

REMEDIAL READING: TEACHER INPUT STUDENT OUTPUT:
THE IMPACT OF TEACHER EDUCATION ON POST-SECONDARY REMEDIAL
READING STUDENTS

by

Deborah Rushing Davis

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

Despite evidence that enhanced teacher education provides enhanced learning opportunities, there is little research on the impact for remedial college students. This study addresses this issue. Reviewing students assigned to remedial reading based on placement test scores, a series of *t*-tests compared students after one term based on COMPASS scores and compared between the courses provided with teachers of bachelor's or master's degrees grouped by gender. This study used a non-experimental, causal-comparative quantitative ex post facto design to study the difference between the education level of the teaching staff and the student achievement at completing the prescribed remediation course within one term. Three *t*-tests conducted determined that there was a difference, but could not state that the difference was related to the gender of the student. This study used recently archived data at a mid-sized mid-western four-year university compiling a sample size of 115. Due to the Bonferroni Correction, the results were marginal. The null was rejected within the entirety of the sample ($N=115$) with a finding of $t(113.00)=-6.31, p=0.01$. However, for the sample of males ($n=59$), the null could not be rejected with a finding of $t(57.00)=4.33, p=0.02$ due to the application of the Bonferroni correction. As to the sample of females ($n=56$), the null could not be rejected with a finding of $t(50.00)=4.46, p=0.02$ due to the application of the Bonferroni correction. Colleges and universities can use this study to aid in assigning professorial staff to remedial courses for the best possible outcomes. This study should be replicated with other variables and in varying size colleges in the future.

Keywords: remedial reading, remediation, writing, placement test, freshman college, developmental coursework, teacher degrees

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Dedication

While there are many to whom this work may be dedicated, the below list, highlights some of those most responsible for me continuing to work through this project.

Darlene Baker

Vickie Price

My mother, Yvonne Harden

My father, William Worth

My sister, Rebecca Patterson

My husband, Kenneth Davis

My son, James Davis

And the Lord our God; His son Jesus Christ; and the Holy Spirit

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List of Abbreviations

Achieving the Dream (AtD)

American College Test (ACT)

American Psychological Association (APA)

Analysis of CoVAriate (ANCOVA)

Collaborative Strategic Reading (CSR)

Common Core State Standards (CCSS)

Computer Adaptive Placement And Support aSessment (Compass)

Diagnostic and Remedial Learning System (DRLS)

Differential Item Functioning (DIF)

Government Issued Benefits Package (GI Bill)

Grade Point Average (GPA)

Higher Education Opportunities Act (HEOA)

Institutional Review Board (IRB)

Modern Language Association (MLA)

No Child Left Behind (NCLB)

Ohio Graduation Test (OGT)

Scholastic Aptitude Test (SAT)

Socio-Economic Standing (SES)

Statistical Package for the Social Sciences (SPSS)

Student Veterans Association (SVA)

Veterans Assistance Programs (VAP)

World War Two (WWII)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

College level remedial reading seems anachronistic by name. It would seem that college students should be able to read. But, due to a variety of factors, many start college without a functioning level of academic literacy. This chapter explores how so many students reach that point and what has been done to address the issue.

Background

Across America, high school students exhibit varying levels of stress-induced anxiety as they sit for the four-hour college placement exam. After years of exposure from teaching to the test to meet established curriculum guidelines in the classroom, many of these students took no test preparation program before sitting for their college placement exam (Calhoun, Scarborough, & Miller, 2013). Whether it is the American College Test (ACT) or the Scholastic Aptitude Test (SAT), or some other placement exam such as the Compass placement exam, students enter the test and the outcome indicates, among other things, whether or not they enter freshman coursework or remedial coursework (Bahr, 2013).

For some of these students, placement in remedial coursework is a shock. Having done well in high school, a student is often placed in remedial coursework on the basis of the test results (Shaw, 2014). For others, particularly those who have struggled along the way with academic requirements, the placement is a relief. For many, it is a financial disaster as such placement can result in courses not covered by financial aid or a delay in completion of a program due to prerequisite requirements of the remediation dependent on the college (Sana & Fenesi, 2013). For all, it will mean at least one other class, usually three or more units, for which they must pay, and for which they will not receive college credit. Presuming they pass the class,

most will have to take an “exit exam” that is essentially a placement test, to prove their readiness for the next level in their tier (Bahr, 2012). For those in remedial reading courses, that next level in remedial coursework may be a remedial English course or two, depending upon the exit exam score. While community colleges have more flexibility, universities seldom sort the remedial students into those whose scores are close to the cut-off score and those whose scores are further away from the cut-off score. In schools without the flexibility to group students accordingly, all take the same class with the same requirements. While this may be an advantage for the low achievers who push to perform at the higher level, high achievers are less likely to make the strides needed to be successful on the exit exam (Bahr, 2012; Bailey et al., 2010; Hagedorn & Lester, 2006, Zepke, 2018).

Historical Summary

As colleges and universities were founded in America, there was an erudite elitism related to student academic rigor. However, in the 17th century, it was considered preparatory work. Students could not enter college until they met the admissions requirements including reading fluently in Latin and Greek. Many were sent to special preparatory schools. Others were tutored at home. When more universities opened, a reduction in admissions requirements opened the door to more students. As students entered unprepared for the requirements of academic writing, remedial coursework was formalized (Arendale, 2011). While there have always been complaints that students were underprepared for the rigors of academic work, those complaints have never had as much solid evidence as is now available. Those paying for college need to ask why they are paying for skill attainment that the state ostensibly paid for in kindergarten through twelfth grade. Presumably, students should leave high school with the knowledge to move forward with their lives, whether that is to a vocation or to college (Sana & Fenesi, 2013).

As Harvard grew in population throughout the 1700s, those students who were less than proficient in Latin and Greek often roomed with clergy for tutelage (Arendale, 2011). This practice continued through the next 150 years as the dearth of public education resulted in limited equity among scholars. By the late 1700s, the founding of Amherst and Williams was predicated on a need for students unprepared for Harvard. The early 1800s led to a more flexible education – allowing for elective foundational course for other students (Arendale, 2011). In the mid-1800s, Vassar established a Preparatory Department and the University of Wisconsin created their Department of Preparatory Studies (Arendale, 2011). What the University of Minnesota established as a “General College” program in 1932 now evolved into an expectation for incoming students. With this new program, an orientation and remediation program to ensure preparedness became as multifaceted as the kaleidoscope of students who enter it (Glessner, 2015). Glessner (2015) strongly advises placement testing for all and a rigorous requirement for supplemental learning that must be completed in sequence to allow students readiness to keep pace with their academics.

In the middle of the 1900s, the gates of America’s colleges were flung open wide with the advent of World War II veterans making use of the new Government Issue Benefits Package (G.I. Bill) (Stanley, 2003). These veterans had shown themselves worthy of their benefits, but that did not mean they were ready for college. Like many others in the years following World War II (WWII), their determination and hard work would pay off, but the need to refresh or learn academic skills needed at the college level would delay the process (Stanley, 2003). Delay or not, the remediation coursework provided the stepping stone to academic rigor many of these people needed. More to the point, the GI Bill aided in moving the country forward academically. While prior to WWII less than 10% of the country had college degrees, within the ten years

following the Japanese surrender in 1945, over 50% of the eligible veterans took part in the GI Bill program, when nearly eight million students matriculated to college (Banner, 2006). During that same ten-year period, the number of baccalaureate degrees awarded annually nationwide doubled. This influx of veterans, many of whom held no high school diploma or prior college, led to a requirement for more developmental education. Tutoring was funded to enhance student readiness and success. Developmental coursework became funded alongside full credit coursework (Banner, 2006).

For thousands of students throughout the 20th century, remedial courses paved the way to a degree (Smith-Morest, 2013). While community colleges originally were developed to aid those who did not desire a four-year degree, the availability as a stepping stone to the university level became quickly apparent. Smith-Morest (2013) theorizes that the role of remediation at the community college level is nebulous as many students who require remediation never progress toward or complete even a two-year degree or certificate. One of the nicer facets of remediation at many community colleges is a tiered program for varying requirements of the student. The high-level student who barely missed the requirements for placement in freshman level English can take a shorter (eight or nine week) course and then meet the requirement for freshman level composition. The low-level student whose testing score was more than 25% less than the requirement and needed specialized instruction in some area or another may take classes in those areas only, and then retest for the opportunity to progress. The flexibility of the community college program is a tremendous asset to the student and the community, and difficult to implement in the four-year university program (Smith-Morest, 2013). In a community that is blatantly rural or semi-industrial, the available job pool does not require higher education. For those students and their families, there is no drive to achieve a college degree. Such

understanding perpetuates a community that continues to pursue vocational schooling and the careers that follow (Hendrickson, 2012).

