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A Comparative Study of Full-Admission and Developmental Undergraduate Students' Performance in Online and Face-To-Face Business Courses at a Historically Black College and University

Jearline A. Bryant

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A comparative study of full-admission and developmental undergraduate students'
performance in online and face-to-face business courses at a historically
black college and university

By

Jearline A. Bryant

Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Instructional Systems and Workforce Development
in the Department of Instructional Systems and Workforce Development

Mississippi State, Mississippi

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2018

A comparative study of full-admission and developmental undergraduate students' performance in online and face-to-face business courses at a historically black college and university

By

Jearline A. Bryant

Approved:

Linda F. Cornelious
(Major Professor and Director of Dissertation)

Debra Prince
(Committee Member)

Connie M. Forde
(Committee Member)

James Adams
(Committee Member)

Chien Yu
(Graduate Coordinator)

Richard Blackburn
Dean
College of Education

Name: Jearline A. Bryant

Date of Degree: May 3, 2018

Institution: Mississippi State University

Major Field: Instructional Systems and Workforce Development

Major Professor: Linda F. Cornelious

Title of Study: A comparative study of full-admission and developmental undergraduate students' performance in online and face-to-face business courses at a historically black college and university

Pages in Study: 86

Candidate for Degree of Doctor of Philosophy

The purpose of this study was to determine factors that impact the final grades of full admission and developmental students who were enrolled in selected 22 undergraduate business courses during the fall 2015 and spring 2016 semesters. Also, this study examined the interaction of students' ethnicity, gender, age, and classification on their final course grades in selected business courses at a rural public HBCU.

The research design for this study was causal-comparative research. A 2X2 and a 2X4 factorial ANOVA was used to determine whether there was a main effect on students' final grades considering each independent variable. Out of a population of 393 students enrolled, 320 students participated in this study.

After the data were collected and analyzed, the researcher determined that there was a statistically significant relationship between student's final grade and course delivery, ethnicity, and classification. There was no statistically significant interaction on student's final grades between course delivery and student admission status, gender, age, ethnicity, and classification.

Conclusion and recommendations based on the findings in this study indicated that students attending the rural public HBCU and enrolled in business courses that offered the same courses in both face-to-face and online formats performed better in face-to-face courses than in the online courses.

DEDICATION

This doctoral dissertation is dedicated to my family for all the prayers, encouraging words and support throughout this process. To my husband, Lynn, for inspiring me to keep going because he was always there for me to lean on when I got tired. To my daughters Shavonte' Hammond and Ashley Bryant for wanting to see me through this process. You two are my motivation to never give up no matter how hard the process. To my grandchildren Alivia, Josiah, and Lailah, I pray that this accomplishment will encourage you to always to strive for what you want in life. To my mother, Jearline Hallmon, throughout everything she has been through during this process, she has always been by my side supporting me with her prayers. To my father the late Louis Roosevelt Petty, Sr. and my stepfather the late Leon Hallmon, Sr. if you were here I know you would be so proud of me.

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CHAPTER I

INTRODUCTION

Despite the considerable growth in online enrollment and student perceptions of the benefits of online learning over the last decade, historically black colleges and universities (HBCUs) have been reluctant to offer online courses and programs (Keese & Shepard, 2011; Xu & Jaggars, 2013). Several factors have been given to explain the criteria HBCUs employ in selecting the course and program modality. Faculty and administration hesitancy, perceived deficits in learning outcomes, and student characteristics have been determined to influence HBCUs' online course offering (Flowers, White, Raynor, & Bhattacharya, 2012; Poley, 2008). Moreover, HBCUs, as well as other universities, design their curricula, courses, resources, and activities according to implicit expectations for students' success (Brower & Ketterhagen, 2004).

Allen and Seamon (2007) indicated that one of the most important barriers to universities widespread adoption of online course and program offerings is the fear that, "students need more discipline to succeed" (p. 14). In fact, Fort (2013) also mentioned the culturally disadvantaged doctrine, which stated that students "almost exclusively African American, poor White, Hispanic, and Native American, possess certain characteristics that have interfered with their ability to learn" (p. 3). As a result of this disadvantaged label doctrine, these students, a large percentage of whom attend HBCUs, are forced to operate within the "attitudinal pre-deterministic syndrome" (Fort, 2013,

p. 5). This forced operation has resulted in course offering and teaching methodologies not being offered to HBCU students because their teachers do not believe they can learn from these delivery modes.

Given that face-to-face instruction is the main teaching methodology employed in primary and secondary education, many college students face challenges in adapting to online learning environments (Xu & Jaggars, 2013). Several studies have shown some students performed better in face-to-face courses rather than online courses (Amro, Mundy, & Kupczynski, 2015; Friday, Friday-Stroud, Green, & Hill, 2006; Harris & Parrish, 2006; Weber & Lennon, 2007).

As indicated previously, many students in online courses out perform their peers in face-to-face classes. This high-performance level is pointed out in the following studies (Johnson, 2003; Johnson, Dasgupta, Zhang, & Evans, 2009; Lim, Kim, Chen, & Ryder, 2008; Thirunarayanan & Perez-Prado, 2001). However, some researchers have found no significant difference in student performance in online courses relative to face-to-face instruction as concluded by several authors (Amin & Kuiyuan, 2010; Bernard et al., 2004; Jahng, Krug, & Zhang, 2007; Summers, Waigandt & Whittaker, 2005; Wilson & Allen, 2011). Students with extensive exposure to technology or those who have been taught skills in time management and self-directed learning may adapt more readily to online learning as found in the works of (Stewart, Bachman, & Johnson, 2010). Xu and Jaggars (2013) in their study on adaptability to online learning found that variation in adapting to online learning may result from different student populations and characteristics.

Xu and Jaggars (2014) also examined the impact of gender, age, ethnicity, and prior academic performance on student success in online courses and programs and found mixed results. Other researchers have found no difference in the performance of males and females in online courses and programs (Amro et al., 2015; Daymont & Blau, 2008; June, Chun-Sheng, Chang, & James, 2003; Tekinarlan, 2011; Yukselturk & Bulut, 2007). However, other researchers have found women perform significantly better than men in online courses (Gunn, McSporrán, Macleod, & French, 2003; Xu & Jaggars, 2013). Xu and Jaggars (2013) in their study on adaptability to online learning the differences across types of students and academic subject areas, also found that females adapt to online courses more readily than their male counterparts.

Wojciechowski and Palmer (2005), in their study on the relationship of students' age, examined the relationship to success in an online undergraduate business course at a community college, concluded that older students tend to perform better in online classes. In contrast, however, (Amro et al., 2015; Kupczynski, Gibson, Ice, Richardson, & Chaloo, 2011; Wang & Newlin, 2002) found no significant relationship between age and online academic performance. In their study on adaptability to online learning, Xu and Jaggars (2013) reported that although older students tend to perform better in term course grades, they were also more likely to drop out of courses relative to their younger counterparts.

Ethnicity has been shown to be a factor in determining success in online courses. African American and Hispanic students have been shown to perform poorer than white students in online courses (Newell, 2007; Xu & Jaggars, 2013). This underperformance has been attributed to a lack of access to computer technology (Newell, 2007; Stewart

et al., 2010), skills in time management, and self-directed learning (Artino, 2008; Stewart et al., 2010). Moreover, Xu and Jaggars (2013) suggested that college readiness as a result of the quality of students primary and secondary schooling have also been factors.

The pre-existing academic ability has been shown to impact negatively on students' performance in online courses as found in research studies. Figlio et al. (2013) found that students with low GPAs had a more difficult time adjusting to online courses than students with high GPAs. Whereas, Wilson and Allen (2011) examined the grade performance of students enrolled in two sections (online and face-to-face) of two management courses at an HBCU and concluded cumulative GPA to be the primary determinant of course performance regardless of the mode of course delivery. Xu and Jaggars (2013) found that students who had enrolled in remedial courses tended to have higher drop rates and lower academic performance in online courses rather than face-to-face courses. In fact, the academic performance gap between low GPA and high GPA students was wider in online courses than face-to-face courses.

Moore (2008) concluded that many HBCUs alumni and students had been first-time college students in their families with unrealistic expectations of college life. Thus, it is believed that students attending HBCUs will be disadvantaged as they lack the level of preparation and resources to complete successfully online courses and programs. Also, a study from the University of California at Los Angeles indicated that approximately 34% of students attending historically black colleges come from low-income families, as compared to 28% of students at other academic institutions (Mullins, 2013).

HBCUs depend on African Americans students for the majority of their enrollment (Gasman, 2013). As a result, HBCUs find themselves confronting issues other higher education institutions may not encounter. According to Fort (2013), twin challenges face HBCUs as follows: (a) the continued achievement gap between African-American and white students in K-12 and (b) the cult of cultural deprivation. Differentials in poverty, family structure and values, and parenting practices have been cited as contributing factors to the achievement gap (Fort, 2013).

HBCUs also face the challenge of serving students who arrive on campus unprepared for college work. These groups of students are not as prepared academically as the students at traditional institutions. Flores and Park (2015) concluded from their study that African-Americans and Hispanics enrolled at Minority-Serving Institutions (MSIs) were substantially underprepared academically for college.

The shift in educational policy focus from college enrollment to college completion has increased the level of attention on college graduation rates (Bowen, Chingos, & McPherson, 2009). Researchers have found a decline in college completion rate as a result of changes in student preparation and institutional characteristics (Bound, Lovenheim, & Turner, 2010). Increased focus on retention has been suggested as a significant model to employ in increasing the completion rate among minorities (College Board, 2012). Moreover, the high dropout rate among African-Americans students selecting to attend HBCUs has adversely impacted the completion rates of these students when compared to African-American attending non-Minority Serving Institutions (MSIs). Researchers Flores and Parks (2015) reported that minority students enrolled in MSIs graduated at a 10% lower rate than minorities enrolled at traditional institutions.

These collective results obligate HBCU leadership and teaching faculty to consider every factor, including teaching modality, which might adversely impact their student body's chance of completing courses and consequently obtaining their college degree. Some researchers have concluded that students enrolled in face-to-face courses perform better than students enrolled in online courses (Armo et al., 2015). However, little or no research has examined whether the academic performance gap is widened for students taking online courses at HBCUs.

Statement of the Problem

Institutions of higher learning must determine the proper balance of online and face-to-face courses to include in their curriculum of course offerings. Several reasons have been offered by several researchers (Brooks, 2003; Hurt, 2008) as detriments of offering online courses in universities, including but not limited to the perception of quality, lack of technological background skills of students, student readiness issues, and lack of academic preparation. University administrators and faculty members compare these detriments with the benefits associated with face-to-face courses, which Berk (2013) considered the optimal delivery format.

