods (NCTM, 2014). This struggle becomes an essential part of learning, during which time the instruction focuses less on the teacher and more on the students' actions and thought processes (Van de Walle et al., 2014).

Vocational Education

According to Zhao (2013), in the United States, the education system is lacking a national curriculum and has ineffective schools because students score low on

standardized international tests. McDonnell (2013) reported that there is an absence of research focusing on the effects of accountability policies on public schools. GAO (2014) reported that the traditional education system places emphasis on specific academic subjects. Hiss and Franks (2014) asserted that standardized test scores are the best predictor of college-level academic performance. Currently, there is lack of research on vocational education and standardized test scores. Vocational teachers must be highly effective in order to accelerate student learning (Chetty, Friedman, & Rockoff, 2011). Vocational teachers need to use effective instructional techniques (Vigdor, 2013).

Flexibility in vocational curricula standards may give students the opportunity to acquire knowledge and skills for entering the labor market (Sun, 2010). In Puerto Rico, policymakers suggested to school administrators that vocational curricula be revised as a solution to the problem of poor performance among vocational high school students (Uy, 2008). A new curricular alignment proposal called The Carnegie Statway Networked Improvement Community (Carnegie Corporation of New York & Institute for Advanced Studies [CCNY], 2009) was developed. Statway students were expected to master the curriculum in high school, an important task for success in the workplace (CCNY, 2009).

Students' experiences with state testing have been documented. Embse, Barterian, and Segool (2012) found that university policies limit access to higher education for vocational students because these students lack academic skills. Goodwin and O'Connor (2012) found that vocational students are poorly prepared for higher education. Watson, Heigel, and Chesters (2013) reported that higher education practices have an impact on vocational students who seek college entrance. Wheelahan (2009)

asserted that competency-based training and assessments have an impact on vocational students. Rothman et al. (2011) used postsecondary tracking surveys and found that vocational students lack higher-level skills because these skills are not taught in their high school curriculum.

In the United States, universities should increase access to vocational students (Keller & Hoover, 2009). Aligning state tests to academic content standards is important because state tests place more emphasis on memorization and less emphasis on complex cognitive processes (Polikoff, Porter, & Smithson, 2011). Teachers are under pressure to help students pass standardized tests (Duckworth, Quinn, Lynam, Loeber, & Stouthamer, 2011). Gaylor (2010) recommended that teachers assist high school students in passing standardized tests. According to Du (2009), students need to be motivated to achieve their full potential and long-term academic goals.

For vocational cosmetology and barber courses and students, Bloom's (1956) taxonomy of evaluation applied to this study because during the *theory phase,* students memorize and learn course content. During the *practice phase*, students apply knowledge. Standardized tests measure students' proficiency in certain academic subjects (Huitt, 2011). Dewey's theory of experiences related to this study because I examined the experiences of students regarding standardized tests to identify strategies for teachers to help these students improve their proficiency in the high school curriculum as measured by state scores.

The traditional education system places emphasis on specific academic subjects such as mathematics, science, and literature to meet the requirements of industrialism

(GAO, 2014). However, standardized test scores are the best predictor of college-level academic performance (Hiss & Franks, 2014). Standardized tests are required to provide feedback to educational organizations (Herman, 2010; Salge, 2011). School districts should use assessment systems to measure students' proficiency (Darling-Hammond, 2010). Students' skills should be measured against a common set of college- or career-ready standards (Heritage, 2010). Assessment should include students taking responsibility for their own learning (Townsend, Adams, & White, 2010).

Curriculum and course structures should be redesigned to accelerate students' progression through developmental requirements (Hodara, Jaggars, & Karp, 2012). However, teachers should use cognitive approaches (Hulleman & Harackiewicz, 2011; Kiriakidis & Jenkins-Williams, 2014). For example, teachers should integrate technology into the curriculum to help students understand the curriculum (Boyacioglu & Kucuk, 2011; Teresa, 2010). Test anxiety has a negative impact on student performance on standardized tests (Bradley et al., 2010).

Students learn by using their previous experiences (Sadler, 2010). Students' perceptions regarding standardized tests could influence their performance on these tests (Federici & Skaalvik, 2014). Students' educational experiences could influence their feelings about standardized tests (Fay, Bickerstaff, & Hodara, 2013). Ward and Parker (2013) reported that students should be consulted about their perceptions regarding standardized tests. Students who do not meet AYP do not enter a college or university (NCES, 2010).

Standardized Testing in Puerto Rico

In Puerto Rico, students' assessments are not aligned with career-ready standards to determine students' proficiency in core subjects each academic year. According to Gregory (2007), state tests should supply information about students' precise knowledge or skills within the curriculum as compared to norm-referenced tests that provide information about students' performance relative to an external norm group. Salge (2011) wrote that amendments to standardized tests are required to provide feedback to educational organizations. Multiple-choice tests have discouraged teachers from "having students conduct experiments, make oral presentations, write extensively and do other sorts of intellectually challenging activities" (Powell, 2010, para. 1).

Low Achievement in Puerto Rico

In Puerto Rico, there is (a) a major deficiency in counseling in high school and college, (b) lack of up-to-date information for vocational selection, and (c) fragile curricular articulation between K-12 and college freshman courses (PRLAO, 2008). The Federal Department of Education told the Puerto Rico Department of Education (PRDE) that it needed to have new Title I tests or risk losing federal funding. Puerto Rican Tests of Academic Achievement (PPAA) are the existing local standardized tests used in Puerto Rico. During the months of February and March, The College Board and the Office of Puerto Rico and Latin America administer the PPAA. The tests were developed by Educational Testing Service (ETS), by commission from the Department of Education.

Hodara, Jaggars, and Karp (2012) stated that a number of states have redesigned their curricula. According to PRDE (2014), Grade 11 students who achieve three advanced scores, one proficient score, and a minimum of 3,000 points on the College Board can request a graduate certificate and go to the postsecondary level. Hulleman and Harackiewicz (2011) found student achievement was affected by promoting positive enthusiasm and better cognitive approaches.

Puerto Rican Vocational Students

Vocational students in Puerto Rico need to understand the curriculum for the classes they take. For example, if students do not take biology, they do not know the terminology and vocabulary and may fail in the test in that subject. Recently, The College Board began offering review and practice classes online to help students become familiar with the test. Failure on tests may not be due solely to students' lack of content knowledge; it may also reflect their anxiety resulting from negative thoughts about taking the test (Boyacioglu & Kucuk, 2011). Bradley, Atkinson, Tomasino, Daugherty, and Arguelles (2010) stated that test anxiety was found to have a significant negative impact on student performance on standardized tests. To date, limited research exists on the feelings, thoughts, and anxiety of vocational students in relation to standardized tests.

The government of Puerto Rico sent out a public notice stating that vocational technical programs are being reviewed as part of a reapproved process by the Department of Federal Education (USDE). The state approving agency is responsible for giving approval to programs and courses of the technical-vocational institutes of Puerto Rico. Standards and processes within the agency manuals and the statutes of the advisory

committee are publicly available. Schleicher (2011) emphasized that policy regarding collaborative partnerships and leadership is needed at schools.

Students' Experiences Regarding State Tests

Early research on goal theory revealed that mastery goals are developed through improved learning methods (Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). Venezia, Bracco, and Nodine (2010) emphasized that research should be conducted to examine students' experiences and achievement. Reviewing students' experiences with assessments will help prepare them to cope with different types of tests. Scoles, Huxham, and McArthur (2012) contended that there is a need to study the variance between feedback in present education research and standardized tests. Federici and Skaalvik (2014) recognized the need for research to explore students' perceptions regarding standardized tests. Pekrun, Goetz, Daniels, Stupnisky, and Peny (2010) reported that students' experiences in the classroom have received slight theoretical or empirical attention.

You, Hong, and Ho (2011) examined the effects and perceptions of academic achievement and concluded that educational researchers are considering students' self-beliefs and attitudes, including motivation, personal activity, and commitment, as keys to improving student learning. Fay, Bickerstaff, and Hodara (2013) used interviews and survey data to clarify students' experiences and perspectives in an eastern state system implementing new customized placement exams. Efforts to get student feedback were made by the Carnegie Foundation's NICs. Bryk, Yeager, Hausman, Muhich, Dolle, Grunow, and Gomez (2013) examined students' educational experience in order to

improve curriculum and instruction but did not address students' attitudes and their feelings about standardized tests. In terms of students' voice, Adams (2012) said that students' academic skills are important to their academic success. Morgan, Leenman, Todd, and Weeden (2012) concluded that students' expectations while still in high school impact their future. In addition, Komarraju, Ramsey, and Rinella (2013) asserted that a focus on cognitive and non-cognitive factors impacts students' achievement. Komarraju et al. (2013) suggested the need to examine the analytical effectiveness of both cognitive and non-cognitive factors to support students in standardized tests as predictors of academic performance and retention. Furthermore, Valentine et al. (2011) explained that non-cognitive qualities are based on individual uniqueness. Ward and Parker (2013) said that there is a need to give students the opportunity to be consulted about their contributions, thinking, perceptions, and experiences regarding any educational process.

Teaching Aligned to Vocational Education

Despite five decades of discussion regarding the most effective methodology for math instruction, teachers continue to struggle between constructivist and procedural approaches (Fancella, 2010). The introduction of Common Core State Standards (CCSS) is for educators to effectively teach for conceptual understanding (Common Core State Standards Initiative, 2010; Youngs, 2011). Teachers across the United States struggled to determine what this new teaching paradigm looks like in actual practice (Jaeger, 2014). The current change in education stresses competencies over content (Wagner, 2008). Educators must possess the skills to teach for understanding to ensure students are able to think and act flexibly with a variety of concepts and topics (Van de Walle et al., 2014).

Procedural proficiency, while still essential for math success, must be integrated skills emphasizing understanding in order for students to efficiently justify why their answers make sense (Van de Walle et al., 2014).

In order to enable students to reach success under the new core standards, teachers must ask students to offer ideas, explain thinking, and defend reasoning, while refraining from jumping in and providing answers (NCTM, 2014). Teachers should utilize the strategy of asking probing questions to elicit deeper understanding among their students (Franke et al., 2009). Teachers must appropriately challenge all students in the area of math through nurturing reasoning and thinking processes (Gellert, 2013).

Teachers should adopt an *upside-down* approach to traditional math teaching, wherein problems are presented to the class in the beginning on the lesson to allow skills to emerge organically through the process of making sense of the problem and arriving at a viable solution (Van de Walle et al., 2014). The act of allowing students to solve problems in non-prescribed, individualized ways enables them to structure and model mathematics in a manner relevant to their own worlds (Fosnot & Jacob, 2007). In order to grasp teaching principles aligned with CCSS, teachers should themselves be members of intentional communities of practice to engage in social learning supported via common goals and collegial social interactions (Gellert, 2013).