The move to Common Core State Standards (CCSS) has impacted the remediation issue as well. “States are subject to educational standards copyrighted by organizations that hold no legitimate political authority, leaving parents and participating states without any legal recourse to alter them” (Toscano, 2013, p. 418). These standards and their copyrights give little or no credence to the academic needs of the student, nor variance for the college bound student who may be a low-level performer. While the data are fairly new, studies do not show CCSS as a great success among students, teachers, communities, nor colleges (Toscano, 2013). Further, Staudinger (2017) found, “the focus on standardization emerging from the Common Core in secondary education sometimes limits the transferability of this work” (p. 3). In broad rural areas, many counties fail to meet requirements for a “sound education” as required under CCSS, and consequently, “the 2006 session of the General Assembly initiated the Disadvantaged Student Supplemental Fund to fully fund schools whose local districts should not supplement state funds” (Stewart & Varner, 2012, p. 70). These counties are so poor there is simply insufficient funds for basic education.

For under-performing students moving from traditional high school, the change to the college environment is jarring. Metathesiophobia is the fear of change and most people have some element of it. Satterwhite (2013) presents that if placed in a remedial course, as many are, these under-performing students cling to regional peers rather than seeking deep friendships with others. Consequently, the peers form a group who share the same academic deficits and despite their hard work and intelligence, frequently struggle in the more cosmopolitan setting of the university. The institution of CCSS has not addressed these social constraints.

Whether it is called remedial reading, developmental reading, reading opportunity or university preparedness, the need for it reflects that high schools are not preparing students for the academic rigor of college level work. In Ohio, the Ohio Graduation Test (OGT) is historically taken during tenth grade. However, as of 2018, the state will pay for a one-time attempt at a college entrance exam (ACT or SAT) during eleventh grade and a score that requires no remediation may pass for the student's graduation test. For students who do not desire to pursue a college path, a "workforce credentials" option will be available (Graduation Requirements, 2015).

Social Impact

The requirement for a college education seems prudent in today's society. Students without some form of post-secondary education are presumed ignorant and frequently unemployable. There are jobs and career paths that require no college degree and many students are focused on those (Hendrickson, 2012). College is not for everyone, many try, and many fail. After high school, students may get jobs, join the military, attend a vocational program, enroll at community college (if available), or matriculate to a university. Most colleges and universities require a placement test of some type. While students today have available opportunities other than college, the fulfillment of lifelong learning should never be underestimated. There is more to life than a job that pays the rent.

The importance of orienting potential college students to their options cannot be underrated, nor can preparedness. Many of these students fear the tests that will place them in college classrooms. Providing tutors for the ACT and taking them on college campus visits eased those fears and made college a more viable option for many (King, 2012). Plank and Jordan

(2001) found for students with lower socioeconomic status, when “information, guidance, and action are present, an individual's likelihood of postsecondary enrollment is increased” (p. 972).

Many veterans joined the military to get out of their home area, but when their service is complete, they often go to college with an intent to return home. While their academic readiness for college may be no higher than when they left, Veteran’s Assistance Programs (VAP) aid with the payment of remedial education costs, and Student Veteran’s Associations (SVA) aid with getting the benefits as well as with tutoring and mentoring students (Veterans Education Assistance, 2014). Beyond those assets, they tend to be more disciplined and more mature than the average incoming eighteen-year-old freshman. Consequently, with a combination of discipline and financial and social supports, these students are more successful than the peers from back home.

Nationwide, somewhere between 28% (Howell, 2011) and 53% (McCormick, Hafner, & Saint Germain, 2013) or more students will enroll in remedial coursework each fall. The factoid listing on “Collegesimply.com” reflects that the regional norm for freshman English is 19 or 20 on the composite English score of the ACT and a review of many schools within the region verifies this information. Any score below that requires the student to enroll in some form of remedial English. For reading, a subscore of less than 16 will require a remedial course in reading instruction. This score is similar to the national standard.

Some questioning the readiness of students for college wonder why not to simply keep them out of college, “however, if the answer is to keep the doors open to all students, we must invest time and resources to devise a meaningful plan to help underprepared students overcome their academic deficiency” (Glessner, 2015, p. 33). Many students are decidedly underprepared, and frequently underfunded, so finding a solution that applies to them must be focused on their

multiplicity of needs. Most school systems are restricted by funding and staffing to apply few options to aid students. Students, however, have a wide variety of needs, so perhaps a wider variety of strategies would be useful.

Many of the students who are placed in remedial reading have always been strong students; perhaps they had a bad test day or were otherwise unprepared. Some have been absent from the classroom for years. Remediation can provide a bridge for those students. Many more, however, may have some form of learning disability. Sweet, Dezarn, and Belluscio (2011), found that among disabled students in Appalachia, an extensive transition program, beginning in eighth grade, would help bridge this learning gap and enable them to transition more smoothly into the college environment. While this student population may require remediation, “students with mild disabilities can achieve education beyond high school which will open up a world of new opportunities” (Sweet, Dezarn, & Belluscio, 2011, p. 53).

While it would seem logical that students just need more time to learn, that is not always the case. For many students, it is not time, but instruction that matters. Students given instruction by certified and experienced teachers were able to place significantly higher on tests than those educated by graduate students or other student mentors (Kidron & Lindsay, 2014). The same study (Kidron & Lindsay, 2014) showed that, particularly in English and language arts, students who were struggling that were given additional instruction by trained and certified instructors, with additional learning time, were able to improve. Perhaps, then, the instructor for the remedial coursework should be more carefully evaluated.

Problem Statement

Bahr (2012) found that ability grouping had a direct impact on successful completion of remedial math students. There is, however, a direct link between the qualifications of the

instructor and the success of the student (Kidron & Lindsay, 2014). Unfortunately, Hendrickson (2012) found that students who begin with remedial coursework were considerably less likely to succeed in their college program. Zepke (2018), however, points out that, “success defined by hard outcomes alone gives an incomplete picture of learner/learning achievement” (p. 62).

Studies have shown the impact of advanced learning for teachers upon student output (Banville, White, & Fox, 2014; Gaal, 2014; and Weschke, Barclay, & Vandersall, 2011). Gaal (2014) posits that a teacher who is educated as a teacher is a better teacher than a professional in the field with a few teaching classes. However, the deficit is that in today’s educational post-secondary world, professionals from the field who teach are more welcome than professional teachers. The historical requirement to “publish or perish” costs in educational professionalism. If tenured professors must publish, then that is their focus. Adjuncts, however, must teach, and learning to do so better has shown dividends in student success (Gaal, 2014).

Weschke, Barclay, and Vandersall (2011) focus on teachers who achieved a master’s degree with a specialty in elementary reading and literacy. These teachers were rated by the success of their students in the elementary program. The enhanced ability of the students from these teachers enhanced learning cannot be easily dismissed. What is left open is whether this same reasoning applies at the post-secondary level when the focus is on students within a remediation program. These variances show a gap in research on the efficacy of remedial reading as affected by the qualifications of the teacher at the post-secondary level. The problem is that no study has focused specifically on the need to determine if greater educational achievement on the part of the instructor relates directly to greater educational efficacy for the remedial reading student.

Purpose Statement

The purpose of this non-experimental quantitative causal-comparative study is to determine whether or not there is a difference between completion affects (dependent variable) and teacher education (independent variable) on students of either gender or a combined gender pool in remedial reading at a mid-size four-year university in rural Appalachia.

Significance of the Study

While students who require remedial reading may start the program at varied ability levels, the impact of the instructor's education level on those students' ability to increase skill levels and progress from remedial to college coursework can be measured by the placement and exit exams and warrants study. There are other studies about student success in coursework using before and after testing related to beginning and ending abilities abound (Bahr, 2012; Chou C., 2013; Methvin & Markham, 2015). However, despite the abounding work on remedial or developmental courses, few focus on the issues of concern in reading instruction.

While the importance of an educated instructor would seem obvious, else why would there be a field of teacher education, the importance of the level of educator in remedial English and reading is scarcely given credence. Shaw (2014) speculates that using pre-service teacher students as educators in high school English and college remediation would allow a cost savings that could still ready the students, but found that while effective in AP high school coursework, this strategy was not effective in the college classroom. The current study seeks to determine if greater education on the part of the instructor can be more effective in the remedial classroom at the post-secondary level, allowing for greater efficacy of the process and greater success for the student. Success for the student, in this study, is considered passing the exit exam and thus being

eligible to progress to the next phase of instruction, whether that is a higher level of remediation or a standard college curricular classroom.