Opinions regarding the quality of online education are mixed. Allen and Seamon (2014) conducted a study which compared the perceptions of quality of online education versus traditional face-to-face. In their study, the authors found that 43% of the chief academic officers surveyed viewed online instruction as superior to face-to-face. These findings represented a change from results observed between 2009 and 2011 when the online instruction was regarded as being somewhat inferior to face-to-face instruction. In any case, the 2014 results also represented a significant increase over the 2013 report

when only 23% of the academic leaders shared such a favorable position regarding the advantages of online instruction. The exact reasons for these perceptions were not revealed by the authors.

In their research, (Clay, 2012; Moore, 2008) concluded that online course offering requires an investment of resources. Therefore, HBCUs often face the challenge of funding the changes required to remain current with technology to accommodate the students they are seeking to recruit. For example, in a study commissioned by the Ford Foundation, Clay (2012) concluded, “HBCUs are often technology challenged. This is not to say that the institutions have not upgraded their infrastructure-most have- but technology is an infrastructure requirement that all institutions must constantly enhance” (p. 13). However, HBCUs often conduct a cost-benefit analysis to determine the feasibility of implementing online programs and courses (Buckley & Narang, 2014). Such analysis can be beneficial in determining budgetary priorities and in seeking outside funding to acquire needed technology.

Although almost all resources for infrastructure have been viewed as the dominant deterrent to HBCUs offering online courses and programs, there are no longer the inhibitors they have been in the past (Moore, 2008). To validate this, Moore (2008) compared the technological infrastructure, climate, and programs of select HBCUs and Traditional White Institutions (TWIs) and found that HBCUs were comparable with TWIs in the implementation of distance education. Moreover, HBCUs were found to have comprehensive strategic plans and campuses that are wired with up-to-date hardware and software. Thus, resources appear no longer to be the deterrent to HBCUs in their offering of online courses (Moore, 2008).

Brooks (2009) suggested that changing market necessitates HBCU administrators to consider different teaching delivery modalities. In 2007, the APLU-Sloan National Commission on Online Learning surveyed 42 National Association for Equal Opportunity in Higher Education member college presidents and chancellors. Of the respondents surveyed in this study, slightly more than 84% indicated that online education is critical to their long-run strategy. Moreover, almost 71% of the respondents in the study saw online education as a way to attract students from outside their traditional service area, and almost 64% viewed online education as a vehicle for increasing student access. In yet another study, Seaman (2011) found that 60% of private sector colleges and universities reported online learning as a critical part of their institution's long-run strategies. Thus, offering courses using the online modality has moved from being an attractive option to a competitive necessity.

Failure to offer a sufficient number of online courses may result in losing students to competing institutions or result in students dropping out of school entirely (Brooks, 2009). Consequently, HBCUs must offer courses in the format students prefer if they are going to compete successfully with other institutions of higher learning. According to National Center for Education Statistics (NCES, 2016), enrollment of certain ethnicities in institutions of higher learning over the past several years has increased. The percentage of African Americans attending college increased 4%, from 10% in 1976 to 14% in 2014, compared to a 13% increase for Hispanics, a 5% increase for Asian/Pacific Islanders and a 26% decline for white students. However, HBCUs, on average, have not shared in the level of increase in African-American enrollment experience witnessed by universities as a whole.

According to Gasman (2013), African Americans enrollment at historically black colleges has continued to trend downward. In 1980, for example, African American enrollment accounted for 80% of the total enrollment at HBCUs, down from 100% in 1950. An increase in the number of African Americans attending college has not translated into higher enrollments for HBCUs. As a result, HBCUs have been forced to consider online course offerings to remain competitive in recruiting students to their universities. HBCUs are now being forced to consider this delivery format, not only to obtain additional revenue but perhaps, more importantly, to increase enrollment to justify their existence (Mullins, 2013).

In addition to facing challenges of declining enrollment, HBCUs have also been criticized for their low graduation rate, which is on average approximately 30% (Postsecondary National Policy Institute, 2017). Supporters and HBCUs administrators have unwaveringly contended this statistic does not capture the “full story” (p.10), because it fails to consider the level at which students arrive at HBCUs (Gasman, 2013). HBCUs have a social service mission based on educating a distinctive population with limited resources (Fort, 2013). HBCUs, established during the decades after the Civil War until 1964, are the only institutions created in the United States with the expressed objective of educating black citizens (Gasman, 2013). Thus, it is believed that students attending HBCUs will be disadvantaged as they lack the level of preparation and resources to complete successfully in online courses and programs (Moore, 2008).

When developing strategic plans for online course offering, HBCUs often face a dilemma. In particular, online education tends to offer opportunities for higher education institutions to expand their enrollment to include a broader group of non-traditional

students who currently, due to employment constraints and family obligations, cannot afford to attend traditional classes. These characteristics seem to include a large segment of those in the African American community seeking to obtain post-secondary degrees (Aslanian, 2014; Keesee & Shepard, 2011). Consequently, HBCUs administrators recognize the benefits of online courses and programs to address enrollment problems. National Association of State Universities and Land-Grant Colleges (2007) found that 70% of HBCU's chief academic officers surveyed viewed online education as a mechanism to reach students not currently served by the face-to-face delivery format.

HBCUs administrators, however, must also take into consideration the body of knowledge that suggests African Americans, due to a lack of academic preparation, are often not well-suited to complete courses in an online environment (Xu & Jaggars, 2013). Wiggam (2004) suggested this lack of college readiness on the part of African Americans might be due to their being systematically disadvantaged because of the quality of their elementary and secondary academic preparation.

Subsequently, HBCUs must balance the opportunities to increase access to their student population with their obligation to provide an academic environment that promotes their students' success (Brower & Ketterhagen, 2004). Therefore, if online courses and programs widen the academic gap among prepared students and the under-prepared students on HBCUs campuses, the under-prepared are placed at a further disadvantage. Very few studies, if any, have been conducted that focused on whether the “ethnic minority performance gap”, (Xu & Jaggars, 2013, p. 3), is exacerbated by online coursework. Hence, this study is designed to answer the question of whether student enrollment in online courses widens the gap between the prepared and underprepared at a

rural public HBCU. This study should also provide information on online course offerings that would assist HBCU administrators in determining whether to increase those course offerings.

Purpose of the Study

The purpose of this study was to determine factors that impact the final grades of students in selected business courses during the fall 2015 and spring 2016 semesters. In addition, this study examined the interaction of students' ethnicity, gender, age, and classification on their final course grades in selected business courses at a rural public HBCU. It has been posited that African American students lack the necessary skill set and preparation required to take courses in an online environment (Wiggam, 2004; Xu & Jaggars, 2013). This study determined whether the final grades between students who have received full admission and those students who are required to take developmental course attending a rural public HBCU are affected by the delivery format in the 22 selected business courses in which students were enrolled during the fall 2015 and spring 2016 semesters.

If the online environment affects the final grade of the students who have received full admission into the rural public HBCU and those students who are required to take developmental courses, HBCUs may be doing a significant segment of their student population a disservice. Hence, if HBCUs promote an academic delivery system that will lower the probability of students obtaining a degree, they will inadvertently lower meaningful job opportunities for this group of students. If the performance gap is widening, "continued expansion of online courses could strengthen, rather than ameliorate, educational inequity" (Xu & Jaggars, 2013, p. 23). Given the inconsistent

findings in the literature on the impact of the course delivery format on students' academic success, a study on the effect of the delivery format on the academic performance of students enrolled at a rural HBCU is timely and should provide invaluable information to university administrators as they attempt to provide the optimal mix of course offering for their student populations.

Research Questions

This study focused on the factors that impact the undergraduate student's final grades in 22 selected business courses of students who received full admission and those students who are required to take developmental courses. The study compared the final grade of students taking online courses and those of students taking face-to-face courses at a rural public HBCU in Mississippi located in the southeastern region of the United States. The study answered the following research questions:

1. Are there main effects for course delivery, admission status, age, gender, ethnicity, and classification on the students' final grade?
2. Are there significant interaction on final grades between course delivery and select independent variables (admission status, age, gender, ethnicity, and classification)?

Limitations

This study was limited to a rural public HBCU located in the southeastern region of the United States. This study was limited to undergraduate students who were enrolled in undergraduate business classes during the fall 2015 and spring 2016 semesters at a rural public HBCU located in the southeastern region of the United States. The study did

not include all four-year universities or two-year colleges, public, or private institutions. This study did not address the motivational factors influencing African Americans students living in rural areas to enroll in HBCUs institutions. Therefore, this study cannot be generalized to any other student population at a rural public HBCU.

Justifications of the Study

Several researchers (Bernard et al., 2004; Blake, Gibson & Blackwell, 2003; Jahng et al., 2007; Summers et al., 2005; Wilson & Allen, 2011) have sought to understand why students' performances vary in online relative to face-to-face courses. A number of researchers have indicated that gender (Amro et al., 2015; Daymont & Blau, 2008; Tekinarlan, 2011; Yukselturk & Bulut, 2007;), age (Amro et al., 2015; Kupczynski, et al., 2011; Wang & Newlin, 2002;) ethnicity (Newell, 2007; Wilson & Allen, 2011; Xu & Jaggars, 2013), and academic preparation (Figlio et al., 2013; Hoskins & Van Hooff, 2005; Xu & Jaggars, 2013) have been used as factors in determining persistence and academic performance.

Research is scarce, however, regarding the adaptability to online learning of students attending HBCUs and whether the "ethnic minority performance gap" (Xu & Jaggars, 2013, p. 3), is exacerbated by online coursework. Therefore, this study was designed to answer the question of whether student enrollment in online courses widens the gap between college-ready students and academically unprepared students at a rural public HBCU. This study should provide information that will assist HBCU administrators in deciding if their institutions are providing educational opportunities that their students are equipped to take advantage when they offer online courses and programs.

This study has implications for state legislatures, policy makers, governing boards, and university administrators. Scarce resources in institutions of higher learning demand allocations based on coherent rationales and sustainable outcomes. If it is determined that African American students attending HBCUs are capable of performing at a high level in online courses, or and at least consistent with their performance in the traditional face-to-face courses, this confirmation opens the door for HBCUs to offer more online programs and courses. This change in academic course offerings can potentially boost enrollment, increase tuition revenues, and strengthen the overall health of the institution. This research study should be an important part of pioneering research on HBCUs and the students who attend them. The recommendations of this study may be significant to HBCUs as they attempt to better serve their student populations and develop programs to increase access to educational opportunities needed for achieving educational and career goals.

Definitions

The following terms were used in this study:

1. Developmental Admission – students fully admitted to the university with no needs for remedial courses
2. Ethnicity – term used to describe the students ethnic background in this study
3. Full Admission – term used to describe the traditional classroom environment in which students and instructor’s communications are in person.

