Community college success: a multi-site program evaluation of postsecondary career and technical education

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COMMUNITY COLLEGE SUCCESS: A MULTI-SITE PROGRAM
EVALUATION OF POSTSECONDARY CAREER AND TECHNICAL EDUCATION

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

In

The Department of Educational Theory, Policy, and Practice

by

Kimberly Tynes
B.S., The University of Southern Mississippi, 2002
M.S., The University of Southern Mississippi, 2003
December, 2010
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# TABLE OF CONTENTS

DEDICATION ............................................................................................................ ii

ACKNOWLEDGEMENTS ........................................................................................... iii

LIST OF TABLES ...................................................................................................... vii

LIST OF FIGURES .................................................................................................... ix

ABSTRACT ................................................................................................................ x

CHAPTER 1: INTRODUCTION .................................................................................. 1
  Statement of the Problem ....................................................................................... 1
  Purpose of the Study .............................................................................................. 4
  Rationale ................................................................................................................ 4
  Research Questions ............................................................................................... 6
  Significance of the Study ....................................................................................... 7
  Limitations of the Study ....................................................................................... 9
  Definitions of Terms ............................................................................................ 10

CHAPTER 2: LITERATURE REVIEW ...................................................................... 12
  Introduction ........................................................................................................... 12
  Historical Context ................................................................................................. 12
  Underlying Theories ............................................................................................. 21
    Student Retention ............................................................................................... 21
    The Curriculum ................................................................................................. 26
  Federal Laws—Funding and Accountability .......................................................... 27
    Carl Perkins Act ................................................................................................. 28
    Higher Education Act ....................................................................................... 32
    No Child Left Behind Act ............................................................................... 33
    American Recovery and Reinvestment Act ...................................................... 34
  High-Stakes Testing ............................................................................................ 37
    Teacher Implications ......................................................................................... 38
    Student Outcomes ............................................................................................ 41
  Accountability ....................................................................................................... 43
  Summary of Literature Review ........................................................................... 44

CHAPTER 3: RESEARCH METHODOLOGY ......................................................... 46
  Research Design ................................................................................................... 46
  Sampling Procedures ............................................................................................ 47
  Data Collection Strategies ................................................................................... 49
    Phase 1 ............................................................................................................... 49
    Phase 2 ............................................................................................................... 49
    Phase 3 ............................................................................................................... 50
  Data Analysis ....................................................................................................... 51
    Research Question 1—What Are the Components of a Successful Program? ......................................................................................................................... 53
Research Question 2—What Are Faculty and Administrators’ Perceptions of Their Responsibilities Relative to Program Success And Accountability Mandates in Relation to the Assessment Measures? .................................................. 55
Research Question 3—What Student Factors Influence Performance on the Program’s MS-CPAS2 Assessment? .......... 56
Validity and Credibility ................................................................. 60

CHAPTER 4: RESEARCH FINDINGS .................................................. 62
Demographics of Faculty Survey Participants ............................... 65
Demographics of Administrator Survey Participants ....................... 66
Research Question 1 Results ........................................................ 68
  Sub-question 1-a Results ......................................................... 73
  Sub-question 1-b Results ......................................................... 77
  Sub-question 1-c Results ......................................................... 77
  Sub-question 1-d Results ......................................................... 78
Research Question 2 Results ........................................................ 83
  Sub-question 2-a Results ......................................................... 88
  Sub-question 2-b Results ......................................................... 89
Research Question 3 Results ........................................................ 90
  Sub-question 3-a Results ......................................................... 92
  Sub-question 3-b Results ......................................................... 94
  Sub-question 3-c Results ......................................................... 95
  Sub-question 3-d Results ......................................................... 97

CHAPTER 5: DISCUSSION AND CONCLUSION .................................. 99
Summary of Results ................................................................. 99
  Characteristics of Successful Programs ................................. 100
  Perceptions of State-Mandated Assessment Impacts ............... 103
  Impacts of Student Factors on Assessment Performance ....... 105
Recommendations ................................................................. 107
  Instructor Improvement Plans .............................................. 107
  Administrator Policy Improvement Plans ............................. 108
  Assessment Improvement Plans ........................................... 109
Implications for Future Research ........................................... 110

REFERENCES .............................................................................. 112

APPENDIX A: CONTENTS OF INITIAL DATABASE ......................... 122
APPENDIX B: PILOT INSTRUCTOR SURVEY ................................. 124
APPENDIX C: PILOT INSTRUCTOR SURVEY RESULTS ................... 125
APPENDIX D: PILOT ADMINISTRATOR SURVEY ......................... 127
APPENDIX E: PILOT ADMINISTRATOR SURVEY RESULTS ............. 128
APPENDIX F: FACULTY SURVEY ............................................. 130
APPENDIX G: ADMINISTRATOR SURVEY ................................................................. 139
APPENDIX H: STATISTICAL ANALYSIS RESULTS FOR GENDER .................... 146
APPENDIX I: STATISTICAL ANALYSIS RESULTS FOR ETHNICITY ................... 147
APPENDIX J: STATISTICAL ANALYSIS RESULTS FOR STUDENT RATING .......... 148
APPENDIX K: STATISTICAL ANALYSIS RESULTS FOR MULTIPLE REGRESSION ... 150
APPENDIX L: RESEARCH STUDY CONSENT FORM ........................................... 152
APPENDIX M: INSTITUTIONAL REVIEW BOARD APPLICATION FORM ............. 153
VITA ...................................................................................................................... 154
## LIST OF TABLES

1-1 Student Ratings .......................................................................................... 10
3-1 List of Top 13 Programs ............................................................................ 48
3-2 Research Questions and Related Survey Questions ................................. 52
3-3 Ethnicity Codes ....................................................................................... 57
4-1 Administrator Survey Completion Dates ................................................ 63
4-2 Faculty Survey Completion Dates ............................................................ 64
4-3 Faculty Per Program Area ....................................................................... 65
4-4 Faculty Years of Teaching Experience ..................................................... 66
4-5 Administrator Job Titles ....................................................................... 67
4-6 Administrator Years of Teaching Experience ......................................... 67
4-7 MS-CPAS2 Defined ................................................................................ 70
4-8 Instructional Methods Altered ................................................................. 75
4-9 Instructional Materials Utilized ............................................................... 76
4-10 Instructional Material Selection by Faculty ............................................ 78
4-11 Certifications in Lieu of MS-CPAS2 Assessment ................................... 81
4-12 Perceptions of Responsibilities ............................................................. 83
4-13 Test of Homogeneity of Variances ......................................................... 146
4-14 Robust Tests of Equality of Means ....................................................... 146
4-15 Descriptives ......................................................................................... 146
4-16 ANOVA .................................................................................................. 146
4-17 Test of Homogeneity of Variances ......................................................... 147
4-18 Robust Tests of Equality of Means ....................................................... 147
4-19 Descriptives ......................................................................................... 147
4-20 ANOVA .................................................................................................. 147
4-21 Test of Homogeneity of Variances ......................................................... 148
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust Tests of Equality of Means</td>
<td>148</td>
</tr>
<tr>
<td>Descriptives</td>
<td>148</td>
</tr>
<tr>
<td>ANOVA</td>
<td>148</td>
</tr>
<tr>
<td>Coefficients</td>
<td>149</td>
</tr>
<tr>
<td>Descriptive Statistics</td>
<td>150</td>
</tr>
<tr>
<td>Correlations</td>
<td>150</td>
</tr>
<tr>
<td>Variables Entered/Removed</td>
<td>150</td>
</tr>
<tr>
<td>Model Summary</td>
<td>150</td>
</tr>
<tr>
<td>ANOVA</td>
<td>151</td>
</tr>
<tr>
<td>Coefficients</td>
<td>151</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-1</td>
<td>Student Enrollment from Faculty Survey</td>
<td>68</td>
</tr>
<tr>
<td>4-2</td>
<td>Programs Passing from Administrator Survey</td>
<td>69</td>
</tr>
<tr>
<td>4-3</td>
<td>Components of Successful Program by Administrators</td>
<td>72</td>
</tr>
<tr>
<td>4-4</td>
<td>Instructional Methods Utilized by Faculty</td>
<td>73</td>
</tr>
<tr>
<td>4-5</td>
<td>Percentage of Student Participation in Clubs/Organizations</td>
<td>79</td>
</tr>
<tr>
<td>4-6</td>
<td>Certifications Used in Lieu of MS-CPAS2</td>
<td>81</td>
</tr>
<tr>
<td>4-7</td>
<td>MS-CPAS2 Scores Histogram</td>
<td>91</td>
</tr>
<tr>
<td>4-8</td>
<td>Normal P-P Plot of Regression Standardized Residual</td>
<td>92</td>
</tr>
<tr>
<td>4-9</td>
<td>Linear Regression Scatterplot-Student Rating</td>
<td>95</td>
</tr>
<tr>
<td>4-10</td>
<td>Student Retention Results</td>
<td>96</td>
</tr>
<tr>
<td>4-11</td>
<td>Student Placement Results</td>
<td>97</td>
</tr>
</tbody>
</table>
ABSTRACT

Postsecondary career and technical institutions are required to follow a set list of performance indicators in order to receive federal Carl Perkins funding (Perkins IV Accountability, 2009). Within those indicators includes measuring technical skills attainment, which the state of Mississippi chooses to utilize program-specific standardized assessments known as the MS-CPAS2 assessment. The purpose of this multi-site program evaluation was to determine which programs are meeting the assessment passing requirements and to determine how they are achieving success. The rationale for this study was to evaluate the components inherent in successful programs in order to aid other programs who may not be performing as well in the assessment reach the minimum requirements in order to secure federal funding.

Qualitative and quantitative methods were utilized for both raw data provided by the RCU and survey data collected by the researcher from the faculty and administrator participants of the selected programs. Results of this study indicated components of successful programs, perceptions of the assessment by the participants, and student factors that influence the assessment scores. Components included small class sizes, having necessary equipment, program-specific software, computers, providing a well-rounded instructional environment, aligning materials with curriculum, the use of hands-on activities, participation in clubs/organizations, and integrating program-specific certifications. Perceptions included a need for instructor participation in the update process of the MS-CPAS2 assessment, student accountability by offering student preparatory courses, and student recognition for outstanding scores. Student factors that affected assessment scores included ethnicity and student rating.

Recommendations were made by the researcher from the results of the analysis that included multiple program improvement plans that can be utilized as a how-to guide by faculty
and administrators, and assessment improvement plans for the RCU as provided by the participants’ responses from the survey data.
CHAPTER 1
INTRODUCTION

Statement of the Problem

Education in general has been viewed as a privilege and continues to be viewed as an opportunity in the American community college system. In 1922, Mississippi began a continuing legend of opportunity as the “first state to establish a system of public junior colleges” (Young & Ewing, 1978, p. xi). Originally seen as a continuation of local agricultural schools, two junior colleges in Mississippi were the first to enact Senate Bill 251 including Pearl River and Hinds. By 1929, a total of 11 junior colleges existed in Mississippi pin spotted in various locations throughout the state. Ten junior colleges were accredited by the Southern Association of Colleges and Schools by the end of the third decade of its existence. By 1954, the state’s junior college system encompassed a total of 16 junior colleges. The last junior college to join the group included Utica, which was an extension of the Hinds County Agricultural High School for Colored. However, by 1983, Utica Junior College became Hinds Junior College, Utica campus.

As these junior colleges began to flourish into offering various trades, industrial, and technical skills, new programs were emerging including allied health programs such as nursing. With this continuous growth of training being offered to the surrounding areas, junior colleges became community colleges in the 1980s era. Today, 15 two-year colleges exist all over the state of Mississippi including 14 community colleges and one junior college. Mississippi prides itself in a close-knit community/junior college system consisting of a State Board for Community and Junior Colleges and the Mississippi Virtual Community College (MSVCC) system. The MSVCC provides an opportunity for students to take online courses not only from the community college they are enrolled in, but from any community college instructors actively participating in this
capacity. This online system adds an additional layer of connectivity between the colleges, faculty, students, and the community.

In addition to the online and close-knit atmosphere of the community/junior college system in Mississippi, each of the 15 colleges offers two main areas of interest for students: academic programs and career and technical programs. Each of these two areas requires approximately 64 credit hours, give or take, to complete an academic Associate of Arts degree or a career and technical Associate of Applied Science degree. The academic programs act as pre-programs for transfer to senior universities; while the career and technical programs act as terminal, skills-specific programs for students seeking immediate employment. In addition, career and technical programs serve as feeder programs for articulation agreements set up with local high school career and technical programs and corresponding local colleges.

According to the Association for Career and Technical Education (2009), career and technical education refers to educating individuals at any age for immediate employment or supplemental training. As part of the federal Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV), postsecondary career and technical institutions must follow five core indicators of performance: technical skill attainment; credential, certificate, degree completion; student retention or transfer; student placement; and nontraditional participation and completion (Perkins IV Accountability, 2009). Falling within the first indicator of technical skills attainment, the state of Mississippi administers standardized assessments to career and technical post-secondary students that is aligned with the curriculum for each program called the Mississippi Career Planning and Assessment System, Second Edition (MS-CPAS2).

These MS-CPAS2 tests assess the quality of programs by administering area-specific assessments to graduating students enrolled in various career and technical secondary and postsecondary programs. The focus of this study was postsecondary programs in the state of
Mississippi, and many of these programs are not meeting the minimum overall passing rate as designated by the Research and Curriculum Unit’s Curriculum, Instruction, and Assessment unit (RCU CIA).

The mission of the RCU “is to conduct activities such as curriculum development, personnel development, program improvement, and research to improve career and technical education and workforce development in Mississippi” (Research and Curriculum Unit, 2010). The CIA unit “is responsible for the development or acquisition of a broad range of curriculum materials and media for use in Mississippi secondary schools, community/junior colleges, and vocational centers” (Research and Curriculum Unit: Curriculum, 2010, ¶1). In addition, the CIA also develops “vocational assessments that determine student mastery of technical skills in each program area” (¶2). Since 2001, the Mississippi Assessment Center (MAC), as a division of the RCU CIA, is responsible for “the development, administration, scoring, reporting and teacher training for the Mississippi Career Planning and Assessment System, Edition 2 (MS-CPAS2)” (Mississippi Assessment Center, 2010, ¶1). According to the MAC, assessment procedures for the MS-CPAS2 involve “development and field-testing the highest quality test items at appropriate Depth of Knowledge (DOK) that validly and reliably measure each student’s degree of technical skill mastery and academic attainment” (¶2).

Each year, the state passing score for each program evolves from specific passing rate per program, to last year’s and this year’s 60% cut-off score across the state for all programs. Students in one-year and two-year completer categories in each program are given the MS-CPAS2 upon completion of core program requirements. An average score for each group is then compared to the state minimum average. If the program does not meet the requirements, then the program director (which in many cases is the instructor as well) and instructor(s) must work out a documented plan of change with their local administration. If the program continues the next
year to fall below state minimum average, then leaders from the state department come in and take control of the program. If this continual rate of failure occurs yet a third year, the program and instructor(s) face termination. However, a number of various programs across the state have been successfully passing the MS-CPAS2 assessment. The purpose of this study was to evaluate the components inherent in successful programs.

**Purpose of the Study**

Seidman (2005) states that, “program evaluation should be ongoing to judge its [student success outcomes] effectiveness” (p. 311). Furthermore, “Looking at the data from course, program, and student retention perspectives can help a college determine whether or not courses are providing the necessary skills for students to success in the next level course” (p. 311). The purpose of this multi-site cluster program evaluation was to determine which programs are successfully meeting the overall requirements of the MS-CPAS2 assessment and how they are achieving success. This study focused on all post-secondary career and technical education institutions in Mississippi that are required to administer the MS-CPAS2 assessment to their students, including a wide variety of one-year certificate and two-year degree programs.

**Rationale**

The rationale for this study was to understand how programs are successfully passing the MS-CPAS2 exam, which in turn, meets the criteria for one of the five standards and measures provided by the U. S. Department of Education and Perkins IV funding. Without Perkins IV funding, many programs, if not all programs, will face termination. In fiscal year 2008, Mississippi received Perkins IV funds of $13,363,550, with a total number of 61,925 career and technical education students, of which 21,094 are post-secondary (Mississippi CTE, 2009). With such a large number of much needed funds and students, it is evident that community colleges are providing the services in which they are designed to do and that Mississippi cannot afford to
lose any more programs. Focusing on those successful programs and their instructional techniques in the state will hopefully serve as a how-to guide for great programs who may be passing in the other performance indicators but failing in the area of standardized testing.

Students are enticed by two-year public colleges for many reasons. These reasons range from gaining employability skills, upgrading skills, remediation, low tuition costs, and gaining transfer credits to a senior university (American Association, 2008; Association for Career, 2008; Boswell & Wilson, 2004; Wirt, 2000). Community colleges constitute nearly half of all U. S. undergraduates, approximately 46 percent, and first-time freshmen at 41 percent (American Association, 2008). In addition, community colleges offer an average annual tuition that almost one-third less than that of four-year public colleges (American Association, 2008).

Grubb and Lazerson (2005) point out that, “At the bottom level [of the American system of higher education] are the community colleges, with open access allowing second chances for students who did poorly in high school, who made mistakes in their earlier plans, or who have come to this country and need to start anew” (p. 10). This may be true but there is more to community colleges and to many it is not the bottom level. The authors use the word vocation or vocationalism, which traditionally refers to a specific occupation learned; a more recent term is career and technical education. Starting at the high school level, students can begin learning a specific skill in the career and technical education center. But more exclusively, “Career and technical education is about helping students, workers, and lifelong learners of all ages fulfill their working potential” (Association for Career, 2008, ¶ 1). According to the American Association of Community Colleges, Fifty-nine percent of healthcare workers, including nurses, close to 80 percent of firefighters, law enforcement officers, and EMTs obtained an education from a community college (2008). Yet, funding for many programs, especially those in career and technical education, faces extinction.
As with any arena of education, community and junior colleges receive their fair share of support and criticism. Supporters include those who exhibit an understanding for the underlying reasons for these post-secondary institutions. “Indeed, the one uniquely American type of institution—the community college—was founded in the 20th century to ensure open access to higher education for individuals of all ages, preparation levels, and incomes” (Eckel & King, 2004, p. iii). On the other hand, juxtaposing views have been made in regards to community college including comments that they are an Agent of capitalism, training workers to fit business and industry; it is a tool of the upper classes, designed to keep the poor, especially minorities, in their place by denying them access to the baccalaureate and, concomitantly, to higher-status positions in society. (Cohen & Brawer, 2003, p. 375)

However, the support for community colleges thrives in all sectors and positive results are overwhelming (American Association, 2008). Trachtenberg (2008), president and professor at George Washington University, states “They are to post-secondary education what jazz is to music,” continuing with, “They are among our lesser-appreciated and most important academic resources. We need to celebrate them and accord them the status they have earned” (¶ 4, 11). Furthermore, Miller (2008/2009) states that, “The role community colleges play in economic development must not be understated” (p. 6).

**Research Questions**

The following questions and related sub-questions were used to guide this research:

1. What are the components of a successful program?
   a. What instructional methods and materials are implemented by faculty in successful programs?
   b. In what ways are faculty preparing students to meet assessment standards?
c. How, if any, are classes structured to fit the objectives and competencies of the curriculum?

d. Are faculty and students actively participating in student organizations and/or certification exams directly related to their programs?

2. What are faculty and administrators’ perceptions of their responsibilities relative to program success and accountability mandates in relation to the assessment measures?

   a. How do faculty view their participation in professional development relative to their responsibilities as an instructor (i.e., mentoring, professional associations, outside educational courses, continuing education units)?

   b. In what ways are administrators involved in the process of preparing faculty for assessment delivery to their students?

3. What student factors influence performance on the program’s MS-CPAS2 assessment?

   a. What kind of relationship exists between student characteristics (i.e., gender and ethnicity) and performance on the assessment measure?

   b. Is there a relationship between students’ achievement in coursework (i.e., student rating) and their performance on the assessment measure?

   c. In what ways does student retention affect assessment results? (Student retention refers to retaining students for the duration of a program).

   d. In what ways can student assessment performance serve as an accurate predictor for student placement? (Student placement refers to students who are employed within their area of study within six months after graduation).

   **Significance of the Study**

   The significance of this study is to provide an understanding of what makes a successful program in the current accountability and assessment requirements for postsecondary career and
technical education programs. In turn, by evaluating the components of successful programs, the results are intended to be utilized as a guide for improving programs whose students may not be performing as well on statewide standardized assessments. The importance of passing these assessments is to secure the continuation of Carl Perkins funding and to prevent program closure because it may be failing in the technical skills attainment indicator set forth by the federal Carl Perkins Act of 2006.

In addition to providing a much-needed guide for career and technical programs, the significance of the study is to give contribution to the growing area of literature and research in community colleges in general. More specifically, the literature base for postsecondary career and technical education is limited and research into this area of education will provide insight for its successes in order to improve on its potential shortcomings or downfalls. Furthermore, assessment and accountability is an important aspect of education whether referring to the No Child Left Behind Act in secondary education or to the Carl Perkins Act in postsecondary career and technical education.

Researching successful postsecondary programs using the MS-CPAS2, will contribute to current literature in that it will provide a window into the post-secondary level of education as it relates to student learning outcomes and program accountability. Additionally, the results will provide a sense of relief and a way to improve for those programs that are not able to successfully pass a standardized test. Unfortunately, a limited amount, if any, of research exists on this level of education. Letting others know the pressures involved in teaching post-secondary CTE and keeping programs alive and successful may open more opportunities for further research with a positive outlook on high-stakes testing and a sense of relief that success can be achieved.
Limitations of the Study

Because the MS-CPAS2 is a state-specific test, created locally for the 15 community and junior colleges in Mississippi, results of this study may or may not be applicable to other states. Each state can choose the method of assessing the technical skills attainment performance indicator as outlined by the Perkins IV Act. Furthermore, the researcher brings in her own biases to the study because she is currently employed in the community college system of Mississippi; however, her particular place of employment did not fall into the selected 13 programs.

Another limitation of this study was the limited amount of participants. In this study, the sample size was limited because of purposeful sampling techniques incorporated by the researcher in regards to the scope of the selection process of programs. However, of the 13 selected programs, six program areas existed among the ten community colleges and faculty from all six programs areas responded to the survey as well as administrators from all ten colleges.

In addition to the sample size, the scope of the study was limited to programs deemed successful by the researcher. Expansion and comparison to programs that may not be labeled as successful can provide several characteristics that may not be evident with the research of only successful programs. Also, programs that are utilizing certifications instead of the MS-CPAS2 assessment were not included in the study but would provide valuable results as to what instructional methods are being used to pass the certifications. This comparison, however, reaches beyond the scope of this particular study and would require expansive research into all 15 community colleges and over 350 existing Career and Technical programs within the state of Mississippi alone.
Definitions of Terms

CIA—Curriculum, Instruction, and Assessment unit, which is part of the RCU and responsible for providing curriculum creation and management as well as assessment management and professional development for instructors across the state of Mississippi.

DOK—Depth of Knowledge is utilized to rate the level of knowledge of questions generated for the MS-CPAS2 assessment. DOK includes four levels: 1—recall and reproduction; 2—skills and concepts; 3—strategic thinking; and 4—extended thinking (Depth of Knowledge, 2006).

MAC—Mississippi Assessment Center, which is part of the RCU CIA unit responsible for researching and analyzing the MS-CPAS2 assessment.

MS-CPAS2—Mississippi Career Placement and Assessment System, Second Edition. Assessment utilized in Mississippi in many secondary and postsecondary career and technical education programs to satisfy the assessment measure and administered by the RCU CIA and analyzed by the MAC.

Student Placement—refers to students who are employed within their area of study within six months after graduation.

Student Rating—The level that instructors rate their students before testing begins. Scores are rated according to their overall performance in the program and is equivalent to Grade Point Average on a scale of one to four, with four being the highest (MS-CPAS2, 2010). The scale includes:

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<th>MS-CPAS2 Score Range</th>
<th>Rating Equivalency</th>
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<tr>
<td>Below 50%</td>
<td>1</td>
</tr>
<tr>
<td>50% - 70%</td>
<td>2</td>
</tr>
<tr>
<td>71% - 80%</td>
<td>3</td>
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<tr>
<td>Above 80%</td>
<td>4</td>
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RCU—Research and Curriculum Unit as part of Mississippi State University in Starkville, MS.

Student Retention— refers to retaining students for the duration of a program.
CHAPTER 2

LITERATURE REVIEW

Introduction

The following literature is broken into five main sections including historical context of community and junior colleges, underlying theories, federal laws, high-stakes testing, and accountability. Underlying theories is broken into two categories: student retention and the curriculum. Four particular laws of interest pertaining to student learning and standardized testing include the Carl D. Perkins Career and Technical Education Improvement Act of 2006, Higher Education Act, No Child Left Behind Act, and the latest American Recovery and Reinvestment Act of 2009. Within high-stakes testing, teacher implications and student outcomes need illumination and provide clarification to both sides of the testing process. Accountability is present in education from the federal level all the way down to each school and is an integral part of the federal laws and funding in education.

Historical Context

Junior colleges can be defined as, “an institution offering two years of instruction of strictly collegiate grade” (Bogue, 1950, p. xvii as cited in Cohen & Brawer, 1989 & 2003, p. 3). The term community college is defined as “any institution regionally accredited to award the associate in arts or the associate in science as its highest degree” (Cohen & Brawer, 2003, p. 5). More often than not, societal forces play a role in college selection for many. Although history tells us that community colleges originated for the purpose of providing the first two years of general education courses for universities, community colleges have been coined the developmental schools or the schools that low-income students attend. “Yet both scholars and laypeople often know very little about them, believing they are only a peripheral part of the collegiate system, a catch basin for those few students unable or unwilling to enter ‘regular’
colleges” (Dougherty, 1994, p. 3). Furthermore, hegemonic forces have played a part in early historical times of two-year colleges in that university leaders were wanting general education courses set apart from the senior university in efforts to separate the elite faculty and student body from those who are not.

Initial thoughts of the American junior college began as early as 1851 by Henry Tappan, continuing in 1859 by William Mitchell, and also in 1869 by William Folwell (Cohen & Brawer, 2003). These individuals believed that “universities would not become true research and professional development centers until they relinquished their lower-division preparatory work” (Cohen & Brawer, 2003, p. 6). Others, including Henry Barnard, John W. Burgess, William Rainey Harper, and Alexis Lange promoted the idea that two-year colleges would be developed as “upward extensions of secondary schools” (p. 8). In 1892, Harper, first president of the University of Chicago, was one of the original pioneers who formulated the idea of separating students into four groups of freshman, sophomore, juniors, and seniors, and undergraduate colleges into two groups, including lower junior colleges and upper senior colleges (Diener, 1986).