Gaal (2014) posits the importance of professional development education for instructors not to be underrated, particularly as regards the impact on students at the post-secondary level. Guy, Cornick, and Beckford (2015) present, “While cognitive measures influence student outcomes, there are additional non-cognitive, affective student characteristics which are related to student performance” (p. 1). These student characteristics are better understood and more effectively applied by professors better instructed in the arts and sciences of education.

While the target population for this study hails from a university within the foothills of Appalachia, the implications go far beyond the mountains. Like so many schools, the university studied is operating under fiscal constraints that cause those who make decisions to question the best use of employable talent. Historically, this has caused universities to cut senior and more educated staff and employ a greater pool of adjunct professors who are paid at a scale related directly to the degree that teacher holds. This cost is balanced against accreditation criteria, which requires staffing to be at certain percentages for degree holders (Gaal, 2014; Hlinka, Mobelini, & Giltner, 2015). Considering the vast proportion of students enrolling in remedial coursework each year, and the large percentage of those who do not successfully complete remediation nor their intended course of study (Bahr, 2012; Howell, 2011; McCormick, Hafner, & Saint Germain, 2013), the ability of universities to make selections more attuned to the eventual graduation rates of those students is key.

Research Questions

The proposed research questions for this study are:

RQ1: Is there a statistically significant difference between the exit exam test scores of students taught by instructors with a bachelor's degree when compared to students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ2: Is there a statistically significant difference between the exit exam test scores of male students taught by instructors with a bachelor's degree when compared to male students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ3: Is there a statistically significant difference between the exit exam test scores of female students taught by instructors with a bachelor's degree when compared to female students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

Definitions

In order to discuss remediation and the consequence of teacher education, a common vocabulary is useful. A number of terms pertinent to the study may be less familiar to the reader and are listed here for purposes of edification and clarification.

1. *Ability Level* – While ability grouping is and has been a common term of art among educators, for purposes of this study, the term ability level for this study is limited to the alignment of students into groups based on a predetermined exhibit of skill (Ainsworth, 2013).
2. *College Readiness* -- Having “the prerequisite academic knowledge and skills for entry-level, credit-bearing postsecondary courses” (Achieve, 2012, p. 27).

3. *COMPASS* -- The ACT Computer-Adaptive Placement Assessment and Support System (COMPASS) is an untimed, computerized, standardized placement test. The test is adaptive and measures students' performance in English and math to help colleges place students at the appropriate level of study to achieve maximum success (ACT, 2012).
4. *Compulsory Coursework* – That which must be complete as prerequisite to other courses not necessarily in the same field (Relles & Tierney, 2013).
5. *Developmental education* – Arendale (2005) presents that developmental education is a term used to encompass more than the learning of specific skills, it represents the development of the person as a learner. It was not until the 1990's that stigma was applied linking developmental education to learning disabilities (Arendale, 2005).
6. *Enabling Education* – Enabling education is a term of art in Australia used to identify and support learners at a higher education level not otherwise qualified (Zepke 2018).
7. *Intervention* – Intervention may be physical, emotional, or educationally specific. For purposes of this study, intervention is intended to refer to a form of educational instruction, practice, strategy, or curriculum designed to accelerate learning for all students (Bender, 2012).
8. *Remedial English* – For purposes of this study, remedial English is defined as a course formatted and required for those indicated as not being able or comfortable with reading, writing, and speaking at a set level of academic proficiency (DiRusso & Aven, 1970).
9. *Remedial reading* – Hagedorn and Kuznetsova (2016) define remedial reading at the college level as coursework with content below the college level.
10. *Summer Bridge Programs* -- Summer bridge programs are exactly what the term implies. A program, usually in the summer, to bridge the gap between high school and college.

These generally include a short residential term with intensive academic experience (Bir & Myrick, 2015).

11. *Teaching Efficacy* – While a diversity of elements can be included under the guise of teaching efficacy, for this study, teaching efficacy is defined as the implementation of high quality diverse strategies among professionally growing educators with objectives for learning improvement (Chou C-T, 2013).

CHAPTER TWO: LITERATURE REVIEW

Overview

This chapter provides a review of research related to remedial reading and teacher education. First, the implications of analysis using theories of constructivism, cognitive learning theory, and transformation theory will be reviewed. Second, a short history of remediation in American post-secondary education will be summarized. Third, a review of issues that are related to student success in remediation coursework or college readiness will be presented which will include areas representing teacher education requirements and benefits of remediation. Finally, a brief summary will consolidate and illuminate the information into a cohesive and specific requirement for the need for this study.

Theoretical Framework

Three learning theories frame this study: cognitive learning, constructivism, and transformation theory. Williams and Burden (1997) present cognitive learning theory as that where “the learner is seen as an active participant in the learning process, using various mental strategies in order to sort out the system of the language to be learnt” (p. 13). According to Vygotsky (1978), constructivism is “the distance between the actual developmental level as determined by independent problem-solving and the level of potential problem solving as determined through problem solving under adult guidance or in collaboration with more able peers” (p. 83). Mezirow (1994) defines transformative learning from this perspective as the “...process of construing and appropriating a new or revised interpretation of the meaning of one’s experience as a guide to action” (p.222).

Students’ ability to take what they know cognitively and apply it to learning processes is the essence of cognitive learning theory (Moghaddam & Araghi, 2013). The influence of

neuropsychology and the increased understanding of how thinking and learning happens have led to a growth in understanding this process. In applying cognitive learning theory to this study, the influence of the teacher's education and a presumption of greater understanding of learning behaviors with that education is a decided influence in the student learning process. The application of non-cognitive skills to cognitive learning is a facet of this theory. Holmund and Silva (2014), present the impact of non-cognitive skills that can be difficult to measure. Readily measurable or not, issues such as self-confidence and persistence are undeniably factors in raising cognitive skill levels. While not easily quantified, an effort towards enhancing self-discipline would logically lead to better learning practices. Cognitive learning theory is about linking disparate functions for greater understanding (Tennyson & Rasch, 1988).

Teaching remedial students requires an understanding of what they knew, or thought they knew, prior to entering the classroom. Presumably, the placement testing process aligns a knowledge or lack thereof resulting in placement in remediation. The remedial instructor, therefore, must rapidly build an understanding of each student's needs and level of learning to begin to build upon that base level. This construct of reaching for the next level is the foundation of the Zone of Proximal Development (ZPD) as articulated in Vygotsky (1978). Jiang and Perkins (2013) cite Bruner (1960) indicating the traditional scaffolding approach of visiting the basics and building upon them repeatedly to reinforce understanding.

Students are in place to learn, and active engagement in the process is more likely to be successful than passive learning. Still, the student needs goals, and the teacher is tasked with setting the goals such that the actively engaged learning will reach for greater and greater skill set or problem-solving method. While adult students may believe they have learned the basics of what they know, it is at that point that instead of raising the bar higher and higher, the educator

must stretch the knowledge, requiring the adults learning to reach outside of the world from which they came to find new perspectives (Mezirow, 1994). “If the goal is to help secondary students meet high expectations . . . effective interventions need to be identified” (Jitendra, Lein, Soo-hyun, Alghamdi, Hefte, & Mouanoutoua, 2018, p. 178).

With adult learning, to teach basic skills is not enough. Teachers need to challenge ideas, expectations, and beliefs to allow the student to broaden perspective and understand how the skill set fits into a larger framework (Harris, Lowery-Moore, & Farrow, 2008). Two subsets of students need this adult perspective most decidedly. One is the public-school student who managed to pass all coursework and receive a high school diploma without restrictions, yet is unprepared for the academic rigor of college work. The other is the returning student. This student may always need some form of remediation to be successful at college (Boylan & Trawick, 2015). Frequently, these students have been either at home with family or out in the work force for years. In many circumstances, this is the transitioning veteran. In any case, this person has been out of the classroom and is out of practice with academic norms and manners. Learning the academic mindset is key to success for these students, and that is the function of transformative learning. Dix (2015) however, presents that transformative learning is actually cognitive transformation, in that the same cognitive learning skills are simply applied from a horizontal rather than the traditionally vertical perspective.

Like all learning theories, there are facets and elements that build between and upon these. Theories of learning are not completely variant; they are an intertwined set of strands and constructs. These theories lend themselves most readily to this study, but they are not alone. Other theories could be applied, bolstering the understanding of the issue and its resolution alternatives. Between cognitive learning – links, constructivist learning – scaffolding, and

transformative learning – a broadened view, it would seem building to greater heights for a broadened view is key.