4. Historically Black Colleges and Universities (HBCU) - institutions established primarily for the education of African Americans (Higher Education Act 1965)
5. Nontraditional Student – term used to describe students who returned to college to complete their degree over the age of 23
6. Online Education – courses and degrees offered via the Internet. Assignments, communications, and student interaction are online in a virtual classroom
7. Traditional Student – students between the ages of 18 through 23

CHAPTER II

REVIEW OF RELATED LITERATURE

This study examined whether the academic performance gap between particular subgroups (academically prepared and underprepared students) attending a rural public HBCU in selected business courses widens due to differences in adapting to online coursework. This chapter begins with a review of the related literature regarding distance education in higher education and its target market. The next section of this chapter provides an overview of online education, and two methods students can communicate in the online environment. This chapter also describes the benefits of online learning including economic benefits, the establishment of communities of learning, instructional strategies for online learning, and students' attraction to online courses.

Section three in this chapter describes the differences in academic performance between students enrolled in face-to-face courses and online courses and the suitability of certain subjects to the online environment. The final section of this chapter describes the factors critical to online success and the impact of student characteristics on online learning performance, focusing on students' ethnicity, gender, age, prior academic performance, and pre-existing academic ability.

Distance Education in Higher Education

The earliest form of distance education (correspondence courses) had its beginning in the 1800s in Europe (Synder, 2005). In fact, the earliest adaptation of correspondence courses among colleges and universities was to meet the needs of students located outside of a normal driving distance from the campus (Gunawardena & McIsaac, 2004). Correspondence courses were later adopted to accommodate the needs of those whose restrictive schedules would not allow them to add another traditional course (Fekula, 2010). Wesleyan University, located in Illinois, is regarded as the first U.S. University to offer both undergraduate and undergraduate degree programs "in absentia" (Emmerson, 2005).

Distance education has been used to meet the educational needs of different populations including individuals in the military (Synder, 2005). For example, the United States military through the Department of Defense (DOD), The Advanced Distributed Learning (ADL) Initiative, was designed to help the Army and other military services implement distance education as a means of delivering education and training for their military forces (Duncan, 2005).

The DOD commitment to use distance education has contributed to the development of education technologies (Duncan, 2005). The emerging technologies have all influenced the delivery formats for distance education. For example, Duncan (2005) stated, "The Advanced Distributed Learning (ADL) movement became the voice of change for distance learning, which moved from a primarily paper-based and television delivery format to one that would include the value and benefit of the emerging training technologies, including the Internet" (p. 397).

Online Education

In June 2014, HBCUs offered approximately 67 online/blended programs. Business and management accounted for approximately 39% of the online programs. Combined business and management and criminal justice programs represented approximately 50% of the online programs offered by HBCUs (HBCU-Levers, 2014). Online and face-to-face courses examined in this study are from a rural public HBCU located in the southeastern region of the United States. The rural public HBCU identified in this study is a member of the Mississippi Institutions of Higher Learning (IHL), the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), and the Accreditation Council for Business Schools and Programs (ACBSP). The IHL system comprises a mix of comprehensive and regional schools, historically white and black schools, and institutions located in rural and urban settings.

Online education falls under the umbrella of distance education as its design is to meet the educational needs of students whose situation or preference prevents them from taking classes in the traditional face-to-face classes (Synder, 2005). Moreover, the sustainability of distance education rests in the flexibility it provides students to access education, anytime or anywhere. In distance education classes, students have an opportunity to work at their pace and in environments conducive to their choice.

Synchronous and Asynchronous Learning

Online learning has two ways that students can communicate, synchronous and asynchronous (Hanna, Glowacki-Dudka, & Conceicao-Dudka, 2000; Hrastinski, 2008; Simonson, Smaldino, Albright, & Zvace, 2011). Synchronous learning allows for real-time access to both instructors and students in different geographical time zones (Er,

Özden, & Arifoglu, 2009). However, the asynchronous instruction is neither limited by location or time. Also, asynchronous learners have the freedom to complete assignments or to correspond with instructors and fellow students in their own time.

Synchronous learning has many of the same advantages of face-to-face classroom instruction, but with added advantages of flexibility and cost savings. Additionally, synchronous learning allows students and instructors to collaborate over vast distances (Hughes, 2004). As such, synchronous technologies can be used to overcome some of the objections associated with the online instruction. One of the challenges associated with online instructions is instructors' inability to gauge the level of student understanding through face-to-face reactions and interactions (Hofmann, 2004). To overcome this limitation, the online instructor must rely upon a variety of technological tools to encourage and measure participation. Synchronous learning through its use of video conferencing, chatting, polling, and questioning provides students and instructors real-time interactions.

Despite the appeal of synchronous learning, asynchronous methods remain the chosen medium for certain segments of the online student population (Lorenzo & Ittelson, 2005). Students needing to combine education with work, family, and other commitments continue to take online courses because of their asynchronous nature (Hrastinski, 2008). Asynchronous also referred to as location independent learning, supports the teaching and learning functions when instructors and students are not engaged in real-time interaction. According to Morse (2003), computer-mediated communication (CMC), commonly facilitated by email and discussion boards in an online course, supports multiple learning styles. Asynchronous methods provide students

with the flexibility to work at their own pace, additional time to review instructional materials, and the opportunity to interact with other students (Morse, 2003).

Benefits of Online Learning. Online learning offers several advantages to higher education students and institutions including the capacity to offer teaching and learning opportunities, anytime and anywhere, and access for students who, due to their job, family, or other obligations, are place-bound (Moore, Winograd, & Lange, 2001). As stated in its advertisement, the mission of online education is to provide access to a wide range of audiences for whom traditional education is not an option, regardless of their location (Yamagata-Lynch 2014). Gilson and Jinhong (2014) stated, “As online course offerings increase at higher education institutions, the forms in which an online course is delivered becomes diverse and are often based on students’ needs and interest” (p. 241).

Online instruction can also offer learning opportunities in a more non-threatening environment than the traditional face-to-face classroom. This instructional approach can be very valuable as it allows students to complete their work in the comfort of familiar surroundings, provides additional time to formulate responses and encourages more openness in sharing their answers due to certain levels of anonymity (Blake, Gibson & Blackwell, 2003).

Students enrolled in online courses can also benefit from more objective evaluation of their online assignment submission. Moore et al. (2001) observed the capacity for reduction of possible race and gender bias as communications and collaborations on assignments take place in an environment in which student demographics revelations are not required or identified. Equally important, students can

focus on the lesson at hand and not be concerned as to how they will be evaluated in their online courses.

Economic benefits. There are many economic advantages to online learning for students and providers of instruction and training, such as businesses (Gregory, 2002). Students can take advantage of cost savings in travel, physical locations, time away from work, re-use of materials, and timely updates (Blake et al., 2003). Thus, the savings can be sizable.

According to a report by the Commission on Technology and Adult Learning (ASTD/NGA, 2001), "E-learning also holds enormous potential as a tool for reducing costs of workplace-related education and training" (p. 4). In a study on the return on investment (ROI) of online education, Gregory (2002) found that although the initial start-up costs for online learning may be high for businesses, the long-term return on investment is often worth the cost. Since businesses are rapidly moving to cut costs, e-learning can provide substantial savings. "Lacking the logistical expenses of instructor-led courses, e-learning can be developed and delivered more quickly and at a reduced cost" (Gregory, 2002, p. 1).

ASTD/NGA (2001) suggested that the justification for e-learning should not be limited to economics alone as in addition to financial considerations; the instructional benefits must also justify online learning. Watts (2003) argued that online learning's economic benefits; if not properly monitored and prioritized, can jeopardize sound instructional strategy since online learning can offer the best of both worlds of cost savings and effective instruction. Whether used as a blended solution to improve

classroom instruction or as a replacement for traditional teaching, web-based learning has distinct advantages going beyond economics.

Combined synchronous and asynchronous learning methods of instruction are often referred to as "blended" learning (Hofmann, 2004). Practitioners often recommend a blended approach because of its capacity to accommodate multiple learning styles and accomplish various learning objectives (Hofmann, 2004). Therefore, the concern is that effective online instruction may be compromised if the focus is limited to economics and not reaching as many students as possible. Quality instruction must remain at the forefront of online instruction.

Communities of Learning. Distance learning also has the potential to facilitate communities of learning. The real-time advantage of synchronous learning for interaction and developing a sense of belonging to a learning community is compelling (Hughes, 2004). This advantage has been evident even when considering learners who are in multiple time zones and spread over wide geographical areas. For example, Arctic University initially limited the offering of programs to asynchronous learning because of concerns over different time zones. However, synchronous learning became an option when students requested the addition of chat sessions and indicated their willingness to participate even in early morning hours (Hughes, 2004). This further illustrates that e-learning can be applied in practices that complement educational learning.

Teachers and students view synchronous methodology as more social and avoid frustration by asking and answering questions in real time (Hrastinski, 2008). Using this approach, students become part of a community, which allows them to collaborate with others throughout the course with any concerns or assistance they may need to be

successful (Yamagata-Lynch, 2014). In one study conducted by Romanoff (2003), students in Maine and Hawaii were brought together to share learning experiences in which both asynchronous and synchronous tools were used to promote collaboration. The result was the formation of a successful learning community. The following describes the benefits Romanoff (2003) observed in the online learning community:

Learning communities are effective formats for nurturing academic success and for fostering a sense of solidarity and well-being by reducing the distance between students. The absence of an in-person, face-to-face classroom is less important than the experience that affirms the individual and collective efforts of students and teachers. Technology serves to reduce that distance by enhancing the sense of community among students and teachers. (p. 58)

Bambara, Harbour, and Davies (2009) conducted a qualitative study utilizing the phenomenological method to examine the experience of students enrolled in high-risk online courses (HRCs) at a community college in the American Southeast. This method examined the educational experiences of the students enrolled in challenging online courses at a community college. The four structural themes that emerged as framing the experiences of the participants were isolation, academic challenge, ownership, and acquiescence. The findings in this study indicated that the participants' voices combined to form four structured themes that defined the participants' lived experiences in their HRCs. All participants experienced isolation and academic challenges in some way and to some degree. The findings indicated that the participants differed in how they

responded to these experiences. The data analysis revealed that some participants responded through ownership while other through acquiescence.

The formation of learning communities is not an automatic outgrowth of online education. By their very nature, online courses were designed to be independent and self-paced; characteristics that are not very well suited to cohorts or learning communities. Instructional innovations resulted in solutions to bridge gaps in communication. Hughes (2004) found that discussion boards were established to meet the needs of students living in Arctic regions from multiple countries and cultures (Hughes, 2004). Asynchronous knowledge sharing (ASKS) provided learners, and instructors access to knowledge sharing via the internet. With the aid of technology, an influential learning community was established through the provision of learning portals, asynchronous and synchronous learning methodologies. According to Hughes (2004), the program benefited not only from technology but also from the shared vision and a focus on the sharing of knowledge among learners and instructors.