The idea of junior colleges developed because of the overwhelming delegation of freshman and sophomore preparatory work to that of newly created two-year colleges along with the expansion of research in universities. “By limiting the curriculum to the first two years, the colleges required fewer teachers, fewer resources, and fewer students to operate” (Community Colleges, 2008, ¶ 11). The separation of undergraduate colleges led to the junior and senior college. The term junior college generally referenced the smaller, privately-supported schools in the 1950s and 60s while the term community college referred to those schools that were more publicly funded. However, “by the 1970s, the term community college was usually applied to both types” of schools (Cohen & Brawer, 2003, p. 4). Additional terms used to describe
community or junior colleges include city college, country college, branch campus, technical institute, vocational technical and adult education center, people’s college, democracy’s college, contradictory college, opportunity college, and anti-university college.

Vocational education has been in existence early on with the development of the two-year college system. This tier of the community college has been coined as *terminal* meaning “all studies not applicable to the baccalaureate, but programs designed to lead to employment” (Cohen & Brawer, 2003, p. 222). Other terms that have been used to describe vocational education include *occupational, career*, and a combination of *vocational-technical*. Funding for vocational education began as early as 1917 with the Smith-Hughes Act which continued into the early 60s followed by a series of vocational education acts (e.g., The Vocational Education Act of 1963, the 1968 Amendment to the Vocational Education Act of 1963). Additional programs that emerged include the Comprehensive Training and Employment Administration in 1973, the Job Training Partnership Act of 1982, and the Carl D. Perkins Vocational Education Act of 1984 (Cohen & Brawer, 2003).

The first public junior college on record was a continuation of Joliet High School by Principal J. Stanley Brown. In 1901, Joliet Junior College, located in Illinois, opened as “the country’s self-proclaimed first independent public junior college” (Brint & Karabel, 1989, p. 25). The initial enrollment for the college was only six students (Joliet Junior College, 2009). The original image of a two-year college degree program was to set apart “the first two years of undergraduate study apart from upper-division and graduate programs” (Thelin, 2004, p. 250). Junior colleges were not only serving as a transfer school, but also providing guidance to students to prepare them for the latter years of their degrees (Diener, 1986). “By 1915 there were more than 70 junior colleges in the United States” (Junior college, 2008, ¶ 2). Approximately
twenty years after the first two-year college opened, 77 percent of states supported a two-year college (Cohen & Brawer, 2003).

By 1929, approximately six states offered ten or more public junior colleges, and “only in Mississippi and in the three Texas colleges linked to Texas A&M did the zeal for higher education become directly linked to the state’s economic interests” (Brint & Karabel, 1989, p. 28). However, an array of community colleges were offering a variety of remedial courses and therefore being labeled as remedial schools. In turn, “four-year institutions lost a great deal of confidence in the community college as reliable transfer institution” and accountability became a larger issue in the community college setting during the late 1970s (Thelin, 2004, p. 333). Accountability in the past was viewed as a way to demonstrate “increased social mobility an increased quality of life;” however, today’s standards of accountability are to assess or evaluate the “return on investment” (Laanan, 2001, p. 60).

By the 1930s, these two-year colleges were providing vocational or job training skills to meet the needs of surrounding communities and a total of 440 junior colleges existed (Cohen & Brawer, 2003). Post-World War II efforts gave rise to the need for “greater access for all citizens to higher education, greater opportunity for technical and job skill learning, greater availability of programs and services for adults” (Diener, 1986, p. 8). Further development of two-year degrees sprang from the idea of grades 13 and 14 after high school. Much of the junior college growth came from the Midwest, the Southwest, and the Far West, particularly in California, which currently holds the record for the largest community college system of 111 colleges (Brint & Karabel, 1989; Special Analysis, 2008).

According to Dougherty (1994), World War II played an effort in the establishment of the vocationalism of the community college system. Post-war efforts led to the rise of increased labor market, and vocational education began to flourish by the 60s and 70s. In addition, “baby
boomers began reaching college age, and the number of community colleges and enrollments soared” (Kasper, 2002/2003, p. 15). These terminal programs provided a large market for businesses by providing skilled workers without the cost of training. In addition, many schools “started to forge relationships with employers” in order to provide a skilled labor force with adequate and precise training (Dougherty, 1994, p. 198).

With World War II ending in 1945, the influx of women working during the time period of 1939 through 1945 was great in size (Solomon, 1985). However, postwar efforts led to the need for male war veterans to have an opportunity to obtain their old jobs and/or continue their high school education. The enactment of the Servicemen’s Readjustment Act (G. I. Bill) in 1944 provided a way for male war veterans to receive federal funding for attending college. This shift of male college enrollees led to the idea that “Women suffered a large setback when the operation of the GI Bill reduced female access to higher education” (p. 189). However, funding for community colleges was not as visible until Pell Grants, originally called the Basic Educational Opportunity Grant program, came into existence in 1972 (Cohen & Brawer, 2003).

Another factor affecting women in education, specifically in relation to receiving an education in the community college sector includes the political arena of the Equal Employment Opportunity Commission of 1965. The primary purpose of the EEOC was to ensure no discrimination based on various factors; however, “it refused to consider cases of economic discrimination against women” (Solomon, 1985, p. 201). Conversely, women did not receive a break until Title IX came into play in 1972 which opened the doors for women’s collegiate championships, which in turn brought monetary value to women’s sports. By the 1980s, women constituted for more than half of the enrollment of community colleges (Kasper, 2002/2003).

In the late 1960s, the theory behind setting forth and opening two-year colleges was based on the idea states were wanting “low-cost, comprehensive, community–oriented, two-year
colleges… located within commuting distance of every citizen” (Yarington, 1969, p. x).

Commuting distance meant access for students who would not be able to attend college otherwise (Cohen & Brawer, 2003). Two-year colleges were being built during the 50s and 60s in locations that did not have senior universities in close proximity and in an area that supported a fairly large amount of people. Two-year colleges were once again serving the surrounding community by providing a means for a college education. A study completed in 1972 by M. J. Cohen viewed the location that community colleges were being built in relation to a state’s population density. Results from the study concluded that approximately 1,074 two-year colleges “would effectively serve the nation” (Cohen & Brawer, 2003, p. 17). Indeed, 27 years later, 1,075 two-year colleges were operating in 1999.

Community colleges, as outlined by Dougherty (1994), “democratize college access by being plentiful, nearby, and inexpensive, by offering vocational education and adult education in addition to more traditional college offerings, and by adhering to an ‘open door’ admissions policy that imposes few entry requirements” (p. 17). Democratizing college access would mean allowing for equality among students wanting to attend college. However, community colleges have been labeled by some as remedial schools, and colleges that only low-income families can afford. The works of William Rainey Harper in relation to two-year colleges has been viewed as a way to form an “elitist model” in which senior universities would serve only those students who have already completed their general education courses and “the university would be free to pursue its higher tasks of research and advanced professional training” (Brint & Karabel, 1989, p. 25).

Student success at the community college level is of great importance. Knowing the student population is a key to the growth of two-year colleges. Meritocracy can be described as “the belief that student advancement in an educational system is based on objective measures of
achievement and attainment” (Levinson, 2005, p. 93). Being a source of open access for all, community colleges provide a way for all who aspire to go to college, an opportunity to fulfill that need. Furthermore, Levinson states that “selection simply on the basis of merit runs the risk of reproducing a select, definitive set of social participants” (p. 93). Without regards to merit, two-year colleges provide a unique role of providing guidance to students “such as tutoring services, study skills, and an in-depth orientation toward college life” (p. 95). Along with the idea of gaining students through the use of open access policies and providing guidance to students who are mostly first-time college students, student organizations offer a venue for students to participate in a community-wide effort (Eklund-Leen & Young, 1997).

Remediation at the community college level has been a concern since the 1970s with the rise of “a severe decline in the scholastic abilities of high school graduates” (Cohen & Brawer, 2003, p. 260). As senior universities raise the bar for student access, community colleges have become the favorable choice for students who need remediation, “the essentials of reading, writing, and arithmetic” (p. 262). In turn, remediation has become synonymous with two-year colleges (Levinson, 2005). Increasingly, community colleges have become the sole provider of remedial courses “although to some people this fortifies the image of community colleges as dumping grounds for the educationally challenged, other observers suggest that community colleges can embrace this role in a create work that spurs baccalaureate completion” (p. 110).

Baker (1994) states that, “The community college is a social system because its internal functions and parts are affected by outside forces, and the institution in turn affects its external environment” (p. xii). Students are interested in two-year colleges for reasons such as upgrading their skills, low tuition costs, employability skills, remediation accessibility, and obtaining transfer credits (American Association, 2008; Association for Career, 2009; Boswell & Wilson, 2004; Wirt, 2000). According to the American Association of Community Colleges (2008), 46
percent of all United States graduates attend community colleges, including 41 percent of first-time freshmen. Along with these staggering numbers, the annual cost of tuition for a two-year college is generally one-third less than four-year public colleges.

A rising shift in community college degree allotments has allowed room for a growth of baccalaureate degrees at the community college level. History has exposed that “change in the past has been more evolutionary than revolutionary” (Floyd, 2006, p. 71). The idea of obtaining a bachelor’s degree at the community college level has been in existence since the early 1980s; however, the influx of community colleges wanting to implement a four-year degree has become more popular. As stated by Floyd (2006), “Achieving the baccalaureate through the community college is an appropriate and increasingly popular pathway for large numbers of students in the twenty-first century” (p. 71). According to the Community College Baccalaureate Association (CCBA), “every person should have an opportunity to pursue the baccalaureate degree at a place that is convenient, accessible and affordable” (2009, ¶ 3).

However, others view the idea of transforming two-year community colleges into four-year institutions as a way to “establish a bottom stratum of former two-year colleges among the senior institutions” (Cohen & Brawer, 2003, p. 386). Dougherty (1994) suggests the idea of merging community colleges with universities as a branch instead of creating four-year institutions. Further thoughts include increasing the transfer rate into a senior university and minimizing students from deterring “by the allure of vocational education leading to immediate employment” (p.266). In addition to the development of four-year community colleges and branches, Bahr (2009) discusses a pattern of lateral transfer as “second only to upward transfer” (p. 271). The idea that students hop from program to program with one or multiple community colleges gives an underrepresentation of the amount of student completers. However, a study conducted by Gentry, Peters, and Mann (2007) with high school students, discusses how they
enjoyed the environment of career and technical education, specifically the autonomy of learning a specific profession.

Although a need for federal funding and tuition assistance was apparent for two-year college students, “student abuse of the financial aid system has been a persistent problem” as well with the existence of community colleges (Cohen & Brawer, 2003, p. 211). The authors argue that students in the late 80s were receiving financial aid but continued to have debt. Furthermore, it has been noted that “students enroll merely for the funds available to them and that student aid thus represents another form of welfare payment” (p. 211). Students receiving federal monies are given a specific amount per semester, which must be used to cover tuition and should be used to cover the expense of books and materials. Remaining monies are given to the students in the form of a refund check that students can cash. The original intent was to use the money for operating expenses such as travel or living expenses while attending school.

Currently, community colleges comprise sectors in all states and even in foreign countries. California still holds the record for the largest community college system with approximately 111 total colleges and 23 percent of the nation’s community college students (Special Analysis, 2008). With such a large number of students, it is no surprise that funding for community colleges is far less than four-year institutions. More specifically the average total expenditures for each full-time-equivalent (FTE) student is one-third that of four-year institutions ($10,500 compared to $31,900). Reasons for this reduction in cost include, “a greater proportion of faculty at 4-year institutions have doctorates, are employed full time, and spend a greater portion of their time on research and noninstitutional activities than community college faculty” (¶ 4).

What would the higher education system of today be like without the existence of two-year colleges? This question raises a plethora of answers that only history can validate. The
historical value of the community college has set forth remarkable, groundbreaking ideas for the higher education system such as providing open access to everyone. As stated by Twombly and Townsend (2001), “community colleges have been remarkably successful institutions within a policy environment that has, for the most part, failed to recognize their importance” (p. 291).

“I believe we see now that the advent of the Age of the Junior and Community College signaled the opening of another and distinctive chapter in the evolutionary development of American higher education” (Diener, 1986, p. 17). However, it is an area of higher education that has failed to reach the interest of researchers and continues to be seen as the last resort for students who cannot handle four-year institutions, whether on the basis of money, remediation, location, or standardized test scores. This ideology that has been painted by our society has become a hindrance for the growth of community college education in the past, present, and future.

Underlying Theories

Student Retention

Student retention is a major factor in the measures and standards of career and technical education. Hagedorn (2005) describes student retention as, “staying in school until completion of a degree” (p. 91). Another term called student departure is often used to describe retention and is “as varied as the institutional settings from which it arises” (Tinto, 1987b, p. 4). Seidman (2005) defines retention as “student attainment of academic and/or personal goals(s)” (p. 296). Hagedorn (2005) further describes two basic types of students as being the college persister and the nonpersister. “A student who enrolls in colleges and remains enroll until degree completion is a persister. A student who leaves the college without earning a degree and never returns in a nonpersister” (p. 89).
Tinto (1987b) gives six basic reasons for student departure including “adjustment, goals, commitments, uncertainty, congruence, and isolation” (p. 4). In addition, for institutions to provide more effective ways of increasing student retention, they must develop “effective educational communities which seek to involve all students in their social and intellectual life and which are committed to the education of students, not their mere retention” (p. 3). Within effective retention at institutions, students need to know that the college wants them to succeed and that the institutional environment is conducive for learning by providing proper support and guidance (Tinto, 2000). Further research into student retention shows a decrease among low-income students (Tinto, 2004). Funding and overall high school preparation are two factors influencing the departure rate of low-income students.

Tinto (1987a) created a theoretical integration model that increases student retention. The institution plays a crucial part of the student’s progression through school and in building much-needed social interaction. “Tinto postulates that academic and social integration influence a student’s subsequent commitments to the institution and to the goal of college graduation” (Braxton & Hirschy, 2005, p. 67). Areas include the time before students are admitted into college, a thorough orientation to the school, and their first semester of college. Schools should offer assistance to students who are trying to make the transition from high school to college. Colleges should also promote contact programs that allow students to become familiar with faculty or staff on campus, and to promote their social skills and social interaction. Based on results of a study focusing on the institutional environment conducted by Centra and Rock in 1971,

A college environment particularly effective in fostering learning is one with the following characteristics: frequent student-faculty interaction, with faculty perceived as being interested in teaching and treating students as individuals; a relatively flexible
curriculum in which students have freedom in choosing courses and can experiment before selecting a major; an intellectually challenging academic program with a stress on intellectual rather than social matters; and strong cultural facilities. (As cited in Pascarella & Terenzini, 1991, p. 78)

Effective counseling and guidance programs are beneficial to the students as well. Indicators of student retention need to be developed at the community college level. These indicators help build a strong student retention program for the college (Wild & Ebbers, 2002).

Bean (2005) describes nine themes that effect student retention including student “intentions, institutional fit and commitment, psychological processes and key attitudes, academics, social factors, bureaucratic factors, the external environment, the student’s background, and money and finance” (p. 218). One of the major underlying differences with these nine themes and Tinto’s past models of student retention is that Bean discusses the attitude of the student and the attitudes of those who prompted the student to depart. However, Bean concludes that “student retention is a win-win situation: the student gains an education and increased lifetime earnings and the institution educates a student, fulfilling its mission, and gaining tuition income” (p. 237).

Student persistence is another factor affecting student retention and academic attainment (Pascarella & Terenzini, 1991). “Persistence, whether at a particular educational institution or in the postsecondary system generally, is obviously an important determinant of a student’s eventual attainment levels” (p. 370). Academic attainment can be affected by students who choose to go to a two-year college before entering a four-year institution. These effects can be positive or negative; however, many students do not transfer to obtain a bachelor’s degree once completing a two-year degree college program. The quality of the institution also has an effect on student retention and attainment because college rankings has allowed for numerous schools
to be considered as higher quality than others and granting admission to only those who meet the qualifications. This selective process may have an inadvertent effect on those aspiring for college and never attending because they were not accepted into a quality school.

Seidman (2005) presents a formula for successful retention. The formula reads that retention equals early identification plus early, intensive, and continuous intervention (p. 296). Early identification in the formula is defined as “the earliest possible time of a student who is potentially at risk for being unsuccessful at the college, either academically or personally” (p. 297). Early intervention is defined as “starting an intervention at the earliest time possible after identification of a problem” (p. 298). The next variable in the equation is intensive intervention, which is “creating an intervention that is intensive or strong enough to effect the desired change” (p. 298). And lastly, continuous intervention “persists until the change is effective” (p. 298). The student retention data that is collected from such a program can provide valuable insight into the future of an institution including much needed data such as graduation rates and changes that may need to be implemented within the institution itself to decrease student departure and increase student attainment.

However, in order for instructors to apply the curriculum in such a way to be successful at passing a standardized assessment, they must understand their student population and be able to apply the proper instructional techniques necessary for success. Ortiz (1995) states that, “Practice guided (not dictated) by theory allows professionals to consider a variety of needs in ways that promote success, however it is defined by individual students” (p. 63). When discussing student development theory, many areas of interest apply. For example, the economic benefit on student departure as outlined by Tinto (1987b) offers a long-term benefit if students decide to complete college (Becker, 1964; Braxton, 2003; as cited in Braxton & Hirschy, 2005).
Another theorist applies ten variables that influence student satisfaction including routinization, participation, instrumental communication, integration, distributive justice, grades, practical value, development, courses, and membership in campus organizations (Bean, 1980, 1983; as cited in Braxton & Hirschy, 2005). Within the psychosocial realm, Astin (1984) states that, “Student involvement refers to the amount of physical and psychological energy a student devotes to the academic experience” (p. 297, as cited in Braxton & Hirschy, 2005, p. 64). Bean and Metzner (1985) have discovered within the sociological realm that nontraditional students are more likely to leave school because of environmental factors than academic factors. The theory of student departure from commuter colleges can be altered significantly by the external environment, as well as some internal issues, and student characteristics include items such as self-efficacy and motivation (Braxton, Hirschy, & McClendon, 2004; as cited in Braxton & Hirschy, 2005).

Further research into student development conducted by Strange (2004) looks at this theory through the different types of generations students are in, including baby boomers and the Millennial generation, born since 1981. The human development side of psychosocial-identity formation is discussed including “age-appropriate development tasks reflective of maturation at various points in the life span” (Chickering and Reisser, 1993; Neugarten, 1968; Erikson, 1950; & Levinson and Levinson, 1996; as cited in Strange, 2004, p. 50).

Tinto (1987b) states that “effective retention is possible only when retention per se is no longer the goal of retention programs” (p. 3). The author summarized the role the institution plays in student retention and improvements that must be made including more effective admissions, early assessment of students and assistance, orientations for students, increased availability of student life programs during a student’s first year, including the first six weeks of their freshman year. In general, the institutional environment must be one conducive to learning
and students should be matched to the environment that provides the best opportunity for the student and the least opportunity for early student departure (Seidman, 2005).

Tinto (2005) offers a model of institutional action for student success, which was utilized in this study. This model entails that, “Institutional commitment to student success in turn sets the tone for the expectational climate for success that students encounter in their everyday interactions with the institution—with its policies, practices, and various members (faculty, staff, administrators, and other students)” (Tinto, 2005, p. 326). This model fits into the category Pascarella and Terenzini (1991) refer to as college impact models, which focus more on the “sources of change” (p. 18).

The Curriculum

Postsecondary career and technical curriculums in Mississippi previously focused on Bloom’s Taxonomy. Now, they are designed with specific learning objectives in line with Norman Webb’s Depth of Knowledge learning levels, which include four levels: recall, skill/concept, strategic thinking, and extended thinking (Depth of Knowledge, 2006). In turn, the MS-CPAS2 assessment is based upon those objectives. As stated by Cohen (1971), objectives contain, “the type of behavior the student is to exhibit, the criterion of performance and the conditions under which the performance will occur” (p. 24). Tyler (1971) states that during the process of creating objectives, “It is very important that you have clearly in mind your conception of the learning process and the process of education” (p. 147).

Schwartz (2006) states that two groups will be utilizing a curriculum including the users (teachers) and the receivers (students), but that the difference should be distinguished. He continues by introducing a model he labels as a rehearsal curriculum that “prepares teachers for the teaching experience by prompting them to go through the same process of learning that will be used in the classroom” (p. 454). The rehearsal curriculum is broken into two stages: 1. teacher
experiences—disjuncture, research, then innovation; 2. Teacher creates for students—disjuncture, discovery, then resolution.

The MS-CPAS2 assessment is a tool used in Mississippi to measure program outcomes and accountability based on the curriculum. However, Pinar (2004) states that curriculum theory “rejects the current ‘business-minded’ school reform, with its emphasis on test scores on standardized examinations” (p. 16). Further into Pinar’s curriculum theory describes a need for genuine learning to occur instead of conforming to external aspects. In 1977, The Carnegie Foundation for the Advancement of Teaching discussed six major external influences on the curriculum including general influences (the public, media, churches), opportunities for graduates, intellectual and academic influences, inputs (budgets high school contributions), regulation (governments, accrediting agencies, courts), and procedural influences (transfer students, competition). The Foundation continued by stating, “To a remarkable degree, the curricula of American colleges reflect the concerns of the general society and of the institutions that shape public opinion” (p. 30).

**Federal Laws—Funding and Accountability**

The Carl Perkins Act, Higher Education Act, No Child Left Behind Act, and the most recent American Recovery and Reinvestment Act are provided as underlying federal laws for our education system today. The reauthorization of the Carl D. Perkins Career and Technical Education Improvement Act of 2006 serves as a funding source specifically for community colleges and deserves attention as part of the higher education system. The reauthorization of the Higher Education Act in 2008 was examined as it provides funding for higher education institutions including federal dollars for student tuition. The No Child left Behind Act was analyzed within the constructs of this study because of its importance with accountability and similarities with Perkins IV (Mississippi Career Planning, 2008). Lastly, the newest policy that
emerged in 2009 with our newly elected President is the American Recovery and Reinvestment Act.

These four acts are of particular importance within the community college sector in that they each play an important role in higher education funding and accountability, which is the foundation for receiving funding for community colleges as well as other postsecondary and secondary institutions (Field, 2008, p. A32; MDE, 2009; Perkins IV Accountability, 2009; The American Recovery, 2009). Funding has always been an issue of importance in education. However, with the current state of the American economy, one may ponder what the future holds for our educational system. “Assuming that, at the very least, the United States is experiencing a severe recession with a good possibility that an economic depression will occur, an examination of the impact of depressions on higher education is in order” (Galambos, 2009, p. 2).

Carl Perkins Act

Funding for secondary and postsecondary vocational funding began with the Smith-Hughes National Vocational Education Act of 1917 to promoted vocational training in three areas: agricultural, home economics, and trade and industrial settings (U. S. Department of Education, 2005). Then, the Area Redevelopment Act of 1961, followed by the Manpower Development and Training Act of 1962, and then the Vocational Education Act of 1963 were all established to carry on the idea of promoting rural agricultural areas with vocational training (Bachmura, 1963). Soon after, the Vocational Education Amendments of 1968 were enacted to amend the Vocational Education Act of 1963 (Perkins, 1968). The amendments included general provisions, state vocational education programs, research and training in vocational education, exemplary programs and projects, cooperative vocational education programs, work-study programs for vocational education students, curriculum
development in vocational and technical education, training and development programs for vocational education personnel, and miscellaneous provisions. (p. 1)

In addition to the first amendments of 1968 a second set of amendments were established as the *Educational Amendments of 1976* (Stevenson, 1977). Changes included areas in “evaluation, sexual bias and stereotyping, special populations (disadvantaged, handicapped, English deficient), and program improvement (research and curriculum)” (p. 5). The first *Carl D. Perkins Act* was later authorized in 1984. This was the original Perkins Act and was then reauthorized in 1990 as the *Carl D. Perkins Vocational and Applied Technology Act*, or Perkins II. The third Perkins Act was reauthorized in 1998 as the *Carl D. Perkins Vocational and Technical Education Act* (U. S. Department of Education, 2003).

According to Public Law 105-332, the purpose of the Carl Perkins Act is to, “Assess the effectiveness of the State and statewide program in vocational and technical education, and to optimize the return of investment of Federal funds in vocational and technical education activities [sec. 113(a)]” (U. S. Department of Education, 2003). As of July, 2006, the act was reauthorized and referred to as the *Carl D. Perkins Career and Technical Education Improvement Act of 2006*, or Perkins IV (Carl D. Perkins, 2009; Peckham, 2006).

The purpose of Perkins IV is to “develop more fully the academic and career and technical skills of secondary education students and postsecondary education students who elect to enroll in career and technical education programs” (Public Law 109-270, 2006, p. 684). Furthermore, to support accountability for the Perkins IV Act, those receiving monies must document progress “to optimize the return of investment of Federal funds in career and technical education activities” (p. 696). Activities supported by the Perkins IV Act include program improvement, strong accountability, academic integration, access for special populations,
curricula improvement, equipment purchasing, guidance and counseling services, professional
development, and student organization support (Background, 2009).

Fischer (2007) discusses the negative feedback concerning Carl Perkins funding from
President Bush, and that funds for 2008 may be cut in half allocating only $617.4 million to
career and technical education. Requested funds have decreased from 1,303.7 billion in 2006 to a
predicted 617.4 in 2008 (Fiscal Year 2008 Budget, 2007). However, the 2008 budget included
1,271.7 billion and no requests had been made in 2008 for the 2009 fiscal year (Fiscal Year 2009
Budget, 2008). However, since the budgetary plans in 2008, the 2009 and 2010 budgets for
Career and Technical Education funding had indeed remained the same as 2008 at an estimated
1,271.7 billion dollars (Department of Education Fiscal Year 2010). According to Fischer,
President Bush stated that Perkins, “…produced little or no evidence of improved outcomes for
students despite decades of federal investment” (p. 31). However, President Obama’s view is that
Community colleges are a vital component of our higher education system, serving 12
million people each year, almost half the undergraduate students in the U.S. Without
community colleges, millions of people would not be able to access the education and
skills they need to further education or succeed in the workplace. (College Affordability
Fact Sheet, p. 2)

Of the approximate $1.3 billion dollars provided to all 50 states in 2006, Mississippi
received approximately $15,447,368 Carl Perkins federal dollars, which is now down to
$13,363,550 for the 2008, 2009, and estimated 2010 Mississippi allocations (Hyslop, 2006;
According to the Fiscal Year 2008 and 2009 Budget Summaries, federal dollars for Perkins IV
have decreased since 2006 and a budget request for 2009 remained undecided for the first quarter
of the year. According to the U.S. Department of Education, the total budget for 2008 and 2009
were equal and the budget for FY2010 will be equivalent to 2009 (Department of Education, 2010). However, the House and Senate budget committees worked toward a finalized budget in 2009, which was to include an increased budget of $4.4 billion for fiscal year 2009 (Federal Budget, 2009).

