The Identification of Variables and Factors Related to Preservice Teacher Candidates’ Passing a State Teacher Certification Examination at an HBCU

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THE IDENTIFICATION OF VARIABLES AND FACTORS RELATED TO PRESERVICE TEACHER CANDIDATES’ PASSING A STATE TEACHER CERTIFICATION EXAMINATION AT AN HBCU

BY

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ABSTRACT

This study sought to examine the outcome of teacher education candidates’ performance on a state content exam. Seventeen participants from the class of 2012 were identified for the study of which 12 participants fully participated in the study. The study utilized data collected from the participants through the Teacher Quality Enhancement Subcontract Grant Summer/Fall/Spring 2011-2012 Workshop Series held at a private HBCU. The research design used a QUAN-QUAL-QUAN to triangulate the data through three methods of data collection: GACE early childhood education (ECE) data, GACE ECE survey questionnaire and class of 2012 member interviews. The first QUAN correlations were run on the 17 participants. The survey instrument (qualitative and descriptive statistical constructs) was completed by 12 participants. The last QUAN correlations were run on the 12 participants who completed the survey instrument. Correlation analysis was used to determine if a significant relationship existed between the independent variables and dependent variables. Descriptive statistical analyses were extrapolated from the selected Likert scaled items collected from the survey instrument to test selected research questions. The findings from the survey items related to program quality for the participants’ mean was 3.05 (n = 12) on a 1 to 5 Likert scale. The findings from the survey items related to motivation for the participants’ mean was 4.35 (n = 12) on a 1 to 5 Likert scale. A limitation was the total participants that were available for the case study of majors for the degree in the class of 2012 (n = 17). Correlation analyses revealed a statistically significant relationship between first time pass or fail and number of failed attempts on #001; first time pass or fail and number of failed attempts on #002; test failures after first attempt on test #001 and SAT; test failures after first attempt on test #002 and SAT; program quality and GPAPST; first time pass or fail rate and perception of program quality.
INTRODUCTION

This synopsis provides preliminary information about the demonstrated ability of minorities to pass teacher content examinations required for certification, variables and factors that may influence candidates passing the examinations. In addition, information is discussed on how this topic affects minorities and teacher preparation programs at Historically Black Colleges and Universities (HBCUs). Since testing is a federal requirement for students as they matriculate through P-12, and with the inception of the No Child Left Behind (NCLB) Act and the highly qualified status requirement, the probability of additional testing required by states for certification coupled with impeding pressures to post a passing score on the first attempt may negatively affect candidates' performance on certification examinations (Barnes-Johnson, 2008; Gifford, 1985; Supon, 2004). The research selected to introduce the rationale for this study was grounded in the identification of the following variables related to teacher education candidates' performance on basic skills tests and content examinations (Anrig, Goertz, & McNeil, 1986; Barnes-Johnson, 2008; Bennett, McWhorter, & Kuykendall, 2006; Haney, Madaus & Kreitzer, 1987). The variables that appear in the selected review of literature are the American College Testing (ACT) program score, Scholastic Aptitude Test (SAT) score, high school grade point average (HSGPA), grade point average prior to preservice teaching (GPAPST), cumulative grade point average (CGPA), motivation and program quality (Fleming, 2000; Fleming & Garcia, 1998; Liu, Bridgeman, and Adler (2012); Marable, 2011; Pardee, 1990; Perry, 2011; Slater, 1999-2000).

Purpose of the Study

The purpose of this study was to examine the effectiveness of a selected traditional teacher preparation program and the planned program's responsibility to provide candidates with
sufficient content knowledge to increase their capacity to post a passing score on a state-certification examination on the candidates first attempt, to ensure that the candidates could complete the program and become eligible for a certificate as a highly teacher (Amerin-Beardsley, Barnett, 2010; Bennett et al., 2006; Boyd, Goldhaber, Lankford, & Wyckoff, 2007; Carter, 1998; United States Department of Education [USDOE], 2011a; USDOE, 2011b). In addition, components of the study were based upon historical literature and conceptual factors. The study also reported selected findings from an ex post facto data set collected from an attempted treatment to the historic problem of failure among black candidates at the private HBCU chosen for this study.

Statement of the Problem

The specific evidence of the problem of selected black preservice candidates enrolled at a private HBCU to pass the state mandated certification exam on their first attempt was studied through the use of a federally funded subcontract award. The problem at the private HBCU identified for this study caused many of the candidates to change their major from the certification tract to the non certification tract. The researcher has identified through the literature documented studies that addressed minority failure on teacher certification content exam and basic skills tests. Through the literature and results of this study, the problem of test preparation for preservice candidates enrolled in an early childhood education program can be related to the testing accountability requirements in NCLB in 2001 for P-12 students (Pohan & Ward, 2011).