Instructional Strategies for Online Learning Instructional design and techniques are critical to the success of online instruction. Faculty members have an important role in developing and facilitating the student learning experience in the online environment (Diaz & Entonado, 2009). Great attention has been given to the adjustments faculty members must make to teach effectively in an online environment (Hofmann, 2004). Faculty members must make decisions as to how to transfer learning activities from a face-to-face environment to an online environment. According to Hofmann (2004), an online teacher should be collaborative, flexible, and unshakeable; additionally, he or she should be an online learning advocate and a multi-tasker.

Faculty members' decisions concerning instructional methods are becoming more complex with options ranging from problem sets to experiential serving learning projects (McIver, Fitzsimmons, & Flanagan, 2016). These instructional methods must take into account the relative advantages of each teaching style. Instructors need to have an understanding of the online learning environment and to have received appropriate training in online instructional strategies, technologies, and platforms. An effective online educational program also requires subject area teachers who are well organized and can encourage dialogue among students. Regarding the development and implementation of new technologies and learning strategies, Duncan (2005) indicated, "Over time the distance education movement accepted that a new technology should be entertained only after sufficient research showed that a student learned faster, retained more, or possibly improved in overall ability relative to the task or job" (p. 400). Putting Duncan's recommendation into practice remains a reliable justification for e-learning educators.

Effective online instruction is about learning; consequently, the primary focus in designing an online course is to promote collaborative learning. Hughes (2004) conducted a study on the best practices utilized in a successful distance learning program. She examined the support services, such as, study skills assistance, administrative and technical support needed to support a successful outcome for online learners. Her findings also indicated that shared learning or peer study groups had an advantage when compared to traditional learning and its structured methods of incorporating knowledge into course materials. Moisey and Hughes (2008) found that student interaction is an

important component in the creation of virtual communities deepen the knowledge and expertise through the exploration of topics and problems of shared interest.

Figlio et al. (2013) examined the first experimental evidence on the effects of live versus internet media instruction. Students in a large introductory microeconomics course at a major research university were randomly assigned to live lectures versus watching these same lectures in an internet setting where all other factors (e.g., instruction, supplemental materials) were the same. The authors found evidence that live-only instruction dominates internet instruction. This conclusion was contrary to findings in earlier studies. The study also revealed that live instructions are particularly well-suited for Hispanic students, male students, and lower-achieving students.

Students' Attraction to Online Courses. In a study comparing distance education with traditional classroom environments, (Bernard et al., 2004) investigated the motivation of students for taking an online class. The investigators sought answers to two primary questions. First, why do students choose an online environment? Secondly, do the advantages of taking an online class outweighs the sacrifices made by not taking the class face-to-face? This study found no significant overall differences in student achievement, attitude, and retention outcomes between online and face-to-face courses. However, when achievement outcomes were divided into synchronous and asynchronous forms, student performance for synchronous applications favored classroom instruction, while student achievement in asynchronous applications favored distance education.

Many students are just as satisfied with the online experience as with the traditional classroom. In a study involving a finance course taught both online and in the classroom, Ashkeboussi (2001) reported, "...there were no significant differences between

the two groups regarding their feelings about web utility, interactivity (students/students, and students/instructor), learning experience, and overall satisfaction with the Financial Management course delivered on-site or online" (p. 133). There are other positions as given in the following paragraphs

Online education, despite its attractiveness of flexibility and convenience, is not well suited for every student. Muilenburg and Berger (2005) stated, "A lack of social interaction was the most severe barrier perceived by students overall" (p. 45). Thus, it is important for students to employ good time management skills to ensure the timeless and high quality of assignment submission.

Student Performance in Face-to-Face and Online Courses

There have been numerous studies conducted comparing online learning to traditional instruction as seen in studies conducted by (Ashkeboussi, 2001; Blake et al., 2003; Botsch & Botsch, 2001). In general, many researchers have concluded that e-learning is at least as effective as traditional methods (Ashkeboussi, 2001; Botsch & Botsch, 2001). For example, Blake et al. (2003) conducted a study on what supervisors needed to know when using web-based training and noted that 248 studies revealed that online education was just as effective as traditional classroom instruction.

Other studies have suggested online education is not only as effective, but it may also provide an educational experience superior to that of face-to-face instruction (Johnson, 2003). For example, Thirunarayanan and Perez-Prado (2001) compared the performance of 29 students enrolled in an online section of English speakers of the second language (ESOL) to that of 51 students enrolled in the same course offered in the face-to-face format. Comparison of their pretest and posttest scores revealed an

advantage for the classroom section on the pre-test but no significance difference between the groups on the post-test. However, when examining the change in scores on the post-test in comparison the pre-test, the online section demonstrated a measurable advantage in the level of improvement.

Allen et al. (2004) found that distance education course students marginally outperformed traditional students on exams and course grades. The authors used meta-analysis to summarize the quantitative literature evaluating the performance of students enrolled in distance education versus traditional face-to-face courses. The results also revealed no significant decline in course quality when offered using distance education tools and technologies.

Sitzmann, Kraiger, Stewart, and Wisher (2006) examined the effectiveness of Web-based instruction (WBI) relative to classroom instruction (CI) using a meta-analytic technique. Their findings showed that WBI was 6% more effective than CI for teaching declarative knowledge while both delivery mechanisms were comparable when teaching procedural knowledge. Trainees were equally satisfied with the WBI and CI instructional methods.

Jahng et al. (2007) conducted a meta-analysis study to integrate existing research published between 1995 and 2004 comparing student achievement in online distance education (ODE) and face-to-face education (F2FE) at the post-secondary level to see if students perform more poorly in an ODE than F2FE? The authors also focused on how the development of technology contributed to student achievement in ODE during the ten years. The study indicated that when comparing overall weighted means, the student achievement showed no significant difference between the two settings. However, the

student achievement comparison revealed an interesting result when the primary studies were categorized by whether the experimental study conducted a pre-test or not. For example, the authors revealed that OFE students scored higher on pre-test exams than F2FE students. However, there was no significant difference in academic performance in the no pre-test group.

Means, Toyama, Murphy, Bakia, and Jones (2009) examined thousands of empirical studies on online learning over a 12-year period between the years 1996 through 2008. The study used 50 independent factors and concluded that on average students taking classes online performed better than students taking face-to-face classes. The study also revealed that when studies compared conditions in which blended elements were added to online and face-to-face versus classes taught strictly face-to-face in a face-to-face environment, students in blended classes received more time, which produced a more positive effect in their performance.

Despite the mostly positive picture of online learning, there is no guarantee of success or effectiveness of online training for every application. O'Connell (2002) conducted a study on students' performances in e-learning courses on their exams. In this study two Economic professors, Carl Liedholm and Byron Brown, showed that students in the classroom performed much better than online students in an economics course. Their findings suggested that online learning works better for courses in which basic concepts are taught but is lacking for "developing complex analytical skills"(p. 15). For example, students could grasp basic economic skills like supply and demand, but they were unable to apply these concepts to advanced problem-solving scenarios.

In a study conducted by Pribesh, Dickinson, and Bucher (2006), the authors examined two cohorts of a graduate-level Library Media Specialist program, one face-to-face and the other online, to determine the feasibility of using online education in the field of Library Media to improve the shortage of school library personnel. The face-to-face cohorts included students who self-selected the classes and paid for them. The online cohort consisted of those students who were nominated or showed an interest in the program. The results of this study indicated that the performances of the two cohorts were equally the same in the content-based activities. The difference was noted in grades on project-based activities, where face-to-face students scored higher, due to the feedback from the students and the instructor.

Factors Critical to Online Success

Student characteristics have been found to impact a student's success in online courses. Newell (2007) examined four student characteristics and their effect on successful online course completion for a large population of adult students. In particular, the study sought to determine the influence of age, gender, ethnicity, and financial aid eligibility on successful completion rates for nontraditional adults participating in online technical college courses. The findings in Newell's study indicated that age, ethnicity and financial aid eligibility were significant predictors of online course completion. Older students, white students, and students not eligible for Pell grants were more likely to complete online courses successfully.

Jun (2005) conducted a study to determine which specific set of variables can best predict adult learners' dropout rates in the e-learning course in the workplace. The author developed a model including variables such as attention, relevance, confidence, marital

status, some learning hours for the course, mandatory/voluntary attendance, and hours worked per week. The study revealed that the number of e-learning courses taken, gender, and attention variables had a significant impact on dropout rates.

Hoskins and Hooff (2005) examined whether the study styles, ability, age, and gender of 110 undergraduates in the second year of a psychology degree predicted the extent to which they utilized online learning using Web Course Tools (WebCT) in support of a core Biological Psychology unit. The study indicated that the number of hits, length of access, and use of the bulletin board was predicted by age, with older students using WebCT more. The factors also influenced the ability and achievement orientation. Student variables did not predict the degree of participation in self-assessment, but, of those that repeated an online quiz, the improvement was more likely in those with lower achievement orientation. Only bulletin board use influenced achievement with those students posting messages outperforming those not using or passively using bulletin boards. Obviously, bulletin board use is used in in-person settings.

Flanagan (2012) evaluated the performance of undergraduate students enrolled in business statistics courses taught online and face-to-face to determine differences in grades of males and females in both class formats. The study results found that students overall performed better in the face-to-face business statistics courses than in the online courses. When gender was analyzed, the research found that final grade for female students was much lower in the online classes as opposed to face-to-face, while there were no significant differences in the male students' grades in the two-course formats.

Adaptability to Online Learning

Several researchers have found that content and student characteristics are important elements in determining student success in online courses. For example, Zhao, Lei, Yan, Lai, and Tan (2005) identified factors with the potential to influence the effectiveness of distance education. The authors analyzed 423 empirical studies that compared face-to-face education to online education. Zhao et al. concluded, “Distance education, in essence, is still education The factors found to impact the effectiveness of distance education are also factors that affect the effectiveness of face-to-face education” (p. 1865). However, they also concluded that not all implementations of distance education were “created equal.” Their findings provide evidence that not all content is suitable for distance education, human interaction is critical, and some learners may not be well suited to benefit from the delivery method. Their study also indicated undergraduate college-level students have results that are more positive in distance education courses than graduate students. Another variable is examined in the following paragraph.

Stewart et al. (2010) examined the interaction between demographic variables, and motivation orientation was compared to students interested in completing online and traditional degree programs. The study surveyed 265 students enrolled at an open-enrollment state institution who completed an online survey examining student interest in online degree programs. The findings demonstrated similar student motivations for completing online and traditional degrees as follows: age, gender, and ethnic interactions with motivations for completing of online and traditional degrees, and intrinsic motivation as a predictor of online student interest in online degree programs. These

findings are useful for developing online degree programs that support online learners' needs and increase retention rates.