According to Peckham (2006), “Communities receiving Perkins funding must establish performance measures and indicators, and states must evaluate local programs against set performance goals” (p. 2). Educational accountability is increasingly sought after with the newest Carl Perkins Act, especially at the postsecondary level since community colleges are the primary beneficiary of the monies (Dervarics, 2006). “States and programs that fail to meet at least 90 percent of any performance measure for any core performance indicator must successfully implement an improvement plan within one year or risk losing a portion or all of their federal Perkins funds” (Turner, 2006).

Hyslop (2006) discusses areas that would be directly impacted if Perkins funds were not available. Those areas include less professional development, less student support, less flexibility, fewer career pathways, and overall more state losses. Southeastern Louisiana University currently has an associate of applied science degree in industrial technology with four areas or concentrations: construction technology; design drafter technology; occupational safety, health, and environment; and supervision, all of which are funded by Carl Perkins monies (Associate of Applied Science, 2010). These degree areas offered at SLU have a direct impact on the energy industry of Louisiana as well as construction needs for previous and future hurricanes. Carl Perkins also provides funding for tech prep programs and special support services for students.

Turner (2006b) sums it up in his article, “Celebrate, But Don’t Wait.” Although the career and technical education (CTE) community should be proud and grateful for receiving the
2006 Carl Perkins Act, the community needs to continue making Congress aware of the importance of CTE and that funding is important. Turner also suggests that the CTE community stay active in ACTE and encourage others to join the fight.

**Higher Education Act**

The U. S. Department of Education, originally called the Office of Education, began operating in 1867 with the establishment of land grant colleges made possible by the original *Morrill Act of 1862*. From then, the second *Morrill Act of 1890* gave administration responsibilities to the Department of Education. Federal support continued with the 1917 *Smith-Hughes Act*, and post-World War II efforts lead to *The Lanham Act in 1941*, *The George-Barden Act in 1946*, and the Impact Aid laws of 1950 (The Federal Role, 2008). The National Defense Education Act was put into place in 1958 due to the Cold War and the launch of Sputnik. After the *Civil Rights Act of 1964* was passed, the *Higher Education Act* was authorized in 1965. In 1972, the *Rehabilitation Act* was created, “which prohibited discrimination based on race, sex, and disability” (¶ 8).

In August of 2008, the Higher Education Act of 1965 was reauthorized under the new name of *Higher Education Opportunity Act of 2008* (ACE Analysis, 2008). Major changes with the new authorization include areas of college costs, accreditation, student financial aid provisions, key disclosures and compliance provisions, and student loan provisions. One of the requirements is that “the top 5 percent of colleges that have the greatest cost increases for their sector to submit detailed reports to the secretary of education explaining why their costs have risen and what they will do to hold costs down” (Dessoff, 2008, p. 34). National lists will be available to the public outlining these schools with the highest tuition and fees (ACE Analysis, 2008). The new Act has also put into place ways of increasing accountability. Furthermore, Pell
Grants will be offered on a yearly basis to reduce the time it takes for students to obtain a degree, including an easy-to-use, two-page Federal Student Aid application called the *EZ-FAFSA*.

Within the rules and regulations of the Higher Education Act of 2008, accountability has become a bigger issue for higher education. The new Act “will double colleges’ reporting requirements, making them disclose considerably more information about their graduation rates, grand aid, and—perhaps most significantly—the success of their teacher-training programs” (Field, 2008, p. A32). In addition, data for teacher licensure and certification exams are required for accountability purposes. However, funding remains the current event for all sectors of higher education today. “A November *New York Times* headline captured the reality for all of us in higher education: ‘Tough Times Strain Colleges Rich and Poor’” (Gann, 2009, p. 16).

**No Child Left Behind Act**

Initiated by President Bush in 2001, and a reauthorization of the Elementary and Secondary Education Act (ESEA), the No Child Left Behind Act (NCLB) has a goal of establishing, “…solutions based on accountability, choice, and flexibility in Federal education programs” (MDE, 2009). Although NCLB focuses on kindergarten through high school programs, the accountability factor in education are congruent with the standards and measures carried out for other educational funding programs whether secondary or postsecondary and are worth mentioning for the constructs of this research.

In addition, community colleges have been viewed as grades 13 and 14 of high school, continuing on into yet another level of education that closely match standards and measures set for program funding and accountability (Cohen & Brawer, 2003; Brint & Karabel, 1989). With such high standards of accountability set on school systems, the National School Boards Association (NSBA) wants the reauthorization of the NCLB Act to change in order to add more
flexibility in the measurement of Adequate Yearly Progress (AYP) including an option for alternative ways to quantify it (“No Child Left Behind,” 2007).

Wagoner (2007) is a seventh-grade English teacher at a high-needs school. She argues that NCLB is increasing the instructor turnover rate due to the complexity of the high-stakes testing requirement. “We have been a high-needs school (25 percent special needs, 25 percent ESOL, 40 percent students of color) the whole time, but we only recently became hard-to-staff” (p. 64). Because results show student failure each year, the students are discouraged to learn and competent teachers are less likely to apply for a job. “There is a gnawing sense that it is easier to talk about and promise that ‘no child will be left behind’ than it is to achieve it” (Bray, 2003).

According to the MS-CPAS2 Interpretive Guide provided by the Mississippi Assessment Center (2008), “No Child Left Behind (NCLB) and the Carl D. Perkins Vocational and Technical Education Act of 2006 (Perkins IV) are very similar in their requirements for accountability” (p. 5). In addition, high school students enrolled in career and technical programs must meet NCLB and Perkins IV accountability requirements for graduation including a MS-CPAS assessment. Furthermore, the state of Mississippi developed an articulation agreement in 2005 that allows students to receive “articulated credit” for courses within a postsecondary career and technical program. The stipulation is that “the student must complete the articulated high school career and technical program and score an 80% or higher on the Mississippi Career Planning and Assessment System (MS CPAS) in his or her high school program of study” (King & West, 2009, p. 430).

American Recovery and Reinvestment Act

The American Recovery and Reinvestment Act of 2009 (ARRA) is a newly-established Act and is part of the new Presidential administration. “The Act is an extraordinary response to a crisis unlike any since the Great Depression” (Education Department, 2009, ¶ 1). According to
Arne Duncan, Secretary of Education, the Act will provide $44 billion for states and schools and “will lay the foundation for a generation of education reform and help save hundreds of thousands of teaching jobs at risk of state and local budget cuts” (Abrevaya & McGrath, 2009, ¶1). In addition, “The primary purposes of the ARRA focus on promoting economic recovery, assisting those most affected by the recession, improving economic efficiency by ‘spurring technological advances in science and health,’ investing in infrastructure, and stabilizing state and local government budgets” (Skinner, Smole, Lordeman, & Riddle, 2009, p. 2). Furthermore, funds provided to the U. S. Department of Education will be allocated to multiple programs including those within the Higher Education Act of 2008.

One of the goals of the American Recovery and Reinvestment Act is to make college affordable to everyone. The Federal Pell Grant for the 2009-2010 school year will be increased from last year’s $4,731 maximum award to a total of $5,350 (Skinner, et. al., 2009). The Federal Work Study program will receive additional funds of $200 million in addition to any other funding already provided to this program. However, no additional funding is provided to the Federal Perkins Loan program; however funding provided to students helps populate the programs and in turn increase enrollment and need for additional Carl Perkins funding. Teacher Quality Partnership Grants received $33.7 million in funds last year and will receive $100 million in funds this year. ARRA is “an unprecedented effort to jumpstart our economy, create or save millions of jobs, and put a down payment on addressing long-neglected challenges so our country can thrive in the 21st century” (Education Department, 2009, ¶1).

The American Recovery and Reinvestment Act requires those receiving funding to gather the following four areas of information:

Improvements in teacher effectiveness and commitments that all schools have highly qualified teachers; Progress toward college and career-ready standards and rigorous
assessments that will improve both teaching and learning; Improvements in achievement in low-performing schools, by providing intensive support and effective interventions in those schools; That they can gather information to improve student learning, teacher performance, and college and career-readiness through enhanced data systems that track progress. (Abrevaya & McGrath, 2009, ¶ 8)

A remaining $5 million in funds will be utilized as competitive grants in a fund called Race to the Top, and will be allocated to those states that can show how they implemented their first allotment of monies effectively. Funding for the new American Recovery and Reinvestment Act of 2009 faces many challenges today not only because it is a brand new Act, but because the monies provided are allocated for many different areas of education and outside of education. This massive distribution of money has been set up as an “effort to jumpstart our economy” (Education Department, 2009, ¶ 1). The ARRA will provide additional funding for those who are already affected by the recession and cannot afford to go to college. Part of this Act is to increase college degree attainment from 40 percent to 60 percent for students 25 to 34 years of age (Duncan, 2009). The Act also “looks ahead a full 10 years, making good-faith estimates about what costs we would incur; and it accounts for items that under the old rules could have been left out” (Obama, 2009, p. 3).

In addition to ARRA, President Obama will create the American Opportunity Tax Credit whereby students who did not have the opportunity before to go to college will now receive an automatic $4,000 credit. This credit will “cover two-thirds the cost of tuition at the average public college or university and make community college tuition completely free for most students” (Education, 2009, ¶ 4). In return, the student must fulfill 100 hours of community service. This tax credit will serve as an opportunity for higher education leaders to
simultaneously increase enrollment and increase community involvement by allowing students to complete their community services hours within the local community.

In addition to student opportunities, ARRA will allocate stimulus funds for saving teacher jobs and creating new jobs in higher education. According to Abrevaya and McGrath (2009), ARRA “will lay the foundation for a generation of education reform and help save hundreds of thousands of teaching jobs at risk of state and local budget cuts” (¶ 1). One of the purposes of the Act is to “create or save more than 3.5 million jobs over the next two years” (The Act, 2009, ¶ 1). Saving teacher jobs specifically will promote smaller class sizes providing students a better opportunity for learning in the classroom.

As part of the American Recovery and Reinvestment Act of 2009, accountability will be a focus point, as with the No Child Left Behind Act already in place in secondary education. Collaborative learning efforts between secondary and postsecondary may provide ways of improving student retention and attrition and provide a means of bridging the gap for students who otherwise would not consider going to college. Further research has been conducted demonstrating how this collaborative effort can help with teacher shortages (Walker, Downey, & Kuehl, 2008). The association between secondary, community college, and a university within this two-year study shows that “the partnership is progressing in addressing teacher shortages” (p. 967).

**High-Stakes Testing**

The following sections have been chosen to provide a highlight of high-stakes testing in two general areas. Although much of the data may have common characteristics in both areas, it is important to note the impact high-stakes testing has on teachers as well as students. As teachers in career and technical education continue to talk about testing, budgets, and teacher shortages, the conversation needs to switch to the future of what CTE can provide to students
across the nation (Bray, 2003). “A larger fight against high stakes testing and educational standardization is on our national horizon” (Knecht, 2007, p. 64).

**Teacher Implications**

High-stakes testing has been an integral part of the educational system for some time. The impacts, positive and negative, can be felt by students, teachers, administrators, and all the way up to state school boards and the federal government. Many feel certain losses in education due to the fact that teachers are required to change or modify their curriculums to fit in instruction geared for the testing (Abrams & Madaus, 2003; Berube, 2004; Lamb, 2007; McCracken & McCracken, 2001; Vogler & Virtue, 2007). McCracken and McCracken (2001) note the effects high-stakes testing has on students currently enrolled in college wanting to become teachers. The Praxis II test is discussed as not containing the right information to help students become better teachers for our future. This test, in turn, may have a negative effect on student learning and achievement in the future by future educators who are being molded to teach in a high-stakes testing era.

Gerwin (2004) discusses the implications high-stakes testing, specifically the Regents exam, has on preservice teachers. After studying the comments of the 21 people in the program, 71% commented on structuring their classrooms to the Regents exam. One student commented on a previous interview for a teaching job, stating that one of the concerns was how she was going to structure her classroom to meet the requirements of the Regents exam. Others talked about how they would choose teaching areas that did not focus on the exam.

Luna and Turner (2001) conduct a study on two groups of ninth and tenth grade English teachers to determine the effects the Massachusetts Comprehensive Assessment System (MCAS) has on their classrooms. The teachers at the urban school, “…described the overall administrative response at Urban High as one of ‘cracking down’ on teachers and ‘invading
classrooms’ in an attempt to improve students’ scores” (p. 81). Teachers at the suburban school felt that the scope of the MCAS for their students is limiting. Results state that both groups of English teachers feel a negative impact of high-stakes testing is felt by them as well as their students. They also conclude that the political realms of education need to listen to what educators and researchers have been trying to tell them about high-stakes testing.

Over a period of three years, qualitative research was conducted on 12 schools broken into three Education Action Zones (EAZs) in England (Halpin, Dickson, Power, Whitty, & Gewirtz, 2004). EAZs allowed for innovative change in curriculum, but most chose not to because their school systems were still subject to national, high-stakes testing. “The English EAZ experience illustrates the difficulties of developing an innovative, responsive and inclusive curriculum within an evaluative state characterized by high stakes testing” (2004, p. 205).

Watanabe (2007) performed an ethnographic case study over a period of 12 months on two teachers in seventh grade language arts classes as the focal group and 11 teachers from four other schools for interviews and comparisons. The teachers were chosen with more than three years of teaching experience so that experience can be observed instead of new adaptations, and the schools are from different levels of classification. Results indicated by all 13 teachers in relation to high-stakes testing that the tests: “take time away from their curricula; squash students’ desire to read and appreciate literature; decrease collaborative activities between students; and make writing instruction less ‘like a real writer writes’” (p. 335). Results indicate that all of the teachers, in spite of their school’s classification, felt pressure and dislocation of priorities due to high-stakes testing.

According to Dearman and Alber (2005), “Only 31% of U.S. fourth graders scored at or above the proficient level in reading on the 2003 National Assessment of Educational Progress (NAEP)” (p. 634). On a positive note for high-stakes testing, collaboration and reflective study
are ways in which Mississippi teachers in this study are dealing with education. Teachers are encouraged to work together with their colleagues to produce effective results in change. Professional development sessions that are meaningful to the classroom instruction are also seen as an important step in accepting change in education. Furthermore, these Mississippians choose to study together with other educators. High-stakes testing must not be accepted as a fate for Mississippi educators, but a way to build a plan for future growth and improvement.

Curriculum limitations and changes are of special interest to many (Abrams & Madaus, 2003; Berube, 2004; Lamb, 2007; Vogler & Virtue, 2007). Lamb’s (2007) qualitative study consisted of 21 seventh graders and 17 Algebra I students, two school administrators, and 16 teachers located at a small, rural school in Mississippi in regards to high-stakes testing and accountability. As the only math teacher, Lamb (2007) discussed how he used a broad range of teaching methods to insure student learning in the classroom until it came time to study for the accountability testing. Comments recorded by various students were consistent in that they noticed a change in pace of the classroom and the instructor when it came down to studying for the state assessment. Results concluded that, “…schools, especially poor performing rural schools, will resort to ‘memorizing’ the types of tests items and minimizing their cognitive development of some students” (p. 42). Berube (2004) compares standardized testing to the game show “Jeopardy.” She begins to explain that although the contestants are very intelligent and know a wealth of knowledge, the game is simply recalling of data.

Vogler and Virtue (2007) discuss how the traditional relationship between the teacher and the student is changing or evolving to meet the needs of high-stakes testing. Teachers are seeing students as a test score instead of a person in need of learning. “Teachers must learn how to navigate the testing waters without destroying their integrity or damaging their sense of purpose” (p. 57). Teachers are held accountable for their students’ results and are judged according to the
ratings of their students. However, the authors point out that teachers do not have complete control of their students because they are human beings and not “inanimate objects.” Because of the amount of pressure and time involved in producing viable high-stakes testing results, many believe that multiple measures of testing should be implemented in the school systems (Abrams & Madaus, 2003).

**Student Outcomes**

Many tests exist to measure students’ abilities for career paths, and job-ready assessments (“One Size Fits All?,” 2000). But with high-stakes testing in schools, students do not have a choice to type of test they are given or to their career path if they fail standardized exit exams (“Are the Stakes Too High?,” 2003). A pattern appears to exist between dropout rates of high school students and high-stakes testing (Shriberg & Shriberg, 2006). Students that are at a disadvantage and those that may come from lower socioeconomic backgrounds seem to be dropping out more frequently since the requirements of high-stakes testing. It is almost as if they now have another good reason to drop out of school, and that is the inability to pass a required, standardized test. “Few people realize that an estimated 99 percent of schools are expected to be labeled as failures by 2014 if NCLB remains as written” (p. 80).

Differentiation is described as a learning style that brings a well-rounded atmosphere of multiple techniques that are effective in student learning (Brimijoin, 2005). The idea of teaching “outside of the box” is what many educators are arguing for but high-stakes testing may be hindering differentiation. Vogler (2004) discusses the MCAS as a resented, single, high-stakes test that caused many students in the past not to graduate high school. Although these students met the other requirements for graduation, the MCAS only allowed the students certificates. With these certificates, the students were not allowed to start college because it was not equivalent to a high school diploma. Vogler (2004) also discusses instead of providing a sense of
belonging and equality, the MCAS has provided a better target for separating the disadvantaged students from the rest. “If high-stakes testing has done any good, it has put a spotlight, and provides ample evidence, on the inequality of public education” (p. 10).

According to Burroughs, Groce, and Webeck (2005), social studies are not an integral part of NCLB. The purpose of this qualitative study was to determine if social studies being left out is a good idea or bad idea. Three states were used in the data collection to see what particular teachers’ thoughts were on providing more or less social studies to their students. All of the teachers were reluctant to adding social studies to NCLB because they have seen the ramifications high-stakes testing has on the other subject areas. They are not ready to accept that responsibility of conforming to a standardized test, but they are tired of seeing social studies not emphasized enough in the school systems at all age levels.

On a positive note for student outcomes in high-stakes testing, other states are implementing new plans to find where students’ needs are early on and inform the instructors of their needs in order to provide the necessary skills required for exit exams and college (Christie, 2007). Three ideas to improve overall high-stakes test scores include diagnostic testing, end-of-course assessments, and tests associated with college expectations. Black and Duhon (2003) conducted a three-semester long study on the reliability and validity of the Educational Testing Service’s Major Field Test in Business. The purpose of the study was to statistically show how standardized tests can be valid, reliable, and overall a good measure for accountability. Results included 297 students, all of which had taken the ACT test, which is a requirement for this study. Students are given bonus points added to their final averages as an incentive for doing well on the test. This type of encouragement is needed in to ensure students will take the test seriously. GPA scores are calculated into the results of the ETS test performance. “Having addressed the issues of score reliability and validity satisfactorily, we conclude that schools can turn to using

42
standardized test results for evaluation and enhancement” (p. 95). Also notable is that they use these test scores as part of the grade for a particular class to encourage higher test scores. The authors also feel that these ETS test scores should be implemented as part of a graduation requirement if the student makes above a certain cutoff score.

**Accountability**

“Educational accountability, defined as holding educators and public school systems accountable for the academic achievement of their students, is an issue receiving considerable debate” (Vogler, 2004, p. 6). Accountability in career and technical education trickles down from federal laws to state laws then into the classroom itself. It is an integral part of the Carl Perkins Act, No Child Left Behind Act, and high-stakes testing. Castellano, Stringfield, and Stone (2003) note that much research is needed in the realm of CTE and school reform, but state that these two areas should be integrated. “It is ironic that, at the very time that national policy is calling for a more integrated and outward-looking version of CTE, there have been few scholarly attempts to build bridges from CTE to research on academic components of U.S. schooling” (p. 232).

The government plays a huge part in higher education reform and accountability in order to ultimately increase economic growth (Alexander, 2000). With this in mind, the long-term effects of accountability in high-stakes testing need clarification (Foote, 2007). For instance, some high schools may meet the standards as stated by NCLB, but drop-out rates continue to rise due to the fact that these tests are required for high school graduation. The New York Performance Standards Consortium of approximately 28 high schools focuses on the performance of their students. Items included on the performance test to measure accountability include: analytic literary essay, social studies research paper, original science experiment, and application of higher-level mathematics (p. 361). Based on a performance study conducted on
the consortium, 77% of the graduates attended a four-year university. Of the remaining 23%, 19% attended two-year institutions and the remaining 4% vocational or technical schools.

Others are concerned with building the skills and knowledge of the teachers in order to produce valid test scores and program accountability (Wolfe, Viger, Jarvinen, & Linksman, 2007; Berube, 2004). The study was to determine if teachers are able to align their classrooms and curriculum with the statewide standards for testing. The instrument used was the Teacher Assessment Efficacy Scale (TAES) and was administered to 642 teachers in various schools in Illinois. “The results of surveys of statewide standards and assessment practices indicate a movement towards standards-based curricula and assessment” (Wolfe et al., 2007, p. 461).

**Summary of Literature Review**

After researching the historical context, federal laws, underlying theories, high-stakes testing, and accountability, considerable research is needed in career and technical education, particularly on the post-secondary level. The historical value of the community college from its origins as junior colleges, gives a brief understanding of how these two-year colleges were invented. Starting out as a mere continuation of high school, community colleges now enroll approximately 46 percent of the undergraduate college students in America (American Association, 2008).

The underlying theories discussed in this study include areas in student development theory and curriculum theory. Tinto’s (1987, 2005) research on student retention and the institutional model serve as a foundation for student development. As this study examines the success rates of programs, it is important to not only study the type of students in the program, but to understand how instructors are utilizing the curriculum to achieve success, as described with the rehearsal curriculum (Schwartz, 2006).
Four federal laws were briefly discussed and linked on the basis of accountability and funding measures for educational institutions. With its roots set as far back as 1917, the Carl Perkins Act provides funding for career and technical programs and requires institutions to provide a way to be accountable for monies received (U. S. Department of Education, 2005). As with the Carl Perkins Act, the Higher Education Act has its roots in the Smith-Hughes Act of 1917 and revisions are demanding more strenuous means of accountability reporting for funding (The Federal Role, 2008). Although the No Child Left Behind Act has its monies tied directly to secondary education, accountability for funding is still a major issue and continues to spill over as students leave one institution where education is being quantified to yet another with the same intentions (“No Child Left Behind,” 2007). The American Recovery and Reinvestment Act encompasses the whole educational arena by providing funding and grant monies to secondary and postsecondary institutions (Abrevaya & McGrath, 2009; Education Department, 2009). Monies will include increased grant monies for students wanting to attend college and for teachers to improve learning environments. Furthermore, monies will be used to stabilize and increase teacher jobs and accountability measures will be used to measure the effects of monies being distributed.

Much of the research in high-stakes testing describes some deficiencies high-stakes testing has on states, schools, teachers, and students. Specifically with secondary education, NCLB is a major factor in accountability at the school level and for the teachers. Effects on high schools include higher dropout rates and being labeled as a high-needs school when qualified teachers are already scarce. Teachers are narrowing their curriculum and including less interaction with the students in order to cover objectives for required high-stakes tests.
CHAPTER 3
RESEARCH METHODOLOGY

Research Design

A multi-site cluster program evaluation was conducted for this mixed-methods case study design. Program evaluation can be defined as “The use of social research methods to systematically investigate the effectiveness of social intervention programs in ways that are adapted to their political and organizational environments and are designed to inform social action to improve social conditions” (Rossi, Lipsey, & Freeman, 2004 as cited in Zimmerman & Holden, 2009, p. 1). A cluster evaluation “is evaluation of a program that has projects in multiple sites aimed at bringing about a common general change” (Sanders, 1997, p. 397). Furthermore, Sanders (1997) outlines four basic questions that a cluster evaluation addresses (p. 397):

1. Overall, have changes occurred in the desired direction? What is the nature of these changes?
2. In what types of settings have what types of changes occurred, and why?
3. Are there insights to be drawn from the program failures and successes that can inform future initiatives?
4. What is needed to sustain desired changes?

The design of this study includes both qualitative and quantitative data within the constructs of a case study. “Concurrent mixed methods procedures are those in which the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem” (Creswell, 2009, p. 14). A case study “copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result” (Yin, 2009, p. 18). Yin (2009) continues to state that case
studies “rely on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result” (p. 18).

**Sampling Procedures**

Purposeful sampling strategies included all Career and Technical education (CTE) post-secondary programs taught in the state of Mississippi. All 15 community and junior colleges in the state follow the standards and measures implemented by the Perkins IV Act, including utilizing the MS-CPAS2 assessment for measuring the technical skills attainment. However, a small percentage of programs in the state utilize a nationally-recognized certification or licensure and do not take the MS-CPAS2 assessment. These programs were not included within the constructs of this study. The remaining programs included one-year certificate programs and two-year Associate of Applied Science degree programs.

Approximately 33 MS-CPAS2 assessments exist in Mississippi and each test consists of select-response items, along with illustrations for many items (Mississippi CTE, 2009). Furthermore, the assessments are based on each program’s curriculum and the curriculum is aligned with national industry standards (Mississippi Career, 2008). Currently the state of Mississippi has 78 different programs group into six categories: agriculture, allied health, business computer, family consumer, marketing, and trade industrial (Curriculum, 2009).

Within this sampling technique, the researcher gathered data from the Research and Curriculum Unit located in Starkville, Mississippi. Since 2001, the RCU has been responsible for MS-CPAS2 development and research (Mississippi Career, 2008). The sample was based on the programs that have successfully passed the MS-CPAS2 assessment with an average percent score of 70 or higher within a three-year period, and including only those programs with 10 or more students who have taken the exam each year for the past three consecutive years, which was a total of 13 programs and 705 students. The mean average of MS-CPAS2 scores for the
chosen student population was 76.13, with a standard deviation of 9.5. The mean average for the total student population was 67.32, and the standard deviation was 13.88. Table 3-1 provides the top 13 programs chosen for this study. Approximately 40 instructors and 12 administrators received the surveys. To ensure a high response rate, the survey link was emailed to the participants on three separate occasions (Creswell, 2009). In addition, each administrator and instructor who did not respond with an email stating they completed the survey was called and voicemails were left with those who were not available by phone. The instructor and administration counts were located by accessing the personnel directories on each institution’s website. The student count is the total number of students who completed the assessment within the past three years. However, the students are not part of the surveys.