Summary and Significance

Teacher certification programs serve as a gateway to the teaching profession (Boyd et al., 2007). Historically, numerous references can be found about requirements for individuals who
sought to teach children, such as, ministers approving teachers during the 18th and 19th centuries (Angus, 2001; Wilson, 1985). Within the 21st century, more emphasis has been placed on standardized examinations by federal, state, and local policy makers through the increase in requirements for educators including, individuals entering teacher preparation programs with states establishing their own procedures and cut off scores for basic skills and content examinations (Allen & Jewell, 1995; Angus, 2001; Anrig et al., 1986; Boyd et al., 2007; Dilworth, 1986; Gifford, 1985; Holmes, 1986; Hood & Parker, 1989; Wilson, 1985; USDOE, 2011a; USDOE, 2011b).

Haney, Madaus, and Kreitzer (1987) posit that, “teacher testing is regarded as a means of improving education in America” (p. 170). Attaining a passing score on a state mandated teacher content examination is one of many requirements teacher education candidates must meet to be certified (Bennett et al., 2006; Dilworth, 1986; Wilson 1985; USDOE, 2011b). The numerous plausible variables and factors that have affected minority passing rates over the last few decades are examined throughout this synopsis. For HBCU teacher preparation programs, continued candidate test failure is not an option. For candidates, failure means they can pass all required coursework, complete required preservice teaching requirements, meet the minimum university GPA requirements for graduation, and still not be considered a highly qualified candidate for failure to pass certification tests (Perry, 2011).

REVIEW OF THE LITERATURE

An overview of the literature related to teacher preparation in the United States of America is presented. An examination of two state-constructed content examinations for teacher certification in the field of Early Childhood Education serves as the dependent variables. Continually, literature in the chapter provides insight on the independent variables of the study,
which are the American College Testing (ACT) program and the Scholastic Aptitude Test (SAT) standardized test scores, high school grade point average (GPA), GPA prior to preservice teaching, cumulative undergraduate GPA, motivation, and program quality.

**ACT and SAT**

As the national debate lingers over the quality of teacher preparation and the corollary significance of increasing the diversity within the ranks of 21st century teachers in public schools with the highest number of and proportion of children from diverse backgrounds, this study proposes to examine causal variables and emerging themes from a southeastern metropolitan HBCU as its primary focus. Also, the correlation between student performance in elementary and secondary schools as measured by the Scholastic Aptitude Test (SAT) and American College Testing Program (ACT) with a participant pool of preservice teachers from communities around the United States of America may posit a glimpse into teacher preparation at HBCUs and other minority serving institutions.

Throughout the last century, college entrants have been required to post a predetermined score, by post secondary institutions, on college admissions examinations for entrance into the institution (Marable, 2011; Perry, 2011). Colleges use SAT I scores as a supplement to other information, notably the high school grade-point average (HSGPA), to make selection decisions (Bridgeman, McCamley-Jenkins, & Ervin, 2000). Bridgeman et al., (2000), Fleming (2000), NCES (2012), and Marable (2011) posit that the SAT is designed to predict college grades, especially in the freshman year. Additionally, when examining candidate test performance, citing the type of university during the data collection process may assist with understanding the differences in test scores across racial/ethnic groups. For example, Fleming and Garcia (1998), posited that “several studies suggest that standardized test scores predict
academic performance much better for black students who attend predominately black colleges, with the same consistency and level of prediction usually found for white students” (p. 489).

**Use of GPAs and Standardized Examinations**

According to Kobrin and Michel (2006), the use of high school grades and scores on standardized tests such as the SAT are often used by colleges and universities to predict the probability of student’s success during their college career. According to Zwick and Sklar (2005), the two most studied measures of college academic success are high school grades and admissions test scores. In addition, the authors indicate the degree to which high school grade point average (HSGPA) and test scores predict freshman GPA and their use by institutional research offices and admissions offices. According to Fleming (2000), the SAT design allows for the predictability of applicant college grades, particularly during the freshman year. Furthermore, use of the test has been restricted to predicting correlations with GPA. Zwick and Sklar (2005) state that the use of college entrance criteria to predict first-year college GPA is a drawback to traditional studies on the subject. Furthermore, correlations of test scores with FGPA tend to be smaller for black and Latino students when compared to white students and the use of a common regression equation to predict FGPA produces over prediction among black and Latino students.