Xu and Jaggars (2013) examined approximately 500,000 online and face-to-face courses are taken by nearly 40,000 students enrolled in community colleges in the state of Washington during the fall term of 2004 to determine the impact of students' course subject areas on students' adaptability to online courses. While previous research had focused on the performance of the different groups in online courses, little attention had been given to whether the gap for different subgroups in academic performance was wider in online courses or face-to-face (Xu & Jaggars, 2013). The study revealed, "Males, younger students, black males, and students with lower levels of academic performance had more difficulty adapting to online courses" (p. 19). African-American students were found to perform twice as poorly as Asians in online courses as they did in face-to-face courses. The study also revealed that the gap in academic performance between high and low skill students tended to be stronger in online courses than in face-to-face courses.

Xu and Jaggars (2014) investigated a dataset containing 51,017 degree-seeking students enrolled over a five-year period in 498,613 courses, of which approximately 10% percent were taken online. The authors were to determine the performance gap between online and face-to-face courses, and how the size of the gap differs across student subgroups and academic subject areas. Although the authors noted a decrement line in the academic performance of all students in the online courses relative to face-to-face, the declines were more pronounced in males, younger students, black students, and students with lower grade point averages. The results showed that students with a

stronger academic background had a narrower online performance gap while students with weaker academic skills performed more poorly in online performance gap in online courses versus face-to-face courses. The conclusions of Xu and Jaggars suggested that online learning is at least as effective as traditional classroom learning.

Summary of the Review of Related Literature

Online education is acknowledged as having been designed to meet the educational needs of students whose preference or position does not allow them to attend traditional face-to-face classes (Synder, 2005). Synchronous and asynchronous communications are used in online instruction (Hofmann, 2004, Hrastinski, 2008; Hughes, 2004; Lorenzo & Ittelson, 2005). Synchronous learning offers real-time interactions similar to traditional face-to-face through video conferencing, webcasts, and chat rooms (Hughes, 2004). Despite the benefits of synchronous technologies, students needing to combine educational pursuits with family, work, and other responsibilities continue to enroll in online courses because of the asynchronous technologies (Hrastinski, 2008).

Online education allows higher education institutions to provide access and learning opportunities, anytime and anywhere, this offering benefits for higher education institutions (Gilson & Jinhong, 2014; Moore et al., 2001; Yamagata-Lynch, 2014). Students enrolled in online courses benefit from the opportunity to complete their work in the comfort of familiar surroundings, additional time to prepare responses, and more openness in sharing answers in a non-threatening environment due to certain levels of anonymity (Bernard et al., 2004; Blake et al., 2003). Online education has been found to provide to both student and teacher economic advantages, among other things, in the

form of savings in travel to physical locations, as well as time away from work (Blake et al., 2003; Gregory, 2002).

Even though researchers methods (Ashkeboussi, 2001; Batte, Foster, & Larson 2003; Blake et al., 2003; Botsch & Botsch, 2001) found that e-learning is at least as effective as traditional classroom instructional methods, and some cases were superior (Allen et al., 2004; Johnson, 2003; Sitzmann et al., 2006; Thirunarayanan & Perez-Prado, 2001; Zhoa et al., 2005), other studies (O'Connell, 2002; Pribesh et al., 2006) found students enrolled in traditional face-to-face classes outperformed their fellow students enrolled in online courses. While previous research had focused on the performance of the different groups in online courses, little attention had been given to whether the gap for different subgroups in academic performance was wider in online courses versus face-to-face (Xu & Jaggars, 2013).

Several researchers (Flanagan, 2012; Jun, 2005; Newell, 2007) reported that student characteristics such as age, ethnicity, and financial aid eligibility were significant predictors of online course completion. Older students, white students, and students not eligible for Pell grants were more likely to complete successfully online courses.

According to Xu and Jaggars (2013) and Xu and Jaggars (2014), older students were more likely to drop out of online courses than their younger counterparts, however, for those who persisted, their final grades were higher. The study also revealed that the gap in academic performance between high and low skill students tended to be stronger in online courses than in face-to-face courses. Their results showed that students with a stronger academic background had a narrower online performance gap while students

with weaker academic skills performed more poorly in online performance gap in online courses versus face-to-face courses.

Given the number of students enrolled at HBCUs who possess these characteristics, due diligence requires a university administrator to consider the relative effectiveness of online and face-to-face learning when developing curriculum and delivery format decisions. Therefore, this study sought to determine the impact of online course and face-to-face courses on the academic performance of students attending a rural public HBCU located in the southeastern region of the United States.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine the factors that impact the final grades of students in selected business courses. Also, this study examined the interaction of students' ethnicity, admission status, gender, age, and classification in selected business courses at a public rural HBCU located in the southeastern region of the United States on their final grades.

This chapter describes the methodology and procedures that were used to conduct this study. This chapter includes the following sections: research design, variables of the study, population, data collection, and data analysis.

Research Design

The causal-comparative analysis is one of the three broad classifications of quantitative research (Leedy & Ormrod, 2001). The research design for this study was causal-comparative research. Onwuegbuzie and Leech (2006) defined causal-comparative research as research that examines differences in the behavior of groups on some outcome (i.e., dependent variable). In this study, students who received full admission and those with developmental admission were examined to determine the impact and interaction of the course's delivery format, and the students' ethnicity, gender, age, and classification on their final grades. According to Schenker and Rumrill (2004), causal-comparative research methods use data from pre-existing or derived

groups to investigate the differences between or among those groups on outcomes or dependent variables. Hall (2003) described a type of causality in which changes in one independent variable can cause a particular outcome in some cases, but an entirely different outcome in other cases.

Since this study examined the interaction among the selected independent variables on the student's final grade a factorial design is a logical and appropriate design for this study. A factorial design, which is a type of causal comparative analysis, focuses on two or more categories with the independent variables as compared to the dependent variable and allows the researcher to examine the interaction between the independent variables and their influences on the dependent variables (Gall, Gall, & Borg, 2007). This research design was used since there was no manipulation of the independent variables. A 2X2 and 2X4 factorial analysis of variance (ANOVA) was used to determine whether there was a main effect on students' final grades considering each independent variable. This "parametric" test was used to show any interaction effects, which indicates there may be a relationship between two variables but only under certain conditions (Gall et al., 2007). Archival data for this research study were provided by the university's Office of Institutional Research and Effectiveness (OIRE).

Variables of the Study

In this research study, the independent variables are admission status, course delivery format, gender, ethnicity, classification, and age. The students were grouped according to their course delivery format (online or face-to-face) and their admission status (full admission or developmental admission). The final grades for the course delivery format is the dependent variable because this cannot be controlled.

Population

The population of this study consisted of 393 students enrolled in 22 business courses within the College of Professional Studies at a rural public HBCU in the southeastern region of the United States. The courses were offered in the face-to-face environment and online environment during the fall 2015 and spring 2016 semesters. Students' final grades, gender, ethnicity, age, classification, course delivery format (whether the course was offered online or face-to-face), and college readiness (student admission status: full or developmental) were obtained from the university's OIRE.

Eleven of the 22 business courses were offered face-to-face, and 11 were offered online. Enrollment included (206) students in the face-to-face courses and (187) students in the online courses. Courses offered in the face-to-face format included one-400 level course, seven-300 level courses, and three-200 level courses while the online format consisted of one-400 level course, seven-300 level courses, and three-200 level courses.

Data Collection

The data used in this study were collected from the university's OIRE. Request for approval from the university's IRB at the rural public HBCU identified in this study was obtained before any data were retrieved from the university's OIRE. The researcher sought approval from the university's IRB office. Once approval from the university's IRB was granted, the university's OIRE at the rural public HBCU identified in this study gathered the students' information based on the variables they were given to retrieve. Before obtaining student data for each business course, the proposal was submitted to the IRB at the rural public HBCU and Mississippi State University for approval to collect student information. Individual students were not identified in the study, the University's

OIRE at the rural public HBCU identified in this study gathered the student's information based on the variables they were given to retrieve.

The primary focus of this study was to determine if the course delivery format, online or face-to-face, had an effect on students who received full admission into a rural public HBCU and students who were required to take developmental courses on their final grades. Also, this study examined the interaction of students' ethnicity, admission status, gender, age, and classification on their final grades. Information on each business course, such as course number, course subject, course delivery format and grade earned by the student in the course (ranging from A, B, C, D, F), which was converted into a numerical scale that represents each grade earned for statistical analysis. Each letter grade was represented using the following numerical scores: values a value of four was assigned to an A letter grade; a value of three was assigned to a B letter; a value of two was assigned to a C letter grade; a value of one was assigned to a D letter grade; and a value of zero for any value of F letter grade.

The University's OIRE at the rural public HBCU identified in this study provided information on ethnicity, sex, age, student admission status (fully or developmental), and the student classification, which was converted into a numerical scale. Students auditing courses, having missing grades, or having grades of Incomplete or Pass/Fail, or having withdrawn from the course were excluded from the data collected in the study. The independent variables were denoted using the following numerical values: *Course delivery format* – (1= Online, 0 = face-to-face). *Ethnicity* – (1 = Black, 0 = otherwise); *Gender* - (1 = female, 0 = male,); *Admission status*- (1 = Full Admission, 0 = Developmental Admission). The variable *Age*- (1 = Traditional Student, 0 =

Nontraditional Student). The variable *Classification* was represented using the following levels: 1 = freshmen, 2 = sophomore, 3 = junior, and 4 = senior.

Data Analysis

The data from this study were analyzed using the Statistical Package for the Social Sciences 24 (SPSS). The data in this study were gathered and analyzed using factorial ANOVA. Factorial ANOVA allows the researcher to examine two independent variables impact on one dependent variable. The analysis was used to determine if there are group differences and if there are any interaction effects on the dependent variable between the different levels of the independent variables. A factorial design provides descriptive statistical analysis using frequencies, percentages, means, and standard deviations were used to describe the demographic variables and to answer question 1. This analysis used the data to compare the performance of students (prepared and underprepared) enrolled in courses offered (face-to-face and online) during the fall 2015 and spring 2016 with grades across the different levels. The correlational analysis measures the strength of the interaction among variables; factorial analysis seeks to measure and understand the cause and effect.

A 2x2 and a 2x4 factorial ANOVA were used to examine any interaction between the independent variables and dependent variable and reach conclusions about the dataset to answer research questions 1 and 2. This study relied heavily on quantifying the interactions between the dependent and independent variables.

The literature reviewed examined the historical relevance researchers have determined regarding the alignment of independent variables and academic performance

in online courses. The research questions correlate with the statistical analysis shown below.

Research Question One: Are there main effects for course delivery, admission status, age, gender, ethnicity, and classification on students' final grades?

To answer research question 1, the researcher used descriptive statistical analysis using frequencies, percentages, means, and standard deviations to analyze the academic grades of student's admission status and course delivery at a rural public HBCU.

Research Question Two: Are there significant interaction on final grades between course delivery and select independent variables (admission status, age, gender, ethnicity, and classification)?