Table 3-1: List of Top 13 Programs

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Institution</th>
<th>Instructor Count</th>
<th>Admin Count</th>
<th>Student Count</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Childhood Education &amp; Technology</td>
<td>Community College 1</td>
<td>2</td>
<td>1</td>
<td>45</td>
<td>80.63</td>
</tr>
<tr>
<td>Early Childhood Education &amp; Technology</td>
<td>*Community College 2</td>
<td>4</td>
<td>1</td>
<td>61</td>
<td>79.84</td>
</tr>
<tr>
<td>Early Childhood Education &amp; Technology</td>
<td>*Community College 3</td>
<td>2</td>
<td>1</td>
<td>42</td>
<td>79.46</td>
</tr>
<tr>
<td>Welding and Cutting</td>
<td>Community College 4</td>
<td>1</td>
<td>2</td>
<td>89</td>
<td>79.31</td>
</tr>
<tr>
<td>Early Childhood Education &amp; Technology</td>
<td>Community College 5</td>
<td>2</td>
<td>1</td>
<td>51</td>
<td>76.33</td>
</tr>
<tr>
<td>Food Production &amp; Management Technology</td>
<td>*Community College 6</td>
<td>1</td>
<td>2</td>
<td>37</td>
<td>76.29</td>
</tr>
<tr>
<td>Business &amp; Office &amp; Related Technology</td>
<td>Community College 7</td>
<td>7</td>
<td>1</td>
<td>48</td>
<td>75.77</td>
</tr>
<tr>
<td>Early Childhood Education &amp; Technology</td>
<td>Community College 8</td>
<td>3</td>
<td>1</td>
<td>70</td>
<td>75.14</td>
</tr>
<tr>
<td>Heating, Ventilation, AC, and Refrigeration Tech.</td>
<td>Community College 9</td>
<td>2</td>
<td>1</td>
<td>37</td>
<td>75.06</td>
</tr>
<tr>
<td>Business &amp; Office &amp; Related Technology</td>
<td>Community College 10</td>
<td>4</td>
<td>1</td>
<td>61</td>
<td>74.59</td>
</tr>
<tr>
<td>Electrical Technology</td>
<td>*Community College 2</td>
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<td>1</td>
<td>53</td>
<td>72.72</td>
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<tr>
<td>Business &amp; Office &amp; Related Technology</td>
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<td>2</td>
<td>65</td>
<td>71.36</td>
</tr>
<tr>
<td>Welding and Cutting</td>
<td>*Community College 3</td>
<td>3</td>
<td>1</td>
<td>46</td>
<td>71.30</td>
</tr>
</tbody>
</table>

*Represents repeated college names

N= 40  12*  705

Although the state passing rate for the test for the past two years has been 60%, the 70% or higher score was used to ensure programs are making a successful passing rate instead of the
minimal value. In addition, the MS-CPAS2 ranks 70% or higher as proficient in skills attainment. Furthermore, many programs require a minimal of 10 students enrolled in each program to justify funding. Expected outcomes were used to determine how these programs are successful and how these techniques may be applied to other programs across the state that are not successfully passing the MS-CPAS2 assessment.

**Data Collection Strategies**

The data collection process consisted of three phases. The first included receiving the initial MS-CPAS2 quantitative data, phase two consisted of analyzing the data to determine if the study will produce the records needed to continue, the third phase entailed distributing the surveys to the selected community college teachers and administrators and collecting and analyzing the remaining quantitative data and qualitative survey results.

**Phase 1**

During the summer of 2009, the researcher conducted an in-person interview with the Interim Coordinator of Assessment and Accountability at the Research and Curriculum Unit in Starkville, Mississippi. The interview consisted of the researcher completing an IRB for Mississippi State University for permission to receive and use their data, and a proposed timeline for receiving the needed data for phase one of the research. In addition, the coordinator requested an LSU IRB before any data will be released. The researcher completed the IRB and sent the form to the coordinator in the fall of 2009.

**Phase 2**

The MS-CPAS2 data was received in the latter part of fall, 2009, as an email attachment from the RCU assessment and accountability interim coordinator. The data was in the form of a Microsoft Excel 2007 workbook with a file size of 2.89 MB. The original data file consisted of two worksheet tabs, one with 4,228 programs by district, and the second consisted of 33,807
student records. The workbook was converted into a Microsoft Access database by the researcher, in which two main tables were created, one for each sheet.

The results of the queries as outlined in Appendix A were compared and were narrowed down to 13 programs who actually had more than nine students who took the test each year for 2007, 2008, and 2009, and who averaged 70 or above each of those three years. Of those 13 programs, 10 different postsecondary schools are represented. The researcher has chosen to examine all 13 programs for the constructs of this study to allow for three additional programs to collect survey data from.

**Phase 3**

Phase three consisted of contacting the 10 postsecondary institutions which house the 13 chosen programs from the data analysis in phase one and two. These colleges’ administrators were contacted through telephone conversations to first receive acknowledgement of the study and approval for survey submission. The surveys, available in Appendix B and C, were created electronically utilizing Kwik Surveys online survey software (2010). These tests were then exported as HTML online surveys that are housed and administered locally by the researcher. Survey completion reminders were sent automatically to the researcher as an anonymous email message. A link within an email message was sent to the participating faculty and administrators with a brief introduction and rationale for the project along with IRB consent forms. The faculty (N=40) and administrators (N=12) received a link to the survey on three separate occasions to ensure the highest response rate possible for the constructs of this study (Creswell, 2009). This data collection occurred after proposal acceptance and approval from the researcher’s committee during the fall of 2010.

In the spring of 2009, a pilot study was conducted by the researcher involving a local program within the researcher’s community college system. The program met all of the
requirements for the study except having 10 or more students each year complete the MS-CPAS2 assessment for the past three years in a row. However, the program has passed the assessment with a 70% or higher for the past three years. The pilot survey was sent to the two instructors of the program and results proved valuable to the study. In addition, 33 students’ scores, Grade Point Average, and Age were utilized for the quantitative section of the study.

The new surveys, as outlined in Appendix B and C, have minor alterations, including more details within questions, and additional questions to each survey were added, as seen necessary from the results of the pilot study. The pilot survey can be found in Appendix B along with the results in Appendix C. Furthermore, the administrator survey was piloted in the spring of 2010 with the administrators associated with the pilot study of 2009. The results from this pilot proved beneficial to the researcher by providing insight into the type of data collected and to ensure that the data was in line with the researcher’s intentions for the constructs of this study.

**Data Analysis**

Within the constructs of this mixed methods design, two types of surveys were created and administered electronically to program instructors and administrators of the career and technical education programs selected to be analyzed (See Appendix B and C for surveys). These surveys included a series of open-ended, closed-ended, and hybrid questions allowing the option for both open and closed-ended responses, along with basic demographic questions. The faculty survey consists of 25 questions, six open-ended questions, 13 hybrid questions, along with six demographic questions located at the end of the survey. The administrator survey consisted of 19 questions, including two open-ended questions, 11 hybrid questions with optional comments on each, along with seven demographic questions. The following table outlines each research question and corresponding survey questions.
Table 3-2: Research Questions and Related Survey Questions

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Faculty Survey</th>
<th>Admin Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Question 1--What are the components of a successful program?</td>
<td>2, 3</td>
<td>2, 3, 7</td>
</tr>
<tr>
<td><strong>Sub-question 1-a--</strong> What instructional methods and materials are implemented by faculty in successful programs?</td>
<td>4, 5, 6</td>
<td></td>
</tr>
<tr>
<td>Sub-question 1-b--In what ways are faculty preparing students to meet assessment standards?</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Sub-question 1-c--How, if any, are classes structured to fit the objectives and competencies of the curriculum?</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Sub-question 1-d--Are faculty and students actively participating in student organizations and/or certification exams directly related to their programs?</td>
<td>8, 9, 10, 11</td>
<td>4, 5</td>
</tr>
<tr>
<td>Research Question 2--What are faculty and administrators’ perceptions of their responsibilities relative to program success and accountability mandates in relation to the assessment measures?</td>
<td>16, 17, 18, 19</td>
<td>10, 11, 12</td>
</tr>
<tr>
<td>Sub-question 2-a-- How do faculty view their participation in professional development relative to their responsibilities as an instructor?</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Sub-question 2-b-- In what ways are administrators involved in the process of preparing faculty for assessment delivery to their students</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Research Question 3--What student factors influence performance on the program’s MS-CPAS2 assessment?</td>
<td>CPAS data</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-question 3-a--</strong> What kind of relationship exists between student characteristics (i.e., gender and ethnicity) and performance on the assessment measure?</td>
<td>CPAS data</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-question 3-b--</strong> Is there a relationship between students’ achievement in coursework (i.e., student rating) and their performance on the assessment measure?</td>
<td>CPAS data</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-question 3-c--</strong> In what ways does student retention affect assessment results? (Student retention refers to retaining students for the duration of a program).</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td><strong>Sub-question 3-d--</strong> In what ways can student assessment performance serve as an accurate predictor for student placement? (Student placement refers to students who are employed within their area of study within six months after graduation).</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>DEMOGRAPHICS</td>
<td>1, 20, 21, 22, 23, 24, 25,</td>
<td>1, 13, 14, 15, 16, 17, 18, 19</td>
</tr>
</tbody>
</table>

The demographics were split into two sections: faculty and administrator. Faculty survey questions 1, 20-25 were utilized for demographics along with administrator survey questions 1, 13-19. The last four questions of the instructor survey provided a general overview of the years of teaching experience, along with amount of years the instructors have been teaching in postsecondary education, the years teaching experience at the current institution, and degrees attained. Question one provided the current program of study they teach in. The administrator survey provided similar results with the last five survey questions including the years of teaching and administrative experience, amount of years associated with postsecondary career and
technical education, number of years in an administrative capacity in current position, and
degrees attained. Question one provided the administrator’s current position.

Surveys for the qualitative section of this study were analyzed by the researcher and a
secondary coder to ensure intercoder reliability. “Given that a goal of content analysis is to
identify and record relatively objective (or at least intersubjective) characteristics of messages,
reliability is paramount. Without the establishment of reliability, content analysis measures are
useless” (Neuendorf, 2002, p. 141). The results of the instructors’ and administrators’ surveys
were compared to each other to determine commonalities and any relationship with the results.
After reviewing the survey data and telephone conversations, the researcher determined that it
was no longer necessary to conduct a series of face-to-face or telephone interviews with the
participants to gather data that may not have been given on the survey or from questions that
may arrive from the survey data collected. In addition, the researcher deemed it no longer
necessary to complete on-site visits with some or all of the ten sites to review the teaching
environments and instructional tools used. However, these two additional techniques of data
collection will serve useful in future research by the researcher.

The use of ATLAS.ti® V6.1 was utilized for some of the open-ended survey data and data
were stored as a Hermeneutic Unit (ATLAS.ti, 2010). Codes were assigned to specific quotes
within five primary documents. Answers were then coded into a systematic approach to
analyzing the data in an orderly fashion (Creswell, 2003). The codes included clustering the data
into manageable and related themes according to the research questions. The results assisted and
extended the results found in the quantitative section of this mixed methods study.

**Research Question 1--What Are the Components of a Successful Program?**

Faculty survey question two included their definition of the purpose of the MS-CPAS2
assessment, and question three an estimated average of how many students take the assessment
during the three years the collected data encompasses. Administrator survey question 2 provided brief description of the MS-CPAS2 assessment for the whole division for each of the chosen 10 community colleges. Question three on the administrator survey asked participants the amount of programs that are successfully passing the MS-CPAS2 each year. In addition, question seven on the administrator survey allowed the participant to outline general components that make a successful program within their division.

**Sub-question 1-a--What Instructional Methods and Materials are Implemented by Faculty in Successful Programs?** Within the faculty survey, question four consisted of the instructional methods being implemented in successful programs. Question five provided insight into how instructors are altering, if any, their instructional methods to ensure passing rates on the assessment given to the students. In addition, survey question six provided an opportunity for instructors to state the types of instructional materials utilized within their programs.

**Sub-question 1-b--In What Ways are Faculty Preparing Students to Meet Assessment Standards?** Faculty Survey question 13 provided open-ended responses by the instructors pertaining to preparation sessions provided to students before the assessment is given. If preparation is being provided, the collected data served beneficial to other programs who may not be providing these prep sessions or who may not know how to conduct such a session.

**Sub-question 1-c--How, if any, are Classes Structured to Fit the Objectives and Competencies of the Curriculum?** Question seven on the faculty survey elaborated on how instructional materials are being selected and utilized to cover objectives and competencies listed in the curriculum, since the MS-CPAS2 assessment is based on programs’ curriculums. A comment box was added to provide further insight into the investigation of aligning MS-CPAS2 assessments with classroom instruction which includes not only instructional materials but also instructional methods.
Sub-question 1-d--Are Faculty and Students Actively Participating in Student Organizations and/or Certification Exams Directly Related to Their Programs?

Question eight and nine of the faculty survey are questions pertaining to program-related student organizations or clubs that instructors and students may or may not participate in. Instructors were asked to provide name(s) of the organizations or clubs. The information collected provided useful information as to whether or not clubs or organizations help necessitate successful post-secondary programs in Career and Technical Education. Questions 10 and 11 provided information as to whether students are encouraged to participate in certification exams and whether or not the participants would prefer the use of certification exams in place of the MS-CPAS2 assessment. The administrator survey provided similar results pertaining to certifications with questions four and five by providing the amount of programs currently utilizing certifications in lieu of the MS-CPAS2.

Research Question 2--What Are Faculty and Administrators’ Perceptions of Their Responsibilities Relative to Program Success and Accountability Mandates in Relation to the Assessment Measures?

Questions 16 through 19 on the faculty survey and questions 10 through 12 on the administrator survey were utilized to answer research question two. The faculty survey questions pertain to faculty perceptions of the quality of the assessment, job satisfaction, job performance, and course delivery in relation to the MS-CPAS2 assessment. The administrator survey questions relate to the administrators’ perceptions of the assessment for the whole division, as well as individual impacts the assessment has on administrator job satisfaction and job performance. The administrators’ results were useful in providing an outside view of the whole Career and Technical Education divisions within the chosen community college programs.

Sub-question 2-a-- How do Faculty View Their Participation in Professional Development Relative to Their Responsibilities as an Instructor? Survey question 12
provided further elaboration from instructors on their involvement in professional development activities such as mentoring, professional associations, outside educational courses, and possibly continuing education units. This survey was given to approximately 40 faculty members from ten various community colleges in the state of Mississippi. The information was compiled and discussed within the results section.

**Sub-question 2-b-- In What Ways Are Administrators Involved in the Process of Preparing Faculty for Assessment Delivery to Their Students?** The administrator survey was administered to approximately 12 administrators at 10 different community colleges in Mississippi. This survey provided a general insight of the MS-CPAS2 assessment by giving a generalization of all career and technical programs for an entire division instead of one particular program of study. The goal of this survey was to provide information on how divisions and individual programs are structured to be conducive to successful assessment rates. Administrators provided information such as how well students are performing for the divisions as a whole. Furthermore, survey question six pertained to how, if any, instructors were being prepared for the assessment in advance, such as preparatory sessions, pre-test materials, training, for example.

**Research Question 3--What Student Factors Influence Performance on the Program’s MS-CPAS2 Assessment?**

Using a correlational design, research question three was fulfilled using a series of statistical procedures. A series of one-way Analysis of Variance tests was compiled for each of the independent variables compared to the dependent variable, MS-CPAS2 scores. This test was chosen over a *t*-test because, “The problem with computing multiple independent *t* tests for comparing *K* sample means is that, as the number of *t* tests increases, the Type I error rate increases” (Hinkle, Wiersma, & Jurs, 2003, p. 332). In order to determine to what degree these variables are related, the Pearson product moment correlation coefficient was used (Hinkle,
Wiersma, & Jurs, 2003). Normality was established by examining central tendency, shape of the curve, and QQ plots. Random selection and assignment was established as outlined in the context of this study using a purposeful sampling strategy. The Levene’s test for homogeneity was also computed to test for equal variances. Multiple linear regression was used for the Student Ratings independent variable and the dependent variable in conjunction with one-way ANOVA procedures on the remaining independent variable. Omega squared was used to determine association between independent and dependent variables (Hinkle, Wiersma, & Jurs, 2003). A series of post-hoc comparisons was completed, such as the Tukey/Kramer method if the populations for each group are unequal. The use of SPSS predictive analytics software (2010) was utilized for computer-generated data analysis. Since the direction of the results may be positive, negative, or none, a non-directional approach was implemented.

**Sub-question 3-a--What Kind of Relationship Exists Between Student Characteristics (i.e., Gender and Ethnicity) and Performance on the Assessment Measure?**

The dependent variable in each scenario was MS-CPAS2 scores for the individual students within each chosen program. The independent variables include gender, ethnicity, and student rating. Although the total student records is 705, the number (n) of students utilized in the study is 685; however, 20 student files were not utilized within this quantitative section of the research because they had one or more empty values within the three independent variables. Gender and ethnicity data is currently available within the MS-CPAS2 database. Ethnicity was coded on a scale of one to six with the following codes (MS-CPAS2, 2010, p. 19):

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>1</td>
</tr>
<tr>
<td>Black</td>
<td>2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3</td>
</tr>
</tbody>
</table>
Native American 4
White 5
Other 6

Sub-question 3-b-- Is There a Relationship Between Students’ Achievement in Coursework (i.e., Student Rating) and Their Performance on the Assessment Measure? The conceptual definition for Student Rating as described in the MS-CPAS2 Guide (2010), “is designated for teachers to rate how they expect each of their students will score on the MS-CPAS2 based on the student’s classroom performance. Student grades may be used for rating or an estimation of content mastery” (p. 19). Student Rating is labeled as “Proficiency_Level” within the table of data provided by the RCU. The ratings consisted of a numerical value of one to four, with four being the highest rating equivalent to MS-CPAS2 scores above 80%. All students’ assigned ratings and assessment scores were utilized to perform quantitative data analysis as a whole, or one whole group of students.

Student Grade Point Average is often used as the criterion for selecting Student Ratings. The operational definition for GPA is a cumulative explanation of how students performed throughout their two years in a specific program of study. The GPA is measured in number format and according to school policy students must have a 1.9 GPA or higher in order to graduate. MS-CPAS2 data collected used the assigned Student Rating numerical value for each participant equivalent to each student’s current GPA or overall performance in the program. Then statistical analyses were created for each program to determine if results on an individual basis match those of the whole group of students.

MS-CPAS2 scores are conceptually defined as a standardized test administered to all program completers measured on a percentage-based scale of 1 to 100. Operationally, the MS-CPAS2 is a test that is geared toward the learning objectives found in the curriculum for each
particular program of study, which are based on the Depth of Knowledge learning Levels (Depth of Knowledge, 2006). The test is used to measure program accountability and student learning outcomes. The test is administered yearly or each semester, if necessary, to students who are completing or have completed their last set of core courses required for graduation from a particular program. Students are given approximately 110 minutes to complete the assessment (MS-CPAS2, 2010). Approximately 52 different types of coded assessments were administered during the 2009-2010 school year. These assessments are given a three-digit code signifying which assessment was given to each program. Some programs have multiple concentrations and fall under the same assessment, such as Business and Office Related Technology. This particular area of study includes Accounting Technology, Office Systems Technology, Health-care Data Technology, and Microcomputer Technology.

**Sub-question 3-c--In What Ways Does Student Retention Affect Assessment Results? (Student Retention Refers to Retaining Students for the Duration of a Program).** Survey question 14 on the faculty survey contained instructors’ comments in relation to the affects student retention has on MS-CPAS2 scores and graduation rates for their individual programs of study. The administrator survey question nine asked administrators to provide information pertaining to student retention and division-wide graduation rates. The information collected within these two survey questions provided valuable insight into how these programs and/or divisions may be successfully retaining students and increasing graduation rates as well as MS-CPAS2 assessment scores.

**Sub-question 3-d—In What Ways Can Student Assessment Performance Serve as an Accurate Predictor for Student Placement? (Student Placement Refers to Students Who are Employed Within Their Area of Study Within Six Months After Graduation).** Faculty survey question 15 and administrator survey question eight referred to student placement after
graduation from a successful program. Both surveys’ participants were given the option to elaborate on the subject and results will prove beneficial to the overall connection between MS-CPAS2 scores, graduation rates, and employment opportunities for students. In addition, student placement is yet another measure that postsecondary career and technical programs must satisfy along with assessment and accountability standards.

**Validity and Credibility**

Threats to internal validity include participants who may not have a valid GPA or Student Rating for reasons such as dropping a class too late and receiving an F (zero quality points). In addition, the Student Rating has the risk of not being reported accurately by the individual instructors, although it is a requirement that it is an equivalent measurement of grading that should be as accurate as possible. Also, some of the participants may not have performed as well on the MS-CPAS and did not take the exam seriously and produced a failing grade since a passing grade is not required for graduation. These threats are accommodated by providing a three-year sample size from programs that have continually succeeded in passing the MS-CPAS2 at a proficient level. External validity threats may include population characteristics and the ecological context of the study. To decrease the population threat, the participants were chosen from a variety of programs and will change over the three-year period, and are known to have a variety of gender, race, and age.

In addition, the results from the correlational study can be comparable to other programs in the state of Mississippi and possibly other states that use a standardized test to in accordance with the Carl Perkins IV Act. Furthermore, the data provided will shed positive light on the area of high-stakes testing, which is a much-needed area of research in secondary and post-secondary education as discussed in the literature review. The data found in the qualitative data analysis phase of the study were compared to the results from the quantitative data analysis phase to help
provide validity and reliability to the study. In addition, intercoder reliability was established by comparing the content analyses with the researcher and an outside rater.
CHAPTER 4

RESEARCH FINDINGS

As part of the quantitative analysis, MS-CPAS2 data for 2007, 2008, and 2009 were gathered from the Research and Curriculum Unit (RCU) in the fall of 2009. The RCU is part of Mississippi State University and provides educational research such as curriculum development and assessment for the Mississippi Department of Education and the State Board for Community and Junior Colleges. These data, as outlined in Appendix A, included narrowing down a database that contained all tests scores, secondary and post-secondary, for the state of Mississippi for the past three years. The data were analyzed and reduced from 4,228 program records and 33,807 student records down to 13 programs and 705 student records. In addition to the quantitative analysis, two surveys were administered to the 13 programs, which included 12 administrators and 40 instructors at 10 community colleges across the state of Mississippi in order to gather additional information pertaining to the MS-CPAS2 standardized assessment.

The survey data were collected during a period of five weeks. The first week consisted of contacting each of the 10 community college administrators by telephone to gain permission to contact and send the survey link to the administrators and faculty of the 13 chosen programs. In addition, the list of instructors per program gathered from the various community college websites were reiterated to each administrator to ensure the list was accurate. Instructors for five programs were altered according to updated information provided by the administrators. The second week consisted of sending out the survey links to the group of 12 administrators and the 40 faculty participants along with a brief project description and an attached copy of the approved IRB. During that week, six administrators and 11 instructors completed the survey. The survey link was then sent a second time at the beginning of week three to all faculty and administrator survey participants. At the end of this same week, the remaining five
administrators who did not send an email stating they completed the survey were contacted by telephone and the survey link was sent again to only those five participants. All 12 administrators completed the survey by the beginning of the fifth week, as outlined in the table below. The ID values were randomly generated and assigned by the online survey software.

<table>
<thead>
<tr>
<th>ID</th>
<th>Responded</th>
<th>Taken</th>
<th>Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2852873</td>
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<td>2010-10-11</td>
<td>YES</td>
</tr>
<tr>
<td>2800265</td>
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<td>2010-10-05</td>
<td>YES</td>
</tr>
<tr>
<td>2791326</td>
<td>YES</td>
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<td>YES</td>
</tr>
<tr>
<td>2767322</td>
<td>YES</td>
<td>2010-09-30</td>
<td>YES</td>
</tr>
<tr>
<td>2748649</td>
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</tr>
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<td>2734296</td>
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<td>2702075</td>
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<td>2692753</td>
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<td>2683778</td>
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<tr>
<td>2683702</td>
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<td>2010-09-20</td>
<td>YES</td>
</tr>
</tbody>
</table>

By the end of week three, 21 instructors had completed the instructor survey, and seven instructors sent an email stating they completed the survey and wanted to be entered in the gift card drawing. A total of 31 instructors were contacted by phone during week three and some stated they already completed the survey but did not send an email. Many of the participants asked for the link to be resent. Of those 31 contacted, 13 did not answer the phone and were sent a second detailed voicemail from the researcher. Twenty-three of those 31 were sent a third email with the faculty survey link. A few comments were noteworthy from the telephone conversations. Five instructors within the Business and Office Related Technology program at Community College 6 asked for the survey reminder to be sent at a later time because their whole department was moving offices into a different building and did not know when and if they would have time to complete the survey. Another instructor from Community College 3 was unsure that the comments made would be kept anonymous. An instructor from Community College 7 with a total of seven instructors was unsure when the department would have time to
complete the survey because of online courses and midterm grades approaching. During week four, the remaining instructors who did not answer the phone the previous week were contacted again by phone. Twenty instructors were sent the faculty survey link during week four.

At the beginning of week five, a total of 24 instructors completed the instructor survey, as seen in the below table. The ID numbers were randomly generated and assigned by the online survey software. After analyzing the participants who sent emails stating they completed the survey and those that stated by telephone they completed the survey, instructors from 9 out of the 10 community colleges participated in the survey. In addition, participants within all six total program areas completed the survey.

Table 4-2: Faculty Survey Completion Dates

<table>
<thead>
<tr>
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<tbody>
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<td>2822821</td>
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<td>2707071</td>
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<td>YES</td>
</tr>
<tr>
<td>2697955</td>
<td>YES</td>
<td>2010-09-22</td>
<td>YES</td>
</tr>
<tr>
<td>2694203</td>
<td>YES</td>
<td>2010-09-22</td>
<td>YES</td>
</tr>
<tr>
<td>2685767</td>
<td>YES</td>
<td>2010-09-21</td>
<td>YES</td>
</tr>
<tr>
<td>2685121</td>
<td>YES</td>
<td>2010-09-20</td>
<td>YES</td>
</tr>
<tr>
<td>2684639</td>
<td>YES</td>
<td>2010-09-20</td>
<td>YES</td>
</tr>
<tr>
<td>2684165</td>
<td>YES</td>
<td>2010-09-20</td>
<td>YES</td>
</tr>
<tr>
<td>2684003</td>
<td>YES</td>
<td>2010-09-20</td>
<td>YES</td>
</tr>
</tbody>
</table>

The remainder of this chapter presents demographic information about the participants and both quantitative and qualitative results of data analyses conducted for this study including quantitative student data and quantitative and qualitative survey results. Descriptive statistical
procedures were implemented to represent the scale item data and a qualitative data analysis program (Atlas.ti) was utilized to assist in the analysis of the open-ended responses. Results of these analyses were organized by each research question and sub-question.

Demographics of Faculty Survey Participants

Demographic data were collected from the faculty and administrator surveys. From the 24 faculty participants, 100% were Caucasian, 29% (N=7) were male and 71% (N=17) were female. Table 4-25 below, provided by question 1 on the faculty survey (Appendix F), lists the total faculty by program area. Within the *other* category, the instructor of the Paralegal Technology program is also part of the Business and Office Related Technology program at Community College 6. In addition, the instructor who listed Industrial Maintenance Technology also selected Electrical Technology as a program in which he or she is part of on the faculty survey.