Related Literature

The freshman college year should be exciting, and it can be overwhelming. Nationwide, somewhere between 28% (Howell, 2011) and 65% (Glessner, 2015) or more students will enroll in remedial coursework each fall. For these students, the challenges and stresses of the freshman college year are magnified. Methvin and Markham (2015) present that less than 10% of students who take a remedial course will eventually graduate with a four-year degree. Yet Glessner (2015) shows that students who completed mandatory remediation in English had greater scholastic success than those who were placed in remedial courses, but managed to evade them. Glessner (2015) further showed that students who “only required modest remediation graduated at a rate just one percent lower than those students who didn’t require help” (p. 33) and further posited that most students would benefit from a sequence of developmental courses prior to standard college coursework and that those who took singular or stand-alone courses were at a higher risk for dropout than those who took the series. For comparison, about half the students who enter college will earn their degree (Lukosius, Pennington, & Olorunniwo, 2013). If the difference is founded between students who are assigned to remediation – as one in ten will graduate; and those who completed remediation – greater scholastic success as nearly half will graduate – the difference must be related in getting those students into and through remediation itself. What makes this difference such a challenge is that it is so multi-faceted that there have been many researchers looking at the issues.

There are those who would say “there’s no such thing as remediation” (Doyle, 2012, p. 60). Whether right or wrong depends on the goal of the person studying the issue. The terms

developmental, remedial, and intervention require a certain level of explanation though to great extent they are used interchangeably. DiRusso and Aven (1970) presented a reasonable definition of remedial English focusing on a course formatted for those not comfortable with reading or writing, or not able to do so with proficiency. Arendale (2005), defines remedial education as those courses that focus on specific skills for students who need them; developmental as those encompassing the learning needs of the whole student; and intervention as targeted skills learning in brief specific tasks. Doyle (2012) represents that courses offered at the college level are interventions that are aligned to student needs as “heterogeneous treatment effects” (p. 61). Doyle (2012) further represents that developmental education is one way to define skills that are developed for education and alternatively a reference to the developmental needs of the students. Crisp and Delgado (2014) construe developmental, remedial, and basic skills courses to be interchangeable terms. However, it is defined, “Developmental education expanded its service to more students not due to an intelligent plan, but as a natural response to growing needs by an increasingly diverse heterogeneous college student body” (Arendale, 2011, p. 59). Regardless of the name, a simple comparison of before and after examination showed “that a remedial English course may significantly increase the English proficiency of the student” (DiRusso & Aven, 1970, p. 186). The same should be true of any course, but particularly those addressing basic skills such as reading, writing, and arithmetic. The important thing is to determine the best path for the student, and the best way to aid that student along that path.

While intervention programs may be a consequence of specific actions – failing a test, or missing a paper – remedial programs are generally intended to provide a new foundation for future learning (Chou C-T, 2013; Zepke, 2018). Some developmental or remedial programs get

funding from grants for the learning disabled. This has led to a stigma attached to these programs that is not warranted as many participants simply do not have the prior level of education needed to meet the standards of collegiate work (Arendale, 2005; Stewart & Varner, 2012). Within the context of this study, the terms remedial and developmental will be used interchangeably as the study relies on data from a university where the terms have rotated throughout the years and the classes are currently termed as reading development courses.

Remedial courses paved the way to a degree for thousands of students throughout the 20th Century (Hodara & Jaggars, 2014). Community colleges may have originally developed to aid those who did not desire a four-year degree as a path to a vocation. However, the availability of the vertical transition to the university level quickly became apparent. Hodara and Jaggars (2014) presented that remediation at the community college level is a particular challenge as many students who would be placed in remediation may never enroll, much less progress toward any certificate or degree. However, at the community college level, there can be a tiered program for varying requirements of the student. The high-level student who barely missed the requirements for placement in freshman level English can take a shorter (8 or 9 week) course and then test into freshman level composition (Hodara & Jaggars, 2014; Bahr, 2012). A study by Jaggars, Hodara, Cho, and Xu (2015) found that students in both English and math benefitted markedly in areas of college success by accelerating the developmental coursework. This was true regardless of the tier into which the student was placed, while maintaining the tiered structure at the community college level. The student who was more than 25% away from the threshold score and needs specialized instruction in some area or another may take classes in those areas only, and then retest for the opportunity to progress. This flexibility is a tremendous asset to the student and the

community, but as Hodara and Jaggars (2014) pointed out, it can be difficult to implement in the four-year university program.

Part of the issue is within the placement test itself and its use. Saxon and Morante (2014) note that “No test gives an absolutely exact measurement of skills or any other variable” (p. 25). The myriad of factors engaged in taking the test must be considered, and while these include academic knowledge and skills, they also include issues like test-taking anxiety, room temperature, and health. Financial situations and period of time since high school are not considered in marking placement scores, but they are definitely factors (Saxon & Morante, 2014). Studies have mixed results on the effectiveness of using the placement scores to indicate a need for remediation in English or math (Hughes & Scott-Clayton, 2011). At one point in the 1970s, students were not required to test, and could take any course desired. If they failed, that was their consequence. The high failure rates and increasing reduction in retention caused schools to go back to placement testing (Hughes & Scott-Clayton, 2011). The fact is also true that some students are erroneously placed into remediation.

The move to Common Core State Standards (CCSS) has impacted the remediation issue as well. “States are subject to educational standards copyrighted by organizations that hold no legitimate political authority, leaving parents and participating states without any legal recourse to alter them” (Toscano, 2013, p. 418). These standards and their copyrights give little or no credence to the academic needs of the student, nor variance for the college bound student who may be a low-level performer. While the data are fairly new, studies do not show CCSS as a great success among students, teachers, communities, nor colleges (Toscano, 2013; Staudinger, 2017).

One example of problems with setting these kinds of standards is in broad areas of Appalachia, where many counties fail to meet requirements for a “sound education” as required under CCSS, and consequently, “the 2006 session of the General Assembly initiated the Disadvantaged Student Supplemental Fund to fully fund schools whose local districts should not supplement state funds” (Stewart & Varner, 2012, p. 70). These counties are so poor there is simply insufficient funds for basic education. Whether it is called remedial, developmental, or college opportunity, the need for it reflects that high schools are not preparing students for the academic rigor of college level work.

Prior to the implementation of CCSS, there was No Child Left Behind (NCLB). Make no mistake, while related, these two programs are disparate both in ideology and in implementation. NCLB was focused on the ideas of accountability as rated by assessment (Ametepee, Tchinsala, & Agbeh, 2014). Key within NCLB was flexibility of curriculum. The entire purpose was to hold states accountable for student progress. A major conflict became apparent when determining which students would be included in the assessment to perform these accountability checks without impinging on the individual educational needs of students with disabilities (Colker, 2013). No one denies the importance of educating children – all children. The issues come when determining what education is or should be and how to discern whether children are appropriately educated. Regardless, the content of high school curricula for college preparatory students should render them prepared for college (Sana & Fenesi, 2013).

There is nothing new about remediation. It has certainly been around since the first colleges in America formed. However, at the time, it was considered preparatory work. Students would be refused entry into college until they met the admissions requirements including reading fluently in Latin and Greek (Arendale, 2011). Many were sent to special preparatory schools.

Others were tutored at home. In those early years, acceptance was highly prized, but students who were unprepared would leave university quickly. For those with the finances, tutors often attended with the student, aiding and translating as many texts were presented in their original Greek or Latin. As other universities opened, a reduction in admissions requirements opened the door to more students. As students entered unprepared for the requirements of academic writing, remedial coursework was formalized (Arendale, 2011). While there have always been complaints that students were underprepared for the rigors of academic work, those complaints have never had as much solid evidence as is now available.

The great thinkers of our history have given us many ideals to reflect upon about education within our society. Malcolm Forbes is credited with saying, “The purpose of education is to replace an empty mind with an open one.” Martin Luther King is credited with saying, “The function of education is to teach one to think intensively and to think critically. Intelligence plus character – that is the goal of true education.” Ayn Rand said, “The only purpose of education is to teach a student how to live his life – by developing his mind and equipping him to deal with reality. He has to be taught to think, to understand, to integrate, to prove.” William Deresiewicz said, “The true purpose of education is to make minds, not careers.” Liberty Hyde Bailey once said, “The true purpose of education is to teach a man to carry himself triumphant to the sunset.” Truly, the needs of the individual are as diverse as the individuals in our classrooms compounded exponentially to the great thinkers and thoughts to which those individuals will be exposed. Preparation for education and education itself must be an ongoing and lifelong process. For those transitioning between high school and college, and finding themselves in developmental coursework, this construct must be conveyed fully, and in such a manner that it is embraced by

the student with an attitude of expectation and promise. As John Dewey said, “Education is not preparation for life; education is life itself.”