To answer research question 2, the researcher used a 2x2 and a 2x4 factorial ANOVA to tell whether there were any interactions between the independent variables and the dependent variable on the student's final grades between the two groups of students in two different types of course delivery method.

CHAPTER IV

RESEARCH FINDINGS

Pre-existing academic ability and the need to enroll in remedial courses have been shown to influence students' performance in face-to-face and online courses (Figlio, Rush, & Yin, 2013; Hoskins & Hooff, 2005; Xu & Jaggars, 2013). The impact of student characteristics such as age, gender, and ethnicity on academic performance in online courses relative to face-to-face courses has been mixed (Wojciechowski & Palmer, 2005; Xu & Jaggars, 2014).

Subsequently, HBCUs must balance the opportunities to increase access to their student population with their obligation to provide an academic environment that promotes their students' success (Brower & Ketterhagen, 2004). Thus, HBCU administrators must also take into consideration the body of knowledge that suggests African Americans, due to a lack of academic preparation, are often not well-suited to complete courses in an online environment (Xu & Jaggars, 2013). Wiggam (2004) suggested this lack of college readiness on the part of African American students might be due to their being systematically disadvantaged because of the quality of their elementary and secondary academic preparation.

Therefore, the purpose of this study was to determine the factors that impact the final grades of students in selected business courses at a public rural HBCU located in the Southeastern region of the United States. Also, this study examined the interaction of

students' ethnicity, admission status, gender, age, and classification in selected business courses on their final grades. The following research questions guided this investigation:

1. Are there main effects for course delivery, admission status, age, gender, ethnicity, and classification on the students' final grade?
2. Are there significant interaction on final grades between course delivery and select independent variables (admission status, age, gender, ethnicity, and classification)?

The research design for this study was causal-comparative research.

Onwuegbuzie and Leech (2006) defined causal-comparative research as research that examines differences in the behavior of groups on some outcome (i.e., dependent variable). In this study, students who received regular admission and those with developmental admission were examined to determine the impact and interaction of the course's delivery format, and the students' ethnicity, admission status, gender, age, and classification on their final grades. According to Schenker and Rumrill (2004), causal-comparative research methods use data from pre-existing or derived groups to investigate the differences between or among those groups on outcomes or dependent variables. Hall (2003) described a type of causality in which changes in one independent variable can cause a particular outcome in some cases, but an entirely different outcome in other cases.

Since this study examined the interaction among the selected independent variables on the student's final grade a factorial design is a logical and appropriate design for this study. A factorial design, which is a type of causal comparative analysis, focuses on two or more categories with the independent variables as compared to the dependent

variable and allows the researcher to examine the interaction between the independent variables and their influences on the dependent variables (Williams, 2007). This research design was used since there will be no manipulation of the independent variables. A 2X2 and 2X4 factorial ANOVA was used to determine whether there is a main effect on students' final grades considering each independent variable. This "parametric" test will also show any interaction effects, which indicates there may be a relationship between two variables but only under certain conditions (Gall et al., 2007).

Data were collected from 393 students enrolled in 22 business courses within the College of Professional Studies at a rural public HBCU. The courses were offered in the face-to-face environment and online environment during the fall 2015 and spring 2016 semesters. Students' final grades, gender, admission status, ethnicity, age, classification, course delivery format (whether the course was offered online or face-to-face), and college readiness (student admission status: full or developmental) were obtained from the university's IRE.

Demographic Data

Course Delivery

Data were collected from *course delivery* to determine the impact of the course delivery format in which participants were enrolled on their final grades. One hundred and ninety-two (192) or 60% of the participants were enrolled in face-to-face courses, while 128 or 40% took their courses in an online environment. Students enrolled in face-to-face courses outperformed their colleagues taking online courses. Table 1 shows that course delivery has a significant impact on student's final grades. $F(1,266)=50.879$, $p=.000$, $p<.05$. The results showed that enrolling in a course face-to-face course is

associated with a higher course grade is consistent with the findings of Armo et al., 2015; Friday et al., 2006; Harris and Parrish, 2006; Weber and Lennon, 2007; and Xu and Jaggar, 2013.

Table 1

Two Way ANOVA for Course Delivery on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	83.333	1	83.333	50.879	.000
Intercept	1928.008	1	1928.008	1177.153	.000
COURSEDELIVERY	83.333	1	83.333	50.879	.000
Error	520.839	318	1.638		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = 1.38(adjusted R Squared=.135). Dependent Variable: Final Grade.

Admission Status

After removing students records which had incomplete data, 320 students were included in the final data. Data were collected from 320 (81.4%) participants from the actual population (N=393). Student admission status was determined based upon IHL criteria when the student initially entered an institution of higher learning. This methodology was adopted to account for students who transferred to the HBCU from a community college. The researcher examined 205 students who would have had to enroll in developmental courses and 115 who were admitted with full admission status.

Seventy-two (72) or 63% of the fully admitted students enrolled in face-to-face courses while 43 or 37% enrolled in online courses. One hundred and twenty (120) or 59% of the developmentally admitted students enrolled in face-to-face courses while 85 or 41% enrolled in online courses. Table 2 shows that Admission Status has a significant impact on final grades. $F(1,266) = .855, p = .356, p < .05$.

Table 2

Two way ANOVA for Admission Status on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	1.619	1	1.619	.855	.356
Intercept	2038.669	1	2038.669	1075.917	.000
ADMISSIONSTATUS	1.619	1	1.619	.855	.356
Error	602.553	318	1.895		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .003(Adjusted R Squared = .000). Dependent Variable: Final Grade.

Gender

Data were collected for gender so that the researcher could examine the impact of gender on students' academic performance in online and face-to-face courses by course delivery format. The researcher examined the academic performance of 166 males and 154 females. One hundred and nineteen (119) of the males were admitted developmentally, while 47 received full admission. Eighty-six (86) females were

admitted developmentally, while 68 received full admission. Thirteen (13) or 27% of the males admitted with full admission were enrolled in online courses, while 30 (44%) of females enrolled in online courses. Thirty-five (35) or 29% of the males admitted with developmental admission enrolled in online courses, while 50 (58%) of females enrolled in online courses. Eighty-four 84 or (71%) of the males admitted with developmental admission enrolled in face-to-face courses, while thirty-six 36 or (42%) of females enrolled in face-to-face courses. Table 3 illustrates that Gender was found not to have a significant impact on student's final grades $F(1,266) = .114, p = .736, p < .05$.

Table 3

Two Way ANOVA of Gender on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	.216	1	.216	.114	.736
Intercept	2177.391	1	2177.391	1146.459	.000
GENDER	.216	1	.216	.114	.736
Error	603.956	318	1.899		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .000(Adjusted R Squared = .003). Dependent Variable: Final Grade.

Ethnicity

The researcher examined data related to *ethnicity* to determine the impact of ethnicity on student academic performance in online and face-to-face courses. It was

revealed that 301 (94%) of the participants were African Americans, while the remaining 19 (6%) were others, composed Caucasian, Asian, and Hispanics. One hundred and four (34.5%) of the African American students were admitted in full admission status. Fully admitted Other race students enrolled in five face-to-face courses and four online courses. Fully admitted African American students enrolled in 65 face-to-face courses and 39 online courses. Developmentally admitted Other race students enrolled in 7 face-to-face courses and one online course. Developmentally admitted African American students enrolled in 113 face-to-face courses and 84 online courses. Other race students on average outperformed African Americans in their courses 3.37 to 2.56. This finding supports the research of Newell (2007) who found that African American students perform poorer than White students in online courses. Table 4 shows that there was a significant impact between *Ethnicity* and student's final grades. $F(1,266)=6.246, p=.013, p<.05$.

Table 4

Two Way ANOVA for Ethnicity on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	11.638	1	11.638	6.246	.013
Intercept	628.438	1	628.438	337.269	.000
ETHNICITY	11.638	1	11.638	6.246	.013
Error	529.534	318	1.863		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .019(Adjusted R Squared = .016). Dependent Variable: Final Grade.

Age

Data were collected on the age of the student participants to determine the impact on age, student academic performance in face-to-face and online courses. Two hundred seventy five (275) traditional students between the ages of 18 to 24 were included in the study, while 45 students were above age 25. Table 5 shows that Age was found not to have a significant impact on academic performance $F(1,266)=2.114$, $p=.147$, $p < .05$. Eleven (11) of the fully admitted students were non-traditional students, while 104 were traditional students. Surprisingly the split between face-to-face and online enrollment was almost even as nontraditional students enrolled in 5 online courses and six face-to-face courses. Thirty-eight (37%) traditional student enrolled in online courses while 66 (63%) enrolled in face-to-face classes. Descriptive statistics demonstrated that the traditional age students performed slightly better than their older counterparts. Thirty-

four (34) of the developmentally admitted students were non-traditional students, while 171 were traditional students. Nineteen (44%) of the non-traditional students were enrolled in face-to-face courses, while 19 (56%) were enrolled in online courses. Sixty-six (39%) traditional students enrolled in online courses while 105 (61%) enrolled in face-to-face classes.

This finding was consistent with Al-Mutari, (2011), who found that younger students tend to perform better in the college setting than mature students, however, it was in contrast to the results researchers Wojciechowski and Palmer, 2005, and Xu and Jaggars, 2013, who concluded that older students tend to perform better in online classes than traditional age students.

Table 5

Two Way ANOVA for Age on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	3.990	1	3.990	2.114	.147
Intercept	962.115	1	962.115	509.767	.000
AGE	3.990	1	3.990	2.114	.147
Error	600.182	318	1.887		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .007(Adjusted R Squared = .003). Dependent Variable: Final Grade.

Classification

Data were collected on the *classification* of the student participants to determine the impact of classification on student's final grades. Thirteen (13) freshmen, 50 sophomores, 133 juniors, and 124 seniors were included in the study. Six (6) of the fully admitted students were freshmen, 16 were sophomores, 40 were juniors, while 53 were seniors. The average grade was higher at each classification level and in face-to-face classes relative to courses taken online. Table 6 shows that classification had a statistically significant impact on student's final grade $F(3,266)=2.700, p=.046$. All six (100%) fully admitted freshmen enrolled in face-to-face courses, eleven (69%) of the sophomores enrolled in face-to-face courses, as compared to 5 (31%) enrolling in online courses. No freshmen student enrolling in online courses is consistent with Xu and Jaggar (2014) who found that on average few students enroll in online courses in their first semester at the university.

As it further relates to classification, 27 (68%) fully admitted juniors enrolled in face-to-face courses compared to 13 (32%) enrolling in online classes. Twenty-eight (53%) of the fully admitted seniors enrolled in face-to-face classes compared to 25 (47%) enrolling in online courses. Seven (7) of the developmentally admitted students were freshmen, 34 were sophomores, 93 were juniors, while 71 were seniors. Forty-three (43%) of the developmentally admitted freshmen enrolled in face-to-face courses, as compared to 4 (57%) enrolling in online courses. Twenty eight (82%) of the developmentally admitted sophomores enrolled in face-to-face courses, compared to 6 (18%) enrolling in online courses. Sixty (65%) developmentally admitted juniors enrolled in face-to-face courses compared to 33 (35%) enrolling in online classes.