**Reading Comprehension Effects on Content Examination Scores**

Test takers’ ability to read and comprehend the information that is presented may be a direct correlation to their ability to post passing scores on basic skills and teacher content examinations. In a report entitled "Study of Teacher Preparation in Early Reading Instructions" by the National Center for Education Statistics (2010), which examined 99 public and private teacher preparation programs in 24 states, 69% of those surveyed reported a moderate overall
programmatic focus on the essential components of early reading instruction. Thus, the examination of reading comprehension as a moderating variable may lead to a clear relationship between content knowledge and preparation in the planned program. According to Holmes (1986), deficiencies in language skills account for the reason blacks do not perform well on standardized tests. Hess and Shipman’s (1965) study of 160 Negro mothers and their four year old children sought to provide evidence of the effects of socio status differences among the research groups with respect to cognitive functioning and linguistic codes. Moreover, individual motivation may affect candidates’ demonstrated ability and content examination score outcomes.

**How Motivation May Influence Testing Outcomes**

How well teacher candidates perform on basic skills and teacher certification exams contributes to whether they will be accepted into a teacher preparation program and whether they will become certified to teach. Various factors may influence how well test takers perform on these exams. In a study completed by Liu, Bridgeman, and Adler (2012) on motivation in higher education, the researchers used random assignment to administer a multiple-choice test and an essay across three motivational conditions. The results indicated that motivation significantly predicted test scores and a substantial performance gap emerged between students in different motivational conditions.

According to Pardee (1990), motivation can be defined as "those forces within an individual that push or propel him to satisfy basic needs or wants." (p. 3). Maslow and Herzburg (cited in Pardee, 1990) developed motivational theories that can be used by not only employers of teacher educators but also can be used by teacher preparation programs to improve program effectiveness and efficiency through the development of test preparation programs to assist with the improvement of candidate test productivity.
Review of Literature Related to Teacher Preparation Programs

According to Carter (1998), “if a teacher preparation program cannot prepare its students to meet even the minimum standard of passing a licensing exam, the program should be deleted from the college or university offerings” (p. 88). Teacher preparation programs are the pinnacle of traditional four year institutions where the goal of the program should be to produce highly qualified candidates for employment in P-12 schools. In Dilworth’s (1986) article about schools, departments and colleges of education, at the date of publication, the author posits that candidates entering college are not as prepared as other college entrants; hence, once they have completed their planned program they are not equipped with basic knowledge to teach. The aforementioned statement is not based on candidates’ classroom performance but their inability to adequately perform on tests prior to, during and after college. However, the last decade has seen improvements in teacher education programs through a more focused offering of courses in content and pedagogy and through “intensive coursework that focuses on the needs of diverse learners” (Perry, 2011, p. 11).

Summary of Review of Literature

Throughout the last century there have been guidelines in place to qualify individuals interested in becoming teachers. Gaining momentum in the last few decades, teacher testing has seen a complete overhaul beginning with the Pennsylvania Study which led directly to the creation of the National Teacher Examinations Program. The use of the National Teachers Examination and other standardized exams used for certifying teachers have failed to correctly diagnose the competency of teachers and has caused a high failure rate among minorities (Hood & Parker, 1989). Also, the correlation between student performance in elementary and secondary schools as measured by the SAT and ACT with a participant pool of preservice
teachers from communities around the United States of America may posit a glimpse into teacher preparation at HBCUs and other minority serving institutions. Test takers’ ability to read and comprehend the information that is presented may possibly be a direct correlation to their ability to post passing scores on basic skills and teacher content examinations (Holmes, 1986).

THEORETICAL FRAMEWORK AND METHODOLOGY

This section defines the type of research that was conducted to investigate an internal problem within a teacher education program at a private HBCU located in a metropolitan city in the southeastern part of the United States. The researcher examined preservice teacher education candidates’ performance on the Georgia Assessments for the Certification of Educators Early Childhood Education content examination tests (#001 in the areas of reading and English language arts and social studies, and #002 in the areas of mathematics, science, health, physical education and the arts).