<table>
<thead>
<tr>
<th>Program</th>
<th>Total Faculty</th>
<th># of Completed Surveys</th>
<th>Percentage Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business &amp; Office &amp; Related Technology</td>
<td>16</td>
<td>9</td>
<td>56%</td>
</tr>
<tr>
<td>Early Childhood Education &amp; Technology</td>
<td>13</td>
<td>7</td>
<td>54%</td>
</tr>
<tr>
<td>Electrical Technology</td>
<td>4</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>Food Production &amp; Management Technology</td>
<td>1</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>Heating Ventilation AC and Refrigeration Tech.</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Welding and Cutting</td>
<td>4</td>
<td>1</td>
<td>25%</td>
</tr>
</tbody>
</table>

An additional three questions (23, 24, and 25) on the survey provided information pertaining to the faculty’s years of teaching experience, years of teaching experience in post-secondary career and technical education, and years of teaching experience at the current institution. Although similar in nature, these three questions provided insight as to whether or not the faculty have been teaching in post-secondary career and technical education their whole teaching career and how long they had been teaching at the current institution. As seen the table
below, 54% (N=13) of the faculty participants have 16 or more years of teaching experience. A total of 69% of those had 16 or more years’ experience in postsecondary career and technical education for a total of 38% (N=9). Furthermore, 8 out of 13 of those faculty have 16 or more years’ experience at their current institution. In addition, 70% (N=17) of all participants have 10 or more years teaching experience, 50% (N=12) have 10 or more years at their current institution.

Table 4-4: Faculty Years of Teaching Experience

<table>
<thead>
<tr>
<th>Years of Teaching</th>
<th>Teaching Experience</th>
<th>%</th>
<th>PostSec CTE Experience</th>
<th>%</th>
<th>Current Institution Experience</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>4</td>
<td>17%</td>
<td>5</td>
<td>21%</td>
<td>5</td>
<td>21%</td>
</tr>
<tr>
<td>4-6</td>
<td>3</td>
<td>13%</td>
<td>4</td>
<td>17%</td>
<td>4</td>
<td>17%</td>
</tr>
<tr>
<td>7-9</td>
<td>0</td>
<td>0%</td>
<td>3</td>
<td>13%</td>
<td>3</td>
<td>13%</td>
</tr>
<tr>
<td>10-12</td>
<td>2</td>
<td>8%</td>
<td>3</td>
<td>13%</td>
<td>3</td>
<td>13%</td>
</tr>
<tr>
<td>13-15</td>
<td>2</td>
<td>8%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>4%</td>
</tr>
<tr>
<td>16+</td>
<td>13</td>
<td>54%</td>
<td>9</td>
<td>38%</td>
<td>8</td>
<td>33%</td>
</tr>
</tbody>
</table>

Question 25 on the survey asked the participants to list all degrees attained and allowed for comments such as certifications. Of the 24 faculty participants, 38% (N=9) earned an Associate’s Degree, 46% (N=11) earned a Bachelor’s Degree, 42% (N=10) earned a Master’s Degree, 8% (N=2) earned a Specialist, and 13% (N=3) earned a Doctoral Degree. Seven faculty commented with additional certifications and/or various degrees.

Demographics of Administrator Survey Participants

Of the 12 administrators who completed the survey, 83% (N=10) were Caucasian and 17% (N=2) were African American. In addition, 67% (N=8) of the administrators were male and 33% (N=4) were female. Question 1 on the administrator survey asked participants to list his or her current administrative job title, as listed below in Table 4-27. The job title most frequently designated is Dean (33%) or Assistant Dean (25%) of Career and Technical Education.
Table 4-5: Administrator Job Titles

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Amount of Admins</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean of Career and Technical Education</td>
<td>4</td>
<td>33%</td>
</tr>
<tr>
<td>Assistant Dean of Career and Technical Education</td>
<td>3</td>
<td>25%</td>
</tr>
<tr>
<td>Vice-President of Career and Technical Education</td>
<td>1</td>
<td>8%</td>
</tr>
<tr>
<td>Assistant Vice-President of Career and Technical Education</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Director of Career and Technical Education</td>
<td>2</td>
<td>17%</td>
</tr>
<tr>
<td>Assistant Director of Career and Technical Education</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Other: Dean of Instruction and Assistant Dean of Instruction</td>
<td>2</td>
<td>17%</td>
</tr>
</tbody>
</table>

Questions 15 through 18 on the survey asked the participants to describe years of teaching experience, years of administrative experience, years of post-secondary career and technical education experience, and years’ experience in administration at current institution. As seen in Table 4-27 below, 50% (N=6) of the sample administrator population has 16 or more years teaching experience. In addition, 67% (N=8) of the sample have 10 or more years of administrative experience. Then participants were then asked the number of years of experience in post-secondary career and technical education whether teacher or administrative and 75% (N=9) have 13 or more years of experience. At their current institution, 25% (N=3) have 16 years or more experience in comparison to 42% (N=5) have 7 to 9 years of experience.

Table 4-6: Administrator Years of Teaching Experience

<table>
<thead>
<tr>
<th>Years of Experience</th>
<th>Teaching Experience</th>
<th>Teaching Experience %</th>
<th>Admin Experience</th>
<th>Admin Experience %</th>
<th>PostSec CTE Experience</th>
<th>PostSec CTE Experience %</th>
<th>Current Institution Experience</th>
<th>Current Institution Experience %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>8%</td>
<td>0%</td>
<td>2</td>
<td>17%</td>
<td>2%</td>
</tr>
<tr>
<td>4-6</td>
<td>1</td>
<td>8%</td>
<td>1</td>
<td>8%</td>
<td>2</td>
<td>17%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>7-9</td>
<td>3</td>
<td>25%</td>
<td>2</td>
<td>17%</td>
<td>1</td>
<td>8%</td>
<td>5</td>
<td>42%</td>
</tr>
<tr>
<td>10-12</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>17%</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>8%</td>
</tr>
<tr>
<td>13-15</td>
<td>2</td>
<td>17%</td>
<td>2</td>
<td>17%</td>
<td>1</td>
<td>8%</td>
<td>1</td>
<td>8%</td>
</tr>
<tr>
<td>16+</td>
<td>6</td>
<td>50%</td>
<td>4</td>
<td>33%</td>
<td>8</td>
<td>67%</td>
<td>3</td>
<td>25%</td>
</tr>
</tbody>
</table>

Question 19 on the administrator survey asked participants to list all degrees attained and allowed for comments such as certifications earned. Of the 12 administrator participants, 17% (N=2) earned an Associate’s Degree, 58% (N=7) earned a Bachelor’s Degree, 75% (N=9) earned a Master’s Degree, 17% (N=2) earned a Specialist, and 42% (N=5) earned a Doctoral Degree. Administrators were then asked to provide additional certifications or degrees earned and
comments entailed, “Certified as a laboratory professional. and there are school certifications (i.e., teaching certificates, etc.),” AA and Vocational Administration,” and “BS-Industrial Arts Education MS-Vocational Education EdD-Administration & Supervision in Higher Education.”

**Research Question 1 Results**

The components of instruction considered within this section included class size, instructors’ and administrators’ perceptions about the state assessment, divisional passing rates, and balance of instructional strategies utilized. In addition, open-ended responses were coded and grouped accordingly. The results for sub-questions 1-a, 1-b, 1-c, and 1-d provided information about instructional methods and materials, student preparation sessions, curriculum and instructional material alignment, and student involvement in organizations, clubs, and certification exams.

Question three of the faculty survey asked the participants the average number of students enrolled within their program for 2007, 2008, and 2009. On average, 70% of the faculty indicated that their total enrollment ranged from 10 to 20 students. In 2008, 4% of the instructors selected having more than 100 students enrolled and 8% in 2009.

![Figure 4-1: Student Enrollment from Faculty Survey](image)
In summary, the majority of the instructors described their programs as having between 10 and 40 students enrolled within their respective programs who participated in the MS-CPAS2 assessment, as seen in the figure above.

The administrators were asked, “On average, how many programs successfully met the minimum passing requirements for the MS-CPAS2 assessment for the past three years?” The results are provided in the figure below. In 2009, 4% of the administrators listed that between 20% and 30% of their programs successfully met the minimum passing requirements. In addition, 45% indicated that 70% to 90% of their programs passed with the minimum passing rate on the MS-CPAS2 assessment in 2008 and 2009. In general, the administrator participants indicated a general rise in MS-CPAS2 passing rates each year from 2007 through 2009. As a reminder, these administrators belong to the community colleges chosen utilizing purposeful sampling by the RCU data provided. These administrators belong to ten colleges that house the top 13 programs with passing rates above the minimum average with 10 or more students participating in the MS-CPAS2 assessment for the past three years.

Figure 4-2: Programs Passing from Administrator Survey
In addition to student enrollment and passing programs, the faculty and administrators were asked to describe the purpose of the MS-CPAS2 assessment in their own words. A total of 15 faculty and all 12 administrators responded to this question. The comment data were then imported into Atlas.ti within the survey Hermeneutic Unit and coded according to occurrence of specific keywords. Six codes were created for this particular survey question data including Accountability (5 instances), Assess (7 instances), Competency (5 instances), Comprehension (2 instances), Exit (4 instances), and Retention (3 instances). Of the 15 faculty responses, three responses were personal thoughts pertaining to the assessment and the remaining 12 were general statements describing the purpose of the assessment. Of the administrator responses, one response was a personal thought relating to the assessment. The following table outlines the comments according to the Atlas.ti codes. A total of 17 out of the 27 responses were coded utilizing these main code terms that reference the MS-CPAS2 assessment.

Table 4-7: MS-CPAS2 Defined

<table>
<thead>
<tr>
<th>Atlas.ti Code</th>
<th>Response</th>
<th>Faculty (F) or Admin (A) Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability</td>
<td>The MS-CPAS2 is an instrument used to establish accountability in our program by assessing how well our students score in a valid and reliable instrument. It is designed to measure each student’s degree of technical skill mastery. The results may be used as an indicator of student success in the workplace.</td>
<td>F</td>
</tr>
<tr>
<td>Accountability &amp; Competency</td>
<td>I view the purpose of the CPAS test as a measure of accountability i.e. is the program adequately covering the material that meets the competencies of the state curriculum.</td>
<td>F</td>
</tr>
<tr>
<td>Accountability &amp; Assess (2)</td>
<td>The CPAS2 purpose is to provide our CTE programs that do not have an industry standard assessment an evaluation tool to assess student and instructor performance. It is also an accountability measure for each program and each school with the Dept of Ed.</td>
<td>A</td>
</tr>
<tr>
<td>Accountability</td>
<td>We use it for program accountability and improvement.</td>
<td>A</td>
</tr>
<tr>
<td>Assess &amp; Exit</td>
<td>It is used as an “exit exam” to assess how much the students have retained at the conclusion of their 4 semester program.</td>
<td>F</td>
</tr>
<tr>
<td>Assess &amp; Exit</td>
<td>To assess what students have learned at the exit point of their degree.</td>
<td>F</td>
</tr>
<tr>
<td>Assess &amp; Competency</td>
<td>Ideally the CPAS test is given to assess student’s understanding and instructor’s teaching competency. However, I am certain that the CPAS test is not valid, and is out-of-date for the software we are currently using.</td>
<td>F</td>
</tr>
<tr>
<td>Assess</td>
<td>To evaluate the knowledge gained through our program and to assess the student's readiness to go to work</td>
<td>A</td>
</tr>
<tr>
<td>Competency</td>
<td>Passing the MS-CPAS2 is required for graduation from the program and receipt of an AAS degree. The test is an overview of the various</td>
<td>F</td>
</tr>
</tbody>
</table>
Additional faculty comments included information such as, “To compare students with peers and to compare programs to other programs in the state,” “To verify the effectiveness of the program in meeting instructional objectives,” “state requirement,” “To evaluate the instructor and students,” and a personal opinion concerning the instrument itself from a faculty that stated:

In my program of study, Medical Billing and Coding and Medical Office Technology, the CPAS2 did not include any questions in either field of study. My students have done well on the CPAS prior to 2009. In 2009, the CPAS had numerous accounting questions which most of my students did well on, but were the questions Accounting Technology related of Business and Office related? My students need a CPAS test which includes their related field of study.

Further administrator comments were also of importance that were not coded in Atlas.ti including, “The MS-CPAS is a statewide test given to students in career and technical programs that do not have a national credential test to measure a student’s skill level attainment,” “The MS-CPAS2 is used to determine student and program outcomes,” “Good capstone test for 4th semester students within a specific discipline,” “The purpose of the MS-CPAS is to provide information relating to the technical skill attainment of students in Career and Technical

| Competency | The MS-CPAS attempts to determine how much the student has learned based upon program goals and objectives as defined by a list of competencies identified by teachers across the state. | A |
| Competency Comprehension & Retention | Used for competency testing and verification. | A |
| Comprehension | To determine student comprehension and retention in our classes. | F |
| Exit | I am opposed to using MS-CPAS2 to measure the students’ level of comprehension of a CTE program. | A |
| Exit | Students take the test as an exit exam for our BOT department. | F |
| Exit | The Ms-CPAS2 is used as an exit exam for the Career & Technical programs. The test is used to check the knowledge of students in their program area. This test is to be used by employers to see the knowledge base of the students completing the programs. | F |
| Retention | The MS-CPAS2 provides an effective tool to gage the level of concept retention my students take away from the training. | F |
| Retention | The CPAS is an antiquated and out of date test that is used to judge the level of instruction and knowledge retention of our students. The problem therein is that this test is given to both 1 year certificate students as well as A.A.S students. The testing method is not even close to what we need. | F |
The goal of the MS-CPAS is to improve the quality of instruction in Mississippi CTE programs,” and “Test skill proficiency of program completers.”

Survey question 7 on the administrator survey asked the participants, “What are the components of a successful program within your division.” The following figure displays 8 different categories of importance ranked on a 5-point Likert scale with the following values: 5-Very Important, 4-Important, 3-Neutral, 2-Unimportant, 1-Very Unimportant. All of the values were 3 and above with the majority of the responses as either very important or important. All of the administrators indicated that the instructors were very important and 100% (N=12) stated that the students were important. Furthermore, 100% (N=12) stated that instructional methods were important and 83% (N=10) indicated that textbooks were important. In addition, 84% indicated the classroom as important, 91% (N=11) importance for equipment, 83% (N=10) that software was important, and 92% (N=11) stated computers were important components of a successful program.

Figure 4-3: Components of Successful Program by Administrators
One comment was added by an administrator in relation to components of a successful program that stated, “On the CPAS, students need to take the CPAS exam seriously and that their responses are used for program improvement.”

In summary, the majority of the instructors indicated enrollment status in the general area of 10 to 20 students per year. In addition to enrollment of students, nearly half of the administrator participants indicated that the majority of their programs were passing the MS-CPAS2 assessment. Furthermore, both groups of participants elaborated on the purpose of the assessment and the majority of the comments indicated that the assessment was a test of accountability, assessed program competencies, tested student comprehension and retention (retaining) of data, and that it was an exit exam before graduation. Administrators then described the important components of successful programs with instructors, students, and instructional methods ranked as most important. All of the remaining components were described as important such as textbooks, the classroom, equipment, software, and computers.

**Sub-question 1-a Results**

![Figure 4-4: Instructional Methods Utilized by Faculty](image)
Faculty survey questions 4, 5, and 6 addressed this question. Survey item four asked the instructors to place a percentage of time that they dedicated to five major instructional method areas including lecture, discussion, demonstration, small group activities, and individual hands-on activities as outlined in the figure above. The results, in relation to the comments, were evident that many of the instructors utilized multiple instructional methods simultaneously in the classroom with most of the methods being utilized around a 25% time frame for each.

Additionally, comments included, “The amounts do not add up to 100% because dependent upon the course, all the activities above are used some more that others,” “80% lab 20% lecture discussion and demonstration are done in lab in a group setting, as well as one on one,” “Each class has lecture and discussion. Demonstration, small group and hands-on activities are included in most class except theory classes such as Early Childhood Education,” “I believe you needed a 10% so that we could break it down better. For instance, I would have chosen 10 percent for ‘Discussion’ and 10% for ‘Small Group Activities’,” “lecture is more like 10% Discussion 10% Demonstration 20% Small group activities 10%,” “Repeat objectives and state competencies,” “I realize my percentages add up to more than 100%, but I use different methods depending on the type of class, and I teach 12 different classes over the course of the year,” and one instructor gave good feedback pertaining to the particular courses at hand:

Depends on the course. In Word Processing, most of the class is Demonstration and Individual Hands-On Activities. In Professional Development, more Discussion and Lecture take place. Small group activities are used in all courses at some point in the semester.

Faculty were asked if they altered instructional methods within their classrooms to ensure MS-CPAS2 passing rates. A total of 63% (N=15) of the faculty said no and 37% (N=9) said yes. A total of nine commented concerning instructional method alterations, including one comment that was not an alteration but stated, “I do not teach the test, I have curriculum to cover and I do so. I refuse to alter my methods for one test.” In addition, another related comment by a
participant stated an alteration due to technology, “Over the years I have altered my teaching methods, not specifically to ensure passage on the CPAS, but to adjust for changing technology and for the resulting changes in learning styles over the years.” Additional comments included the use of teamwork, “Changed from individual work to team work so other students could help coach other students.” An Atlas.ti coding unit created for this particular sub-question was hands-on which was listed in four instances as well as two instances in the survey item four comments as seen in Table 4-30 below.

<table>
<thead>
<tr>
<th>Atlas.ti Code</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands-On</td>
<td>I have increased hands-on activities as that seems to be a better method for the students to retain information.</td>
</tr>
<tr>
<td>Hands-On</td>
<td>yes, less lecture, more hands on</td>
</tr>
<tr>
<td>Hands-On</td>
<td>I have implemented more hands-on activities and on-line tutorials.</td>
</tr>
<tr>
<td>Hands-On</td>
<td>As a class progresses I adjust lecture, demonstration and hands-on activities as needed in order to keep the students relatively on the same level. By doing this it allows me to ensure that the majority of my students have a useable knowledge of the concepts being presented.</td>
</tr>
</tbody>
</table>

In addition to hands-on activities, one stated to “review more throughout the semester,” and another participant stated that through the use of technology,

Yes, instructional methods have changed to ensure that students are up-to-date with technology. We are "paper-free" in most courses, with students submitting work on Blackboard. All tests and assignments are given on Blackboard. We use SmartSync software and Smart Boards for instruction also. This helps students stay on track and become more involved with their learning.

The results of question six on the faculty survey were strictly open-ended responses pertaining to the type of instructional materials utilized within each instructor’s program. Book companies listed included Delmar, Grob, and Paradigm. Of the 15 responses, two instructors listed Microsoft products and specific products such as Word 2007. A coding unit called Software was created in Atlas.ti with a total of 9 instances as outlined in the table below.
Table 4-9: Instructional Materials Utilized

<table>
<thead>
<tr>
<th>Code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software</td>
<td>Step-By-Step Coding 3M Coding software Medisoft Billing software</td>
</tr>
<tr>
<td>Software</td>
<td>My students use Westlaw (legal research engine) and a case management program called ProLaw which is packaged with some of my texts. I posts &quot;handouts&quot; on Blackboard. these consist mainly of sample legal documents. Students do legal research projects and a lot of document drafting exercises (deeds, Complaints, Motions, etc)</td>
</tr>
<tr>
<td>Software</td>
<td>Text: Grob, Basic Electronics; Computer Hardware: Labvolt Facet; Software: NI MultiSim</td>
</tr>
<tr>
<td>Software</td>
<td>Illustrated Text, teacher made handouts, SAM tutorial software.</td>
</tr>
<tr>
<td>Software</td>
<td>Textbooks, powerpoints that come with our texts, internet resources that are included with the textbook.</td>
</tr>
</tbody>
</table>

In addition to the comments directly related to software, additional comments included student demonstrations, hands-on training videos, and even faculty-created handouts. An additional instructor commented with the following statement:

Wow - this one would take a long time. Each course has a textbook that has been critiqued to insure that it matches the objectives of our state curriculum. I attend workshops, invite guest speakers, incorporate the WIN program, include colleagues on campus to speak in class, use local day care centers as lab sites (these will also be employment sites), supervise 12 hours a week of student teaching, provide internet sites, network with other program coordinators ... My resources are always growing so that students can get the best possible "the big picture" of early childhood education.

In summary, five main instructional methods were presented to the faculty participants and the majority of the participants indicated that approximately 25% of their classroom time was utilized with each method and that no one particular method was utilized at all times. Some commented that the percentages of utilization were even smaller such as 10% and that the amount of time per method depended on each course. Many of the faculty participants indicated that no alterations to methods were made in accordance with the MS-CPAS2 assessment.

However, comments related to the use of hands-on activities and a change in methods due to technology not necessarily because of the assessment itself. The faculty participants then
provided types of instructional materials utilized within their classrooms and software was one of the key components.

**Sub-question 1-b Results**

Survey item 13 on the faculty survey asked if preparation sessions were provided for students by faculty. A total of 58% (N=14) of the faculty said yes that preparatory sessions were provided and 42% (N=10) said no. Many faculty comments were made concerning the preparation sessions, but most were brief, one-sentence comments. All comments related to giving the students a practice exam, which the RCU provides a list of sample questions for each program that requires a MS-CPAS2 assessment on the website with the downloadable curriculums. Comments included, “The program coordinator does, but I do not,” “We practice the practice test,” “I allow them to use a practice test if available to study,” “I teach 1st and 2nd semester prep given in 4th semester,” “I teach the accounting courses and provided a review for all majors at PRCC in Applied Business Math and Business Accounting prior to the test,” “Use Sample test,” “informal question review,” and “Review basic competencies/objectives.” However, one faculty commented that “However, we have developed a self-study guide to review key ideas contained in each of our courses.”

In summary, over half of the faculty participants indicated the use of preparatory sessions for students. Materials included practice tests, review sessions, and faculty-developed study guides.

**Sub-question 1-c Results**

To answer sub-question 1-c, faculty survey question 7 asked the participants, “How do you determine and select what instructional materials (books, software, handouts, etc.) will best cover the objectives and competencies in your curriculum.” Two new Atlas.ti codes were created for this research question including Colleagues (3 instances) and Objective (3 instances). In
addition to these two codes, three existing codes were utilized including Hands-on (2 instances), Software (3 instances), and Competency (3 instances). These results can be found below in Table 4-10. One additional comment that was not included in the coding scheme was that the participant “attend[s] NAEYC conferences.”

Table 4-10: Instructional Material Selection by Faculty

<table>
<thead>
<tr>
<th>Atlas.ti Code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colleagues</td>
<td>Some authors and textbooks were recommended by colleagues. I try to stay in touch with various book publishers and try to review new books to determine what will best suit my needs and the abilities of my students.</td>
</tr>
<tr>
<td>Colleagues</td>
<td>Review &amp; discuss with colleagues</td>
</tr>
<tr>
<td>Colleagues</td>
<td>I review complimentary copies and talk with other program coordinators.</td>
</tr>
<tr>
<td>Competency &amp; Hands-on</td>
<td>To choose instructional material we evaluate the material in advance to ensure that it provides adequate concepts to meet the goals of our programs as well as having supplemental materials that work well with out hands-on trainers.</td>
</tr>
<tr>
<td>Competency</td>
<td>I select my texts and handouts based upon the published curriculum for my program.</td>
</tr>
<tr>
<td>Competency</td>
<td>I order the books from the company and go through the competencies checking off what the book covers.</td>
</tr>
<tr>
<td>Competency &amp; Objective</td>
<td>Through previewing and matching content to the objectives and competencies.</td>
</tr>
<tr>
<td>Hands-on</td>
<td>look for realistic hands-on application/delivery systems</td>
</tr>
<tr>
<td>Objective</td>
<td>I request review copies of textbooks and look over the objectives and the Chapters of each book. Compare to see if objectives would be met with the textbook.</td>
</tr>
<tr>
<td>Software</td>
<td>I review textbooks, software, and contact my textbook rep for questions about the textbooks.</td>
</tr>
<tr>
<td>Software</td>
<td>Experience with the books, and software and handouts. If something does not work well, I try a different approach.</td>
</tr>
<tr>
<td>Software</td>
<td>Simply by the course I am teaching. Of course Computerized Accounting requires a totally different teaching method and software than would Mechanics of Communication.</td>
</tr>
</tbody>
</table>

In summary, instructional materials were selected by faculty according to alignment with curriculum’s competencies and objectives, the use of hands-on activities with the instructional materials, the use of software, and recommendations based on other colleagues in the participants’ program area.

Sub-question 1-d Results

The faculty were asked with survey question 8 if they or their students actively participated in program-related student organizations or clubs. The results indicated that 67% (N=16) of the faculty did actively participate and 83% (N=20) indicated that their students
actively participated in some form of club or organization. In addition to the above question, the faculty were then surveyed with survey question 9 to identify the clubs and organizations, including the percentage of students who participated in each. Furthermore, participants were allowed to comment additional clubs the students may have participated in that was not listed and were asked to identify a percentage of students who did participate. As indicated in the figure below, a mean average of 67% of the faculty indicated that up to 10% of their students actively participated in the clubs listed. In addition, the amount of students who participated in PBL, DEX, or PTK was indicated by the faculty as being less than 60%. Skills USA was the only club within the chart identified with 100% participation by one participant.

In addition to the four clubs pre-identified by the researcher, five additional clubs and/or organizations were identified within the comments section of survey question 9. These clubs included the “American Welding Society (AWS)” at 100% participation, “Early Education Club” at 100% participation, “The National Association for the Education of Young Children,” “P.A.S.T.E. Preschool Association for Students and Teachers in Education,” and “Non-

Figure 4-5: Percentage of Student Participation in Clubs/Organizations
traditional Student Association” at 25% participation. An additional comment was made that, “We are in the process of trying to reintegrate the Skills USA program into our student population.”

Survey question 10 asked the faculty, “Are your students encouraged to take state or nationally-recognized certification exams upon completion of the program? Please list the name(s) of the certifications.” A total of 71% (N=17) of the faculty indicated that they encouraged their students to take a state or nationally-recognized certification exam. Twenty-five percent indicated that they did not encourage their students and one participant did not respond to this question. Faculty participants were then asked to identify or list the certifications that they encouraged their students to participate in. Seven various certifications were identified including “ICC Master Electrician ICC Journeyman Electrician” (identified by two faculty), “NATE,” “Serv Safe,” “NEC Electrical Code,” “Certified Coding Associate Exam through AHIMA,” “CLA exam administered by the National Association of Legal Assistants,” and two identified the Microsoft Office User Specialist.

The administrators were asked to identify how many of their programs currently utilized a state or nationally-recognized certification instead of the MS-CPAS2 assessment. A total of 50% (N=6) of the administrators identified 1 to 5 programs, 42% (N=5) identified 6 to 10 programs, and 1 participant identified 11 to 15 programs.