Vygotsky (1978) stressed the importance of social interactions in the processes of learning, reflecting, and changing. In designing constructivist, social learning environments for students to develop mathematics competencies, teachers should also ensure similar opportunities for learning with colleagues through ongoing professional

learning, lesson observations, facilitated discussions, and opportunities for group reflection (Gellert, 2013). Social learning positions the learner as an active seeker of meaning, assisted by working collaboratively with peers possessing various levels of knowledge and experiences with the content (Van de Walle et al., 2014).

According to Zhao (2013), in the U.S., the education system is dispersed lacking national curriculum and having ineffective schools because students score low on standardized international tests. McDonnell (2013) reported that there is an absence of research focusing on the effects of accountability policies on public schools. Regarding higher education, Hiss and Franks (2014) asserted that standardize test scores are the best predictor of college-level academic performance. Currently, there is lack of research on vocational education and standardize test scores.

According to Lagares and Connor (2009), vocational education programs were needed and teachers were expected to help students learn the curriculum. Furthermore, Polikoff, Porter, and Smithson (2011) stated that aligning state tests to academic content standards is important because state tests place emphasis on more memorization and less complex cognitive processes. Gaylor (2010) recommended assisting high school students in passing standardized tests. Students need to be motivated to achieve their full potential and long-term academic goals (Du, 2009).

Teachers should communicate to students the importance of assuming the role of co-learners, allowing students to take the lead in explaining understanding of various concepts, thereby facilitating student-teacher border crossing (Bahou, 2012). In order to enable students to become proficient in the new content and practice standards, teachers

must learn to validate and value the cognitive conflict of learners in their classes, encouraging peer interactions to promote stimulus and challenge (Pritchard & Woodard, 2010). The vision of the Puerto Rico Department of Education is that Puerto Rican schools should be an effective instrument for the construction of a fair and democratic society, cultivating ethics, solidarity, and social consciousness. Students should view the school as a dynamic unit with creativity to develop attitudes, skills, and knowledge to prepare students in a competent way to confront the challenges of the modern world.

The school district at the research site promoted constructivist and social learning principles in training teachers to implement new facilitative teaching methodologies in all classrooms. Teachers first assumed the role of the learners, grappling through word problems grounded in real-life application via collaborative efforts with colleagues. Teachers were presented with example problems that contained multiple entry and exit points to ensure different degrees of challenge, and could be solved in a variety ways using strategies that resonated with the individual learners.

Through use of questioning techniques, instructional coaches led teachers to elicit deeper levels of thinking and understanding that they were then able to transfer to their own classrooms. Strategies, such as number talks and talk moves, were explicitly taught in order to guide teachers in implementing math discourse and inquiry-based learning into their math lessons. Teachers were directed to use standard algorithms to solve a problem and to apply strategies in arriving at solutions to given problems. Teachers were taught each new strategy or skill through word problems, using a three-phase lesson format in which the coaches first activated prior knowledge and established clear

expectations, then “let go” and observed teachers’ thinking, and, finally, summarized the main ideas and actively listened to the rationale of the community of teacher-learners. All strategies were introduced to students one at a time, in order to provide students with a repertoire of strategies from which to pull when solving word problems.

Professional Development for Teachers

Professional learning opportunities are critical for teaching and learning (Akiba, 2012). Professional growth should occur for student achievement (Dever & Lash, 2013). In Puerto Rico, vocational education teachers are excluded from professional growth initiatives. The changes in teaching practices following the VEPD were grounded in teachers assuming facilitative roles in the classroom, incorporating strategies to raise vocational education students’ perseverance in problem solving. The shifts in practice following Common Core adoption to the vocational education curriculum were accompanied by teachers’ perceived feelings of anxiety, apprehension, resistance, and being overwhelmed.

The proposed VEPD has been called as a 5-to-5 VEPD. A 5-weeks 5-days vocational education professional development program, directed to develop strategies on core standards on standardize test, a writing, reading comprehension and high-order thinking skills core standards directed to improve standardize test. Furthermore, teachers attending to the 5-to-5 professional development plan will acquire strategies on stress management, working with students attending to any standardize test. As VEPD continued, and teachers became more familiar with and skilled in using the new practices,

those emotions gradually transitioned to excitement in applying increased depth of knowledge in the classroom.

Web Conferencing to Support Professional Learning

Bower (2011) completed a research study examining teaching and learning conducted via web conferencing software. Findings indicated that web-conferencing systems were beneficial in promoting active distance learning through use of functions including online presentations, videos, screen sharing, polling, and chat features (Bower). Virtual interfaces provided opportunities for participant engagement and collaboration that promoted meaningful and lasting learning experiences. Dvorak and Roessger (2012) examined the impact of web conferencing training for college-aged peer tutors. This training infused trainer modeling and guided practice, projected onto a large screen using a web conference platform. At the end of each session, questions were posed to participants in order to promote dialogue. Findings indicated that learners are increasing in comfort levels pertaining to participation in online collaboration opportunities (Dvorak & Roessger, 2012).

Discussion also included information stressing the importance of participant attitude. Learners who perceived the online learning environment as useful, showed noticeable improvements in the areas of flexibility and attitude specific to the content presented (Dvorak & Roessger, 2012). Tokmak, Baturay, and Faddie (2013) concur that online learning has the capacity to promote lifelong learning through their analysis of an online master's degree program. Based on input from student surveys, questionnaires, and focus groups, findings showed the need for inclusion of face-to-face interactions to

complement the virtual learning. Students believed the addition of live discussions would reinforce session content and allow more opportunities to ask clarifying questions. Finally, participants indicated the need for more examples and real-life application of the subject matter in order to better generalize the content (Tokmak, Baturay, & Faddie, 2013). A web conferencing to support professional learning could be a good source to help vocational education strategies to improve students' basic scores on standardize test, but represent a mayor economic investment to the district.

Instructional Coaching

For the VEPD, vocational education teachers will include coaching, delivered to help teachers to develop strategies directed to the standardize tests. Furthermore, teachers will have coaching from experts on human behavior such as psychologists and sociologists. Have coaching has emerged as one of the most successful professional learning components for educators (Williamson, 2012). An instructional coach is loosely defined as an individual who works cooperatively with a teacher with the goal of improving practice and content knowledge to increase student achievement (Yopp et al., 2011). Instructional coaching has the potential to be a highly effective school-wide intervention, as its focus is on identified instructional needs and improvement of practice in a supportive and collaborative environment (Williamson, 2011). Biancarosa, Dexter, and Dryk (2010) conducted a 4-year longitudinal study evidencing the positive impact of instructional coaching on student learning. After 3 years of working with a coach, teachers demonstrated a 32% increase in student learning gains school-wide (Biancarosa

et al.). Knight (2011) conducted 20 years of research though the Kansas Coaching Project and concluded that coaches greatly impact the success of the teacher-coach partnership.

The conditions for success in a coaching situation include assumption of positive intentions, identification of a focus, listening and reflecting in a non-judgmental manner, questioning for understanding, and emphasis on data collection (Williamson, 2012). Instructional coaching should abstain from directive practices, instead emphasizing reflective conversations and targeted feedback (Knight, 2011; Yopp et al., 2011). Knight (2011) stated that instructional leaders hear and respect teachers' voices. The supportive, non-evaluative approach to coaching encompasses the partnership principles of equality, choice, reflection, dialogue, praxis, and reciprocity (Knight). Coaches must be prepared to model strategies in real-time, jumping into a lesson as opposed to merely observing the teacher instruct (NIET, 2012). Teachers must also assume an active role in the coaching process, communicating needs and expectations on an ongoing basis in order to benefit most from the support (Yopp et al., 2011). Teachers must be given opportunities to engage in meaningful reflection and dialogue with their coaches in order to ensure true learning is taking place (Knight, 2011).

Mindset

Learning involves change. Learning is about the acquisition of attitudes, habits, and knowledge (Knowles, Holton, & Swanson, 2011). Attitudes and perceptions greatly influence the experiences of adult learners. Mindset is a specific cognitive orientation that impacts behavior (Mahoney, 2008). Individuals have a tendency to employ the same mentality and tools due to comfort and an underlying fear of taking risks (Van de Walle

et al., 2014). Rarely do adults re-examine and update their mindsets, resulting in utilization of past mindsets, resulting in resistance to change (Mahoney, 2008). Mindsets can be changed, and resiliency can be developed, regardless of a person's age (Yeager & Dweck, 2012). When individuals attempt to implement change, they are altering automatic behaviors, and subsequently exhausting self-control (Heath & Heath, 2010). Exhaustion of self-control results in fatigue of the muscles required to focus, think creatively, and persevere in the face of failure (Heath & Heath). Adult learners are required to make both personal and social adjustments in response to the experiences with which they are presented (Knowles et al., 2011).

People, who appear lazy, or resistant to change, are likely exhausted and responding to a lack of clarity (Heath & Heath, 2010). Adults need to understand why they need to learn new information, and maintain responsibility to entering the educational experience in order to benefit from it (Knowles at al., 2011). Teachers have a tendency to hold onto instructional strategies they utilized as school-aged students, due to long-held insecurities about their own mathematical abilities (Boaler, 2008). Adults' brains are malleable, and math ability is not rigidified in childhood (Yeager & Dweck, 2012). Teachers need to change their mindsets in order to develop the confidence to implement the CCSS teaching practices that bear little resemblance to the rote algorithms of their student and teacher pasts (Boaler, 2008).

In order for a district to enact lasting change through VEPD, leaders must ensure that the new knowledge is accompanied by practice. In order to receive buy-in from staff following a major shift, as with the new math standards, leaders must provide clear

directions, motivation to engage individuals' emotional sides, (though not to the point of exhaustion), and a clear path (Heath & Heath, 2010). When the road is uncertain, adults tend to default to old patterns and behaviors as the default method, in order to avoid the anxiety that often accompanies unfamiliarity (Heath & Heath). Resilience is essential for students of all ages, and adult learners must find a method for coping with challenges in teaching. Learners who believe that intellectual abilities can be developed tend to show greater adjustment and higher achievement across difficult school transitions (Yeager & Dweck, 2012). The adoption of an innovation, such as the new standards, can be precarious, and buy-in from students is essential for a launch to be successful (Mahoney, 2009). Districts can ensure this success by acknowledging that change requires time, effort and commitment.