Research Design

A QUAN-QUAL-QUAN model and selected ex post facto findings from an attempt to treat the problem of student failure were used by the researcher. The QUAN-QUAL-QUAN model allows for the use of both qualitative and quantitative methods during the data collection process. This model, also known as the triangulation mixed methods design, allows for both qualitative and quantitative data to be weighed equally and collected concurrently throughout the study (Gay, Mills, & Airasian, 2012). The quantitative portion of the research study focused on selected variables possibly influencing black teacher education candidates’ demonstrated ability to post passing scores on content examinations on the first attempt. The research design used correlation analysis to determine if a relationship existed between the quantitative variables (Gay et al., 2012). Descriptive statistical analysis was utilized on the data collected to test the research
questions. The historical record and policy data analyses of certification history were used to inform the researcher’s development of the survey questionnaire and the interview protocol (Gay, Mills, & Arisian, 2012; Howell & Prevenier, 2001; Lange, 2013).

This study used data gathered from the Teacher Quality Enhancement (TQE) Subcontract Grant GACE Summer/Fall/Spring 2011-2012 workshop series held at a selected private HBCU located in a metropolitan city in the southeastern part of the United States and Title II reports from 2007-2011.

Specifically, this study, through QUAN-QUAL-QUAN methodological design, sought to examine causal variables and conceptual themes from data sets and interviews of selected candidates who had to pass the GACE under the selected teacher preparation program’s new mandated testing requirements. The interview protocol sought to purposively collect the reflective narrative and emerging themes and triangulate these qualitative findings with the quantitative independent and dependent variables from those who were enrolled candidates in the program, those that enrolled in the program and decided to pursue an Educational Studies degree instead of an Early Childhood Education degree, and those who sought GACE examination preparation assistance through a tutorial program.

The qualitative approach that this study used was phenomenology. Phenomenology allows the researcher to conclude with a descriptive passage in which they discuss how and what the participants have experienced (Creswell, 2012; Goulding (2005); Johnson & Christensen, 2008). In this research study, purposely selected participants reflected upon their preparation for the GACE ECE content examination through the use of their lived experiences, thus allowing the researcher to extrapolate recurring themes common to all participants.


**Relationship among the Variables**

To determine the causal factors that could possibly be affecting black teacher education candidates’ demonstrated inability to post passing scores on the Georgia Assessments for the Certification of Educators (GACE) Early Childhood Education (ECE) examination on the first attempt, selected independent variables (number of attempts failed test #001, number of attempts failed test #002, ACT, SAT, high school grade point average [HSGPA], grade point average prior to pre service teaching [GPAPST], cumulative grade point average [CGPA], motivation, and program quality) and selected dependent variables (Exam first time pass or fail; GACE ECE test #001 pass or fail; GACE ECE test #002 pass or fail) have been illustrated and operationally defined through the theoretical framework. GACE ECE test #001 and GACE ECE test #002 and Exam first time pass or fail are illustrated as interdependent in the theoretical framework. In order for candidates to pass the entire content examination they must earn a passing score of at least 220 on both GACE ECE test #001 and GACE ECE test #002 (see Figure 1).
Selected Independent Variables

Selected Dependent Variables

- Number of Failed Attempts: Test #001
- Number of Failed Attempts: Test #002
- ACT
- SAT
- HSGPA
- GPAPST
- CGPA
- Motivation
- Program Quality

GACE ECE Test #001 Pass or Fail

Interdependent

Exam First Time Pass or Fail

GACE ECE Test #002 Pass or Fail

Figure 1. Theoretical Framework
Definition of Variables

**American College Testing (ACT):** An examination that is taken by individuals interested in gaining admission into a college or university.

**Cumulative Grade Point Average (CGPA):** CGPA is used as an independent variable and is the accumulation of all university coursework completed once the candidate has matriculated through the planned program and graduated from the university.

**Exam first time pass or fail:** In this research study, exam first time pass or fail is defined as whether participants passed both test #001 and #002, passed either test #001 or #002 or passed neither test #001 or #002 of the GACE ECE examination on their first attempt.

**Georgia Assessments for the Certification of Educators (GACE):** For this study, the Early Childhood Education content examination consisting of test #001 (reading and English language arts and social studies) and test #002 (mathematics, science, health, physical education and the arts) were examined. The GACE are criterion-referenced, objective-based assessments designed to measure a candidate's knowledge and skills rather than an established standard (GACE, 2012, Program Overview).

**Grade Point Average before Preservice Teaching (GPAPST):** GPAPST is used as an independent variable and is the GPA of all university coursework completed before candidates’ enrollment in preservice teaching course.

**High School Grade Point Average (HSGPA):** HSGPA is used as an independent variable and is the cumulative GPA reported on teacher education majors’ university admission related documents from the high school of record.