It is a reality that many students do approach college unprepared for the rigor of collegiate academia. Saxon and Morante (2014) claim numbers between 42% and 80% participation in developmental education at community colleges. Howell (2011) shows a figure of 28% and McCormick, Hafner, and Saint Germain (2013) claim 53% of American college student require remediation, while Glessner (2015) cites a figure of “more than 65 percent” (p. 32). While some claim the problem is that the placement tests do not do their job of accurate assessment of student skills (Bahr, 2013; Crisp & Delgado, 2014; Saxon & Morante, 2014; and McCormick, Hafner, & Saint Germain, 2013), the most pertinent fact is that once students are in their program of choice, their placement test and scores becomes irrelevant (Saxon & Morante, 2014). Still, it has been shown that a combination of high school success and placement scores are strong predictors of collegiate success (Camara, 2013).

Those paying for college may ask why they are paying for skill attainment that they, as taxpayers, paid for through the state in kindergarten through twelfth grade (Glessner, 2015). Presumably, students should leave high school with the knowledge to move forward with their lives, whether that is to a vocation or to college (Sana & Fenesi, 2013). As many are not ready for collegiate coursework, some kind of preparation, intervention or other readiness program seems necessary. What the University of Minnesota established as a “General College” program in 1932 has now evolved into an expectation for incoming students and an orientation and remediation program to ensure preparedness that is as multifaceted as the kaleidoscope of students who enter it (Glessner, 2015).

Defining college success is one issue of concern. For Bahr (2012) the view was five terms beyond remediation of continued enrollment. For Crisp and Delgado (2014), the achievement was graduation within a set period that was program dependent. Camara (2013) points to completion of follow-on coursework, completion of program in a specific time period, exemption or completion of remediation or developmental programs, and grades. Others, such as Trammell (2009), Bahr (2013), Venezia and Hughes (2013), and Zepke (2018) consider the sense of achievement from the student to be the deciding characteristic of collegiate success. Regardless of the outcome, for these students, the emplacement in remedial coursework is an issue in and of itself. Romano (2012) found that part of the issue was that at the beginning of the term, the huge numbers of students enrolling in remedial coursework meant some were unable to enroll due to limited spaces. However, with a drop rate of over 50% in those courses within three weeks, schools could not justify more courses to enroll more students.

In many ways, consideration of the effectiveness of remedial education is about the money. The significant funding required for developmental education attracts much attention (Melguizo, Kosiewicz, Prather, & Bos, 2014). Brothen and Wambach (2012) posit that students deserve the opportunities and that funding remediation is a small price for their success. Further, Brothen and Wambach (2012) suggest follow-on placement testing to those who fall short of the set score on the ACT or SAT as being well worth the investment in student success; though some schools represent the low level of requested re-tests as evidence that students feel appropriately assessed (Melguizo, Kosiewicz, Prather, & Bos, 2014).

Many states are reducing or eliminating funding for developmental education at four-year institutions (Wilson, 2012). However, this will not and cannot meet the needs of all returning students. After all, “recent high school graduates comprise only a minority of those who go to

college” (Boylan & Trawick, 2015, p. 30). Khoule, Pacht, Schwartz, and van Slyck (2015) suggest a low-cost form of enhancing pedagogy for and between remedial teachers can enhance outcomes drastically. Supporting this view, Cox (2015) indicates that the variance in pedagogy and enhancing consistency of goals among disparate teaching practices is key.

An alternative view comes from Garcia (2014) who finds that students require more information literacy and study skills to employ academic abilities more effectively. From this basis, encouraged students are presumably more likely to engage and thus improve basic literacy skills. Zepke (2018) also reinforces this concept while relating it to confidence levels and student engagement. While some researchers expand the notion of a computer-based interactive teaching tool to reduce costs affiliated with faculty (Panjaburees, Triampo, Hwang, Chuedong, & Triampo, 2013), others present that the interactive relationship between teacher and student is the key to success (Dallas, Upton, & Sprong, 2014). Probably the most accurate statement is that “the evidence on remediation is mixed” (Boylan & Trawick, 2015, p. 26).

In the middle of the 1900s, the gates of America’s colleges were flung open wide with the advent of the World War II Veterans making use of the new Government Issue Benefits Package (GI Bill) (Stanley, 2003). These veterans had shown themselves worthy of their benefits, but that did not mean they were ready for college. Like many others in the mid-Century following World War II (WWII), their determination and hard work would pay off, but the remediation requirement would delay the process (Stanley, 2003). At the same time, schools like the University of Utah denied admission to students who had finished high school with less than a “C” average, reducing enrollment in remedial courses to 10% by creating an extension college in which to enroll other students who required more instruction (Glessner, 2015). While other schools followed for a while, the siren song of financial gain made this trend quite brief.

More to the point, the GI Bill aided in moving the country forward academically. While prior to WWII less than 10% of the country had college degrees, within the ten years following the Japanese surrender in 1945, over 50% of the eligible veterans took part in the GI Bill program, when nearly eight million students matriculated to college (Banner, 2006). During that same ten-year period, the number of baccalaureate degrees awarded annually nationwide doubled. This influx of veterans, many of whom held no high school diploma or prior college, led to a requirement for more remedial coursework. Tutoring was funded to enhance student readiness and success. Developmental coursework became funded alongside full credit coursework (Banner, 2006). Glessner (2015), among others, queries if the fiscal constraints of the 21st century will create a return to the trends of reducing open enrollment and re-creating the preparatory school programs.

Not all post-secondary students start at the community college level. Many, however, do so and their successful vertical transfer to a four-year university may be dependent on their persistence through development coursework (Crisp & Delgado, 2014). Xueli (2012) found a number of factors, including Socio-Economic Status (SES), socio-psychological issues, and attendance were attributes keying into the vertical transfers of community college students. While community colleges have filled a huge gap in education for students not desiring or suited for university achievement, public universities find themselves also requiring an extensive set of developmental education courses (Bahr, 2013). While many educational and vocational options can be completed without completions of a math sequence, most require at least one college-level English course. For many, the challenges of completing the remedial reading and English program to get to that course can be stifling (Bahr, 2012). Bickerstaff, Barragon, and Rucks-Ahidiana (2017) reinforce this learning pattern and further suggest that the community college

can be a place to develop skills and confidence in learning to go beyond the community college environment. Still, a certificate in some vocational areas can be an alternative who those who do not complete the developmental sequence (Bahr, 2013). Regardless, the diverse populations of today's community colleges are rife with students at high risk for transient scholastic behavior (Smith-Morest, 2013). Again, funding is a huge factor. Community colleges tend to be vastly less costly and closer to home – reducing familial costs. These are factors most students, particularly first-generation college students, must consider. These are also factors states and affiliate groups who would criticize the expanded remedial programs at these institutions need to consider (Smith-Morest, 2013).

Sana and Fenesi (2013) raise the possibility of a thirteenth year of schooling rather than an onset of the unprepared student into the college curriculum. This program was tried in Canada, and while it was discontinued, it was found that the students who had taken the thirteenth year were much more successful (as to GPA and completion rates) at the college level. Glessner (2015) rebuts the question by referencing the influx of collegians at the mid-twentieth century. Glessner's (2015) suggestion of requiring all students to take a course of development or placement coursework may merit further review, and the advancement of extended orientation programs may be a model of this. Once again, the costs have to be balanced. Regardless of the method, "policy makers push colleges to lower the cost per graduate" (Jenkins & Rodriguez, 2013, p. 187). While specific statistics can be garnered on the base costs per student graduated, for those who graduate elsewhere, or later, or never, it can be near impossible to place a value on the college experience.

Some form of gateway or bridge program, like orientation, may also be the solution to another remedial education constraint – students who will not go (Crisp & Delgado, 2014).