Both the faculty and administrator participants were then asked with faculty survey question 11 and administrator survey question 5, if state or nationally-recognized certifications should be used in lieu of the MS-CPAS2 assessment. This question was designed on a five-point Likert scale with an option for comments. The scale was as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. The mean score for the faculty was 3.72 and 4.62 for the administrators, with a total mean value of 4.06. As seen in the figure below,
91% (N=11) of the administrators and 62% (N=15) of the faculty agreed that a type of certification should be used instead of the MS-CPAS2 assessment. In addition, 25% (N=6) of the faculty were neutral, and 8% (N=1) of the administrators and 12% (N=3) of the faculty disagreed.

A total of 7 comments were given by the administrators and 10 comments by the faculty. Those 17 comments were then combined and added as a primary document in Atlas.ti and coded. Three codes were utilized including Cost (4 instances), Recognition (8 instances), and Revision (5 instances). The following table outlines the comments in relation to the three coding units.

<table>
<thead>
<tr>
<th>Atlas.ti Code</th>
<th>Response</th>
<th>Faculty (F) or Admin (A) Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>For the above reasons, the CLA is not offered often nor close by and cost upwards of $300.00, Paralegal have yet to be licensed nor regulated by the states in that case I'm sure some type of exam would be mandatory but for now it is optional and really does not help them attain a better job</td>
<td>F</td>
</tr>
<tr>
<td>Cost</td>
<td>Paralegals are not required by any state to be certified. Several professional associations offer voluntary certification, but these exams are very expensive and out of reach for most students.</td>
<td>F</td>
</tr>
<tr>
<td>Cost</td>
<td>Up until now, our college has not approved additional &quot;fees&quot; for these tests.</td>
<td>A</td>
</tr>
<tr>
<td>Cost</td>
<td>It is sometimes difficult to get national certifications due to costs to the student; therefore we would not have any gauge of student performance.</td>
<td>A</td>
</tr>
</tbody>
</table>
Also, some national scores are difficult to obtain, especially individual scores.

| Recognition | IF the MS-CPAS2 is going to be required, it should be a state recognized certification in addition to the AA Degree that is receives. This would give it more credibility with the students and more would do well. | F |
| Recognition & Revision | CPAS exam is not hands-on, and has not been updated for 2007. I think a certification exam would be MUCH better for assessing students in our programs! Also, the certification exam is what is recognized by industry, not a CPAS exam. | F |
| Recognition | I would like the MS-CPAS2 to be linked to graduation if a state or nationally recognized certification is not used in lieu of MS-CPAS2. Every time it is given we have several students who do not take it seriously and do not make the effort to do well since it does not affect graduation. | F |
| Recognition | Our students would give more effort on the test if they were able to receive a certificate that would assist them in their employment. | F |
| Recognition | I prefer state/national certifications because they are recognized on a state/national level. | A |
| Recognition | Employers do not recognize what the actual MS-CPAS2 test represents. Employers accept and recognize the national certifications. | A |
| Recognition | At this point national certification is benchmarked for competency. | A |
| Recognition | Our goal is for students to be trained to go to work. The more nationally recognized certifications that they have will only help with successful placement in industry. | A |
| Revision | Our one year students are not qualified to take the certifications because they have not had all the academics or the technical classes that a two year student would have. | F |
| Revision | After reviewing the CPAS questions this year, there were so many questions on the exam that were outdated and had nothing to do with what we are teaching. Our Health Data Program is not even included on the exam. The largest enrollment of students we have are in that major. | F |
| Revision | The MS-CPAS is currently being revised. I do not know how they have changed it and hope many items have been revised due to low scores state-wide. | F |
| Revision | This will provide stronger validation for the assessment tool. | A |

In summary, the faculty indicated that they actively participated in program-related clubs or organizations along with their program as a whole. On average, up to 25% of the students participated in various clubs and organizations. Some faculty indicated a 100% participation of students. Furthermore, the majority of faculty participants indicated that they encouraged student participation in program-related certifications and many of the administrators indicated that multiple programs utilized certifications in place of the MS-CPAS2 assessment. In addition, the majority of administrators and approximately half of the faculty indicated that certifications should be utilized in place of the MS-CPAS2 assessment. Reasons provided included recognition of certifications, and revisions of the current assessment needed. However, on disadvantage was
noted by both participants which included the cost of certification exams in comparison to no charge for the MS-CPAS2 assessment.

**Research Question 2 Results**

Results for question 2 included faculty and administrators’ perceptions of MS-CPAS2, job satisfaction in relation to the assessment, job performance, and course delivery for the faculty. Seven survey questions were utilized to answer these four areas and were designed on a five-point Likert scale with an option for comments. The scale was as follows: 1 = Very Insignificant, 2 = Insignificant, 3 = Neutral, 4 = Significant, 5 = Very Significant. In addition, the results for sub-question 2-a and 2-b provided information about faculty professional development and assessment preparation.

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>(N) Very Significant</th>
<th>(N) Significant</th>
<th>(N) Neutral</th>
<th>(N) Insignificant</th>
<th>(N) Very Insignificant</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Perceptions</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3.14</td>
</tr>
<tr>
<td>Faculty Perceptions</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>2.78</td>
</tr>
<tr>
<td>Admin Job Satisfaction</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>3.46</td>
</tr>
<tr>
<td>Faculty Job Satisfaction</td>
<td>0</td>
<td>8</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>3.04</td>
</tr>
<tr>
<td>Admin Job Performance</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>3.41</td>
</tr>
<tr>
<td>Faculty Job Performance</td>
<td>0</td>
<td>7</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>2.81</td>
</tr>
<tr>
<td>Faculty Course Delivery</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>2.84</td>
</tr>
<tr>
<td>Total Participants (N)</td>
<td>3</td>
<td>48</td>
<td>40</td>
<td>28</td>
<td>13</td>
<td>3.07</td>
</tr>
</tbody>
</table>

Faculty and administrators perceptions about state-mandated assessment practices were on the quality of the MS-CPAS2 assessment as a measure for program accountability and student learning outcomes. Survey items included faculty survey item 16 and administrator survey item 10. The mean score for the faculty was 2.78 and the administrator mean score was slightly higher at 3.14. As seen in the above table, 33% (N=8) of the faculty and 58% (N=7) of the administrators indicated a significance in perceptions on the quality of the MS-CPAS2 in relation to program accountability and student learning outcomes.
The comments concerning administrator (4 comments) and faculty (9 comments) perceptions of the MS-CPAS2 assessment were compiled together and added as a primary document in Atlas.ti. All but one of the faculty comments were grouped together as needs-assessment measures for MS-CPAS2 assessment based on faculty’s perceptions. One faculty commented that “If you teach what you are supposed to teach, the CPAS results will come.”

Needs-assessment comments were made such as, “I feel the AWS sense certifications are a better measure because performance is also graded,” “I believe they are significant, but I do not think that the questions in the past have been the best measures,” and “Questions are outdated.”

Faculty comments related to needs assessment included:

I think there are too many variables among the students, the test questions, the region of Mississippi where some skills are more emphasized than others. I think it could be a contributing factor but should not delegate an entire program.

When questions are out-of-date (2003) they cannot be used to measure students’ knowledge. A few weeks ago I previewed the CPAS exam questions, and I realized WHY our students score so low! Many of the questions didn't make sense or were from the 1980's!

Some students do not test well - especially when 2 years of material are covered age and developmentally correct expectations, lesson plans and the positive implementation of lesson plans, positive social and communication skills would be a better indicator for how well someone is prepared to teach young children.

The MS-CPAS2 has a limited number of questions in each course content area. Our state core curriculum objectives are written in very broad and general language. Therefore instructors may interpret and teach to meet those objectives in a variety of ways. This in and of itself does not pose a problem; the problems arise when some of the questions selected and/or written are specific to the instructors who are part of the writing team. Many subject areas have a very limited number of questions which does not allow for a student to miss but a very few questions and then have his percentage drop significantly. This is not fair to the student nor to the program (school) being assessed.

I find that students who have better grades in my program are more likely to do well on the CPAS, but sometimes students who have to work harder to make the good grades don't do as well on the CPAS. It is not a good measure of how hard a student is willing to work for an outcome.
In addition to the faculty comments, the administrators' comments were also based on needs-assessment according to their perceptions of the MS-CPAS2 assessment. One participant indicated that, “It's a shame that our ‘hands-on’ classes are graded by a ‘paper and pen’ assessment. I wish there was a way to go to a performance based assessment.” The remaining comments are listed below and each pertains to the idea of a needs-assessment for the MS-CPAS2 assessment:

I think it is a good indicator; however, there are always questions on the test both students and instructors complain about. Also, students' test taking abilities and external factors regarding what happened in their personal lives must be taken into consideration regarding the testing dates.

The validity and reliability of the exam needs some help. There are been reports to me that answers don't match up to questions, or there is no diagram provided when the question speaks to interpretation of a diagram. The "item analysis" workshop conducted by the RCU is a positive step in test improvement.

Somewhat significant in that we need some type of measure, but as a whole the CPAS2 is only as good as the questions that are chosen for the assessment. If an instructor had little involvement with the revisions then the learning outcomes tend to be marginal. Industry does not recognize the CPAS2 so it is seen more as a necessary evil by my instructors.

With faculty survey question 17 and administrator survey question 11, participants were asked to describe what impact the MS-CPAS2 assessment had on their job satisfaction. The mean for the faculty results was 3.04 and the mean for the administrator results was a slightly higher at 3.46. The above table displays the participants’ responses which indicated 33% (N=8) of faculty suggested the assessment had an impact on job satisfaction in comparison to 66% (N=8) of the administrators. In addition, 46% (N=11) of the faculty were neutral in comparison to 8% (N=1) of the administrator participants.

Comments were provided by the faculty and administrators concerning job satisfaction. On faculty commented that “I can just about tell you where a student land on the CPAS. I consider his performance in the program over the two years we have him or her,” and another commented that the MS-CPAS2 assessment is, “Just a hoop to jump through.” Additional
comments included, “of course, when the students do well I am excited and when they do poorly I am concerned and disappointed but I look at each student individually knowing their abilities after teaching them for two years,” and “I receive greater satisfaction from the long term success of the students, and from the pride they feel when they perform well on their course work.” The remaining comment related to certifications, “There is so much emphasis placed on the CPAS. I think the test should be done away with, and students should take a certification exam - such as Microsoft Office Certification.”

The administrators’ comments in relation to job satisfaction included, “Trickle down - when the President isn't happy - I'm not happy. And right now - no one is happy,” “I want all of my programs to do well. We, as a college, strive to score above the state average, as I'm sure all colleges do,” and “I'm just glad when students pass that the program will be kept off program improvement.”

The faculty and administrator participants indicated whether or not the MS-CPAS2 affected their job performance with faculty survey question 18 and administrator survey question 12. The mean or average for the faculty was 2.81 and the administrators’ mean was slightly higher at 3.41. As indicated in the above table, 29% (N=7) of the faculty and a higher percentage of administrators at 58% (N=7) felt that the MS-CPAS2 assessment has an impact on job performance. In addition, the administrators’ neutral position for this survey question was slightly higher than with job satisfaction at 17% (N=2) neutral, and the faculty neutral position decreased from job satisfaction (46%) to 38% (N=9), as seen in the above table.

Four faculty and one administrator commented on survey question 18, pertaining to the impact the MS-CPAS2 assessment has on job performance. One faculty stated a neutral comment that, “I will perform the same with/without the CPAS.” Further comments reiterated concerns that were listed under perceptions and job satisfaction including, “Here again, if you do
your job by teaching the material the students need to survive in the real word, the CPAS result will come,” “I am much more concerned with pleasing the employers and helping each student get a life changing job than I am with their scores on CPAS,” and “pass rates and accountability are looked at by the administration.” One administrator stated that, “I am constantly after instructors to emphasize the importance of CPAS to their students. The main thing with CPAS is to sell the importance of the test to the students.”

Faculty participants indicated whether or not the MS-CPAS2 assessment has an impact on course delivery with faculty survey question 19. The mean was 2.84 and only 25% (N=6) viewed the assessment as having an impact on course delivery. In addition, 42% (N=10) were neutral, and 33% (N=8) stated the impact was insignificant, as seen in the table above.

Several instructors commented on survey question 19 pertaining to course delivery. All comments were in the general consensus that course delivery is not necessarily altered for the MS-CPAS2 assessment. Comments included, “I do not consider CPAS result when teaching. I consider what my students need and provide them with the material,” “Basic concepts would be taught irregardless if tested or not-- they have to know them to become employed,” “I am going to teach them what they need regardless,” “I think about CPAS format of questions when making my tests, other than that it doesn't have much of an impact,” “I teach for understanding, not for a test result,” and “I do not structure my courses dependent on a standardized test. I feel that to do so would be a very POOR way to teach.”

In summary, the administrators had more positive views than the faculty with regards to the MS-CPAS2 assessment as a quality standard for program accountability and student learning outcomes. Comments from all survey participants related to the content of the questions themselves that contained outdated information, the need for a performance measure, and a need for more program-specific questions. In addition to perception, administrator participants
indicated a higher level of effects on job satisfaction and job performance in relation to the MS-CPAS2 assessment. General comments related to the assessment as another requirement to fulfill in relation to job satisfaction, and faculty commented that the assessment in relation to job performance is not a major concern whereas administrators commented that faculty needed to understand the importance of the assessment. Furthermore, faculty indicated not much impact on course delivery.

Sub-question 2-a Results

Faculty participants were asked whether or not they were involved in professional development and then identified in what capacity and the names of each. A total of 79% (N=19) of the faculty participants indicated that they were involved in professional development. Multiple organizations were indicated by the faculty such as “MCEF apprenticeship program,” “PBL – co-advisor,” “NAEYC,” “NBEA SBEA Post grad work,” and “MS-NBEA VC Blackboard courses offered on campus.” Additional comments included, “I am recognized as a trainer by the state licensing board and provide workshops locally and throughout the state,” “I keep my skills fresh by continuing to work with an engineering group at night and on weekends. This is essential to staying current with new technology,” “Internships with local hospitals. This takes a lot of time during the summer,” “Faculty sponsor of the Non-traditional Student Association Attend various legal seminars sponsored by the Mississippi Bar Association Attend mandatory and voluntary BlackBoard training,” and

ALPHA DELTA KAPPA, NATIONAL WOMEN EDUCATORS SORORITY Member over 25 years, have held various offices at local chapter level, we promote education as a profession for women & men and our gives a scholarship annually to a graduation senior in Tate or DeSoto county. I am a member of MECA- Mississippi Early Childhood Association I am a member of ACTE. My credentials are: B.S., M.A., Advanced Study, University of Mississippi. I have the ServSafe Endorsement. Each year I earn 15 hours staff development as stipulated by the health department for a licensed day care center (for our laboratory school) and earn and additional 15 hours staff development as stipulated by the community college where I am employed.
In summary, the majority of the faculty indicated that they participated in some sort of professional development. Comments included organizations or clubs, online courses, part-time program-related jobs, workshops, and internships.

**Sub-question 2-b Results**

Administrator survey question 6 provided data to answer this sub-question in relation to whether or not administrators provided preparatory MS-CPAS2 sessions for instructors. In addition, the participants were asked to elaborate in detail if sessions were being provided. The results indicated that 67% (N=8) of the administrator participants provided MS-CPAS2 preparatory sessions for their faculty, and 25% (N=3) did not.

The administrators were asked to comment on how these sessions were provided. Several comments were provided including, “No, this [MS-CPAS2 training sessions] is left up to the State Board for CJC and the RCU is [to] provide this type of training for instructors.” Three more commented that the RCU or MAC provided training with the following comments, “This last week, RCU has provided an ‘Item Analysis’ workshop. This is the first time I can remember this has been done,” “Typically through the RCU,” and “Only sessions provided through MAC.” MS-CPAS2 preparatory session ideas included, “Professional development regarding how to write questions and provide practice tests within their classrooms Usually provided in the fall and spring semesters one to two hours in length,” “August 2010 Division Meeting - CPAS review of Curriculum and items in test bank,”

Either the director or Tech Prep Coordinator leads discussions at each monthly division meeting. Additionally, our students that are scheduled to take the CPAS enroll in a CPAS Prep Class the semester they will take the test. It is a comprehensive review of the test blueprint.

and lastly,

We try to make our instructors aware of the importance of the CPAS by providing information about student performance. All instructors are reminded of the need to properly prepare students for the CPAS. Administrators encourage instructors and
students to strive for excellence on the CPAS. Students are recognized for excellent performance by providing Certificates of Achievement for those students scoring in the advanced level (89% or greater). Most of the information for instructors is provided in small group sessions lasting less than one hour.

In summary, many of the administrators indicated that they provided some sort of MS-CPAS2 assessment preparation session for faculty. It appears that most of the administrators affiliated with successful programs recognized the importance of supporting faculty in the effort to providing accountability documentation with respect to the state-wide assessment. Workshops related to assessment concepts such as question-writing for practice tests, review of curriculum, creation of a mandatory student preparatory course, and the use of certificates of achievement for students who performed exceptionally well on the assessment.

**Research Question 3 Results**

For sub-questions 3-a and 3-b, SPSS version 19 was utilized for the statistical analysis of the student records, including a total sample size of 705 and the actual utilization of 685 records. A total of 20 records were removed from the statistical analysis because they contained null values in one or more of the independent variables. The mean average of MS-CPAS2 scores for the adjusted population was 76.13, with a standard deviation of 9.5. The mean average for the total student population was 67.32, and the standard deviation was 13.88. The tests conducted included the dependent variable, MS-CPAS2 assessment scores, and the independent variables of gender, ethnicity, and student rating. Levene’s test for homogeneity was conducted for each independent variable along with a one-way ANOVA for each of the three independent variables and the dependent variable. The figures below display a histogram and P-P plots of MS-CPAS2 assessment scores for the sample population.

A multiple regression model was developed to determine the effect that the three student factor variables had on the student achievement outcome variable. The model consisted of three predictor variables which included gender, ethnicity, and student rating, and the criterion
variable which was comprised of the students' MS-CPAS2 achievement scores. The regression statistics revealed that the model was significant with $R^2 = .092$, $F (1, 684) = 23.005$, $p=.000$, which suggested that student factors accounted for approximately 10% of the variance of the MS-CPAS2 scores (Appendix K).

The remaining two sub-questions for research question 3 were answered utilizing the faculty and administrator survey data. Survey questions 14 and 15 from the faculty survey and questions 9 and 8 from the administrator were answered in Likert-scale format with a comments option. The quantitative analysis of the data included percentage ranks for each of the five scaled values of: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. The average or mean was calculated for the faculty and administrators, and then a total mean was calculated. The results were given in a bar chart format along with qualitative analysis of the participants’ comments.

![Figure 4-7: MS-CPAS2 Scores Histogram](image)
The purpose of this quantitative sub-question was to determine if a significant difference existed between student characteristics (gender and ethnicity) and MS-CPAS2 assessment scores ($H_a: \beta \neq 0$). The null hypothesis was that no significant difference existed between student characteristics and MS-CPAS2 scores ($H_0: \beta = 0$). With the use of IBM’s SPSS version 19, a statistical software package, three variables were created. The first scaled variable was the dependent variable for MS-CPAS2 scores and two nominal independent variables for gender and ethnicity.

The MS-CPAS2 scores were given in percentage form on a scale of 1 to 100. Males were assigned the value of “1” and females were assigned “2” to allow for statistical analyzing of the data. Ethnicity was pre-assigned the following values from the RCU data: Asian: 1, Black: 2, Hispanic: 3, Native American: 4, White: 5, and Other: 6; however, “other” accounted for one
student out of the 685 student records and was removed because a warning existed within SPSS that one record was not enough to use as a comparison. In order for a relationship to be determined, the data must be consistent in that the collected student characteristics must be matched with the corresponding MS-CPAS2 scores for each of the students. Twenty student records were deleted from the original 705 records because one or more variables were blank, leaving a total of 685 records.

**Gender.** The test of homogeneity was conducted using the Levene’s test at an alpha level of .05, as seen in Appendix H. Because $p = .074$ was greater than .05 and the Levene’s $F$ statistics value of 3.205 was less than the critical value for $F$, it has been determined that the sample was appropriate for the population and homogeneity of variance was met as seen in Appendix H. The descriptive data for the independent variable, gender, identified a total of 474 female and 211 male students. A one-way Analysis of Variance (ANOVA) was conducted and the results can be found in Appendix H. The findings indicated that gender was not significant with respect to achievement, $F (1, 684) = .556; p=.456$.

**Ethnicity.** Comparisons for ethnicity were made between black and white student groups because they made up 98% of the populations and the remaining ethnicities consisted of six or less students per group. The sample size was then adjusted to 671 student records by removing the following groups: Asian, Hispanic, and Native American, which consisted of 14 student records. The test of homogeneity was then conducted only on the Black and White student populations using the Levene’s test at an alpha level of .05, as seen in Appendix I. Because $p=.177$ was greater than .05 and the Levene’s $F$ statistic value of 1.829 was less than the critical value for $F$, it has been determined that the sample was appropriate for the population and homogeneity of variance was met as seen in the following tables. Table 4-26 in Appendix I provided the descriptive data for the independent variable, ethnicity. The mean average for Black
(n = 366) is 74.8 and White (n = 305) is 77.75%. A one-way Analysis of Variance (ANOVA) was conducted and the results can be found in Appendix I, Table 4-27. The findings indicated a significant difference between the students’ ethnicity and their achievement on the MS-CPAS2 assessment, F (1, 670) = 15.936; p=0.00007.

**Sub-question 3-b Results**

The purpose of this quantitative sub-question was to determine if a relationship existed between student performance (Student Rating) and MS-CPAS2 assessment scores (H₀: β ≠ 0). The null hypothesis was that no relationship existed between students’ rating and MS-CPAS2 scores (H₀: β = 0). With the use of IBM’s SPSS version 19, a statistical software package, two variables were created. The first scaled variable was the dependent variable for MS-CPAS2 scores and scaled independent variable was Student Rating. The test of homogeneity was conducted using the Levene’s test at an alpha level of .05, as seen in Appendix J. Because the sig. value of .872 was greater than .05 and the Levene’s F statistic value of .236 was less than the critical value for F, it has been determined that the sample was appropriate for the population and homogeneity of variance was met. Table 4-32 in Appendix J provides the descriptive data for the independent variable, Student Rating. Student Rating was separated into four values ranking from 1 being the lowest to 4 being the highest possible rating and was provided each year by the instructors of each individual program as a GPA equivalency rating for the students.

A one-way Analysis of Variance (ANOVA) was conducted and the results can be found in Appendix J. The findings were that a significant difference between the means of student achievement in their program coursework and their achievement on the MS-CPAS2 assessment, F (1, 684) = 17.591; p=5.2 -11. Furthermore, linear regression was established to test the relationship between the two variables. It was determined that b=3.042 and s_b =.447, which indicated that a positive relationship existed between student achievement and MS-CPAS2
scores. Below is the linear regression scatterplot figure for Student Rating and MS-CPAS2 scores.

![Linear Regression Scatterplot](image)

**Figure 4-9: Linear Regression Scatterplot—Student Rating**

**Sub-question 3-c Results**

Retention is defined as retaining students for the duration of a two-year degree program. Student retention affects programs when students are signed up to participate in the assessment and drop out before the assessment occurs. In order to determine if student retention affected MS-CPAS2 assessment results and graduation rates, survey question 14 on the faculty survey and question 9 on the administrator survey were designed on a five-point Likert scale with an option for comments. The scale was as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree. As outlined in Figure 4-24 below, a total of 55% of the faculty agreed that student retention affected scores and graduation rates and a total of 8%
disagreed. The mean on the five-point scale was 3.54. In addition, 75% of the administrators agreed and 16% disagreed that student retention affected division-wide scores and graduation rates, for a total of 61% of both survey participants combined agreed that student retention did affect MS-CPAS2 scores and graduation rates. The mean average for the administrators was slightly higher in agreement that student retention has an effect with a value of 3.92. The total mean for both groups is 3.67.

Several comments were given by the faculty and administrator participants concerning student retention. Overall concerns from faculty survey results has an overarching theme that the MS-CPAS2 was given at the end of students’ second year such as, “Students in the program do not take the MS-CPAS2 until they are in their Student Teaching II class which is at the end of the program,” “Not all students at this level know what program they want for a career,” “students who are successful for two years will do well on the CPAS,” and “Students abusing the system affect graduation rates, and scores.” An administrator commented that, “It would stand to reasons that the longer we had a student the more knowledgeable they would be. However, most of our student do not take the CPAS2 until their last semester.”

Figure 4-10: Student Retention Results
In summary, both faculty and administrators indicated that lower student retention rates were conductive to higher rates on the assessment. Concerns included the relation between losing students and the assessment being administered during the end of the second year.

**Sub-question 3-d Results**

In order to determine if the MS-CPAS2 served as a predictor for student placement, survey question 15 on the faculty survey and question 8 on the administrator survey were designed on a five-point Likert scale with an option for comments. As outlined Figure 4-25 below, a total of 52% of the faculty disagreed that the MS-CPAS2 assessment served as a predictor for student placement and only 25% of the administrators disagreed. In addition, 22% of the faculty and 33% of the administrators agreed. The majority of the administrators selected “neutral” at 42%. The mean for the faculty was 2.57 and administrators were 3.17. The total mean for both groups together was 2.77, which was between strongly disagree and neutral.

![Figure 4-11: Student Placement Results](image)

All comments for this particular question concerning student placement are provided below. Comments that the faculty participants did not agree that MS-CPAS2 assessment was a predictor of student placement included, “Until the student is held liable for his results on the
CPAS I do not think it should even be considered as a part of the program,” “Questions are outdated,” “some students do not test well but are great in the classroom,” “Again, the new test may be a better indicator, but in the past it has not,” “I am not sure about this. I do not look to the CPAS as much of a predictor for anything, simply because I do not think it is a valid test,” “[my program] is a very hands-on activity, and some students do not test well,” and “Whether students get jobs is, in my opinion, a function of how aggressive they are in seeking employment, not of how much information they retain from classes they took their first or second semester.” Another faculty participant stated:

For example, two students on this last test scored in the 90's one got a great job and the other got a good job but quit after two weeks. The lowest scorer 64 was hired at the same place to do the same job as my 90. I use it more to review the program of study than the individual student.

In addition to the faculty comments, one particular administrator’s comment related to a faculty’s comment who was concerned about student liability which stated, “There's no ‘punishment’ for a student not scoring high on CPAS. Good students will continue to do well - average/poor students will do the best they can.” Another comment was made pertaining to a faculty’s comment about the test being outdated which stated, “It has depended on the version of the assessment and how recently the curriculum has been updated. Some of our students do not test well or do not see the importance of the CPAS2.”