Twenty-nine (41%) of the developmentally admitted seniors enrolled in face-to-face classes compared to 42 (59%) enrolling in online courses.

Table 6

Two Way ANOVA for Classification on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	15.098	3	5.033	2.700	.046
Intercept	807.472	1	807.008	433.156	.000
CLASSIFICATION	15.098	3	5.033	2.700	.046
Error	589.074	316	1.864		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .025(Adjusted R Squared =.016). Dependent Variable: Final Grade.

The researcher also examined the interaction on final grades between course delivery and the independent variables. A 2X2 and 2X4 factorial ANOVA were used to determine the interaction between the independent variables and the dependent variable. There was no statistically significant interaction between the effects of course delivery and ethnicity, gender, age, admission status, and classification on students' final grades.

Course Delivery and Gender

Table 7 shows that there was no significant relationship between the interaction of *Course Delivery* and *Gender* on students' final grades, $F(1,266) = .311, p = .578, p < .05$. This supports Xu and Jaggars (2013) who found in their study on adaptability to online learning the differences across types of students that females adapt to online courses

more readily than their male counterparts. The performance gap was narrower in the online courses than face-to-face ($3.26 - 2.88 = .38$ in face-to-face courses, $2.06 - 1.85 = .21$ in online courses).

Table 7

Two-Way ANOVA for Course Delivery and Gender on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	91.045	3	30.348	18.689	.000
Intercept	1827.476	1	1827.476	11.418	.000
COURSEDELIVERY	89.203	1	89.203	54.934	.000
GENDER	6.159	1	6.159	3.793	.052
COURSEDELIVERY* GENDER	.505	1	.505	.311	.578
Error	513.127	316	1.624		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .151(Adjusted R Squared = .143). Dependent Variable: Final Grade.

Course Delivery and Age

Table 8 shows that there are no interactions between *Course Delivery* and *Age* student's final grade, $F(1,266) = .014$, $p = .905$, $p < .05$. This finding is consistent with a researcher who found no significant relationship between age and online academic performance (Amro et al., 2015; Kupczynski, Ice, Gibson, Richardson, & Challoo, 2011; Wang & Newlin, 2002). Traditional students earned higher grades on average than nontraditional students in both online and face-to-face courses. The performance gap

was slightly in the online (2.02-1.83=.19) than in the face-to-face courses (3.04-2.90=.14).

Table 8

Two Way ANOVA for Course Delivery and Age on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	84.354	3	28.118	17.093	.000
Intercept	916.533	1	916.533	557.165	.000
COURSEDELIVERY	41.826	1	41.826	25.426	.000
AGE	.990	1	.990	.602	.438
COURSEDELIVERY* AGE	.024	1	.024	.014	.905
Error	519.818	316	1.645		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .140(Adjusted R Squared = .131). Dependent Variable: Final Grade.

Course Delivery and Admission Status

Table 9 shows that there was no interactions between *Course Delivery* and *Admission Status* on student's final grade, $F(1,266)=.193$, $p=.661$, $p<.05$. The academic gap was significantly narrower in the online courses (2.00-1.98=.02) than the face-to-face courses (3.13-2.97=.16). This finding is consistent with Xu and Jaggars (2013) who found that students who had enrolled in remedial courses tended to have lower academic performance in online courses rather than face-to-face courses.

Table 9

Two Way ANOVA for Course Delivery and Admission Status on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	84.477	3	28.159	17.122	.000
Intercept	1770.834	1	1770.834	1076.755	.000
COURSEDELIVERY	78.159	1	78.159	47.525	.000
ADMISSIONSTATUS	.578		.578	.351	.554
COURSEDELIVERY* ADMISSIONSTATUS	.317		.317	.193	.661
Error	519.695	316	1.645		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .140(Adjusted R Squared = .132). Dependent Variable: Final Grade.

Course Delivery and Classification

Table 10 shows that there was no interaction between *Course Delivery* and *Classification* on students' final grades, $F(1,266)=1.176$, $p=.319$, $p<.05$. Descriptive statistics reveal that sophomores, juniors, and seniors earned higher mean grades in face-to-face courses than online courses.

Table 10

Two Way ANOVA for Course Delivery and Classification on Student's Final Grade

Source	Type III Sum Of Squares	df	Mean Square	F	Sig.
Corrected Model	117.980	7	16.854	10.816	.000
Intercept	555.526	1	555.526	356.493	.000
COURSE DELIVERY	55.604	1	55.604	35.683	.000
CLASSIFICATION	31.720	3	10.573	6.785	.000
COURSE DELIVERY* CLASSIFICATION	5.496	3	1.832	1.176	.319
Error	486.192	312	1.558		
Total	2783.000	320			
Corrected Total	604.172	319			

R Squared = .195(Adjusted R Squared = .177). Dependent Variable: Final Grade.

Summary of Results

This chapter has presented the statistical results obtained from this study. Descriptive statistics and ANOVA were the statistical tests utilized to analyze the data and answer the research questions posed in the study.

The results from this study indicated that there was a statistically significant relationship between academic performance and course delivery, ethnicity, and classification. The results also indicated there was no statistically significant interactions on final grades between course delivery and student admission status, gender, age, ethnicity and classification.

Data which were collected in this study regarding the selected variables have helped the researcher to draw conclusions and formulate recommendations for conducting future studies relating to the main effects for course delivery, ethnicity and classification, and the lack of statistically significant interaction on final grades between course delivery and student admission status, age, gender, ethnicity, and classification. These conclusions and recommendations are discussed in Chapter V.

CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The primary purpose of this study was to determine the factors that impact the final grades of students and to examine the interaction of students' ethnicity, gender, age, and classification in selected business courses. The results of this study were specific to a group of developmental and fully-admitted students (N=320) enrolled in face-to-face and online courses at a public rural HBCU located in the Southeastern region of the United States. Therefore, the researcher can only draw conclusions based on this group of students.

Some studies have suggested that African American students lack the necessary skill set and preparation required to take courses in an online environment (Wiggam, 2004; Xu & Jaggars, 2013). However, several factors have been given to explain the criteria HBCUs employ in selecting the course and program modality. Faculty and administration hesitancy, perceived deficits in learning outcomes, and student characteristics have been determined to influence HBCUs' online course offering (Flowers, White, Raynor, & Bhattacharya, 2012; Poley, 2008). HBCUs, as well as other universities, design their curriculums, courses, resources, and activities according to implicit expectations for students' success (Brower & Ketterhagen, 2004).

Therefore, this study collected data on students enrolled in 22 selected business courses offered in both face-to-face and online environments. The researcher examined 205 students whose admission status required they enroll in developmental courses and 115 who were admitted with full admission status. The researcher examined the academic performance of 166 males and 154 females. Information and data were collected regarding selected variables, gender, age, ethnicity, and classification.

The research design for this study was causal-comparative research. Onwuegbuzie and Leech (2006) defined causal-comparative research as research that examines differences in the behavior of groups on some outcome (i.e., dependent variable). In this study, students who received regular admission and those with developmental admission were examined to determine the impact and interaction of the course's delivery format, and the students' ethnicity, gender, age, and classification on their final grades.

Discussion

Research Question One examined whether or not course delivery, admission status, age, gender, ethnicity, and classification impacted the students' final grade.

The researcher found that course delivery was significant (Sig = .000, $p < .01$). There was a noticeable gap in the mean academic performance between online courses (1.98) and face-to-face courses (3.03). Ethnicity was also found to be significant (Sig. = .013, $p < .05$). There was an obvious gap in the mean academic performance of Blacks (2.56) compared to other race students (3.37). A statistically significant relationship was found to exist between student classification and final grades

(Sig. = .046, $p < .05$). The performance gap was evident between freshmen and sophomore (1.62 to 2.58), the average grade earned increased slightly to 2.59 for juniors and reached its highest point at 2.74 for seniors. *Admission Status, Age, Gender* were found not have a significant impact on final grades. These conclusions support the findings of other researchers. For example, Daymont and Blau (2011) found no significant difference in the performance of males and females in online courses and programs.

Research question two explored the significant interaction on final grades between course delivery and select independent variables, admission status, age, gender, ethnicity, and classification. After conducting a series of ANOVA tests, the researcher concluded there was no significant interaction between course delivery, student admission status, ethnicity, gender, age, and classification. Even though there was no statistically significant relationship between final grades and whether a student was admitted developmental or received full admission, in descriptive terms, it was observed that both fully-admitted and developmental students performed better in face-to-face courses than online. Fully-admitted students earned on average 3.13 in face-to-face courses compared to 2.00 in online courses, while developmental students earned a mean grade of 2.97 in face-to-face course courses, compared to 1.98 in online courses.

The gap between fully-admitted students and developmental students narrower in the online courses (2.00 to 1.98) than face-to-face courses (3.13 to 2.97). The lack of a relationship between these variables also matches the findings of other studies. For example, Xu and Jaggars (2014) found that the students assigned to remediation may drop out in the first or second semester and thus a result those who remain in the junior

and senior years maybe those who are most motivated and well equipped for college. This result could also be attributed to the effectiveness of the remedial courses in filling in deficiency gaps by the junior and senior years. Researchers have found no difference in the performance of males and females in online courses and programs (Amro et al., 2015; June, Chun-Sheng, Chang, & James, 2003; Tekinarslan, 2011; Yukselturk & Bulut, 2007).

Conclusions of the Study

Enrollment in online courses has been increasing over the past several years. Today, with the increase in the number of nontraditional students and the need for students to balance family and work responsibilities, administrators must ensure that the course modality in universities is aligned with the skill set and preparation of their student population. The findings in this study revealed that traditional and nontraditional, African American and other race, male and female, fully-admitted and developmental students attending the HBCU performed better in face-to-face courses than in online courses. The impact of online courses on student academic success is an important finding. This study reinforces the need to continue to explore factors that impact student performance in online courses for all students.

According to this study, course delivery, ethnicity, and classification significantly impacted student performance and therefore underpins the need for administrators to invest resources in providing additional support for their students enrolled in online courses. In their research, (Clay, 2012; Moore, 2008) concluded that online course offering requires an investment of resources. However, HBCUs often face the challenge of funding the changes required to remain current with technology to accommodate the

students they are seeking to recruit. The findings in this study revealed that online course offerings do not widen the gap between prepared and underprepared students attending the rural HBCU.