Romano (2012) also notes that of those who are anticipated to enroll in remedial coursework, less than 50% will attend by the third week of school. Summer bridge programs can lead to greater levels of comfort in the academic environment and greater success. They are designed to aid students both academically and socially in the transition from high school to college (Wathington, Pretlow, & Barnett, 2016). The gateway program which resulted from the University of Minnesota's General College in the 1930's is an example of a program designed for transitioning students (Glessner, 2015) as is the extension division of the University of Utah developed in the mid-1950s to reduce the number of developmental courses on the main campus of the university. Both effectively reduced the number of students enrolling into remedial coursework substantially, but both programs were altered to be more inclusive to the term, and the numbers rose again. While Bir and Myrick (2015) focused on inner-city African-American youth, there can be no doubt that a finding of extra attention and orientation to college needs will increase student efficacy in any demographic. King (2012) found similar issues and results as regards to rural community college attendance. Regardless of the program, students who attend these programs are more successful, but getting them to attend can be a challenge. Wathington, Pretlow, and Barnett (2016) found that 80% of students who did attend the program met the standard to continue with education at the college level no longer requiring developmental coursework. Of course, those programs also require funding.

Bettinger, Boatmen, and Long (2013) find there may be more hope among those nearer to the threshold through other means than remediation. One view related a balance between a sense of belonging in the community to a need for gainful employment, particularly among those in the margin (Hlinka, Mobelini, & Giltner, 2015). Further inquiry in that study found that the support and encouragement of family was also balanced by a need to support the family even to the

extent of missing or giving up on school. Holmund and Silva (2014) targeted a study toward interventions related to absenteeism. Simple, unencumbered remote observation allowed for subtle interactions with students and consequently led to greater attendance, higher test scores, and greater success at the secondary school level. Considering the marked attrition rate in remedial courses (Bahr, 2013; Bickerstaff, Barragan, & Rucks-Ahidiana, 2017; Holmund & Silva, 2014; and Pagan & Edwards-Wilson, 2002), perhaps a similar interaction might be needed at the post-secondary level.

Depending on the study, (Bahr, 2012, Crisp & Delgado, 2014, Glessner, 2015) as many as 50% of the students guided toward remediation will not enroll at all. No reference could be found as to specific causative factors, but as all articles point to issues of cost and non-credit as being concerns, it can be reasonably inferred that those issues are relevant. Remedial and developmental education courses do not contribute credit value towards degree programs, and even though generally eligible for federal financial aid, the programs add on substantially to the long-term costs for the student (Martinez & Bain, 2013). Guy, Cornick, and Beckford (2015) reviewed characteristics of the students that would make them more or less likely to complete their developmental coursework. Like Bahr (2013), the work was related to developmental mathematics. Affective characteristics may not be easy to measure, but they are critical to the success of the student, particularly the remedial student (Guy, Cornick, & Bedford, 2015). King (2012) found parental involvement and parental education levels to be a staunch factor in student drive toward collegiate success. Student engagement became, again, a critically apparent factor.

Guy, Cornick, and Bedford (2015) note that motivation, self-regulation, and social-engagement, are the elements that can make a class lively. An interesting class is far more likely to keep student attendance high, and the relationship between attendance and academic success is

well documented (Lyubartseva & Mallik, 2012). Brothen and Wambach (2012) also note the apathy of the students can convey to the instructors thus creating a dwindling enthusiasm for education among the learning community. Hodara and Jaggars (2014) and Stoffelsma, Mwinlaaru, Otchere, Owusu-Ansah, and Adjei, (2017) both found that by accelerating the developmental coursework and even paralleling it with other college-level coursework, students were more likely to complete not only the developmental sequence, but the educational goal as well. In particular, engaging first-generation college students can ignite a burning desire for learning that can lead to familial support and interest that will carry the student through remediation and across collegiate work to the dais of graduation (Soria & Stebleton, 2012).

Schnee (2014) reviewed in detail how learning community affects those in developmental education and found particular issues within the 10% of threshold scores both above and below the cutoff. In short, those above needed more help than they were willing to seek, while those below did not want to admit to the need nor accept the help they were offered. Moss, Kelcey, and Showers (2014) found that students who needed developmental education could advance better and faster from within the developmental classroom with peers at their same level. Camara (2013) also raises this question about the marginalized students and framing their need for education in a career readiness perspective. This harkens to Sana and Fenesi (2013) and aligning the needs of the student to the career goals prior to exiting secondary schools.

College and career readiness are not, however, the same. While some students are called to careers or work paths that do not include college, more and more employers are looking to college graduates as preferred employees (Guy, Cornick, & Bedford, 2015). However, the preferred seamless transition between high school and college is largely a myth. One key factor in college readiness is reading expertise (Springer, Wilson, & Dole, 2014). Reading literacy is

more than the ability to pronounce the words on the page. Reading literacy to the aspect of college readiness requires students to be able to consume the text at a moderate pace, understanding not only the individual words, but the implications woven between them. “Undergraduate students need powerful reading habits so they are not struggling” (Staudinger, 2017, p. 2). Springer, Wilson, and Dole (2014) provide examples of students writing comparative papers that highlight these skills. These reading literacy issues are another perspective of the remedial reading issue that sometimes surfaces alone, but more often is combined within the remedial or development English program. At college, texts are not engaging, they are directive. Information is presented to be learned, not to be enjoyed (Donalson & Halsey, 2013). For readers lacking high level fluency, the dry texts are an extreme challenge, and the lack of comprehension causes the struggling reader to flail and to fail.

Mellard and Fall (2012) find adult literacy issues to be a particular challenge due to a lack of adult specific modeling and theories. Adult learning styles differ from child learning styles due to a variety of psycho-social-physical influences. Also, adults pursuing literacy skills were better able to grasp phonological differences, but had more trouble with pseudo-words and decoding skills than younger learners (Mellard & Fall, 2012). While the Saal and Dowell (2014) study relates specifically to an adult male who is functionally print illiterate and his journey to print literacy, the study holds important values for the educator looking to issues of concern in the remedial reading classroom. Granted, the average age in the classroom is considerably less than the Saal and Dowell (2014) 57-year-old male. Still, adult learning incorporates frustrations as to why it was not completed earlier. It reflects goals of independence and autonomy and further education. It also can lead to success and enthusiasm for greater learning. Whether a class of one student or twenty, to inspire each individual student towards his or her goals is the same.

Disability is prevalent among adults who are lacking in literacy. The disabilities may vary widely from emotional, academic, and physical manifestations. However, all play a part in the challenge that is adult literacy and learning. Hua, Woods-Graves, Ford, and Nobles (2014) found that for many students with intellectual disabilities, reading was not specifically addressed, but when it was, the strides made across the academic spectrum were marked. However, Breznitz, et al (2012) found that with some disability issues, particularly adult dyslexics, the encouragement to read faster resulted in greater fluency and comprehension. This success encouraged the students to pursue greater challenges. The time constraints were key in preserving these students advanced reading skills.

Strucker (2013) found that the issue of enhanced reading was not always one of disability, nor one of strict literacy. Instead, a big influence was what he termed the knowledge gap. This knowledge gap is particularly important in the evaluation of reading skills as recent changes in placement testing presumes knowledge in reading testing that simply does not always exist. The example given by Strucker (2013) relates to reading comprehension preparedness where the gist of the paragraph is hurricane formation. The paragraph makes reference to the pressure changes that form a hurricane. The students at his inland school, had no frame of reference for such an issue and were distracted by questions relating to the weight of the air and density of molecular balance that were fundamental to a true comprehension. This type of knowledge gap is prevalent among students with reading insufficiencies as they generally avoid more challenging academics in earlier years due to the difficulty in reading the texts.

Essentially, what research has been done in the area of remedial reading is limited. Students do not participate unless driven to succeed beyond that remedial coursework. Those that do participate have their own reasons for doing so. Students with disabilities, known or

unknown, face particular challenges. Reading with fluency and comprehension, however, is a critical baseline to the advancement of education at the post-secondary level.

It has long been noted that success lends toward greater success, and students who complete each course have a better chance of completing the next (Collins, 2013). Alternative methods to engage these borderline students included a reader theater to enhance fluency (Chou C., 2013). Kashtan (2015) and Yoshinaga (2011) both discuss the use of typography to engage freshman writers. Briguglio and Watson (2014) studied a program embedding the English curriculum within the career-oriented coursework. With additional tutelage for specific needs, generally garnered or addressed within the remedial classroom or writing center, students in the program were able to stay on track toward academic goals with a substantially higher success rate. The challenge was great in integrating the instruction of specific compositional elements into these other courses, and the natural resentment of an English department whose staff became adjunct to other departments on an ad hoc basis. Stoffelsma, Mwinlaaru, Otchere, Owusu-Ansah, and Adjei, (2017) echo this over-arching position, finding that engaging students within their own fields enhances engagement across the curriculum.