In summary, more faculty than administrator participants did not agree that the MS-CPAS2 assessment served as an accurate predictor for student placement. In addition, the overarching theme was that survey participants agreed that students should carry some of the liability for their own test scores. Another comment related to students’ ability to find jobs regardless of assessment scores.
CHAPTER 5

DISCUSSION AND CONCLUSION

Focusing on all post-secondary career and technical institutions in Mississippi, the primary purpose of this multi-site cluster program evaluation was to identify the programs successfully meeting the overall requirements of the MS-CPAS2 assessment and to develop the understanding of practices and perceptions of faculty and administrators affiliated with these successful programs. The importance of passing these assessments is to secure the continuation of Carl Perkins funding and to prevent program closure because of failure in the technical skills attainment indicator set forth by the federal Carl Perkins Act of 2006. After analyzing the initial data, it was determined that 13 programs at 10 different community colleges met the requirements for this study.

The use of triangulation was utilized by implementing both quantitative and qualitative research methods within the study. “This design is used when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data” (Creswell & Clark, 2007, p. 62). In addition, “The Triangulation Design is a one-phase design in which researchers implement the quantitative and qualitative methods during the same timeframe and with equal weight” (p. 62-64). Because the researcher implemented this type of research design, findings and topics for future research have been established. The remainder of this chapter will include a Summary of Results, which is broken down into three areas in reference to the main research questions, Recommendations, and Implications for Future Research.

Summary of Results

MS-CPAS2 assessment data were collected for the years 2007, 2008, and 2009 for all career and technical post-secondary programs in Mississippi. The MS-CPAS2 assessment scores
that were utilized in this study included 685 student records in 13 various programs. These programs included six major areas including Business and Office Related Technology, Early Childhood Education and Technology, Electrical Technology, Food Production and Management Technology, Heating Ventilation AC and Refrigeration Technology, and Welding and Cutting. In addition to the above data, quantitative and qualitative data were collected from the faculty and administrators. The majority of the faculty are Caucasian female and over half have been teaching for more than 16 years and degrees earned range from associate to specialist. The administrators were primarily Caucasian and male with 75% having more than 13 years of career and technical education experience. In addition, over half of the administrators have educational degrees beyond a master’s degree. The remaining results are summarized below in three sections including Characteristics of Successful Programs, Perceptions of State-Mandated Assessment Impacts, and Impacts of Student Factors on Assessment Performance, which were the main themes of the three research questions.

Characteristics of Successful Programs

The majority of the faculty provided a rough estimate on the survey of having 10 to 20 students enrolled for each of the past three years. The MS-CPAS2 data collected from the RCU reflects the same rough estimate by analyzing the total student count per program. This is an average class size for many programs and may indicate smaller class sizes are conducive to learning. Class sizes, specifically fewer than 20 students, are conducive of “high quality instructional feedback and individualized instruction” and are “significantly correlated with achievement” (Gilstrap, 2003, p. 1; Lubienski, Lubienski, & Crane, 2008, p. 97). In addition to class size, both participants were asked to describe the assessment in his or her own words. Many described the instrument in terms of accountability measures for students and programs, as an
assessment measure, a test of competencies within each program, a test of student comprehension and retention of materials covered, and it is seen as an exit exam.

The administrators ranked characteristics that make successful programs including the instructors as most important, the students, instructional methods, computers and software, equipment, the classroom, and textbooks. Faculty indicated utilizing multiple instructional methods interchangeably, making for a well-rounded instructional environment. Those areas included lecture, discussion, demonstration, small group activities, and individual hands-on activities. A comment was made that these instructional methods may change per course depending on what is required for this course. Pascarella and Terenzini (1991) refer to a model similar to Tinto’s (2005) model of institutional action as college impact models, which focus more on the “sources of change” (p. 18).

The faculty elaborated on the types of instructional materials utilized within the classroom that are conducive to an effective learning environment. Computer software emerged as an important factor that was identified by the faculty including particular program-specific software. Additional items were utilized such as textbooks aligned with curriculum, the use of presentation software and classroom management software, handouts, demonstrations, and hands-on training videos. These instructional resources, as they were selected by instructors with intentions of curriculum alignment, were aligned with Pinar’s (2004) curriculum theory which emphasizes the need for genuine learning to occur instead of conforming to external aspects.

Both instructional materials and methods were deemed important by the faculty as characteristics that are inherent of successful programs. Faculty participants described methods in which instructional materials are selected. The majority of the faculty based instructional material selection on competencies and objectives in relation to the curriculum, information from other colleagues, materials that work well with hands-on activities, and materials that have
supplemental software. More than half of the faculty indicated that instructional methods were not altered to ensure MS-CPAS2 assessment passing rates. However, comments noted that alterations had been made because of technology, and teamwork integrated “so other students could help coach other students.” In addition, the importance of hands-on activities was emphasized by the faculty. Over half of the faculty indicated that they do provide preparatory sessions for the MS-CPAS2 assessment for their students. Many of the comments indicated that the faculty are providing students with a review and/or practice questions from the sample test provided by the RCU, and one participant indicated that a study guide was developed that went along with the program’s courses and main points. Ortiz (1995) states that, “Practice guided (not dictated) by theory allows professionals to consider a variety of needs in ways that promote success, however it is defined by individual students” (p. 63).

The general learning process, as outlined in the instructors’ comments in relation to instructional materials and methods, was inherent with a nontraditional classroom setting including the use of round-table discussion and peer learning. Faculty incorporated the use of multiple hands-on activities with the use of computer-relevant software and group activities. These activities were characteristics of the more modern role of faculty as facilitators within the classroom setting, who work with the students by providing multiple techniques to ensure learning was taking place.

In relation to student and faculty participation in organizations or clubs, more than half of the faculty indicated a level of active participation for themselves and their students. Social integration of students is an important factor for student departure as outlined by Tinto (1987b). Institutions must develop “effective educational communities which seek to involve all students in their social and intellectual life and which are committed to the education of students, not their mere retention” (p. 3). A majority of the faculty indicated that approximately 10% to 25% of
their students actively participate in organizations or clubs. Three participants noted a 100% participation of students in a club or organization. In addition, the majority of the faculty indicated involvement in professional development such as organizations and clubs related to their program of study, online training courses, post-graduate work, part-time industry jobs and internships, seminars, and licensure upkeep.

In addition to clubs and organizations, a majority of the faculty participants encourage students to participate in state or nationally-recognized certification exams. Half of the administrators identified between 1 and 5 programs at his or her community college utilize certification exams instead of the MS-CPAS2 assessment and the remaining indicated between 6 to 10 programs. In addition, over half of the faculty participants and the majority of the administrators agreed to using certifications instead of MS-CPAS2 assessments. Many themes emerged including recognition of certifications over the state assessment, the cost as a disadvantage to certifications, and revisions that are needed for the MS-CPAS2 assessment such as outdated questions and the need for hands-on testing.

**Perceptions of State-Mandated Assessment Impacts**

The faculty and administrators’ perceptions in relation to the quality of the MS-CPAS2 assessment as a measure for program accountability and student learning outcomes were less significant for the faculty and more significant for the administrators by a little over half. Almost all of the faculty responses and the administrator responses were coded as needs-assessment measures for changes needed in the MS-CPAS2 assessment. Areas for change or alterations include updating out-of-date questions, increasing the limited amount of questions per content area, increase validity and credibility, more instructor involvement, develop as an industry-standard assessment.
More than half of the administrators indicated the MS-CPAS2 assessment as having a significant impact on job satisfaction. Almost half of the faculty participants were neutral and comments by the faculty are mostly pointing to knowing students’ abilities from coursework and not the assessment. Administrator comments indicate a positive outlook on job satisfaction when students do well on the MS-CPAS2 assessment. An additional question was asked relating to job performance and again the administrators indicated a significant impact whereas the faculty participants indicated more neutral or less significant impact. Administrators stressed the need for faculty and students to understand the importance of the assessment. Faculty indicated less of an impact on job satisfaction because instruction will continue with or without the use of the MS-CPAS2 assessment. As with job satisfaction and performance, faculty indicated more of a neutral and less significant impact that the assessment has on course delivery. Comments were very similar to that of job performance in that faculty indicated no change in course delivery because of the MS-CPAS2 assessment.

The majority of administrators indicated the importance of faculty development with respect to assessment preparation. More than half indicated that they provide preparatory sessions for instructors. In order for instructors to apply the curriculum in such a way to be successful at passing a standardized assessment, they must understand their student population and be able to apply the proper instructional techniques necessary for success (Ortiz, 1995). In addition, faculty involved in professional development in relation to assessment “improved skills and knowledge, understanding, confidence, and attitudes regarding assessment following the workshops” (Haviland, Shin, & Turley, 2010, p. 261). The administrator participants suggested that the RCU or MAC is responsible for providing training for instructors. Additional comments related to offering professional development sessions for instructors either monthly or each semester and stressing the important of the MS-CPAS2. Two important ideas that were
formulated from these comments included offering a MS-CPAS2 preparatory course each semester for students who are required to take the exam. As described by Seidman (2005) early intervention is defined as “starting an intervention at the earliest time possible after identification of a problem” (p. 298). The second idea indicated offering students who perform at the advanced level on the MS-CPAS2 assessment a certificate of achievement. “Institutional commitment to student success in turn sets the tone for the expectational climate for success that students encounter in their everyday interactions with the institution—with its policies, practices, and various members (faculty, staff, administrators, and other students)” (Tinto, 2005, p. 326).

**Impacts of Student Factors on Assessment Performance**

A multiple regression model was developed and suggested that student factors, which included gender, ethnicity, and student rating, accounted for approximately 10% of the variance of the MS-CPAS2 scores. Of the 685 student records, 69% were female and 31% were male and it was determined that no significant difference existed between gender and MS-CPAS2 assessment scores. In addition, the ethnic makeup of the sample included 54% Black, 45% White, and 2% accounted for Asian, Hispanic and Native American populations. The results of the analysis were performed on the majority of the ethnic population which included the White and Black population. Within the first analysis, it was determined that a significant difference existed between MS-CPAS2 scores and ethnicity. Within the second analysis, the mean average is higher for White than Black and a significant difference existed between these two races and MS-CPAS2 scores. According to the National Assessment of Educational Progress in 2007, “White students, however, had higher scores than Black students, on average, on all assessments” in public schools grades 4 through 8 nationwide (Vannemann, Hamilton, Anderson, & Rahman, 2009, p. IIII).
Instructors rated students with rating values according to students’ achievement in the program on a scale of one to four. These scores are in relation to the students’ performance in class and are comparable to student GPA. It was determined that a significant difference existed between student rating and the assessment scores and student rating will enhance the prediction of MS-CPAS2 scores. The effects of student retention on MS-CPAS2 were indicated by the faculty participants. Student retention is referred to as retaining students for the duration of a program. Hagedorn (2005) describes student retention as, “staying in school until completion of a degree” (p. 91). “Effective retention is possible only when retention per se is no longer the goal of retention programs” (Tinto, 1987b, p. 3). Over half of the faculty participants and the majority of the administrator participants agreed that student retention does affect scores and graduation rates. Some issues pointed out by the faculty comments included the idea that the assessment is not given until a student’s second year, which if students do not return or if they are enrolled and drop or do not appear for the test, that score counts against the program. Another faculty indicated that students are “abusing the system.” “Student abuse of the financial aid system has been a persistent problem” within community colleges (Cohen & Brawer, 2003, p. 211). Faculty emphasized the importance of good student retention on effective instructional assessment measures.

Student placement is defined as students who are employed within their area of study within six months after graduation. More administrators than faculty agreed that the MS-CPAS2 assessment scores can be utilized as a predictor for student placement. Faculty perceptions of student placement included concerns that students need to be held liable, outdated MS-CPAS2 questions, not a valid test, hands-on students may not do well on MS-CPAS2, and students are placed no matter what scores are. Administrators commented similarities such as student accountability for scores, and outdated assessment.
Recommendations

Instructor Improvement Plans

Instructors of the successful programs evaluated for this study indicated the use of multiple instructional methods within the classroom. Recommendations for programs’ instructors whose students may be unsuccessful on the MS-CPAS2 assessment include the interchangeable use of lecture, discussion, demonstration, small group activities, and hands-on activities integrated into courses in such a way to meet the curriculum requirements for each course. In general, multiple instructional methods should be utilized to maximize student learning within the classroom. In addition, the use of technology, specifically the use of program-specific software, is an important factor in program success in career and technical education. In addition to the use of software, it is recommended that instructional materials selection should directly align with the curriculums of the programs.

Another recommendation for programs includes providing MS-CPAS2 assessment preparatory sessions for students and faculty-created study guides. These sessions and guides can be vital to student success. To further expand this thought, the researcher recommends two very important ideas as discussed in the survey results including: 1) Creation and utilization of a mandatory MS-CPAS2 preparatory course for all students to enroll in during their testing semester and 2) Providing awards such as a certificate of achievement to students who excel on the assessment. The first idea will help prepare the students and the second will help students take the exam more seriously if they know they will possibly be awarded. Student responsibility for assessment results was important in the results from the researcher’s pilot study. An additional recommendation from the pilot study results includes the utilization of the MS-CPAS2 assessment score as a test score or final exam score for a particular course to further enforce student liability for taking the exam seriously.
In order to decrease student retention and increase student participation as described by Tinto’s (1987b) theory of social integration, the researcher recommends an increase in student and faculty participation in clubs or organizations on campus, specifically program-related clubs if available. In addition to clubs and organizations, recommendations include the integration of program-specific certifications. The general consensus from the survey participants was that certifications should be utilized instead of the MS-CPAS2 assessment. Certifications can still be utilized within programs along with the MS-CPAS2 and will help students realize the importance of taking standardized assessments and if the certifications are aligned with the programs’ curriculums, they can serve as an additional study tool for students and possibly increase MS-CPAS2 scores.

**Administrator Policy Improvement Plans**

Program improvement plans are recommended at all 15 community colleges in the state of Mississippi. Less than half of the administrators from 13 of these colleges indicated that their programs’ students are passing the MS-CPAS2 assessment. This is one indicator that program improvement plans are needed. The administrators, which constitute a voice at approximately 67% of the community colleges in Mississippi, feel strongly about the importance of their instructors, students, instructional methods, computers, equipment, the classroom, software, and textbooks. In addition, administrators noted the use of faculty preparatory sessions for the MS-CPAS2 assessment. These sessions are valuable and can provide the faculty awareness of the importance of the MS-CPAS2 assessment, along with assessment training to ensure that the faculty are well-equipped with the knowledge and skills to prepare their students for the assessment. All of these items constitute a well-rounded program and Carl Perkins funding is required to secure them. In order to secure and continue receiving Perkins funding, standards
and measures must be maintained including passing the MS-CPAS2 assessment to satisfy skills attainment.

**Assessment Improvement Plans**

In addition to program improvement plans, MS-CPAS2 improvement plans are recommended by the researcher, including alterations for the assessment as outlined from the survey results. Although the programs evaluated within the scope of this study have been successfully passing the MS-CPAS2 assessment with above average scores for the past three years, recommendations have been suggested by both faculty and administrators. One recommendation includes updating all MS-CPAS2 assessments to eliminate questions that may be out-of-date. One of the main purposes of career and technical programs is to provide students the right skills to fulfill the needs of the current industry. Industry evolves constantly with technological advances in all fields. The MS-CPAS2 assessments need to be structured to match the changing needs of industry. In addition, another recommendation by the researcher is to provide more instructor involvement on a continual basis with MS-CPAS2 test item creation and question selection.

The majority of the survey participants stressed the utilization of hands-on activities with students and the need for an assessment that is more aligned to hands-on learning for students. The researcher recommends the consideration of offering hands-on MS-CPAS2 assessments in order to better assess the students who are in fact enrolled in primarily hands-on programs whose goals are to prepare students for immediate employment. In addition, the assessment has traditionally been given as pen and paper tests until this year. Although this move toward online assessment is in the right direction, the use of adaptive testing is recommended as a result of comments relating to limited amount of questions in certain content areas. With the use of adaptive testing, if a student misses a question in a certain content area, the system will
automatically retest the student with a similar question to provide more accurate information as to whether or not the student is in fact weak in that content area.

**Implications for Future Research**

The first recommendation for future research of this study includes increasing the survey return rate by possibly offering the survey at a different time period of the semester. The survey was sent well into the fall semester, which is a busy time for faculty because of mid-term grades. In addition, in-person interviews and classroom evaluations of each program evaluated would provide more extensive and well-rounded results. Furthermore, a content analysis of instructional materials and program curriculums would provide results as to whether or not the materials are aligned with the curriculum.

Another recommendation for future research includes broadening this study to include community college programs that are not successful on the MS-CPAS2 assessment. Although not passing the assessment, these programs can provide just as valuable instructional techniques and materials in relation to the MS-CPAS2 assessment. Three surveys would need to be administered including one to the administrators, another to faculty of passing programs, and the third to faculty of failing programs. All of these results can then be analyzed with results from successful programs to determine similarities and differences. Furthermore, a multiple regression model including instructional factors could be developed to strengthen the existing model. In addition, the perceptions provided by the faculty and administrators are from 13 programs and 10 community colleges. If the study was broadened to include all 356 programs and 15 community colleges, perceptions will be the views of all post-secondary career and technical programs in Mississippi. In addition to including programs labeled as unsuccessful in the study, programs that are currently utilizing certifications instead of the MS-CPAS2 can also provide valuable insight into instructional methods and materials utilized to be successful on such standardized
assessments. These results will prove valuable to the overall theme of program improvement to secure federal funding.

In conclusion, the results from this study can serve as a how-to guide for instructors, administrators, and even the MS-CPAS2 assessment center in the state of Mississippi. This how-to guide is important to overall program improvement in relation to the required skills attainment measure as dictated by the Carl Perkins Act of 2006. After all, without Perkins funding, many career and technical programs if not all will fail to exist.
REFERENCES


119


APPENDIX A
CONTENTS OF INITIAL DATABASE

The file size of the database is 23.9 MB. The district_program table consists of nine fields including: ID (assigned by researcher to provide a unique key for each record), Term, Test_Code, Program_Name, District_Code, District_Name, School_Code, School_Name, and AvgOfPercent_Score. The student_program table consists of 14 fields: ID (assigned by researcher to provide a unique key for each record), Term, Test_Code, Program_Name, District_Code, Student_ID, District_Name, School_Code, School_Name, Percent_Score, Gender, Ethnicity, Rating, and Proficiency_Level.

The records provided by the RCU consisted of all MS-CPAS2 data for the past three years, including secondary and postsecondary. In order to reduce the file to postsecondary only, the researcher sorted the district_program table by “District_Name” in ascending order. Then all districts listed with the characters “[S]” in front of the name, as instructed by the interim coordinator, were considered secondary and thus deleted from the table. The table decreased from 4,228 records to 1,323 unfiltered records. The same method was applied to the student_program table and the record count decreased from 33,807 to 8,268 postsecondary student records. Furthermore, the field labeled “Term” for each table consisted of variables such as SP07, SU07, and FA07 for all three years. The researcher combined spring, summer, and fall for each year to give a total estimate for 2007, 2008, and 2009. The largest amount of students comes from the spring testing sessions because students take the MS-CPAS2 upon completion of a program, which typically falls in the spring semester. Some may need additional classes that are completed at a later date then they are tested during the summer or fall testing times.

Two queries (Access data questions) were then created by the researcher. The first query was labeled “count per term and average scores per term” and the second as “number of students
per program.” The first query included School_Name, Program_Name, CountOfPercent_Score, and Percent_Score again averaged. The first two fields were sorted ascending (which sorted each school by 2007, 2008 or 2009 term), the third was sorted descending with a criteria of greater than nine students and yielded a total count of students. The fourth field was the average percent score per program for the entire three years given as one score with criteria set to greater than or equal to 70 percent. The results yielded 109 out of a total of 356 program records with 10 or more students total and a total average of 70 percent or higher. With further analysis, 312 programs took the test in 2007, 324 programs took the test in 2008, and in 2009, 293 took the test. Not all programs took the test every year; however, 356 total non-duplicating programs participated in the assessment. These 109 programs are those who met the above criteria for the total of the three years, whether or not the program actually had students who took the exam all three years or not. Of those records, the researcher examined which of those programs actually had ten or more students and an average percent score 70 or above. Then these results were compared to those in query two. A total of 13 programs met these criteria.

The second query, “number of students per program,” displayed the cumulative total amount of students per program for all three years per term, plus the total average percent score for each program for the each of the three years. The fields included School_Name, Program_Name, Term (total by count and criteria above nine), CountOfTerm (total set to group by), and AvgOfPercent_Score (criteria set to greater than or equal to 70). The results yielded 138 records out of a total of 929 records for this particular query. From these results and the results above that indicated the 13 programs, an additional query was created on the student_program table. This query displayed the amount of students within these 13 programs, which included 705 total records, including the name of the school, the program name, and each student’s MS-CPAS2 score, along with ethnicity, gender, and student rating.
APPENDIX B

PILOT INSTRUCTOR SURVEY

1. How many years have you been teaching in post-secondary career and technical education?

2. What is your current position?

3. Please describe the purpose of the MS-CPAS2 for your particular program of study.

4. On average how many students do you have each year taking the MS-CPAS2 exam?

5. What instructional techniques are you currently using in your program? (Lecture, computer/software used handouts, textbooks, etc.)

6. What impact, if any, does the MS-CPAS2 assessment have on your job satisfaction?

7. What impact, if any, does the MS-CPAS2 assessment have on your job performance?

8. What impact, if any, does the MS-CPAS2 assessment have on your course delivery?

9. How, if any, are instructional methods altered to ensure passing rates?

10. Is the MS-CPAS2 assessment a predictor of student placement in your program?

11. Do you and/or your students actively participate in any student organizations or clubs? If so, please identify the clubs and/or organizations.

12. How are your classes structured to fit the objectives and competencies as outlined in your program’s curriculum?

13. Do you provide a test preparation session for your students before they take the MS-CPAS assessment?

14. What are your perceptions on the quality of MS-CPA2 scores as a measure for program accountability and student learning outcomes for your program?
APPENDIX C

PILOT INSTRUCTOR SURVEY RESULTS

Participant One

Test Name: Child Development Technology Program Evaluation Survey
Date: 04/22/2009 12:01:20

? 1. nine years
? 2. Director of Early Childhood Education Technology
? 3. A test which covers information presented to the student over the entire two year course of study.
? 4. 8 to 12
? 5. I teach with lecture following a textbook and provide handouts of information that may not be included in the textbook. I also require participation of the students so that they can have a hands on opportunity to practice what they have learned through lecture. Many of the classes require labs which gives the student the opportunity to carry out further the practices they have learned.
? 6. It helps me know that I have covered the information on the test and also that the student has retained it.
? 7. I try to make sure that I include information in my class so that they will do well on the test. I really do not think too much about the test through the year, I just teach what is important.
? 8. Not too much
? 9. none
? 10. no
? 11. I am a member of Mississippi Early Childhood Association (MsECA) and Southern Early Childhood Association (SECA). The students are given the opportunity to attend the yearly conference.
? 12. I make sure that the textbook chosen covers the competencies and then I follow those as I teach to make sure that they are covered. The students also have assignments that directly follow the competencies that they are required to complete.
? 13. They are provided with a sample test and I check it for accuracy.
? 14. I am not sure that it means much to the student in terms of them trying to do well. Many of them are not aware of the test at the beginning of the program.

Participant Two

Test Name: Child Development Technology Program Evaluation Survey
Date: 04/24/2009 09:48:08

? 1. 3 years
2. Early Childhood Technology Instructor
3. It is to see if the students learned the information presented to them in their classes over the two years
4. 8-12
5. Lecture, powerpoints, videos, textbooks, class discussion
6. I feel that if the students do well on the CPAS then I have done well teaching and they have learned important knowledge and skills to help them in the workplace
7. The curriculum has textbooks that they have approved that go along with CPAS information so I make sure that I use the approved textbook and make sure that each competency is met several different ways to make sure they learn the information
8. I know each student learns differently so I make sure I do some projects, some tests, some powerpoint, and a lot of discussion to make sure each student learns the information in the way they learn best.
9. I do a lot of projects because they have to think through the information. This makes them apply the information they are learning through lectures and discussions. That way they will do well on the higher level thinking questions on the CPAS
10. No they may know the information but may decide that they don't really want to work with children all the time. Also they may not do as well on CPAS because of poor test taking skills, but do great on the job with the children.
11. none
12. I align my discussion, lecture, and projects with the objectives and competencies in each class. That way I know they have had a lot of experience with each objective.
13. The students take a practice test and they are graded and the student takes them home and studies them. I always tell them that the questions may not be the same on the real test but they are questions like these. I also give out handouts on different philosophers and I also try to have them work on their philosophy of teaching. In doing their philosophy they have to review what they have learned over the past 2 years and in doing so they review for the CPAS
14. I like it because I know if my students learned the information we presented in the program. I don't like it because not all students are good test takers and I don't feel it is fair to them. If they could be observed in the classroom with the children they might do better than on a written test.

-----------------------------------------------
APPENDIX D

PILOT ADMINISTRATOR SURVEY

1. How many years have you been associated with post-secondary career and technical education?

2. What is your current position?

3. Please describe the purpose of the MS-CPAS2 for your division.

4. As a whole, how well are students in your division performing on the MS-CPAS2 assessment each year?

5. Do you provide MS-CPAS2 preparatory sessions for instructors in your division?

6. If sessions are provided, please describe in detail when, length of time, and materials covered during these session(s).

7. What are the components of a successful program?

8. Is the MS-CPAS2 assessment a predictor of student placement in your division as a whole? Please elaborate if necessary.

9. To what extent, if any, does student retention have an effect on MS-CPAS2 scores and division-wide graduation rates (student retention refers to retaining students for the duration of a program)?

10. What are your perceptions on the quality of MS-CPAS2 scores as a measure for program accountability and student learning outcomes for your division as a whole?

11. What impact, if any, does the MS-CPAS2 assessment have on your job satisfaction?

12. What impact, if any, does the MS-CPAS2 assessment have on your job performance?
APPENDIX E

PILOT ADMINISTRATOR SURVEY RESULTS

Test Name: Administrator Survey for Success Post-Secondary CTE Programs
Date: 05/06/2010 12:31:48

1. 39 years
2. Assistant Vice President Career and technical ed
3. 1. It should give the instructor some assessment of strong or weak areas so that the teacher can make adjustments in their classroom teaching of the knowledge areas
4. As a total division No
5. 

We have had one training session conducted through Tech Prep
6. Out of town person one day apx 4hrs
7. If the question is in reference to the cpas teacher should have proper attitude about the skill enhancement and encourage students to do well
8. even though knowledge is important the ability to test the skills required in the subject area are not there
9. certaintly is shows some lake of knowledge that a student should have in their respective areas.
10. Only as a measure of the knowledge content
11. I admit that I feel better when our people do well than when they dont
12. At the present our upper administration does not seem concerned therfore our job performance does not appear to be threating.