**Motivation:** In this research study, motivation is defined as the “forces within an individual that push or propel him to satisfy basic needs or wants" (Pardee, 1990, p. 3).
Number of failed attempts test #001: In this research study, the number of times participants took and failed the examination past the first attempt. The researcher calculated values each failed attempt to pass either test from the GACE content examination for Early Childhood Education of all participants identified for the study in the class of 2012 for the administration of the examination through March 2011 to March 2012 (e.g. if participant one passed both tests of the examination on the first attempt, the coded value was a positive coded value; if participant two passed either test # 001 or test #002 and had to attempt to pass either or both tests more than once, the coded value for each became a negative coded value in the calculation of the variable).

Number of failed attempts test #002: In this research study, the number of times participants took and failed the examination past the first attempt. The researcher calculated values each failed attempt to pass either test from the GACE content examination for Early Childhood Education of all participants identified for the study in the class of 2012 for the administration of the examination through March 2011 to March 2012 (e.g. if participant one passed both tests of the examination on the first attempt, the coded value was a positive coded value; if participant two passed either test #001 or test #002 and had to attempt to pass either or both tests more than once, the coded value for each became a negative coded value in the calculation of the variable).

Program Quality: In this research study, program quality is the candidates' level of perception in which they feel they were adequately prepared to meet GACE goals.

Scholastic Aptitude Test (SAT): A test taken by individuals seeking admission to a college or university.
Research Questions

RQ1: Is there a significant relationship between the first time pass or fail results on the GACE ECE tests #001 and #002 of selected ECE graduates and completers and each of the selected independent variables: ACT, SAT, HSGPA, GPAPST, CGPA, number of failed attempt test #001, and number of failed attempts test #002?

RQ2: Is there a significant relationship between number of failed attempts on test #001 after the first attempt and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012 between March 2011 - March 2012?

RQ3: Is there a significant relationship between number of failed attempts on test #002 after the first attempt and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012 between March 2011 - March 2012?

RQ4: What were the findings for the survey items from the survey completed by the purposively selected participants?

RQ5: As a result of the review of the survey items, what narrative reflections were provided from follow-up interviews of purposively selected participants who passed the test as Early Childhood Education majors and those who did not pass the test as Educational Studies majors?

RQ6: Is there a significant relationship between the motivation of candidates to take the GACE test and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012?
RQ7: Is there a significant relationship between perception of program quality and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012?

RQ8: Is there a significant relationship between first time pass or fail rate and perception of program quality for the class of 2012?

**Limitations of the Study**

This section presents the limitations of the study. First, analyses were limited to a single private HBCU located in one metropolitan area in a Southern state. Second, the study was limited to members of the class of 2012 who graduated with a Bachelor of Arts degree in Early Childhood Education or a Bachelor of Arts degree in Educational Studies. Additionally, only participants who took the GACE ECE content examination at least one time were included in the research study. Furthermore, the HBCU teacher preparation program studied for this research enrolls less than thirty undergraduate teacher education majors per graduating class with the members of the class of 2012 only totaling 18; thus, the researcher did not have 30 plus one (31) participants for the statistical portion of this study to be considered valid and reliable. The survey was completed by twelve (n = 71%) of the seventeen participants completed the survey. Finally, the interview participants purposefully selected was guided by cooperation of participants who completed the survey and agreed to participate in follow-up interviews.

**Description of the Setting**

This study was conducted using data that was captured in the setting where the participants were matriculating for the completion of the planned program leading to the degree and certification. The data used in this study are from a private HBCU located in a metropolitan city in the southeastern part of the United States.
**Sampling Procedure**

For this research study, the type of sampling that was used was termed as purposive sampling. The sample for this research study consisted of purposively selected Early Childhood Education and Educational Studies majors who were members of the class of 2012.

**Instrumentation**

The instrument used to assess selected variables that affect black preservice teachers first attempt performance on the GACE was the Georgia Assessments for the Certification of Educators Early Childhood Education content examination (GACE). The relationship among the variables was drawn from data collected as part of the Teacher Quality Enhancement Subcontract Grant (TQE). A survey, developed by the researcher, included 28 questions that were related to GACE passing, ACT and SAT, motivation, and perception of program quality. A semi structured interview protocol was used to interview selected participants to discern their view of the planned program and their GACE preparation.