There can be no denying the long-term outcomes of retention. No student can graduate without staying in school. Short term successes, as noted, continue student motivation toward the next challenge. Academic engagement in the classroom is absolutely critical to keep students continuing in college (Pruett & Absher, 2015). Gajewski and Mather (2015) point out that integrated remedial programs have been repeatedly shown to be more successful in terms of retention than any program working in isolation. Students do not generally enter college with the intention of dropping out of school. The goal then, is to keep the student engaged in the process.

For students in remedial courses, that goal is complicated. Many have learning disabilities – diagnosed or undiagnosed – that they may or may not want to self-reveal during orientation or enrollment processes (MacArthur, Philippakos, & Graham, 2016). The general stresses of change among college freshmen are magnified within these students, and coping mechanisms get lost in the shuffle. In a strong remedial education program, students learn more than reading literacy and comprehension. They learn self-management, self-evaluation strategies, and goal-orientated thinking (MacArthur, Philippakos, & Graham, 2016). In that same study of motivation factors, including self-efficacy, it was found that perceptions of self as learners had as much or more impact on retention as learning the skill sets incumbent in literacy and comprehension.

While a variety of techniques exist and are employed, the issue frequently seems to settle about the students' perception of self upon assignment to remediation (Perun, 2015). Whatever skills those students thought they had mastered to get through high school seem not to work in college. Revision is no longer optional, it is required. For some, it is a matter of knowing the pathways – and they are frequently technological pathways – of a different map (Relles & Tierney, 2013). While students may be “millennial” and presumably “tech-savvy,” it often seems their skills fall short of Blackboard® online collaborative learning tool or Microsoft Word®. It behooves the university that plans on distributing students among developmental coursework to intervene with the tools to succeed. “While “gadgets” like smart phones are ubiquitous, practical computer applications are actually something of a mystery to a surprising number of our students” (Clay-Buck & Tuberville, 2015, p. 20). One extensive study by MacArthur, Philippakos, and Ianetta (2015) did just that, spending substantial time orienting students in a developmental writing course in strategies for writing, drafting, etc., but also in self-regulating

and self-evaluation. The results were that the process had a “large positive effect on the overall quality of students’ writing” (p. 864).

One way to balance the costs of remediation and the benefits of engaging the students is through some form of electronic tutorial program. One example would be the Diagnostic and Remedial Learning System (DRLS). While the DRLS was applied to issues relating to developmental math in Thailand, there is no reason to assume that a DRLS for reading matters could not be equally effective in basic elements of comprehension (Panjaburees, et al, 2015), particularly in the initial diagnostic phases to determine exactly what interventions are required. Such adapted learning systems have been implemented successfully on the small-scale at select universities, and are likely to be expanded as technology enhanced learning abilities increase thus reducing costs for implementation (Johnson & Samora, 2016). Coleman, Skidmore, and Martirosyan (2017) pursued the construct of online instruction for remedial mathematics with mixed findings – students who worked the program quickly and fluidly excelled, those who did not quickly grasp the requirements of the online program failed and frequently left the program completely. Capin and Vaughn (2017) found that Collaborative Strategic Reading (CSR), while developed for disabled learners, blended acquisition of terms with engaged learning to allow students of all learning levels to increase comprehension within the field of reading.

Adaptive learning is personalized, self-paced, and differentiated to guide the individual student to the goal. The most effective alternative to the individualized learning program was a small focused classroom with ten to fifteen students and one highly educated instructor (Sheu, 2011). That same study specifically noted that while only about half of the students thought they were improving in the online program, almost all the students had improvement on the exiting test. The retention rate, despite the improvement, was closer to the perceptions of the students.

So, having them think they improved was as important as actual improvement. One compromise would be to implement the DRLS or other adaptive learning program in a physical classroom with a qualified teacher to guide the students.

In that “Online learning platforms support numerous different types of learning services, and are designed in a manner that enables students to learn with ease” (Jong, Chen, Chan, Hsai, & Lin, 2012. p. 46), one must wonder why not to commit to an online portfolio program. However, one concern that must be addressed is the overlap between students placed in developmental classrooms and those with limited experience or exposure to technology (Clay-Buck & Tuberville, 2015). The things learned in a developmental classroom may be overwhelming enough without adding in a need for technical expertise. Clay-Buck and Tuberville (2015) explain how the disparate interests of learning technology can interfere with the basic writing needs and guidelines for these students. For students who type well, the computer and word-processing programs can allow for a free flow of ideas that may not be well captured in a pen and paper environment. The ability of the instructor to read the penmanship of today’s students also makes the convenience of word-processing more fluid (Jonaitis, 2012). In many developmental classrooms, however, the students are not fully empowered with sufficient knowledge of the word-processing system and it is just one more thing to be learned (Clay-Buck & Tuberville, 2015). Perhaps an intervening evaluation of tech-skills would aid this piece of the process.

Intervention is a popular term among those who work in schools under the Achieving the Dream (AtD) initiative to find what works for students who need help. With an emphasis on building from the student’s academic knowledge and ability level, AtD is a program squarely within Vygotsky’s ZPD. For students who are learning disabled or non-traditional, taking them

at their current status is particularly important (Cowen, Barrett, Toma, & Troske, 2015). It is important to keep in mind that, as previously stated, intervention is intended to refer to a form of educational instruction, practice, strategy, or curriculum designed to accelerate learning for all students (Bender, 2012). While these students had met the level of proscribed achievement in their rural and impoverished community, their home-grown and locally educated teachers were not preparing them for a world beyond their own community or community college (Cowen et al., 2015).

Students, particularly those who are new to the collegiate environment have a tendency to be so overwhelmed as to shut down completely. Stewart and Varner (2012) found that imposing standards on students without taking into consideration the entirety of the student's placement in the populace was overwhelming to students and staff alike. This can be directly contrasted with the lessons from Cowen et al. (2014) about working with students where they are. While Cowen's emphasis was on the individuality of the student, Stewart and Varner's emphasis was on the sociological pool of the student. As in most things pertaining to individual education, it would seem prudent to view both aspects as combined to complete the student.

The value of the remedial instructor is to recognize the complexities of the remedial education program and while aiding a student in a particular subject area, that same instructor is grounding the student in methods for collegiate advancement (George, 2010). Issues of justice and equity must be addressed, frequently by the instructor to aid the student in belonging to the greater learning community of the university, and not just the remedial program (George, 2010; Schnee, 2014). It seems the more social supports the student has – in and out of the school system, the more likely the student is to persevere and not desire to quit (Lukosius, Pennington, & Olorunniwo, 2013). Again, the criticality of student engagement comes forth.

Teacher influence must not be under-accented, particularly among these remedial students. The same sense of community that keeps them in school can be developed with their teachers, keeping them in school more often, and for more years (Slocum, 2014). Among nearly 300 teachers in a study by McCormick, Hafner, and Saint Germain (2013), teachers who participated and learned new and different ways to teach reading and writing found themselves excited about new methods, and their enthusiasm relayed in the classroom, increasing participation, attendance, and consequently, test scores. Again, “developmental students need to be engaged as soon as they start their first semester” (Pruett & Absher, 2015, p. 38).

The unfortunate lack of motivation that exudes from many remedial students is contagious, and must be overcome. In English remediation, many of these students have long struggled with reading fluency and comprehension issues and seldom are avid readers for pleasure. The continual struggle is exacerbated at the collegiate level where texts are frequently dry, and engagement of the reader is not the goal (Donalson & Halsey, 2013). Cockroft and Atkinson (2017) found that engaged readers read longer, and gain more fluency and that the fluency crossed over into the drier texts of the college classroom. Tracking compositional growth through cross-submission of papers and supplemental coursework as needed can streamline the developmental sequence into the career focused requirements of the student and allow for quicker advancement and thus greater engagement.

Furtwengler (2015) addressed the advantages of ability grouping among three levels of honors students. Further comparisons among honors and non-honors students showed considerable enhancements among all groups. As may be suspected, the honors students require less structure and intervention than some of the non-honors students. It is likely that the same can be said for any three sets of ability grouped student. The trend in recent years, however has been

greatly geared toward the embedding of the student into the classroom and reducing or eliminating divisions between groups. This focus has resulted from a concern about social hierarchies and personal esteem issues.