Test Name: Administrator Survey for Success Post-Secondary CTE Programs
Date: 05/06/2010 13:58:54

1. 19
2. Vice President of Career and Technical Education
3. To meet Carl Perkins mandates
4. Students do not perform well on the MS_CPAS2
5. Currently no, but we have utilized consultants in the past to work with teachers whose students were not performing well on MS CPAS2.
6. Sessions not provided
7. Successful components of a successful CTE program are enrollment, retention, skill acquisition, and job placement.
8. No
9. Retention is essential to program completion, skill acquisition and placement, all factors in program accountability.

Students who are retained in a four semester program should take the MS CPAS2 as soon as possible after completion of the core courses. Long intervals between course completion and
testing can result in poor test performance.

? 10. MS CPAS2 scores are reviewed annually but are not a principle measure in program accountability.

? 11. Very limited impact

? 12. Very limited impact
Instructor Survey

Hello!

Your program of study is one of only 13 community college programs chosen in Mississippi for this research project because of your consistent passing rates on the MS-CPAS2 (Mississippi Career Placement and Assessment System, Second Edition) assessment. The responses that you provide will be compiled and utilized to aid other programs throughout the state, not only by increasing passing rates, but stabilizing and ensuring Carl Perkins Funding. Each of you is encouraged to elaborate as much as possible on all of the open-ended questions to provide insight into the workings of a successful program. By responding to this survey, you are granting your consent to participate in this research. Your responses will be kept confidential and the procedures for conducting this survey have been approved by the Institutional Review Board at Louisiana State University.

The following survey consists of 25 questions and results will aid in my dissertation titled: Community College Success: A Multi-Site Program Evaluation of Postsecondary Career and Technical Education.

Thank you in advance,

Kim Tynes

1. Which program of study do you currently teach?
   - Business & Office & Related Technology
   - Early Childhood Education & Technology
   - Electrical Technology
   - Food Production & Management Technology
   - Welding and Cutting

Other: ____________________________
2. In your own words, please describe the purpose of the MS-CPAS2 for your particular program of study.

3. On average how many students were enrolled in your program (including spring, summer, and fall students) taking the MS-CPAS2 exam for the following years?

<table>
<thead>
<tr>
<th></th>
<th>10-20</th>
<th>21-30</th>
<th>31-40</th>
<th>41-50</th>
<th>51-60</th>
<th>71-100</th>
<th>100+</th>
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</tbody>
</table>

4. What instructional methods, and percentage of time dedicated to each, are implemented in your program?

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<thead>
<tr>
<th>Instructional Method</th>
<th>0%</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
<th>100%</th>
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<tbody>
<tr>
<td>Lecture</td>
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<tr>
<td>Discussion</td>
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<tr>
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<td>Small Group Activities</td>
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<tr>
<td>Individual Hands-On Activities</td>
<td>☐</td>
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</tbody>
</table>

Other, please specify amount of time utilized:
5. Have you altered your instructional methods to ensure successful passing rates by your students? Please provide examples of how your instructional approach is modified.

- Yes
- No

If Yes, please elaborate in detail:

---

6. What instructional materials are utilized within your program? Please provide examples such as titles of texts, types of handouts, software titles, computer hardware, and activities that are implemented

---

7. How do you determine and select what instructional materials (books, software, handouts, etc.) will best cover the objectives and competencies in your curriculum?

---

8. Do you and/or your students actively participate in program-related student organizations or clubs?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>You Participate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Students Participate</td>
<td></td>
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</tbody>
</table>
9. Please identify the clubs and/or organizations and the percentage of students within your program who participate.

<table>
<thead>
<tr>
<th></th>
<th>up to 10%</th>
<th>up to 25%</th>
<th>up to 50%</th>
<th>up to 75%</th>
<th>100% Participation</th>
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<tbody>
<tr>
<td>Skills USA</td>
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<tr>
<td>Phi Beta Lambda (PBL)</td>
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<tr>
<td>Delta Epsilon Chi (DEX)</td>
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<tr>
<td>Phi Theta Kappa Honor Society (PTK)</td>
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<td>Other:</td>
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</table>

10. Are your students encouraged to take state or nationally-recognized certification exams upon completion of the program? Please list the name(s) of the certifications.

- Yes
- No

Please identify the certifications:

11. State or nationally-recognized certifications should be used in lieu of the MS-CPAS2 assessment.
(Please indicate your level of agreement or disagreement with the following scale)

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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</thead>
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</table>

Comments:
12. Are you involved in professional development (i.e., mentoring, professional associations, outside educational courses, continuing education units)? If so, please identify in what capacity and the names of the organizations in which you participate.

- Yes
- No

Please elaborate the capacity and names of organization(s):

* 13. Are you providing preparation sessions for your students before they take the MS-CPAS2 assessment? If yes, please elaborate in detail.

- Yes
- No

Please elaborate how or in what ways:

14. Student retention (refers to retaining students for the duration of a program) affects your program’s MS-CPAS2 scores and graduation rates.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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Comments:

...
15. The MS-CPAS2 assessment is a predictor of student placement in your program. Please elaborate if necessary.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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Comments:

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Comments:

17. What impact, if any, does the MS-CPAS2 assessment have on your job satisfaction?

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<th>Very Significant</th>
<th>Significant</th>
<th>Neutral</th>
<th>Insignificant</th>
<th>Very Insignificant</th>
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Comments
18. What impact, if any, does the MS-CPAS2 assessment have on your job performance?

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<th>Very Significant</th>
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Comments:

19. What impact, if any, does the MS-CPAS2 assessment have on your course delivery?

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<th>Very Significant</th>
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<th>Very Insignificant</th>
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Comments

20. Demographics data—Race:

- African American
- Asian
- Bi-Racial
- Caucasian
- Hispanic
- Native American
- Other

21. Demographics Data—Gender:

- Male
- Female
22. Years of teaching experience:
   - 1-3
   - 4-6
   - 7-9
   - 10-12
   - 13-15
   - 16+

23. How many years have you been teaching in post-secondary career and technical education?
   - 1-3
   - 4-6
   - 7-9
   - 10-12
   - 13-15
   - 16+

24. Amount of years teaching at current institution:
   - 1-3
   - 4-6
   - 7-9
   - 10-12
   - 13-15
   - 16+

25. Degree(s) attained: (Select ALL that apply)
   - [ ] Associate's Degree
   - [ ] Bachelor's Degree
   - [ ] Master's Degree
   - [ ] Specialist
   - [ ] Doctoral

Certifications:
Thank you very much!!

If you would like to be entered into the $25 gift card drawing, please send an email to kimtynes@gmail.com with "Instructor Survey completed" as the subject line. Include your name and mailing address within the body of the message. Good Luck!!

Your anonymous results will add to the much-needed literature base for community and junior colleges.

Survey generated by KwikSurveys.com free online surveys

http://www.kwiksurveys.com?s=HKNMMK_dabad837
APPENDIX G

ADMINISTRATOR SURVEY

Administrator Survey

Hello!

Your Career and Technical Division is one of only 10 community college divisions chosen in Mississippi for this research project because of one or more of your program’s consistent passing rates on the MS-CPAS2 (Mississippi Career Placement and Assessment System, Second Edition) assessment. The responses that you provide will be compiled and utilized to aid other programs and divisions throughout the state, not only by increasing passing rates, but stabilizing and ensuring Carl Perkins Funding. Each of you is encouraged to elaborate as much as possible on all of the open-ended questions to provide insight into the workings of a successful division and programs. By responding to this survey, you are granting your consent to participate in this research. Your responses will be kept confidential and the procedures for conducting this survey have been approved by the Institutional Review Board at Louisiana State University.

The following survey consists of 19 questions and results will aid in my dissertation titled: Community College Success: A Multi-Site Program Evaluation of Postsecondary Career and Technical Education.

Thank you in advance,
Kim Tynes

1. What is your current position?
   - Dean of Career and Technical Education
   - Assistant Dean of Career and Technical Education
   - Vice-President of Career and Technical Education
   - Assistant Vice-President of Career and Technical Education
   - Director of Career and Technical Education
   - Assistant Director of Career and Technical Education
   - Other:

   [Blank Space]
2. In your own words, please describe the purpose of the MS-CPAS2 for your division.

3. On average, how many programs successfully met the minimum passing requirements for the MS-CPAS2 assessment for the past three years?

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<th>&lt;10%</th>
<th>10% to 20%</th>
<th>20% to 30%</th>
<th>30% to 40%</th>
<th>40% to 50%</th>
<th>50% to 60%</th>
<th>60% to 70%</th>
<th>70% to 90%</th>
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<tr>
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</table>

4. How many programs are currently utilizing a state or nationally-recognized certification in lieu of the MS-CPAS2 assessment?

- [ ] 1 to 5 programs
- [ ] 6 to 10 programs
- [ ] 11 to 15 programs
- [ ] 16 or more programs

5. State or nationally-recognized certifications should be used in lieu of the MS-CPAS2 assessment.
(Please indicate your level of agreement or disagreement with the following scale)

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Comments:
6. Do you provide MS-CPAS2 preparatory sessions for instructors in your division? If sessions are provided, please describe in detail when, length of time, and materials covered during these session(s).
- [ ] Yes
- [ ] No

Details:

7. What are the components of a successful program within your division? (Please indicate the level of importance with the following scale)

<table>
<thead>
<tr>
<th>Component</th>
<th>Very Important</th>
<th>Important</th>
<th>Neutral</th>
<th>Unimportant</th>
<th>Very Unimportant</th>
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<tbody>
<tr>
<td>The Instructor(s)</td>
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<td>[ ]</td>
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<tr>
<td>The Students</td>
<td>[ ]</td>
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<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Instructional Methods</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>Textbook(s)</td>
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<td>Classroom</td>
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<td>Computers</td>
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Other, please specify:


8. The MS-CPAS2 assessment is a predictor of student placement in your division as a whole. Please elaborate if necessary.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
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Comments:

9. Student retention has an effect on MS-CPAS2 scores and division-wide graduation rates (student retention refers to retaining students for the duration of a program). Please elaborate if necessary.

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<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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<tbody>
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Comments:

10. What are your perceptions on the quality of MS-CPAS2 scores as a measure for program accountability and student learning outcomes for your division as a whole?

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<th>Very Significant</th>
<th>Significant</th>
<th>Neutral</th>
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<th>Very Insignificant</th>
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</table>

Comments:
11. What impact, if any, does the MS-CPAS2 assessment have on your job satisfaction?

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<tr>
<th>Very Significant</th>
<th>Significant</th>
<th>Neutral</th>
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Comments:


12. What impact, if any, does the MS-CPAS2 assessment have on your job performance?

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</tbody>
</table>

Comments:


13. Demographics Data—Race:

- ○ African American
- ○ Asian
- ○ Bi-Racial
- ○ Caucasian
- ○ Hispanic
- ○ Native American
- Other:


14. Demographics Data—Gender:

- ○ Male
- ○ Female
15. Years of teaching experience:
   - 1-3
   - 4-6
   - 7-9
   - 10-12
   - 13-15
   - 16+

16. Years of administrative experience:
   - 1-3
   - 4-6
   - 7-9
   - 10-12
   - 13-15
   - 16+

17. How many years have you been working in post-secondary career and technical education (including teaching or in administration)?
   - 1-3
   - 4-6
   - 7-9
   - 10-12
   - 13-15
   - 16+

18. Number of years in administration at current institution:
   - 1-3
   - 4-6
   - 7-9
   - 10-12
   - 13-15
   - 16+
19.
Degree(s) attained: (Select ALL that apply)

☐ Associate's Degree
☐ Bachelor's Degree
☐ Master's Degree
☐ Specialist
☐ Doctoral

Certifications:


Thank you very much!!!

If you would like to be entered into the $25 gift card drawing, please send an email to kimtynes@gmail.com with "Administrator Survey completed" as the subject line. Include your name and mailing address within the body of the message. Good Luck!!

Your anonymous results will add to the much-needed literature base for community and junior colleges.

Survey generated by KwikSurveys.com free online surveys

http://www.kwiksurveys.com?s=HKNMMK_dabad837
## APPENDIX H

### STATISTICAL ANALYSIS RESULTS FOR GENDER

#### Table 4-13: Test of Homogeneity of Variances

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.205</td>
<td>1</td>
<td>683</td>
<td>.074</td>
</tr>
</tbody>
</table>

#### Table 4-14: Robust Tests of Equality of Means

<table>
<thead>
<tr>
<th>MS-CPAS2</th>
<th>Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welch</td>
<td>.508</td>
<td>1</td>
<td>363.539</td>
<td>.476</td>
</tr>
<tr>
<td>Brown-Forsythe</td>
<td>.508</td>
<td>1</td>
<td>363.539</td>
<td>.476</td>
</tr>
</tbody>
</table>

a. Asymptotically F distributed.

#### Table 4-15: Descriptives

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Between-Component Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
</tr>
<tr>
<td>Male</td>
<td>211</td>
<td>75.7211</td>
<td>10.29072</td>
<td>.70844</td>
<td>74.3245</td>
<td>77.1176</td>
</tr>
<tr>
<td>Female</td>
<td>474</td>
<td>76.3080</td>
<td>9.14169</td>
<td>.41989</td>
<td>75.4829</td>
<td>77.1331</td>
</tr>
<tr>
<td>Total</td>
<td>685</td>
<td>76.1272</td>
<td>9.50668</td>
<td>.36335</td>
<td>75.4140</td>
<td>76.8404</td>
</tr>
<tr>
<td>Model: Fixed Random</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

#### Table 4-16: ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>50.302</td>
<td>1</td>
<td>50.302</td>
<td>.556</td>
<td>.456</td>
</tr>
<tr>
<td>Within Groups</td>
<td>61767.591</td>
<td>683</td>
<td>90.436</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61817.894</td>
<td>684</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

146
APPENDIX I

STATISTICAL ANALYSIS RESULTS FOR ETHNICITY

Table 4-17: Test of Homogeneity of Variances

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.829</td>
<td>1</td>
<td>669</td>
<td>.177</td>
</tr>
</tbody>
</table>

Table 4-18: Robust Tests of Equality of Means

<table>
<thead>
<tr>
<th>MS-CPAS2</th>
<th>Statistica</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welch</td>
<td>16.198</td>
<td>1</td>
<td>663.271</td>
<td>.000</td>
</tr>
<tr>
<td>Brown-Forsythe</td>
<td>16.198</td>
<td>1</td>
<td>663.271</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Asymptotically F distributed.

Table 4-19: Descriptives

<table>
<thead>
<tr>
<th>MS-CPAS2</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Between-Component Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
</tr>
<tr>
<td>Black</td>
<td>366</td>
<td>74.8244</td>
<td>9.83281</td>
<td>.51397</td>
<td>73.8136</td>
<td>75.8351</td>
</tr>
<tr>
<td>White</td>
<td>305</td>
<td>77.7518</td>
<td>8.98837</td>
<td>.51467</td>
<td>76.7390</td>
<td>78.7645</td>
</tr>
<tr>
<td>Total</td>
<td>671</td>
<td>76.1550</td>
<td>9.56328</td>
<td>.36919</td>
<td>75.4301</td>
<td>76.8799</td>
</tr>
<tr>
<td>Mode</td>
<td>Fixed Effects</td>
<td>9.45844</td>
<td>4.54063</td>
<td>.36193</td>
<td>75.4380</td>
<td>76.8719</td>
</tr>
<tr>
<td>Random Effects</td>
<td>1.46898</td>
<td>57.4898</td>
<td>94.8202</td>
<td>4.01596</td>
<td>671</td>
<td>197</td>
</tr>
</tbody>
</table>

Table 4-20: ANOVA

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1425.682</td>
<td>1</td>
<td>1425.682</td>
<td>15.936</td>
</tr>
<tr>
<td>Within Groups</td>
<td>59850.117</td>
<td>669</td>
<td>89.462</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61275.799</td>
<td>670</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

147
### APPENDIX J

#### STATISTICAL ANALYSIS RESULTS FOR STUDENT RATING

**Table 4-21: Test of Homogeneity of Variances**

<table>
<thead>
<tr>
<th>MS-CPAS2</th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.236</td>
<td>3</td>
<td>681</td>
<td>.872</td>
</tr>
</tbody>
</table>

**Table 4-22: Robust Tests of Equality of Means**

<table>
<thead>
<tr>
<th>MS-CPAS2</th>
<th>Statistic&lt;sup&gt;a&lt;/sup&gt;</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Welch</td>
<td>16.687</td>
<td>3</td>
<td>74.850</td>
</tr>
<tr>
<td></td>
<td>Brown-Forsythe</td>
<td>17.107</td>
<td>3</td>
<td>132.060</td>
</tr>
</tbody>
</table>

<sup>a</sup> Asymptotically F distributed.

**Table 4-23: Descriptives**

<table>
<thead>
<tr>
<th>MS-CPAS2</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Min</th>
<th>Max</th>
<th>Between-Component Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>below 50%</td>
<td>17</td>
<td>66.0504</td>
<td>9.36136</td>
<td>2.27046</td>
<td>61.2373</td>
<td>70.8636</td>
<td>54.29</td>
<td>84.29</td>
<td></td>
</tr>
<tr>
<td>50% to 70%</td>
<td>201</td>
<td>73.5110</td>
<td>9.18289</td>
<td>.64771</td>
<td>72.2338</td>
<td>74.7882</td>
<td>48.57</td>
<td>91.43</td>
<td></td>
</tr>
<tr>
<td>71% - 80%</td>
<td>304</td>
<td>77.0301</td>
<td>8.91656</td>
<td>.51140</td>
<td>76.0237</td>
<td>78.0364</td>
<td>44.29</td>
<td>95.71</td>
<td></td>
</tr>
<tr>
<td>above 80%</td>
<td>163</td>
<td>78.7204</td>
<td>9.62723</td>
<td>.75406</td>
<td>77.2314</td>
<td>80.2095</td>
<td>47.14</td>
<td>97.14</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>685</td>
<td>76.1272</td>
<td>9.50668</td>
<td>.36323</td>
<td>75.4140</td>
<td>76.8404</td>
<td>44.29</td>
<td>97.14</td>
<td></td>
</tr>
<tr>
<td>Mode Fixed Effects</td>
<td></td>
<td>9.17860</td>
<td>.35070</td>
<td>75.4386</td>
<td>76.8158</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Random Effects</td>
<td></td>
<td>1.81124</td>
<td>70.3631</td>
<td>81.8914</td>
<td>9.27898</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4-24: ANOVA**

<table>
<thead>
<tr>
<th>MS-CPAS2</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between Groups</td>
<td>4445.890</td>
<td>3</td>
<td>1481.963</td>
<td>17.591</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>57372.003</td>
<td>681</td>
<td>84.247</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61817.894</td>
<td>684</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4-25: Coefficients\(^a\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>95.0% Confidence Interval for B</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>Lower Bound</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>67.321</td>
<td>1.341</td>
<td>50.216</td>
<td>.000</td>
</tr>
<tr>
<td>Student Rating</td>
<td>3.042</td>
<td>.447</td>
<td>.252</td>
<td>6.807</td>
</tr>
</tbody>
</table>

\(\text{a. Dependent Variable: MS-CPAS2}\)
APPENDIX K

STATISTICAL ANALYSIS RESULTS FOR MULTIPLE REGRESSION

Table 4-26: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-CPAS2</td>
<td>76.1272</td>
<td>9.50668</td>
<td>685</td>
</tr>
<tr>
<td>Student Rating</td>
<td>2.89</td>
<td>.788</td>
<td>685</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>3.36</td>
<td>1.487</td>
<td>685</td>
</tr>
<tr>
<td>Gender</td>
<td>1.31</td>
<td>.462</td>
<td>685</td>
</tr>
</tbody>
</table>

Table 4-27: Correlations

<table>
<thead>
<tr>
<th></th>
<th>MS-CPAS2</th>
<th>Student Rating</th>
<th>Ethnicity</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS-CPAS2</td>
<td>1.000</td>
<td>.252</td>
<td>.151</td>
<td>-.029</td>
</tr>
<tr>
<td>Student Rating</td>
<td>.252</td>
<td>1.000</td>
<td>.150</td>
<td>.254</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.151</td>
<td>.150</td>
<td>1.000</td>
<td>.247</td>
</tr>
<tr>
<td>Gender</td>
<td>-.029</td>
<td>.254</td>
<td>.247</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS-CPAS2</td>
<td>.000(1.08^{-11})</td>
<td>.000</td>
<td>.228</td>
<td></td>
</tr>
<tr>
<td>Student Rating</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>.00004</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.228</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

Table 4-28: Variables Entered/Removed

<table>
<thead>
<tr>
<th>Model</th>
<th>Variables Entered</th>
<th>Variables Removed</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gender, Ethnicity, Student Rating</td>
<td></td>
<td>Enter</td>
</tr>
</tbody>
</table>

a. All requested variables entered.
b. Dependent Variable: MS-CPAS2

Table 4-29: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square Change</td>
</tr>
<tr>
<td>1</td>
<td>.303a</td>
<td>.092</td>
<td>.088</td>
<td>9.07866</td>
<td>.092</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Gender, Ethnicity, Student Rating
Table 4-30: ANOVA\(^b\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>5688.432</td>
<td>3</td>
<td>1896.144</td>
<td>23.005</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>56129.462</td>
<td>681</td>
<td>82.422</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>61817.894</td>
<td>684</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Gender, Ethnicity, Student Rating
b. Dependent Variable: MS-CPAS2

Table 4-31: Coefficients\(^a\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>67.345</td>
<td>1.557</td>
<td>43.240</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Student Rating</td>
<td>3.183</td>
<td>.458</td>
<td>.264</td>
<td>6.957</td>
</tr>
<tr>
<td></td>
<td>Ethnicity</td>
<td>.922</td>
<td>.242</td>
<td>.144</td>
<td>3.808</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-2.698</td>
<td>.796</td>
<td>-.131</td>
<td>-3.389</td>
</tr>
</tbody>
</table>

a. Dependent Variable: MS-CPAS2
APPENDIX L

RESEARCH STUDY CONSENT FORM

Consent Form

1. **Study Title:** Community College Success: A Multi-Site Program Evaluation of Postsecondary Career and Technical Education

2. **Performance Site:** 11 Post-secondary career and technical education institutions in Mississippi that are administered the MS-CPAS2 assessment.

3. **Investigator:** The following investigator is available for questions about this study, M-F, 8:00 a.m. - 3:30 p.m.: Kimberly H. Tynes 601-276-2434

4. **Purpose of the Study:** The purpose of this mixed methods case study is to determine which programs are successfully passing the MS-CPAS2 and the components of how they are achieving success.

5. **Subject Inclusion:** The researcher will gather data from the Research and Curriculum Unit located in Starkville, Mississippi. The participants in the survey include instructors and administrators at 11 community college sites in the state of Mississippi.

6. **Study Procedures:** Two online surveys will be administered to the instructor and administrator participants at the community colleges along with telephone and/or personal interviews. In addition, the researcher may complete on-site visits with some or all of the sites to review the teaching environments and instructional tools used.

7. **Benefits:** Expected outcomes will be used to determine how these programs are successful and how these techniques may be applied to other programs across the state.

8. **Risks:** N/A

9. **Right to Refuse:** Subjects may choose not to participate or to withdraw from the study at any time without penalty.

10. **Privacy:** Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

11. **Signatures:** The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects’ rights or other concerns, I can contact Dr. Robert C. Mathews, Institutional Review Board, (225) 578-8692. I agree to participate in the study described above and acknowledge the investigator’s obligation to provide me with a signed copy of this consent form.

   ________________________________
   Signature of Subject

   ________________________________
   Date

   Study Exempted By:
   Dr. Robert C. Mathews, Chairman
   Institutional Review Board
   Louisiana State University
   203 B-1 David Boyd Hall
   225-578-8692 | www.lsu.edu/irb
   Exemption Expires: 9-1-2013

152
APPENDIX M

INSTITUTIONAL REVIEW BOARD APPLICATION FORM

Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, all LSU research/projects using humans as subjects, or samples, or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This form helps the PI determine if a project may be exempted, and is used to request an exemption.

Applicant: Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at http://www.lsu.edu/screeningmembers.shtml

- A Complete Application Includes All of the Following:
  (A) Two copies of this completed form and two copies of part B thru E.
  (B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2)
  (C) Copies of all Instruments to be used.
  *If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
  (D) The consent form that you will use in the study (see part 3 for more information.)
  (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB. Training link: [http://php.nihtraining.com/users/login.php]

1) Principal Investigator: Kimberly Tyner
   Dept: ETTP
   Ph: 601-833-9808
   E-mail: kintynes@smcc.edu
   Rank: Graduate student

2) Co Investigator(s): please include department, rank, phone and e-mail for each

5. Kim MacGregor, Associate Professor
   111H Peabody Hall
   225-578-2150
   smacgregor@lsu.edu

3) Project Title: Community College Success: A Multi-Site Program Evaluation of Postsecondary Career and Technical Education

4) Proposal? (yes or no) N
   If Yes, LSU Proposal Number
   Also, if YES, either
   □ This application completely matches the scope of work in the grant
   OR
   □ More IRB Applications will be filed later

5) Subject pool (e.g. Psychology students) [RCU assessment coordinator, college instructors & administrators]
   *Circle any "vulnerable populations" to be used: children <18; the mentally impaired; pregnant women, the ages, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature ___________________________ Date ____________
   (no per signatures)

** I certify my responses are accurate and complete. If the project scope or design is later changed, I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Screening Committee Action: Exempted X Not Exempted ______ Category/Paragraph ______

Reviewer: S. Kim MacGregor Signature: S. Kim MacGregor Date: 9/2/10

153
VITA

Kimberly Tynes was born and raised in Holden, Louisiana, where she attend Holden High School until she moved to Mississippi and completed her last two years of high school at Dexter Attendance Center in Tylertown. She earned an Associate of Applied Science Degree in computer information systems technology from Southwest Mississippi Community College in 1999. After completing this degree, she decided that teaching was her passion and her goal was to one day teach at SMCC. She then continued her schooling and graduated with a Bachelor of Science Degree from The University of Southern Mississippi in 2002 in technical and occupational education. Her next endeavor included a Master of Science degree at USM, which she completed in one year and graduated in the summer of 2003.

In 2000, Kimberly began teaching at SMCC in the Computer Information Systems Technology Department of the career and technical division and was the program director. In 2004, she transferred jobs as the Information Technology Director for the campus, managing the network and all servers and computers. After two years, she noticed that her current job would not allow for her to continue her education and pursue her lifelong dream of earning a doctoral degree. A teaching job came available during the summer of 2006 in the Business and Office Technology Department in the career and technical division, which she saw as a perfect opportunity to fulfill her ambition.