Recommendations for Future Research

Based on the results of this study, several areas are suggested for future research. These recommendations are listed below:

1. The results of this study indicated that almost all of the students attending the rural HBCU and enrolled in business courses that offered the same courses in both the face-to-face and online formats performed better in the face-to-face courses. Therefore it is recommended that the study is replicated using the entire student population.
2. The results of this indicated that African Americans attending the rural HBCU performed at a lower level than their other race peers. The other race population was limited. Therefore, it is recommended that this study is replicated using a population from HBCUs located in different regions of the country to determine if the trend is exclusive to this rural HBCU or if it is also a national trend.
3. The findings of this study revealed that a non statistically significant relationship between students entering the rural HBCU with full admission and developmental students required to enroll in remedial courses and final grades. Therefore, a comparative study should be conducted with students enrolled at other HBCUs to determine if the same results will be observed.

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APPENDIX A
IRB APPROVAL MEMORANDUM FOR MISSISSIPPI VALLEY STATE
UNIVERSITY

MEMORANDUM

TO: DR. JULIUS O. IKENGA, CHAIR-INSTITUTIONAL REVIEW BOARD COMMITTEE
FROM: MRS. JEARLINE BRYANT
SUBJECT: REQUEST FOR IRB APPROVAL
DATE: NOVEMBER 2, 2016
CC: DR. LINDA CORNELIOUS, MAJOR ADVISOR AND DIRECTOR OF DISSERTATION

This memorandum is to request permission from the office Institutional Research Effectiveness to conduct a research study using existing student data from two business courses taught face-to-face and online during the fall semester 2015 and spring semester 2016. As researcher, I will not have access to individual student data. The Assistant Vice President for Institutional Research and Effectiveness will compile the requested student data and provide the researcher with the requested data (e.g. final grades in selected business courses for both semesters identified). Please see specific details relative to the research study below.

Dissertation Title: The Impact of Online Education on Undergraduate Academic Performance at a Public Rural Historically Black University: Does the Gap Widen Between the Academic Prepared and the Under Prepared?

Name of Principal Researcher: Mrs. Jearline Bryant
Contact Information: (662)254-3909 or jearline.bryant@gmail.com

Name of Principal Advisor and Dissertation Director: Dr. Linda F. Cornelious, Ph.D.
Contact Information: (662) 325-2881 or lcornelious@colled.msstate.edu

Roles and Responsibilities: As a student principal investigator, Jearline Bryant is responsible for the research study to be conducted. She has completed her Masters in Technology. She has successfully completed research and statistics courses including EPY 6214-Educational and Psychology Statistics, EPY 8214-Advanced Educational and Psychology Statistics and EPY-9213 Advanced Analysis Educational Research. Upon approval from the Institutional Review Board (IRB) at Mississippi Valley State University and Mississippi State University, the researcher will obtain data from the Office of Institutional Research and Effectiveness (IRE) at Mississippi Valley State University.

Research Protocol: The primary purpose of this study is to determine if the delivery method (online and face-to-face) has an effect on the final grades of students who were enrolled in business courses during the fall semester 2015 and the spring semester 2016 at a public rural HBCU, and who received full admission and those who were required to take developmental courses.

If you should have any questions about this research project, please feel free to contact Mrs. Jearline Bryant at jearline.bryant@gmail.com via email at work (662) 254-3909 or contact the director of my dissertation research, Dr. Linda Cornelious at 662-325-2881 or via email at lcornelious@colled.msstate.edu.

APPENDIX B

IRB APPROVAL LETTER FROM MISSISSIPPI VALLEY STATE UNIVERSITY

HUMAN SUBJECTS APPLICATION

IRB Log #_120516-001

Title of Proposal: The Impact of Online Education on Undergraduate Academic Performance at a Public Rural Historically Black University: Does the Gap Widen Between the Academic Prepared and the Under Prepared?

Principal Investigator: Mrs. Jearline Bryant

MVSU Employee/Status: Full-time Instructor

Department Address: Business Administration Box 7252

MVSU Phone #: (662) 254-3909

Home Phone #: (662) 515-0639

Will this study receive any direct or indirect federal support? (Including use of federal facilities):
Yes _____ No X Agency _____

Type of review requested: Exempt X Expedited _____ Full _____

Proposed start/completion date: Fall 2016 / Spring 2017

Composition of study group (age, sex, race, disadvantaged, etc.): age, gender, ethnicity, classification, course delivery format (online or face-to-face), and admission status (Complete or Name, MVSU Address, Phone of Co-Investigators and Students: N/A

Principal Investigator Assurance:

On behalf of my co-investigators, associated students, staff and myself, I agree: To perform the research according to the ethical principles of the Belmont Report, requirements of 45CFR46 to strictly adhere to the research protocol as it relates to human subjects, and to promptly report to the IRB any proposed change in the research activity, and to ensure that no changes be made in the activity without obtaining prior IRB approval (except that a change may be made to eliminate apparent immediate hazards to the subject); to comply with any contingencies upon which approval may be granted; to promptly notify any member of the IRB verbally (with written confirmation) of unanticipated problems involving risk to subjects or others and of any other adverse circumstance actions affecting the subjects that arise from the research.

Principal Investigator: Jearline Bryant / 11-16-2016

IRB USE: Exempt X Expedited _____ Full _____

Contingencies for Approval: Performing the research according to the ethical principles of the Belmont Report, requirements of 45CFR46 to strictly adhere to the research protocol as it relates to human subjects.

Re-review Frequency: _____

Approved/xxxxxxxxxx: Jearline Bryant / 11/2/05/2016
Signature (Chair) IRB, Date

APPENDIX C

APPROVAL LETTER FROM THE OFFICE OF INSTITUTIONAL RESEARCH AND
EFFECTIVENESS AT MISSISSIPPI VALLEY STATE UNIVERSITY



MISSISSIPPI VALLEY STATE
UNIVERSITY.

October 23, 2017

Dear MSU IRB Members:

Ms. Jearline Bryant received IRB approval from the Mississippi Valley State University (MVSU) IRB Committee on December 5, 2016 (IRB Log #_120516-001). The MVSU IRB approval applies to her proposed study on "The Impact of Online Education on Undergraduate Academic Performance at a Public Rural Historically Black University: Does the Gap Widen Between the Academic Prepared and the Under Prepared?". After receiving this approval, Ms. Bryant has been granted permission from the Office of Institutional Research and Effectiveness to access anonymous student data for the purposes of this study. Dr. Sharon Freeman, Assistant Vice President for Institutional Research and Effectiveness, is responsible for de-identifying student records before any researcher has access to them.

The inclusion criteria, exclusion criteria, and rationale for the student population were pre-determined by the researcher based on the parameters of her study (See Enclosure). Student data is de-identified prior to release by removing official identification numbers and reassigning random numerical identification numbers. Without official identification numbers, the researcher has no way of identifying any particular student in the data set.

While MVSU may not require IRB approval from the home institution of the researcher, the Office of Institutional Research and Effectiveness does require IRB approval from the MVSU IRB Committee before releasing MVSU student data. After IRB approval from the MVSU IRB has been obtained, the Office of Institutional Research and Effectiveness does not require further approval as it relates to MVSU student data.

Overall, Ms. Bryant has been granted permission to obtain anonymous student data from the Office of Institutional Research and Effectiveness, per MVSU IRB approval Log #_120516-001. For additional information regarding this matter, I can be contacted at sharonf@mvsu.edu or 662-254-3811.

Sincerely,

Sharon Freeman, Ed.D.

Enclosure

OFFICE OF INSTITUTIONAL RESEARCH AND EFFECTIVENESS

MVSU 7266 | 14000 Hwy. 82 West | Itta Bena, MS 38941-1400
662 254 3145 Phone | 662 254 3874 Fax

APPENDIX D

MISSISSIPPI STATE UNIVERSITY IRB APPROVAL LETTER



**MISSISSIPPI STATE
UNIVERSITY**

Office of Research Compliance

Institutional Review Board for the Protection of
Human Subjects in Research
P.O. Box 6223
53 Morgan Avenue
Mississippi State, MS 39762
P. 662.325.3294

www.orc.msstate.edu

NOTICE OF DETERMINATION FROM THE HUMAN RESEARCH PROTECTION PROGRAM

DATE: October 26, 2017
TO: Linda Cornelious, PhD, Curriculum Instruction & Special Ed, Connie Forde; Debra Prince; James Adams
PROTOCOL TITLE: A Comparative Study of Full-Admission and Developmental Students' Performance in Online and Face-to-Face Delivery at a Rural Historically Black University
PROTOCOL NUMBER: IRB-17-329
Approval Date: October 26, 2017 Expiration Date: October 25, 2022

EXEMPTION DETERMINATION

The review of your research study referenced above has been completed. The HRPP had made an Exemption Determination as defined by 45 CFR 46.101(b)4. Based on this determination, and in accordance with Federal Regulations, your research does not require further oversight by the HRPP.

Employing best practices for Exempt studies are strongly encouraged such as adherence to the ethical principles articulated in the Belmont Report, found at www.hhs.gov/ohrp/regulations-and-policy/belmont-report/# as well as the MSU HRPP Operations Manual, found at www.orc.msstate.edu/humansubjects. Additionally, to protect the confidentiality of research participants, we encourage you to destroy private information which can be linked to the identities of individuals as soon as it is reasonable to do so.

Based on this determination, this study has been inactivated in our system. This means that recruitment, enrollment, data collection, and/or data analysis **CAN** continue, yet personnel and procedural amendments to this study are no longer required. **If at any point, however, the risk to participants increases, you must contact the HRPP immediately. If you are unsure if your proposed change would increase the risk, please call the HRPP office and they can guide you.**

If this research is for a thesis or dissertation, this notification is your official documentation that the HRPP has made this determination.

If you have any questions relating to the protection of human research participants, please contact the HRPP Office at irb@research.msstate.edu. We wish you success in carrying out your research project.

Review Type: EXEMPT
IRB Number: IORG0000467

APPENDIX E

COURSE LISTING USED FROM MISSISSIPPI VALLEY STATE UNIVERSITY

Fall 2015		
Course Number	Course Section	Course Description
BA 203	01	Computer App. In Business I
BA 203	E01	Computer App. In Business I
BA 322	01	Business Finance
BA 322	02	Business Finance
BA 322	CCC	Business Finance
BA 340	01	Organizational Behavior
BA 340	CCC	Organizational Behavior
BA 340	E01	Organizational Behavior
BA 430	01	Management Information Systems
BA 430	E01	Management Information Systems

Spring 2016		
Course Number	Course Section	Course Description
AC 222	01	Managerial Accounting
AC 222	E01	Managerial Accounting
AC 325	01	Governmental Accounting
AC 325	E01	Governmental Accounting
BA 204	01	Computer Applications in Business II
BA 204	E01	Computer Applications in Business II
BA 315	01	Human Resource Management
BA 315	E01	Human Resource Management
BA 343	01	Principles of Marketing
BA 343	E01	Principles of Marketing
BA 372	01	Business Law II
BA 372	E01	Business Law II