**Participants/Location of Research**

Participants for this study were members of the class of 2012. These members were purposefully selected because their cohort was the first class that completely went through the new program (2008-2012). Between March 2011 and March 2012, one or more participants took one or more tests of the GACE ECE examination. Of the 18 purposively selected members of the cohort, one participant chose not to take the GACE ECE examination and decided to pursue the Bachelor of Arts degree in Educational Studies. Therefore, this participant was not included in the analysis of the data for statistical purposes.

**ANALYSIS OF THE DATA**
Overview of Data Collection and Analysis

There were three methods of data collection: GACE ECE data, GACE ECE survey questionnaire, and class of 2012 member interviews. GACE ECE results were obtained from data collected through the Teacher Quality Enhancement Subcontract Grant. GACE ECE data included number of testing attempts and scores on content examination. The candidate survey was distributed to purposefully selected Early Childhood Education majors who completed the planned program, were enrolled in CEDC 444 or CEDC 492 during the spring 2012 semester and were members of the class of 2012. The survey was designed to obtain class of 2012 members' perception about their experiences preparing for the GACE ECE content examination. Selected respondents that completed a survey participated in semistructured interviews that were conducted via phone and email.

Survey Participants

Figure 2 shows the total number of survey respondents (n = 12) that indicated they passed or failed GACE ECE test #001 on the first attempt. Four respondents (33%; n = 4) indicated they passed GACE ECE test #001 on the first attempt; however, eight respondents (67%; n = 8) indicated they failed test #001 on the first attempt.

*Figure 2. First Attempt Passers vs. Failures on Test #001*
Figure 3 shows the total number of survey respondents (n = 12) that indicated they passed or failed GACE ECE test #002 on the first attempt. Three respondents (25%; n = 3) indicated they passed GACE ECE test #002 on the first attempt; however, eight respondents (67%; n = 8) indicated they failed test #002 on the first attempt. One respondent (8.3%; n = 1) did not indicate whether they passed or failed test #002 on the first attempt.

Figure 3. First Attempt Passers vs. Failures on Test #002

Analysis of Survey Responses

The GACE ECE Survey questionnaire was developed based on a five-point Likert scale where respondents were asked to rate items from strongly agree to strongly disagree. The conceptual design was to identify, through the analysis, emerging themes within the narrative descriptions and respondents ratings from the survey instrument and interview comments. The questionnaire consisted of 28 questions that were designed around the dependent and independent variables and asked respondents to rate their overall GACE ECE preparation experience, motivation, and perception of program quality (progqua). The analysis of the findings sought to follow a phenomenological approach for the data analyses captured from the survey and the interview protocol.
The analysis of the respondents' ratings indicates that more than 50% of the respondents felt they needed to seek assistance outside of their planned program so they could successfully pass GACE Early Childhood Education content test #001 and #002. Also, all respondents were motivated to study for the content examination prior to taking it the first time with more than 50% of respondents indicating they were motivated to obtain supplemental material to assist them with passing the examination on the first attempt. Although only 3 of the 12 respondents indicated they passed test #002 on the first attempt, 66% of respondents indicated they were uncertain, disagreed or strongly disagreed with whether the course assisted them with passing GACE test #002 to the item asking them to rate how the Methods of Teaching Early Childhood Health and Physical Education course assisted them with passing test #002 (mathematics, science, health, physical education, and the arts) and more than 50% of them indicated the Integrated Teaching of Elementary Math and Science course assisted them with passing test #002 as well. The phenomena that was revealed through the responses indicates that on 67% of the questions (n = 4) participants consistently indicated that the planned program did not provide them with enough content knowledge to assist with understanding the GACE objective presented in the question.

**Interview Participants**

For this study, the researcher purposively selected interview participants from the respondents that completed the survey. Four participants were selected based on similar patterns in their answers to survey items on motivation and program quality. Two participants were selected that graduated with the Bachelor of Arts in Early Childhood Education and two were selected that graduated with the Bachelor of Arts degree in Educational Studies. Two of the interview participants were females and two participants were males.
**Emerging Themes from Respondent Interviews**

**Theme 1: Supplemental Materials**

As participants recounted their experiences about preparing for the GACE ECE examination, each participant described a need to supplement their preparation with material outside of their planned program. From the interviews, it was ascertained that participants understood their roles in their preparation and were motivated to supplement their GACE preparation with additional study material.

I understood that I was unfamiliar with what would be on the test, so I needed to look at and review supplemental materials (Participant 2ES, personal communication, August 17, 2013).

I sought out supplemental materials because I knew I needed to rely on other sources other than just my planned program . . . (Participant 3ECE, personal communication, August 18, 2013).