At the beginning of each VEPD session, no one was expected to completely transform their existing practices overnight. District leaders worked to shift the mindset of teachers by asking them to try the new strategies, as learners themselves, when presented with sample math and science problems. The teacher-learners were not asked to fully abandon their tried-and-true familiar strategies initially, but instead were asked to utilize both their favorite strategy and the new strategy that had been introduced in each session. Gradually teachers were able to grasp that they could learn science and math in this "new" manner. Change can be difficult, and the Albert Einstein high school vocational teachers experienced a range of emotions in response to the instructional shift. Over time, and with patience, collaboration, practice, and on-going dialogue, they began to embrace and welcome the changes.

Description of the Project

Educational programs in Puerto Rico do not meet the needs of Puerto Rican vocational high school students because students' standardized test scores are low. I examined the experiences of Puerto Rican cosmetology and barber vocational high school students regarding mandated standardized tests because students either cannot graduate from this high school or if they do graduate from high school do not enter college because they lack academic skills. I conducted this project study because over 80% of Puerto Rican high school students between 16 and 19 years old did not graduate from high school.

Implementation

I will follow up by scheduling a meeting with district cabinet members, including the superintendent, assistant superintendent, elementary directors, instructional coaches, and site principals to share my findings of this project study. My report contains a summary of findings from this study in the form of an evaluation of the effectiveness of the district-wide VEPD series in preparing teachers to launch the CCSS math and science practice and content standards in their classrooms.

Vocational educators' professional development strategies (VEPD) will be delivered to educators to prepare their vocational high school students pass state tests, improve their proficiency on standardized test scores, improve high-order thinking skills, stay in school to reduce the dropout rate of vocational students, and to focus on understanding the high school curriculum to meet AYP (Appendix G). I will be asking teachers about their thoughts. I will give to teachers the VEPD to examine the strategies

to be applied before a standardize test for vocational students. After each academic year, we will evaluate how the VEPD impacted standardized test scores.

In the report, I will contain specific information as to how the training transformed math and science teaching practices based on the feedback from district principals, assistant principals, and math coaches. I will include recommendations for improvement that can immediately be implemented prior to the release of the next phase of vocational education professional development. During a meeting with cabinet members, I would share my report and ideally facilitate a professional discussion from the team as to how the school district administrators can continue to further enhance teaching practices in alignment with the rigorous expectations set forth by the new standards.

Pending the permission of the district superintendent, I will also share my evaluation report with members of the school district and community members at a regular school board meeting. Members of the board are not typically privy to the specific impacts of VEPD, and will likely be interested to learn how use of district resources and funds allotted to teacher professional growth actually changed current practice in vocational education high school classrooms across the district. I will again offer recommendations for program improvement in the hopes that trustees will continue to prioritize professional development for teachers when allocating future resources.

Potential Resources and Existing Supports

Teachers are the best resource to help vocational students, know best their students, because of this I think that if vocational teachers become as tutors of their own

students the personal relationship and individual help will flow better. As the first response, teacher will be the ones that connect to vocational students to help them understanding the mechanic of the standardize test.

The College Board members will share my findings with teachers who will use these findings as a guide vocational. School counselor and social workers will give vocational students strategies to manage test stress. Many of the resources and existing supports for my VEPD recommendations are accessible, but will require additional time and funding to implement. In working towards further improvement of the district VEPD, quickly approaching its third and final year of implementation, the greatest supports in place are personnel, more specifically the math and Science instructional coaches. Findings from my research indicated the need for more time to work with the VEPD and to continue more real-time demonstration classes at all vocational education high school level sites. Extended time with the VEPD would require additional funding, as principals would need to hire substitutes in order to release teachers from their classrooms.

Another valuable commodity, as indicated in my VEPD, is more time within grade level teams to reflect upon district-wide web conference content, and to develop collaborative action plans as to how best to implement the strategies taught in VEPD sessions. Additionally, teachers relayed to site principals and assistant principals that they required more time to reflect on the successes and shortcomings in their own math teaching practices, in order to problem-solve with colleagues, and to determine student understandings and misunderstandings of various concepts. The analysis of student work component of the VEPD required much more time than allotted in order to gain deep

understanding of student experiences with the standardize test, and the study participants reported teachers were barely able to scratch the surface of the level of student competencies pertaining to various math and science performance tasks. In order to remedy this area of need, more time must be provided at the end of each web conference. In order to provide sufficient time for collaborative professional discussions and reflection, more training sessions would need to be added to allow time for content and discussion.

Potential Barriers

Time management can be considered as a potential barrier to deliver the VEPD. Teachers should review the professional development plan. Later the possible implementation, a proposal will be deliver to the Puerto Rico Department of Education. Other potential barriers for VEPD are time and money. The time needed for teachers to truly grasp the typical modification in instructional practices, observe and analyze the strategies in practice, engage in reflective problem solving and planning with grade level teams through sessions facilitated by instructional coaches, and examine student work using standardized protocols to determine student understandings and misunderstandings is greater than what is currently being allotted.

Due to the timetable implemented by the federal government, districts adopting the core standards are expected to implement the new standards in math, writing, and reading by the 2014-2015 school years. Due to the need for specific coaching and training in three content areas next year, I would expect the district to allot more time for math and science coaching and follow-up. Teachers are overwhelmed by the magnitude

and pace of the changes accompanying the new standards, and are already devoting instructional time (release days) and after school learning time to professional development. However, time may be acquired through conducting workshops during scheduled school breaks (summer vacation and winter vacation) with the incentive of additional pay for teachers.

Another barrier is the lack of funding as an issue many public schools face when developing and implementing teacher training. The district must acquire Safari Montage video conferencing software in an effort to save time and money by allowing all elementary vocational education teachers within the district to virtually access the same VEPD, without leaving their respective sites, at the same time. The issue of additional release time for instructional coaching opportunities within site-specific grade level teams, as well as funding summer/winter break workshops, would require substantial additional funding.

The district may wish to consider additional videotaped web conferencing options, so that teachers may access additional training during non-instructional hours, as an option to those who wish to further their practice at no additional cost to the district. Instructional coaches, already paid as full-time staff members, may also look at reallocating their time by visiting individual classrooms and offering specific and immediate feedback to teachers during weekly structured teacher collaboration time.

Proposal for Implementation and Timetable

I will present my VEPD to the district leadership team. I will provide this report to district instructional leaders in order to allow time to discuss and determine feasibility

of suggested recommendations prior to the launch of the next round of VEPD. The timetable will be used to help teachers plan and implement district VEPD. Teachers will evaluate and discuss VEPD in the 2015-2016 academic year.

The district has already created a timetable for teacher professional development in the areas of CCSS reading, writing, and math for next year. Despite my VEPD suggestions for refinement are applicable to any subject area. Teachers will receive a 5-week PD for 60 minutes per day to include: (a) introduction to a standardize test, (b) importance of a standardize test, and (c) writing abilities and reading comprehension. VEPD sessions should be used to maximize opportunities for positive school change. The district could use my recommendation to film examples of various VEPD strategies with teacher coaches.

Discussion of the Project

The purpose of this qualitative case study was to examine vocational high school students' experiences regarding standardized tests. Qualitative data were collected through interviews. The experiences of vocational high school students regarding standardized tests helped me identify strategies for teachers to use to help students pass state tests and enter the work force or higher education. The findings of this project are associated with teacher training, which could help teachers improve their teaching practices.

Professional development (PD) opportunities should be district-wide for vocational high school teachers. PD standards should be included in the training for teachers to help students improve standardized test scores. Preparing teachers for

vocational education instruction could help student graduate from high school. PD providers should use the findings to prepare teachers to meet academic standards. I will help PD providers with the content of PD for teachers.

My understanding of the experiences of vocational education students who participated in state exams will help district administrators and teachers. I have expertise in VEPD implementation and will use the findings of this project study to help education stakeholders at the research site regarding vocational education state testing to help students improve standardized test scores.

Standardized testing is mandatory for all Puerto Rican vocational students who choose to enter either college or university. Vocational Puerto Rican students are not residing in the U.S. and are tested by U.S. standardized tests written in English and not in Spanish, which is the first language of the students. Puerto Rican vocational high school students' standardized tests scores are very low since the 2007-2008 academic years; these students do not meet AYP and do not enter either college or university because they lack academic skills. I will present my findings at local school districts regarding vocational education practices and academic standards. My goal is to help teachers and administrators to help students to improve state test scores. My suggestions to policymakers and school administrators would be to revise the vocational curricula for high school students in Puerto Rico. For example, flexibility in the vocational curricula standards may help these students acquire knowledge and skills. My PD sessions will include instructional strategies for teachers and an evaluation of whether PD was effective in helping teachers to improve curriculum and instruction. I will also work with

the research site administrators and instructional coaches to routinely visit vocational education classrooms during barber and cosmetology instruction and report on the teacher practices observed. I believe that a program evaluation would be appropriate to determine the value of the PD initiative to determine whether or not the instructional strategies are helping students and that teaching materials and resources are available. Thus, vocational education PD will be delivered as a pilot program about vocational education strategies to prepare vocational high school students pass state tests.

A program evaluation may occur at the macro level, to study large-scale reforms, or the micro level, to investigate small-scale programs (Kiriakidis & Johnson, 2014; Tokmak, Batuuray, & Fadde, 2013). I conducted a micro level, qualitative case study to gather information on the impact and overall effectiveness of vocational education professional development, this method will be useful in assisting stakeholders to make decisions regarding not only the quality of a teacher-training program, but also in holding the architects of such programs responsible for the learning of educators in attendance (Schaffer, 2014). Although the ultimate goal of educator professional learning is to improve levels of student learning and achievement, the more immediate goal is enhanced knowledge, expanded skill sets, and improved practice of teachers (Haslam, 2010). The effectiveness of the VEPD will ultimately be measured by a collective decision made by the district leadership team. The purpose of my project was to provide this group of administrators with a comprehensive, research-based tool to complement and enhance existing feedback pertaining to the training, in order to help inform next steps and future practices in the area of vocational education teacher development.

Numerous current approaches in PD evaluation entail the involvement of staff participants as opposed to relying on external evaluators with no personal connection to the learning community (Walker, Clancy, & Cheng, 2013). The inclusion of staff members in determining whether a program has met its intended goals leads to meaningful and practical recommendations for changes that typically include a personalized action plan as to how to carry out those changes within the local setting (Walker et al.)

In conducting my project study, I focused on the perceptions of vocational students' site level administrators and instructional coaches in order to thoroughly examine the observed impact of the PD series on teaching practices across district elementary schools. In the report, I provide a summary of findings from the project, as well as suggestions for district stakeholders to take into consideration when designing the next VEPD series to be launched in the beginning of the following school year.

The presentation will include a list of the greatest challenges and success connected with the PD, as well as recommendations for additional support needed to ensure sustainable changes in teacher mindset and actions pertaining to math instruction. An evaluation of the VEPD will provide district leaders with valuable information as to the strengths and weaknesses of the program, so that they make enact swift changes in subsequent teacher professional learning opportunities to promote further improvements in teacher practices.

Implications for Social Change

Implications for social change include strategies for teachers of vocational students to help these students to be successful on standardized tests and graduate. The more vocational students graduate from high school, the more could enter either higher education or the workforce. The learning experiences of the vocational students who participated in this study could improve teachers' understanding of the challenges these students have and help them pass state tests. The findings would be published in journals and reports at the district level. These findings inform policymakers with regard to policy changes such as mandating teaching strategies for these students to pass state tests. Administrative support can help these teachers in assisting students to pass standardized tests. The findings have professional application for teachers to improve their teaching practices. School and district administrators could design a professional development program for these teachers.

Section 4: Reflections and Conclusions

Introduction

Vocational education students' experiences regarding standardized tests remain relatively understudied. Because limited qualitative research has been conducted to examine the experiences of vocational high school students regarding mandated standardized tests, the purpose of this project was to help vocational education students demonstrate the core basic standards for academic skills.

Using a qualitative case study, the experiences of Puerto Rican cosmetology and barber vocational high school students regarding mandated standardized tests were examined. The conceptual framework was based on Dewey's theory of experience. The sample was composed of vocational students from cosmetology and barber classes who participated in standardized tests. I conducted audio taped face-to-face interviews. I collected and analyzed data. The findings include learning strategies to help vocational high school students improve their proficiency in the cosmetology and barber curriculum and pass standardized tests. Teachers may use learning strategies within the findings to help students improve standardized test scores and meet AYP.

Project Strengths

The project's strengths in addressing the problem resided in the examination of the experiences of vocational high school students regarding mandated standardized tests. The data provided me with useful information for the delivery of a vocational education professional development (VEPD) program to teachers on strategies to assist vocational education students.

Recommendations for Remediation of Limitations

Time management can be considered a potential barrier to VEPD delivery. Teachers must compromise in order to complete the professional development plan because it will be applied over an extended period outside school hours, initially as a cooperative learning strategy. Later the possible implementation, a proposal will be deliver to the Puerto Rico Department of Education.

Scholarship

There were various components of scholarship that I learned during the process of my study. I learned that not everyone I spoke to shared the passion that I have for helping vocational education students in our schools. Moreover, in doing the research for this study and in receiving encouragement during the interviews, I learned that the national public politics about education need to understand the importance of vocational education but, at the end, there is a chance to demonstrate them that there is a need to be covered. The Puerto Rico Department of Education needs to improve standards and is committed to making changes.

Any educator must be committed to positive social change in order to develop students into lifelong learners. As my research findings grew, so did my passion for doing more than just concluding this study in what I would consider a working document to demonstrate the importance of a needed change in vocational education. With every interviewee concurring that something needed to be done, I became determined to be part of change in the future.

Project Development and Evaluation

In terms of project development and evaluation, I learned about the process, the structure, and the protocol for conducting scholarly research. I also learned from the human research course that I had to take before seeking permission to conduct the interviews. This entire process helped me to develop a passion and a mission, more than a process. In fact, I have learned that it is natural in the process to have a number of obligatory failures that lead to eventual successes. I also learned how to cultivate a community of practitioners, who now email me with requests to make sure that I send them the details and results of this study.

Leadership and Change

During the interviews for this project, I realized that if one can dream it, that one can lead the change proposed in this study. My entire project was not an assignment to be completed, graded, and put into a drawer—a test to be memorized and forgotten after the 100 was received. This project has been about leading change and making things happen, with hard work, searching for more and looking for more. This study will be used, applied, and reused on an ongoing basis as a functioning document, in order to make the changes happen that have been proposed, based on the results of the research.

Analysis of Self as Scholar

I learned a lot about myself as a scholar. I learned that I am truly a lifelong learner, as this study was born out of many years of interest in and passion for learning more about how to help vocational students in my country, Puerto Rico. This was a

scholarly accomplishment, as I regard those whom I interviewed as people at the top of the process.

Analysis of Self as Practitioner

Considering myself as a practitioner, I reflect that I will never stop practicing the art of research that I learned during my years as a doctoral student at Walden University. This is something that will never end; I will never stop wondering how I can improve my skills. As a scholar practitioner, I will look for opportunities to write journal articles about that which I regard as my passion—vocational education.

Conceivably, the most important characteristic of myself as a practitioner that I have discovered through this course of study is that I am able to assess my own self-efficacy. I have learned this from Dr. Kiriakidis. From my professor, Dr. Kiriakidis, I have learned that one can never stop improving one's best, editing one's mistakes, and enhancing one's words, through cautious thought, precision, and recapitulation. I have learned to review everything I write, whether it is a thought before it is pronounced or a word before it is inked. I have also begun to be better at handing out information with a more measured response, rather than crafting an uninformed answer. Over time in this journey I have learned to appreciate the time I am given to revise and review, perfect and make expert, the foundations of my study.

Analysis of Self as Project Developer

In terms of this project and the method I developed for it, I realize that I am an excellent researcher. Using the steps of this process, in which one reads everything first to develop a research base from which to proceed, I developed a plan. I am both excited

and proud to note that I will create communities of practice, reading about what has been done in the past and interviewing vocational teachers in the future in order to open the door to future programs, a test pilot, and writing about future procedures in the vocational education area. I have become a tremendous project developer due to the process that I learned through this project and by doing this study during my years at Walden University.

The Project's Potential Impact on Social Change

I intend to submit an article to a trade journal on vocational education highlighting my findings. I also plan to use the findings as an action item to be presented to PRDE and to the staff. I will ask for a meeting with the actual PRDE secretary, and when it occurs, I will give this project the potential to make a major impact on vocational education policy in my country.

The findings are useful to vocational education teachers who seek to help students improve their proficiency on standardized tests. These teachers can use the findings of this project to teach students higher order thinking skills. The findings are useful to vocational school administrators regarding instructional strategies to meet AYP. School administrators can use the findings to offer professional development sessions for teachers to improve their pedagogical practices.

Implications, Applications, and Directions for Future Research

The findings and work done in this study revealed that there are many inconsistencies in vocational education policies for students and teacher preparedness across the island. There are standards that need to be put into place if we are to be able to

educate our children to become proficient in completing basic core assignments in order to survive in the world such as it is, as a global nation. The impact that this study can have on the vocational educational field is in better standardized test scores. Through application of the findings of this study, more vocational education students may get into colleges and universities. This study has the potential to be a working document, going forward, in order to initiate a dialogue between the local department of education, state universities, and policymakers. In this way, more consistent trends can be identified and more level standards can be put into place.

This study has implications for social change in that it offers strategies for teachers to help vocational students be successful on standardized tests and graduate. If more vocational students graduate from high school, more can enter higher education or the workforce. The learning experiences of the vocational students who participated in this study could aid teachers in understanding the challenges these students experience and helping them pass state tests. The findings may be published in journals and reports at the district level. These findings may inform policymakers with regard to policy changes such as mandating teaching strategies for these students to pass state tests. Administrative support can help these teachers in assisting students in passing standardized tests. The findings have professional application for teachers seeking to improve their teaching practices. School and district administrators could design a professional development program for these teachers.

Conclusion

The problem stated in this study and the findings it yielded suggest that more efforts are needed to improve vocational education students' proficiency on standardized tests. This project is only the beginning of a far greater project, which is that of making those changes happen. I have learned how to do that through this course of study and this process, and I now feel confident to go forth into my field as a scholar-practitioner and a lifelong learner with a passion that has only been made stronger through my research and the Walden community of practitioners behind my degree.

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Appendix A: Executive Summary of the Project

Introduction

The No Child Left Behind Act (NCLB) of 2001 applies to students in Puerto Rico because these students participate in standardized tests. Pizarro (2010) reported that educational programs of the Department of Education of Puerto Rico do not meet the needs of Puerto Rican students. Puerto Rico Federal Affairs Administration is implementing a plan for the improvement of the quality of public education in Puerto Rico (PRFAA, 2014). In Puerto Rico, the range of knowledge (ROK) skills for Spanish language students is limited (ESEA Flexibility, 2013) and as a result standardized test scores for Puerto Rican students are very low. In the next section, I describe the research problem at the research site.

Problem Statement

Puerto Rican students perform poorly on these tests in comparison to their U.S. counterparts (PRDE, 2009). Vocational Puerto Rican students are not residing in the U.S., are tested by U.S. standardized tests, and English is not their first language; these students speak Spanish at the public vocational high schools in Puerto Rico. According to Hyerle and Alper (2011), Puerto Rican students' scores on the Scholastic Assessment Test (SAT) are low. Since 2007, the proposed research site, a vocational school in Puerto Rico, has not met AYP and as a result, students either cannot graduate from this high school or if they do graduate from high school do not enter college because they lack academic skills. At the research site, no qualitative case study research was conducted to

examine the experiences of vocational high school students regarding mandated standardized tests.

Rationale

Evidence of the Problem at the Local Level

Puerto Rico had an enrollment of 493,393 students in public schools, of which 23.7% were in high school and less than 10% were in vocational high schools (Instituto de Estadísticas de Puerto Rico Año Escolar, 2014). The Puerto Rican census bureau identified over 80% of Puerto Rican high school between 16 and 19 years old who did not graduate from high school. At the research site, Puerto Rican vocational high school students' standardized tests scores were very low between 2007 and 2014 academic years. These students do not enter either college or university because they lack academic skills. Stakeholders such as school and district administrators, high school teachers, policymakers, government organizations, and researchers need research-based findings on the experiences of vocational high school students regarding mandated standardized testing in order to make decisions on (a) how to help these students pass standardized tests, and (b) how to help teachers through PD to help these students.

Evidence of the Problem from the Professional Literature

Flexibility in the vocational curricula standards may give students the opportunity to acquire knowledge and skills for entering the labor market (Sun, 2010). New curricular alignment proposal called The Carnegie Statway Networked Improvement Community (Carnegie Corporation of New York & Institute for Advanced Studies [CCNY], 2009) has been developed.