**Theme 2: Program Alignment**

Participants’ reflections of their lived experiences and preparation for the GACE revealed varied but consistent responses about the course material. In their own words, respondents indicated that the format of the courses and the assignments chosen for the courses were not inclusive of material they felt was needed to prepare them for taking the GACE examination. Overall, the participants did not feel that the planned program assisted them with the content knowledge needed to post a passing score on the Early Childhood Education content examination.
With the Early Childhood Curriculum and methods course, I thought it could have been more focused on theory. The coursework did not truly link to the content of the GACE (Participant 3ECE, personal communication, August 18, 2013).

While I enjoyed the content of the class, I did not feel as though it lined up or matched the actual material that I was being tested on (Participant 9ECE, personal communication, August 19, 2013).

**Class of 2012 Survey Alpha**

A Cronbach Alpha was run on the survey items that asked participants to rate their level of motivation and perception of program quality to test the inter rater reliability of the items. According to Gilem and Gilem (2003), the “Cronbach’s Alpha is a test reliability technique that requires only a single test administration to provide a unique estimate of the reliability for a given test” (p. 84). The reliability of the items is interrelated at 85%; therefore, the items motivation and program quality are valid and reliable above 70%.

Tables 1 and 2 display the internal consistency revealed by the Cronbach Alpha.

**Table 1**

*Cronbach Alpha: Case Processing Summary*

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**Table 2**

*Cronbach Alpha: Reliability Statistics*
Summary of Analysis of Data

A purposefully selected private Historically Black College and University located in a metropolitan city in the Southeastern part of the United States was the focus of this research study. There were three methods of data collection: GACE ECE data, GACE ECE survey questionnaire and class of 2012 member interviews. The analysis of the GACE ECE results revealed the following: (a) there is a significance for candidates first time pass or fail rate and the number of failed attempts on test #001 and test #002, and (b) SAT was a significant indicator of performance on the GACE ECE content examination.

Survey participants included 12 Early Childhood Education and Educational Studies majors who were members of the class of 2012. The analysis of the data from the survey suggests the following: (a) significance for level of perception of program quality and GPAPST, (b) significance for first time pass or fail and program quality, and (c) no significance for motivation and CGPA.

Of the 12 participants, 4 participants were selected using convenience sampling. These participants were selected based on the degree obtained from the private HBCU and their ability and willingness to participate in a follow-up interview by the researcher. The interviews revealed two emerging themes that are included as follows: (a) Supplemental Materials and (b) Program Alignment.

SUMMARY OF FINDINGS, CONCLUSIONS and RECOMMENDATIONS
The findings, conclusions, summary and recommendations that were obtained from the research study conducted are cited in Table 3

Table 3:

Research questions, summary of findings and recommendations

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Summary of Findings</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: Is there a significant relationship between the first time pass or fail results on the GACE ECE tests #001 and 002 of selected ECE graduates and completers and each of the selected independent variables – ACT, SAT, HSGPA, GPAPST, CGPA, # of failed attempt test # 001, # of failed attempts test # 002?</td>
<td>RQ1 found the following: there is a significance for first time pass or fail and # of failed attempts on # 001 and # of failed attempts on # 002</td>
<td>As a result, a recommendation for future studies is a review of course syllabi for courses intended to prepare candidates for the state content examination to determine alignment with exam objectives</td>
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<tr>
<td>RQ2: Is there a significant relationship between number of failed attempts on test # 001 after the first attempt and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012 between March 2011-March 2012?</td>
<td>RQ2 found the following: there is a significance for test failures after first attempt on GACE content test # 001 and SAT</td>
<td>As a result, a recommendation for future studies is a candidate who declares ECE as a major with an SAT score of less than 1000 should begin to receive tutorial support in preparation for the content exam</td>
</tr>
<tr>
<td>RQ3: Is there a significant relationship between number of failed attempts on test # 002 after the first attempt and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012 between March 2011-March 2012?</td>
<td>RQ3 found the following: there is a significance for test failures after first attempt on GACE content test # 002 and SAT</td>
<td>As a result, a recommendation for future studies is that the program should facilitate a support for teacher education majors who are promising in their field work and lack the required scores necessary to pass the state content exam</td>
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<tr>
<td>RQ4: What were the findings for the survey items from the survey completed by the purposively selected participants?</td>
<td>RQ4 Participants were motivated to pass the GACE ECE examination. The mean motivation was 4.35 (n=12). The meanlevel of perception of program quality was 3.05 (n=12).</td>
<td>As a result, a recommendation for future studies a concentrated study for public and private HBCUs that enroll graduating classes of more than 30 candidates.</td>
</tr>
<tr>
<td>RQ5: As a result of the review of the survey items, what narrative reflections were provided from follow-up interviews of purposively selected participants who passed the test as Early Childhood Education majors and those who did not pass the test as Educational Studies majors?</td>
<td>RQ5 found the following: participants’ motivation led them to seek supplemental support to assist with passing the GACE ECE examination. Instructor course facilitation was cited as an issue.</td>
<td>As a result, a recommendation for future studies is that based on candidates interview responses the program’s alignment should be reviewed and changes made where necessary to support candidates passing the state content exam on the first attempt</td>
</tr>
<tr>
<td>RQ6: Is there a significant relationship between the motivation of candidates to take the GACE test and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012?</td>
<td>RQ6 found the following: no significant relationship between the motivation of candidates to take the GACE test &amp; ACT, SAT, HSGPA, GPAPST &amp; CGPA.</td>
<td>As a result, a recommendation for educational leaders is to assist faculty wit delivering instruction that is inclusive of material vital to the state content exam</td>
</tr>
</tbody>
</table>
RQ7: Is there a significant relationship between perception of program quality and selected independent variables (ACT, SAT, HSGPA, GPAPST, CGPA) for the class of 2012?  