Students' experiences with state testing have been documented. Embse, Barterian, and Segool (2012) found that university policies limit access to higher education for vocational students because these students lack academic skills. Goodwin and O'Connor (2012) found that vocational students are poorly prepared for higher education. Watson, Heigel, and Chesters (2013) reported that higher education practices have an impact on vocational students who seek college entrance. Rothman et al. (2011) used postsecondary tracking surveys and found that vocational students lack higher-level skills because these skills are not taught in their high school curriculum. The Open University of Scotland (OUS) reported that the curriculum is flexible, modular, and credit-based where approximately three-quarters of students are studying to expand their skills in order to improve their careers (Cannell & Caddell, 2012).

In the U.S., in the state of Oregon, students are organizing an opt-out campaign to persuade other students not to take state standardized tests (Stratus, 2013). Aligning state tests to academic content standards is important because state tests place emphasis on more memorization and less complex cognitive processes (Polikoff, Porter, & Smithson, 2011). Teachers are under pressure to help students pass standardized tests (Duckworth, Quinn, Lynam, Loeber, & Stouthamer, 2011). Gaylor (2010) recommended to teachers to assist high school students in passing standardized tests.

Purpose of the Study

The purpose of this qualitative case study was to examine vocational high school students' experiences regarding standardized tests. Qualitative data through interviews were used to identify strategies for teachers to use to help these students pass state tests

and enter the work force or higher education.

Definitions of Terms

Puerto Rican students' assessments: Herman (2010) stated that "student assessments are used to improve teaching and learning" and should not be viewed as a single event of measures (para 2). In Puerto Rico, schools need learning goals for vocational students.

Puerto Rican tests of academic achievement (PPAA): Standardized tests designed to assess the academic achievement of students in English as a second language, mathematics, Spanish, and science (Department of Education of Puerto Rico, 2013).

Traditional education system: Gao (2014) asserted that the goal of the current traditional education system is emphasizing academic subjects useful for the job market.

Vocational education programs: According to Lagares and Connor (2009), vocational education programs are needed and teachers are expected to help students learn the curriculum.

Significance of the Study

The findings include specific strategies for teachers to help these students stay in school and as a result, the dropout rate at the research site could be reduced. The findings are helpful to vocational teachers to help students improve their high-order thinking skills and to focus on understanding the high school curriculum. The findings are helpful to vocational school administrators regarding strategies to help students and teachers meet AYP. School administrators could use the findings to offer professional development sessions for teachers to improve their pedagogical practices.

Research Question

The research question that guided this study was:

What are Puerto Rican vocational high school students' experiences regarding standardized tests?

Review of the Literature

I used these keywords for the literature review: *education, vocational curriculum, testing, standardized tests, high school, students' experiences with exams,* and *student achievemen*t. My search included peer-reviewed articles regarding students' experiences with standardized tests drawn from Academic Search Premier, ERIC, Psychology and Behavioral Sciences Collection.

Conceptual Framework

At the research site, vocational courses such as cosmetology and barber are divided into *theory* and *practice*. For vocational cosmetology and barber courses and students, Bloom's taxonomy of evaluation applies to this study because during the *theory phase,* students memorize and learn course content. During the *practice phase*, students apply knowledge. Standardized tests measure students' proficiency in certain academic subjects.

To examine the experiences of vocational high school students regarding mandated standardized tests, the conceptual framework is based on Bloom's taxonomy (1956) of evaluation and John Dewey's theory of experience (1952). Bloom's taxonomy is about "learning at the higher levels that are dependent on having attained prerequisite knowledge and skills at lower levels" (p. 11) The experiences of vocational high school

students regarding standardized tests helped me identify strategies for teachers to help these students improve their proficiency in high school curriculum as measured by state scores.

Vocational Education Historical Overview

The emergence of vocational education in the 20th Century revealed two individual points of view preparing students for: (a) an occupation and (b) life as a citizen. In 1929, after the collapse of the stock market, the Great Depression began keeping U.S. and Puerto Rico on a challenging economic status for 10 years. In 1930, New York Governor Franklin Roosevelt asked for the Federal Meeting of Vocational Instruction and sent a commission to evaluate the conditions of the island in order to determine if could extend to Puerto Rico the Smith-Huge law. This legislation, which became effective in U.S. in 1917, assigned minimum standards to the states' departments of instruction to train teachers in the areas of agriculture, commerce, industry, and domestic economy.

The commission operational in Puerto Rico in 1930 approved the application of the law to the island. The commission recommended that, in the area of domestic economy, these standards could support the programs of agriculture and industry while improving the conditions of Puerto Rican family life. The *Carl D. Perkins Vocational and Technical Education Act of 1998* was created for the purpose of sustaining the expansion of academic, vocational, and technical skills in secondary and postsecondary students who decide to join in vocational and technological education classes.

According to Zhao (2013), in the U.S., the education system is dispersed lacking national curriculum and having ineffective schools because students score low on standardized international tests. McDonnell (2013) reported that there is an absence of research focusing on the effects of accountability policies on public schools. GAO (2014) believed that the traditional education system places emphasis on "specific academic subjects such as mathematics, science, and literature to meet the requirements of industrialism" because manufactories needed workers to read and calculate without the need to think critically (para 3). Regarding higher education, Hiss and Franks (2014) asserted that standardize test scores are the best predictor of college-level academic performance. Currently, there is lack of research on vocational education and standardize test scores (Kiriakidis, 2009).

Standardized Testing in Puerto Rico

As a method to measure academic achievement in every state, standardized testing is used by school districts. Standardized scores are used to determine AYP based on the goals of NCLB Act of 2002. In Puerto Rico, students' assessments are not aligned with career-ready standards to determine students' proficiency in core subjects each academic year. Penalties are gradually applied to schools that do not make AYP.

According to Gregory (2007), state tests should supply information about students' precise knowledge or skills within the curriculum as compared to norm-referenced tests that provide information about students' performance relative to an external norm group. Salge (2011) wrote that amendments to standardized tests are required to provide feedback to the educational organizations.

The use of standardized testing in U.S. began in the 20th Century with its origins in the Army alpha and beta tests developed by Robert Yerkes and his colleague (Rivera, 2007). Herman (2010) stated that student assessments improve teaching and learning and should not be viewed as a single event of measures. In Puerto Rico, schools need learning goals for vocational students.

An integrated system of curriculum and assessment, formative and summative should support high-quality students' achievement (Kiriakidis & Geer, 2014). Assessment systems must be based on current educational research and best practices in educational measurement and must be related to student evaluation systems (Darling-Hammond, 2010).

Efforts to review the current testing requirements have been made by *The Race to the Top* (RTTT) Assessment Program. In a meta-analysis review of Alberta Initiative for School Improvement, Townsend, Adams, and White (2010) reported that assessment for learning encouraged changes in students' levels of commitment, confidence and learning.

On February 15, 1964, more than 11,000 high school seniors' in 53 public and private schools across Puerto Rico took a college admissions examination. Students were participating in an historic event that transformed the transition-to-college process on their native island and substantially influenced college admissions throughout many parts of Latin America (The Puerto Rico Latin America Office, [PRLAO] 2008). The major findings of the commission were that the curricula were not properly articulated, situation that still happening in our time.

The biggest project undertaken by PRLAO in collaboration with the PRDE was in 1966 with the development of two sets of achievement tests in Spanish, English, and mathematics. The PRLAO, in conjunction with the PRDE, created a demanding curriculum improved guidance and counseling, and established an in-service teacher training and alternative training for new teachers (PRLAO, 2008).

Low Achievement and Standardize Testing in Puerto Rico

On Oct. 2, 1990, the Association of University Presidents and PRLAO agreed to support a complete study addressing the low achievement rates of new college students. Researchers surveyed more than 2,528 college students and 3,100 high school students and conducted individual interviews and focus groups, which included students, counselors and other pertinent professionals in college and high school settings. The results indicated that there was (a) major deficiency in counseling in high school and college, (b) lack of up-to-date information for vocational selection, and (c) fragile curricular articulation between K-12 and college freshman courses (PRLAO, 2008).

The work of the PRO between 1963 and 1969 had a very important and perhaps significant impact on admissions policies and practices in Puerto Rico. Because of this dislocation among curriculum and teaching, the Federal Department of Education told the Puerto Rico Department of Education (PRDE) that it needed to have new Title I tests or risk losing federal funding. Pruebas Puertorriqueñas de Aptitud Academica (Puerto Rican Tests of Academic Achievement, [PPAA]) are the existing local standardized tests used in Puerto Rico. A report from The Puerto Rico Institute of Statistics developed a school profile for public and private schools in Puerto Rico (Instituto de Estadísticas de Puerto

Rico, 2011). The number of Grade 9-12 students in Puerto Rico in the 2009-2010 year was 140,785. Of these, 9,834 were in Grade 11. The report does not specify how many of these students belonged to vocational education programs (Instituto de Estadísticas de Puerto Rico, 2011). According to Lagares and Connor (2009), vocational education programs were needed and teachers were expected to help students learn the curriculum.

Regarding educational outcomes, Hodara, Jaggars, and Karp (2012) stated that a number of states have redesigned their curriculum and course structures to accelerate students' progression through developmental requirements. According to PRDE (2014), Grade 11 students demonstrated in the Pruebas Puertorriqueñas three advance scores and one proficient, and obtained a minimum of 3,000 points scores in the College Board, can request to be graduate certificate and go to post-secondary level. Regarding the effects of performance-approach goals on achievement, Hulleman and Harackiewicz (2011) found student achievement was affected by promoting positive enthusiasms and better cognitive approaches.

Puerto Rico Vocational Students and Standardized Tests

Vocational students in Puerto Rico need to understand the curriculum for the classes they take. For example, if students do not take biology, they do not know the terminology and vocabulary and may fail in the test in that subject. Recently The College Board began offering review and practice classes online to help students to be familiarized with the test.

The flexibility of integrating vocational education to the general education is essential. There are exemplary initiatives that have resulted in high achieving students,

enthusiastic teachers, excellent academic achievement, integrated communities, and achievements on the social end of education. The Antonio S. Pedreira Elementary School and Manuel Elzaburu Intermediate School is consistent with the interests of the students, are examples of high achieving schools (Teresa, 2010). Teresa (2010) pointed out that the Juan Ponce de León School in Barrio Juan Domingo de Guaynabo inserted work experiences from the elementary school and the Federico Asenjo School integrated technological skills into the curriculum.

In 2008, 318 students in a South Bronx middle school refused to take a 3-hour practice exam that was to prepare them for a statewide social studies test. The students left the exams blank and submitted a petition to the principal of the school. One student said, “The school is oppressing us too much with all these tests. They don't think we have brains of our own, like we're robots” (Gonzalez, 2008, p. 3). This is an example of how the emotions and students thought affect their accomplishments in test.

The reason for failure on tests may not solely be dependent on a student’s lack of content knowledge, but on their anxiety resulting from negative thoughts about taking the test (Boyacioglu & Kucuk, 2011). Limited research exists on the feelings, thoughts, and anxiety of vocational students on standardized tests. Sadler (2010) emphasized that students can use their experiences to better understand course content and students learn by using their previous experiences.

The government of Puerto Rico sent out a public notice stating that the Department of Federal Education (USDE) is reviewing vocational technical programs as part of a reapproved process. The state-approving agency is responsible for giving

approval to programs and courses of the technical-vocational institutes of Puerto Rico. Standards and processes of the Agency manuals and the statutes of the Advisory Committee became publicly available. Schleicher (2011) emphasized that policy regarding the collaborative partnerships and leadership is needed at schools.

Students' Experiences and Achievement

Early research on goal theory has revealed that mastery goals are developed through improved learning methods (Hulleman, Schrager, Bodmann, & Harackiewicz, 2010). Venezia, Bracco, and Nodine (2010) emphasized research shall be conducted to examine students' experiences and achievement. According to Bradley, McCraty, Atkinson, Tomasino, Daugherty, and Arguelles (2010), reviewing students' experiences with assessments will help prepare them to cope with different types of tests. Scoles, Huxham, and MCArtur (2012) recommended the need to study the variance between feedback in present education research and standardized tests. Federici and Skaalvik (2014) recognized the need for research to explore students' perceptions regarding standardized tests. Pekrun, Goetz, Daniels, Stupnisky, and Peny (2010) reported that students' experiences in the classroom have received a slight theoretical or empirical attention.

You, Hong, and Ho (2011) examined the effects and perceptions of academic achievement and concluded that educational researchers are considering students' self-beliefs and attitudes, including motivation, personal activity, and commitment as keys to improving student learning. Fay, Bickerstaff, and Hodara (2013) used interviews and survey data to clarify students' experiences and perspectives in an eastern state system

implementing new customized placement exams. Efforts to get students' feedback had been made by the Carnegie Foundation's NICs. Bryk, Yeager, Hausman, Muhich, Dolle, Grunow, and Gomez (2013) examined students' educational experience to improve curriculum and instruction; however, did not address students' attitudes and their feelings about standardized tests. In terms of students' voice, Adams (2012) said that students' academic skills are important to their academic success. Morgan, Leenman, Todd, and Weeden (2012) concluded that when students' expectations while still in high school impact their future. According to Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, and Beechum (2012), social skills could help students' achievement. In addition, Komarraju, Ramsey, and Rinella (2013) asserted that focus on cognitive and noncognitive factors impact students' achievement. Komarraju et al. (2013) suggested the need to examine the analytical effectiveness of both cognitive and non-cognitive factors together to support students in standardize tests as predictors of academic performance and retention.

Furthermore, Valentine, Hirschy, Bremer, Novillo, Castellano, and Banister (2011) explained that non cognitive qualities are based on individual uniqueness. The Higher Education Funding Council for England in the annual National Student Surveys developed in the UK a strong stimulus of surveys to completing student's opinion on dissatisfaction with feedback (HEFCE, 2010). Ward and Parker (2013) said that there is a need to give to students the opportunity to be consulted about their contributions, thinking, perceptions, and experiences to any educational process.

Implications for Social Change

Implications for social change include strategies for teachers of vocational students to help these students to be successful on standardized tests and graduate. The more vocational students graduate from high school, the more could enter either higher education or the workforce. The learning experiences of the vocational students who participated in this study could improve teachers' understanding of the challenges these students have and help them pass state tests. The findings would be published in journals and reports at the district level. These findings inform policymakers with regard to policy changes such as mandating teaching strategies for these students to pass state tests. Administrative support can help these teachers in assisting students to pass standardized tests. The findings have professional application for teachers to improve their teaching practices. School and district administrators could design a professional development program for these teachers.

Design and Approach

The case study design was employed. Other qualitative methods were considered but not chosen. I did not use a quantitative study design to compare the means of state scores that are quantitative data. I did not select a causal-comparative quantitative research method to determine if a relationship exists between the means of state test scores of groups of students such as regular or vocational students. I did not collect numerical data because I had no independent and dependent variables. With quantitative methods, the researcher seeks to determine if a relationship exists between an independent variable and a dependent variable (Creswell, 2009).

The purpose of grounded theory, according to Creswell (2007), is to "generate or discover a theory" of a particular process or action in order to provide a framework for further research (p. 63). I did not generate a theory about the arrangement of career and technical education (CTE) with academic content courses to improve achievement of vocational students. Grounded theory tradition was not appropriate for this study.

Ethnography focuses on an entire cultural group (Creswell, 2007) and is suited to studies in the fields of sociology and anthropology (Merriam, 2002) and qualitative data include interviews (Myers, 2009). I did not employee ethnography or phenomenological design because I did not focus on an entire cultural group I examined what vocational high school graduates experienced with standardized testing. Narrative study is used to describe the "experiences as expressed in lived and told stories of individuals" (Creswell, 2007, para 3). I did not gather or interpret the stories that the participants would describe their lives (Hatch, 2002).

I selected a case study design because this design is about "in-depth data collection involving multiple sources of information" (Creswell, 2010, para 4). I examined the experiences of vocational high school graduates regarding the mandated standardize test because vocational students in Puerto Rico do not meet the basics requirements of the local and national standardized tests. My goal was to understand the experiences of vocational education students who participated in state exams written in the U.S. and taken by the students at the proposed research site.

Setting, Population, and Sample

The setting for this case study was a vocational high school in a metropolitan area in Puerto Rico. The high school offers vocational courses in cosmetology, barber, carpentry, and culinary arts. The high school population for Grades 10, 11, and 12 between 2009-2010 and 2013-2014 academic years was over 1,600 students taught by 25 teachers. All students are Puerto Rico born. The sample consisted of 20 Puerto Rican vocational high school students who participated in standardized tests in English and took either cosmetology or barber courses. Students who met the participant selection criteria were invited to participate.

Participant Selection Criteria

The criteria for selecting the participants included Puerto Rican vocational high school students who (a) were at least 18 years old, (b) attended Grades 10 to 12 at the high school at the research site, (c) participated in standardized tests in English, and (d) registered in either cosmetology or barber courses. All potential participants meeting the selection criteria were invited to participate in the study and were asked to complete and submit to me their consent forms. Those participants who returned the signed consent forms were invited to face-to-face interviews.

Procedures for Gaining Access to the Participants

Upon IRB approval from Walden University, I signed a (a) confidentiality agreement at the research site after I met in person with the administrator responsible for research and (b) letter of cooperation from the Puerto Rico Department of Education (PRDE). I gained access to the research site by contacting the administrators responsible

for research to discuss the purpose of the study in person by requesting a meeting to seek approval to conduct the study. During the meeting, I explained my role and responsibilities to conduct this research. I requested lists of names of those students meeting the aforementioned selection criteria for me to invite to face-to-face interviews with me. As an interviewer, I made every effort to respect the participants' time and to keep the interviews to the agreed-upon timeframe. An interview protocol was used (Appendix B). Consent form and invitation letter to potential participants followed Walden University's guidelines (Walden University Office of Research Integrity and Compliance, 2011) and included information about me, the purpose of the study, study procedures, the expected time commitment on the part of the participant, sample questions, risks and benefits, and a statement regarding the participant's privacy.

Role of the Researcher

I am a school director in an elementary school in a public school district in Puerto Rico. As a teacher and administrator, my motivation for conducting this study stems from my concern over the lack of research regarding vocational students' low scores in standardized tests. When addressing the selected school director for the IRB administrator at the research study, I discussed my role as vocational teacher and vocational coordinator of several years in another school district. I emphasized to the participants of the study that all responses will be held in confidence, with no information specific to any participant will be revealed in my written study or communicated to the district's administration. In these ways, I established a rapport with the participants and gained their trust.

I was responsible for contacting the school director at the research study, preparing the interview questions, analyzing the interview data, and reporting the findings.

Ethical Protection of Participants

The participants were Puerto Rican vocational high school students. I obtained IRB approval from both Walden University and the research site. I did not reveal the names of the vocational high school participants in my findings. I will keep all documents at home. The documents will be in a locked file cabinet. The electronic interview transcripts have been stored on my personal computer, which is password protected. I will keep all data for at least 5 years.

Data Collection

I explain the data collection process in steps. Step 1, I set up a meeting with the school director to present the purpose and goals of the study. This step took 30 minutes. Step 2, at the meeting, I explained and described to the school director, the goals, objectives, and procedure to conduct the study. I asked the school director for permission to use the private reading rooms available and located inside the school at the library, and the director approved. Step 3, permission to conduct the study was granted. I asked the school director for a list of possible participants and 31 students were asked to participate in the study. The selection criteria included Puerto Rican vocational high school students who (a) were at least 18 years old, (b) attended Grades 10 to 12 at the research site, (c) participated in standardized tests in English, and (e) registered in either cosmetology or barber courses.

Step 4, I made phone calls to each of the potential participants who met the selection criteria and invited them to participate in the study. I inform them about the goals, objectives, data collection process, and procedure of the study. I asked those who accepted the invitation to provide me with their available schedule, in order to arrange the starting date of the process. Only four students accepted to participate in the study.

Step 5, I arranged three possible meeting date based on the four participants' available schedule. I made phone calls and in some cases used text messaging to ask the participants for the first meeting to start the procedure. This step took 3 days. Step 6, I confirmed with each participant the starting date of the interviews. Step 7, I met with each participant in the reading room at the school library. A consent form was signed by each participant. The data collection procedure started and the selected students were interviewed in a one-on-one dialogue, in the reading room at the school library. The four participants were asked open-ended questions relating to the research question about their experiences regarding standardize test using the interview protocol. Each interview took about 45 minutes.

Step 8, at the end of each interview, I asked the participants to confirm a future date for member checking. Step 9, I conducted each interview and collected the interview data with the assistance of a professional colleague to perform the data coding and analysis using line-by-line analysis for emergent themes. Step 10, I made phone calls to remind the participants of member checking. Step 11, a meeting with each participant was held in the reading room at the school library to provide feedback on the findings. Step 12, I used coding for the final data analysis with the assistance of a professional

colleague. Discrepant cases were considered. The participants' responses unrelated to the interview questions were reviewed by me and are included in the findings. Discrepant cases were examined by the professional colleague and subject matter expert who assisted me. I reviewed all transcripts for accuracy. The transcripts were loaded into Atlas.ti 7 and coded to find recurring categories, themes, and patterns. Step 13, I created a table to include concepts and categories and to explain each concept and category. Step 14, I made phone calls to invite the participants, school director, and the professional colleague to a meeting for the presentation of the results. School district superintendent and vocational district facilitator were also invited. Step 15 included a meeting with the selected participants, school director, and the professional colleague to present the study results.