RQ7 found the following: there is a significance for perception of program quality and GPAPST.  

As a result, a recommendation for educational leaders is to structure their teacher education programs so that their candidates will be prepared for the P-12 work environment.

RQ8: Is there a significant relationship between first time pass or fail rate and perception of program quality for the class of 2012?  

RQ8 found the following: there is a significance for first time pass or fail and perception of program quality.  

As a result, a recommendation for future studies is that educational leaders should assist faculty with delivering instruction that is inclusive of material vital to candidates successfully attaining ample content knowledge to pass on the first attempt.

Conclusions

The demonstrated inability of preservice teacher candidates in this research study to successfully pass certification examinations on the first attempt are affected by many variables. The data and participant interviews revealed that individuals possessed high levels of motivation (overall mean of the participants’ [n = 12] motivation was 4.35) and indicated that the gaps in the planned programs alignment with GACE objectives and professor’s facilitation of course material were some of the issues instrumental in their demonstrated inability to post passing scores on their first attempt. From an analysis of the interviews, it was suggested that participants who passed the content examination and graduated with the desired degree of Early Childhood Education attributed their passing to their motivation not to what was attained through classes directly inclusive of objectives on the GACE Content Exam in the planned program. Additionally, Educational Studies participants also indicated they were motivated to pass on the first attempt and stated that material covered in their classes did not assist them with passing the content examination. The analysis suggests that by controlling for attempts negatively it highlights the importance of SAT as a predictor of test performance as well as content knowledge. It appears that motivation is intrinsic and extrinsic since many participants took the examination up until the last minute. Furthermore, the research statistics and interview protocol
have proven that participants were motivated to pass the test and that they indicated lack of alignment as one of the issues with the planned program. Although participants were motivated to pass the test, some still did not pass.

**Summary**

It was the aim of this research study to identify some of the variables that directly affect pre-service teacher education candidates’ demonstrated ability to successfully pass the GACE ECE content examination on the first attempt. However, to the participants quantifiable variables and qualitative survey results and interviews seemingly suggest that to improve passing rates of pre-service teacher candidates, the quality of teacher education programs, the awareness of educational leaders of the needs of the candidates in their Schools, Colleges and Departments of Education and the responsibility of the planned program to provide candidates with instruction are all necessary to prepare teacher education majors to pass content examinations on the first attempt. Through the triangulation of the data, this research study revealed some variables that have an impact on the first time passing rate of pre-service teacher education candidates on the GACE. The research findings suggest the following independent variables were statistically significant with the dependent variables of first time attempt on the GACE ECE content exam: SAT, test failures after the first attempt on test #001, test failures after the first attempt on test #002, GPAPST and program quality, and first time pass or fail rate and perception of program quality directly affect candidate performance on the GACE ECE content examination.

Recommendations for future studies include a concentrated study from public and private HBCUs and/or minority serving institutions with teacher preparation programs enrolling more than 30 candidates of color in their graduating classes.


Marable, R. D. (2011). *Using SAT scores, high school grade point average, and high
school credits as predictors of academic performance of African Americans enrolled in