Data Analysis

I collected all interview responses. I transcribed the audio taped interviews within 10 days of the completion of each interview. I maintained a research log to document all communications with the participants and a reflective journal. These data were saved on a jump drive and hard drive, with a secured password protection. I keep the jump drive and hard drive under lock in my home office.

I listened to each recording multiple times for data accuracy. I kept a research log to document all communications with the participants. I used a reflective journal to save my field notes throughout each semi-structured interview, using a log and reflective journal to catalog the collected data. As a researcher, I was the data collection instrument to collect all data though interviews using the interview protocol. I reviewed each

interview question to gather a clearer concept of the transcripts to evaluate for accuracy. Interview transcripts were coded to identify a way to sort or group the data as well as maintain privacy for the participants (Merriam et al., 2002). I coded each interview transcript to find recurring categories, themes, and patterns. For coding, I included abbreviations such as ST (standardized test) + positive to represent students' personal positive experiences with standardized tests or ST– negative to represent negative experiences with standardized tests.

I used open coding to analyze the interview data (i.e., line-by-line coding) by examining the raw interview data consisting of words, phrases, sentences, or paragraphs and assigning codes. I grouped similar ideas and continue to create codes for new ideas (e.g., concepts) to identify categories and patterns. I considered for distinct concepts and categories in the interview data by breaking down the data into concepts (e.g., headings) and categories (e.g., subheadings). I created a table to contain the final concepts and categories and explain each concept and category to present the findings.

I created the categories, known as themes, by grouping the codes I assign to words, phrases, sentences, or paragraphs found in the interview data (i.e., axial coding). I grouped the responses in a hierarchical manner (i.e., hierarchical coding). The interview transcripts were analyzed for emergent themes (Creswell, 2003) using a thematic analysis. The transcripts were loaded into Atlas.ti 7 and coded to find recurring categories, themes, and patterns. I used a qualitative analysis coding program to help me in identifying potential categories, themes, and patterns. I used the interview transcripts, member checking, my research log were used for all communications with the

participants, and my reflective journal included field notes throughout each semi-structured interview for a fuller understanding of the interview data, in order to triangulate the data.

Presentation of Data

Thirty-one vocational education students, from barber and cosmetology courses, were invited to participate in this qualitative case study interview process. Four participants accepted to participate in the study. The interview questions were:

(a) tell me how you felt when you participated in standardized testing,

(b) tell me how your teachers could have prepared you before your participation in standardized testing,

(c) tell me how your vocational school administrators could have prepared you before your participation in standardized testing,

(d) what strategies did you use to before your participation in standardized testing technology into the math curriculum? and

(e) what resources did you use to before your participation in standardized testing technology into the math curriculum?

Interview Question 1: Tell me how you felt when you participated in Standardized testing. Participant 1 stated, “I feel horrible, my stomach was upside dawn, feel nervous and anxious. I thought I will never do this.” Participant 2 stated, “I was relax, I took reviews, my mother pay for it and I know a lot about what will come into the test. This test is very important to me.” Participant 2 also stated, “I am taking advance

courses to get into college. I am looking to get into the medicine college and know this test will raise my expectative."

Participant 3 stated, "I was very nervous, I feel that this is it- I am always get nervous when taking a test, but this time, I was very anxious, I do not feel prepared to take this test." Participant 3 stated, "Test was very long, there were exercises I never seen before. I knew that this test is not necessary to be a barber but compulsory to get my high school diploma, but I feel it is not necessary." Participant 4 stated, "I have no idea what was this, I feel very confuse and stressed, I feel lost, I never seen before those mathematics items, I never know anything about pre-calculus. I was very lost and anxious."

Interview Question 2: Tell me how your teachers could have prepared you before your participation in standardized testing. Participant 1 stated, "Well, my teachers never ask me if I know something about the College Board, they just tell us that there were some practices online." Participant 1 stated, "As vocational students, no one ever takes care about us; the counselor does not pay attention to us, because she said that if some time we get in to the college that was luck!" Participant 1 stated, "I am already graduate and at this moment I know how important was to take the College Board. At college, the counselor tells me that I have the opportunity to take the test again."

Participant 2 stated, "As vocational student, I have to tell you that there was no help to us. The counselor at the high school was very busy. In my case I was running behind her because I want to get into the medicine program." Participant 2 also stated, "I

took cosmetology for my self-knowledge and to get a par time job at the same time I study medicine. But really, vocational students are alone."

Participant 3 stated, "Vocational curriculum it is very extensive, teacher have no time to help us with the College Board. Some of my classmates just pay for tutoring courses to get prepare with the College Board." Participant 3 also stated, "I have no choice, have no help with the test, and have no money to pay individual reviews."

Participant 4 stated, "I know that vocational teachers have no extra time to help us, academic teachers nether. I think that if the vocational curriculum extend hours of class, maybe can teachers help us a little more." Participant 4 stated, "If the vocational classes were cut in time, some of about 45 minutes, teachers could have more time to help us within the College Board test or more of mathematics and science class."

Interview Question 3: Tell me how your vocational school administrators could have prepared you before your participation in standardized testing. Participant 1 stated, "Well I think that the academic classes have to be arranged with the vocational courses, I mean, must have to take all those classes we are not taking at the moment." Participant 3 stated, "Administrators must see that there is something wrong with the classes we take and the courses we need to take the College Board. OR! Give us, vocational students remedial courses to take the test."

Participant 2 stated, "Well if I can say, even dough, I just take the test previews, could be useful to others to take more courses to reach out what's coming in the test. I mean, arrange the vocational courses with the academic courses." Participant 2 stated, "Vocational students do not take pre-calculus and in science, we do not take physical

science. Administrators must add those courses if they see that vocational students are in disadvantage with the academic general students."

Participant 3 stated, "For me, at this moment it is not important to tell administrators how to prepare vocational students. They must know that the regular and vocational curriculum is not aligned." Participant 3 stated," they push us out to take those College Board and pruebas Puertorriquenas tests without knowledge. There is no sense for me, because I am a barber and I am not excited to go to college."

Participant 4 stated, "At this moment, I really don't know how administrators could help vocational students with standardize test." Participant 4 stated, "I think that they must prepare us, maybe taking additional courses or shrinking the actual schedule to be fixed with the academic courses we do not take."

Interview Question 4: What strategies did you use to before your participation in standardized testing technology into the math curriculum? Participant 1 stated, "I know that there were some reviews online to practice math and science items. In the school at the library there was some computers to use, lack of computers do not permit to all students to practice." Participant 2 stated, "Well, my mom just paid for tutoring at a private place. There were computers and the teacher give us online practicing exercises." Participant 2 also stated, "I try to reach those math exercises on my home computer, but time and some extracurricular activities do not permit me to do so at home."

Participant 3 stated, "Because at that time I was working part time, I do not practice on the school library computer. I have to work after school to afford my economical needs." Participant 3 also stated, "If I could make an effort to do so, I know

can be useful to me. Now it is too late, I must make an effort to do so at that time when I was at school!"

Participant 4 stated, "I do not think that making some practices at that moment could mean any differences. I remember that there were computers at the school library to get the online practice in math and Spanish." Participant 4 also stated, "I do not think that making those practices makes a differences because in math I never seen some of the items like chemistry or physics." Participant 3 stated, "How do I learn making practices in a computer if I never see a pre-calculus exercise? I don't even know what pre-calculus its!"

Interview Question 5: What resources did you use to before your participation in standardized testing technology into the math curriculum? Participant 1 stated, "The only resource we had at that time at school was books and the math teacher, and also the little period on the regular school period to get in to the library." Participant 1 also stated, "Trying to get a computer to be used and get the online practices that the Department of Education give us is almost impossible. The vocational schedule does not give us free time to do anything else."

Participant 2 stated, "As I expressed before, my mom pay for the private reviews, I used all resources from the preview practices. There we have so many practices on paper and using online resources, we also have practices with the same timeline." Participant 2 also stated, "In mathematics, students have to finish class in about 70 minutes; so the practice takes 70 minutes at all."

Participant 3 stated, “I have to work after school hours, the only think I have was some of others classmates that bring me out their note books and try to practice with that.” Participant 4 stated, “I am not interested on the College Board test; I just try to get some of the practices at the school library. I try my best but I never feel that this kind of test could help me in my future.”

Themes

Theme 1

General and vocational program it is not the same, because general courses students’ takes different classes than vocational students. Students’ personal positive experiences with standardized tests. Participant 1 had no positive experiences with standardized tests. Participant 2 stated, “I was relax, I took reviews, my mother pay for it, and I know a lot about what will come into the test.” Participant 2 stated, “I feel confidence because I know this test is very important to me, I am taking advance courses to get into college.” Participants 3 and 4 had no positive experiences with standardized tests.

Theme 2

Negative experiences with standardized tests. Participant 1 stated, “I feel horrible, my stomach was upside dawn, feel nervous and anxious. I thought I will never do this.” Participant 2 stated, “I recognized that the general and vocational program it is not the same, the school must do something to fix this big differences.” Participant 3 stated, “I was very nervous, I feel that this is it- I am always get nervous when taking a test, but this time, I was very anxious.” Participant 3 also stated, “I do not feel prepared to

take this test, It was very long, there was vocabulary and exercises I never seen before." Participant 4 stated, "I was very nervous, I feel that this is it- I am always get nervous when taking a test, but this time, I was very anxious, I do not feel prepared to take this test."

Summary of Themes

Puerto Rico vocational students' experiences regarding standardized tests themes are divided into three groups: (a) ST+ (standardized test positive) to represent students' personal positive experiences with standardized tests, (b) ST– (standardized test negative) to represent negative experiences with standardized tests, and (c) PS (participants' suggestions). ST- comments included: (a) lack of help from vocational teachers and school administrators, (b) general students take different courses than vocational students, (c) students receive no help at the school, (d) reviews offered by the College Board need to be more pragmatic, (e) vocational students are not offered compulsory courses, (f) there is a difference between vocational education and general education curricula, and (g) students are stressed when participating in standardized tests.

ST+ comments included: Only one participant expressed a positive view concerning standardized test. ST+ comments included: (a) relax, (b) the student took private reviews, (c) student recognized the importance of the College Board, and (d) feel confidence because take private reviews and feel prepared. Recommendations included: (a) align vocational curriculum to the general curriculum, (b) provide professional development for teachers to help vocational students, (c) provide vocational students with

after school educational programs to improve their English skills, (d) provide students with practice standardized tests.

Regarding ST-, all participants stated that the general and vocational programs are not the same because general courses students' takes different classes than vocational students. The participants stated that there is no help in the school for them, they adduce that all the reviews offered by the College Board out of school hours and some have to be paid and have to be out of school hours in other place than the school. Some of the participants need to work on after school hours and have no time to get out of the site to get the reviews.

From four interviews, three participants expressed that there was no help from vocational teachers, because teachers do not know how to help them. Furthermore, all participants expressed that teachers need strategies to address their anxious and stress of the test. The participants stated that they do not take necessary courses as the general students and cannot answer some of the mathematics and science exercises because of lack of help from teachers.

Another emergent theme was the level of stress and anxiety the participants felt. Three participants expressed their feeling of stress and anxiety and said that they feel in stress when taking the standardized test. All participants said that no one helped them to manage their feelings (Appendix C). These participants recommended strategies such as stress management sections. Recommendations included that teachers shall develop strategies to manage students' stress to help vocational students manage test time and

resources at school. The participants' suggested courses on stress management and revision of the vocational curriculum.

The participants recommended that teachers should attend professional development to develop educational strategies to help vocational students. Professional development for teachers could help high school students pass standardized tests and enter college. The aforementioned recommendations are in line with the suggestions made by scholars. Gaylor (2010) recommended for teachers to assist high school students in passing standardized tests. Du (2009) asserted that students need to be motivated to achieve their full potential and long-term academic goals.

Professional Development Plan for Teacher of Vocational Students

The purpose of the vocational education professional development (PD) plan is to help vocational education students pass standardized tests. The focus of VEPD is Puerto Rican cosmetology and barber vocational high school students regarding mandated standardized tests. VEPD will be offered to teachers teaching cosmetology and barber classes. The VEPD sessions will include strategies to help vocational high school students improve their proficiency in cosmetology and barber curriculum, and pass standardized tests. Strategies outlined in the VEPD should help vocational students to be successful on standardized tests, graduate from high school, and enter either higher education or join the workforce. VEPD will be offered at each school within the school district where vocational students attend after school hours and/or weekends. Every vocational teacher will be invited to participate in the VEPD. I am both excited and proud that my VEPD will create vocational teacher communities. I plan to use the findings as an

action research at the research site to help senior district administrators develop or evaluate vocational education policies to help teachers better prepare students. After 2-3 years, the VEPD will be evaluated and dialog between local department of education, state universities, and policymakers will be encouraged. Educational stakeholders will be encouraged to revise the vocational curriculum to be aligned to the general curriculum and for teachers to attend professional development to help vocational students with standardized tests. My suggestions to policymakers and school administrators would be to revise the vocational curricula for high school students in Puerto Rico to help these students acquire knowledge and skills. I plan to work with the research site administrators and instructional coaches to visit vocational education classrooms during barber and cosmetology instruction and help teachers with instructional practices.

I will make contributions to the VEPD program by teaching its components to teachers. The school district may implement VEPD as professional learning opportunities for vocational teachers. The VEPD program will be offered weekly. The school district administrators would provide human and capital resources to run the VEPD program. The school district has a 10-month school calendar and the VEPD program would be scheduled throughout the school year. My visits to each high school will include meetings with the administration, curriculum resource teachers, and department chairs to discuss the components of the VEPD program. There will also be discussions about specific activities, video segments, and handouts to be distributed during the VEPD program sessions. I will provide teachers with handouts. The school principals will be

responsible for giving permission for the VEPD program sessions. The principal will also be responsible for ensuring that teachers will attend these sessions.

Appendix B: Interview Protocol

Location of Interview: _____

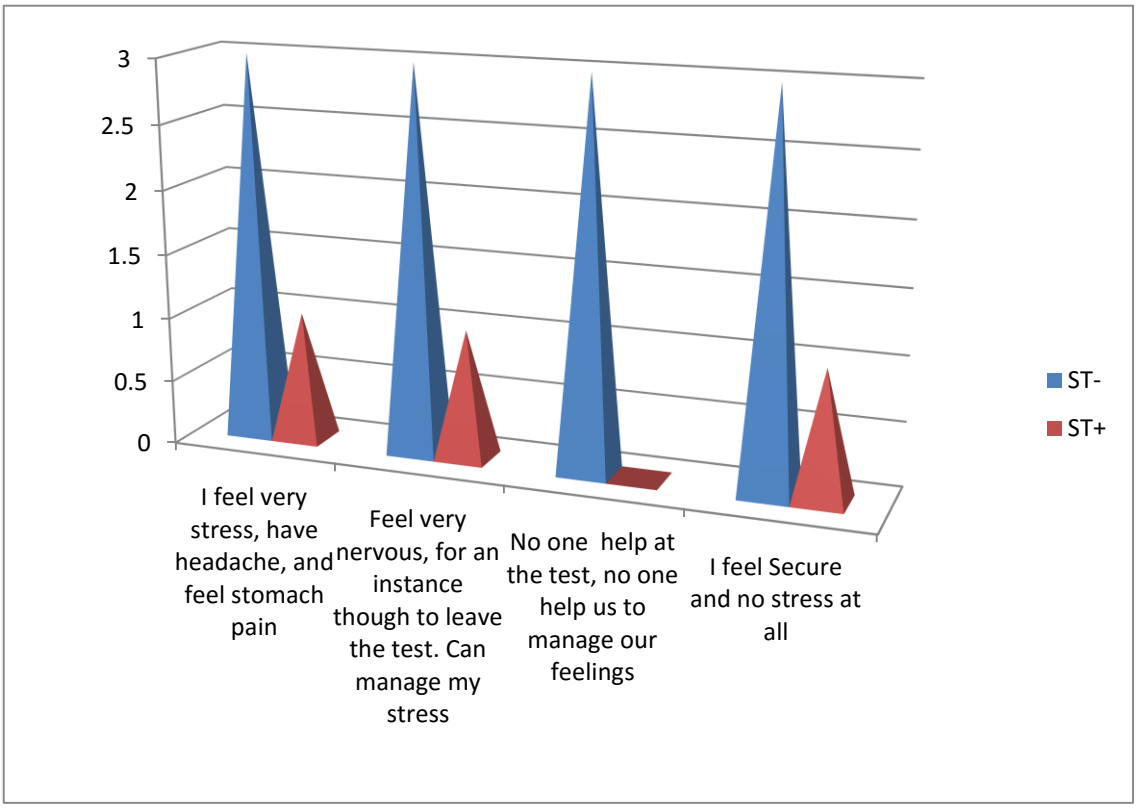
Start Time of Interview: _____

Stop Time of Interview: _____

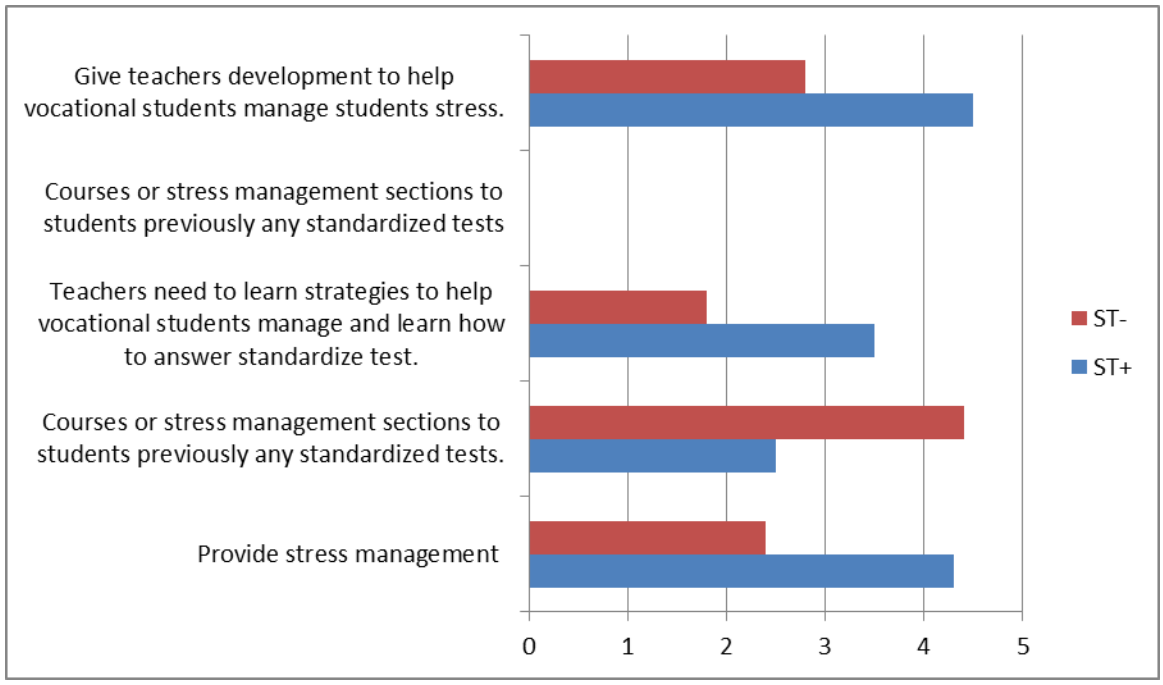
Audio Tape Number: _____

1. Tell me how you felt when you participated in standardized testing
2. Tell me how your teachers could have prepared you before your participation in standardized testing
3. Tell me how your vocational school administrators could have prepared you before your participation in standardized testing
4. What strategies did you use to before your participation in standardized testing technology into the math curriculum?
5. What resources did you use to before your participation in standardized testing technology into the math curriculum?

Appendix C: Participants' Feelings



Appendix D: Participants' Suggestions



Appendix E: Vocational Education Teachers Professional Development Plan

Week	Day 1	Day 2	Day 3	Day 4	Day 5
1	Introduction to a standardize test. The Importance of a standardize test What is for? How useful is? Why taking a test? What measure?	Stress management	Identification of GOALS	Why taking a test?	The Importance of a standardize test Data analysis on vocational students
2	Mat core standards on standardize test	Mat exercises on standardize test	Stress management	Data analysis on vocational students on mat core standards	Strategies on teaching vocational students
3	Science core standards on standardize test	Science Exercises on standardize test	Data analysis on vocational students on Science core standards	Stress management	Strategies on teaching vocational students
4	Writing core standards on standardize test	Writing exercises on standardize test	Strategies on teaching vocational students	Data analysis on vocational students on Writing core standards	Stress management
5	Reading Comprehension and high-order thinking	Reading exercises on standardize test	Stress management	Strategies on teaching vocational students	Data analysis on vocational students on the writing core standards