Contrastingly, the recent Higher Education Opportunities Act (HEOA) has provided additional funding to intellectually disabled students seeking attendance at post-secondary institutions (VanBergeijk & Cavanaugh, 2012). The program having been initiated in 2008, data are not prolific. However, the program is being advanced, particularly among those on the high-functioning levels of the autism spectrum disorders. The expansion of disability services will have to expand accordingly. Capin and Vaughn (2017) present that engaging developmental student in the middle and high school years with the goal of a collegiate aptitude would be more successful. The impact upon developmental courses is already being felt at some schools, and again, budgeting is an issue. As Stewart and Varner (2012) point out, rural communities, though often overlooked, are frequently so poor as to require the Disadvantaged Student Supplemental Fund simply to provide basic curriculum to students in K-12 schools. The ability to provide for students beyond the K-12 arena is seriously lacking in some areas. This means that if and when those students reach the college level, they will likely require the more intensive programs to intervene and support them. However, at the same time, universities are being defunded for developmental programs and community colleges are expected to take and mold these students. Not everywhere has access to community colleges.

Bahr (2012), having found significant impact among grouping by skills a success in remedial math programs, leaves open the question of diversifying the developmental population by layers upon layers of skill levels. Skills referred to by Bahr include not only the basic skill sets being learned, but also the essential skills of functioning in the freshman college community.

Of course, the benefits of ability grouping must be balanced by the sociological impact on the non-cognitive skill set and its eventual effect on the cognitive skills of the learner. Tennyson and Rasch (1988) explored the impact of the non-cognitive skills such as self-discipline and persistence, as well as an emphasis on higher-order thinking skills such as memory and learning methods. This balance is a precarious one and apt to be swayed by political positioning as much or more than educational necessity. As always, funding plays a role that cannot be summarily dismissed.

In many states, funding for developmental coursework has been or is being curtailed (Wilson, 2012). Other states are re-working placement assessments to determine alternative methodologies for inclusive courses. Doyle (2012) cites Mencken to point out that “For every complex problem there is an answer that is clear, simple and wrong” (p. 60). Doyle (2012) further points out that students who complete gateway coursework actually have better graduation rates than students who enroll in remedial coursework during the first term. The focus in that study, however, noted the term “intervention fidelity” (p. 60) explaining that institutional intervention and individual instructor intervention may be very different things. This points to the variance in teachers presenting the remedial material. Due to fiscal constraints at the state level, as noted by Wilson (2012), universities are pressured to keep the costs of developmental or remedial coursework exceedingly low. These efforts to reduce costs often result in less qualified or educated instructors, frequently adjunct, placed in the vital position of bringing these students to the level of collegiate education and keeping their motivation high.

An effort such as the DRLS program of interactive learning could reduce costs and increase effectiveness (Panjaburees, et al, 2013), but the loss of interaction among some populations could result in lower retention rates overall. Doyle (2012) also studied students just

slightly over the placement threshold for remediation and found little difference in graduation rates. While not conclusive, it does raise a question of whether it is placement that is at issue or where placement should be.

Expectations among students and professors vary greatly as is to be expected. Perun (2015) found that expectations among students were specific and literal to the requirements presented in a syllabus, particularly among new college students. Students believed that merely meeting the basic elements of style and pages was sufficient as it had been in high school. However, at the college level, professors expected a level of analysis and care that students were unused to, and the requirement to revise for more in-depth understanding was unnerving to students. This transition in understanding is key to academic success in college, yet lacking in junior teachers. The need to write and revise every paper was a new challenge for these students. Further, while college preparatory activities were frowned upon as negative associations, those that participated were well ahead of understanding the requirements of post-secondary education, and considerably more likely to succeed in a continuous college program through to graduation (Royster, Gross, & Hochbein, 2015). From one-third of eighth graders testing college-ready, among the same students, less than 20% of high school senior tested college ready on one study just a few years later (Radcliffe & Bos, 2013).

There is another view that should be mentioned. Pavesich (2011) suggests that basic writing stifles the innate curiosity of the student to the point that the entire curriculum should be removed, and freshman composition along with it. This view relates the restrictions of research through academic sources and composition within formats of Modern Language Association (MLA) or American Psychological Association (APA) style guides are superfluous to the importance of harvesting new ideas from the students. The use of learning portfolios has

broadened the nature of assignments, while still keeping some of the traditional norms in place (Jong, Chen, Chan, Hsia, & Lin, 2012). But Pavesich (2011) would construe that any of the traditional norms would restrict the free and progressive thought of the students. Jeffes (2016), however, posits that a return to basics – including phonics -- at the secondary level gives students a strong enough foundation to allow them to garner momentum that carries through the requirements of collegiate academic writing.

Teacher Education and Hiring Requirements

“Teacher certification standards specify the dispositions, knowledge, and skills” required for state licensure (Akiba, et al, 2010, p. 447). These requirements cross over into accreditation policies for institutes of higher learning. The historical presumption is that the professor should have a greater degree than the student is trying to achieve (Skolnik, 2011). “Generally, the lower the level of postsecondary institution, the lower is the degree requirements for both full-time and part-time faculty” (Halcrow & Olson, 2011, p. 2). This implies that teachers for students below college level would have at least an associate’s, and community college teachers should have bachelor’s degrees. Teachers at colleges where baccalaureates are awarded should have master’s degrees, and those offering graduate degrees should have doctorates. However, within the last forty years, those lines have blurred. An increase in community college baccalaureate programs and college graduate programs have made these distinctions hazy at best (Skolnik, 2011). At many Community Colleges, however, 20% or less of the instructors have a doctoral degree (Datray, Saxon, & Martirosyan, 2014). Still, there may or may not be a direct relationship between the degree of the teacher and the quality of education (Ruhupatty & Maguad, 2015) within an Activity Based Costing (ABC) system. This ideal of identifying the costs of every aspect in monetary terms has drawbacks where intrinsic value may be underrepresented.

In many situations, the focus at the university level for professors to survive is the idiomatic “publish or perish.” As Ruhupatty and Maguad (2015) discuss, the esoteric and time-consuming publications of some of those professors are seldom read, and frequently draw professors from their student population concerns. Adjunct faculty have been able to fill the gap to teach specific, usually lower level, coursework, allowing the senior full-time and likely tenured professors to focus on the higher-level coursework and publication requirements (Halcrow & Olson, 2011). At as much as one-third the cost for the same degree level, these part-time professors can provide a huge cost savings to the post-secondary school. But, one must ask about the cost to the students at that school.

In most business environments, including service businesses, costs of lacking quality are readily measured by returned products or non-returning customers (Ruhupatty & Maguad, 2015). Such measurements are more challenging in education and slower to yield measurable material. However, Ruhupatty and Maguad (2015) also present that the consistent re-enrollment of students and accreditation of a post-secondary institution can be the primary measures of quality in that institution. Cumming and Zhao (2015) presented an extensive review of varying post-secondary accreditation requirements, but do not specifically address the need for professorial education for remedial coursework. Other studies, including Halcrow and Olson (2011), and Akiba et al. (2010) have indicated that degree level of professorial staff is an inherently quantifiable link to quality within the institution. Chingos (2016) however, did publish an extensive study of a multitude of variables among instructors at the college level in developmental math and found “Education was the only variable that was statistically significantly related to the rates at which students take the final exam and successfully complete

the course (with a C or better)” (p. 97). None of these studies, however, point out specifically any differences between teacher degrees and remedial reading success.

Nonetheless, Glessner (2015) points out that greater faculty instruction on specific learning techniques lead to significant improvements for developmental students. Chingos (2016) points out that the flexibility of instructorship at colleges and universities is a two-edge sword, particularly in the area of remedial education. Hinging outcomes for future coursework for these students, the findings of impacts on successful completion were directly related to education, experience, and status of the professor as full-time or part-time (Chingos, 2016). Instructor experience and status, however, did not appear to impact results as clearly as instructor education for some algebra students. Shields and O’Dwyer (2017) noted that instructorship requires more than simply “repackaging complex texts into slides or summaries so that students with limited literacy skills could use them” (p. 100). While again not specifically identifying degree level, the research indicates instructional quality as a direct impact.

A further entreaty lies within the realm of specifically guided additional education for teachers in the remedial English realm. Khoule, Pacht, Schwartz, & van Slyck (2015) found that supplementing professorial knowledge through an online program aided the tools of the teacher, resulting in greater engagement of the students, and consequently, greater retention among developmental students of the teachers in the program. One essential facet of this study was that pedagogical assessments follow pedagogical choices – the choices were new options, and the assessments that followed had been hitherto unexplored. Feedback through the online community with peers world-wide led to a broadened opportunity of learning for teachers and hence, for students. This is critical as students exiting school either to drop out or change to a vocational program, and not through an emergent need in finances or family, frequently point to

teacher engagement as a factor saying courses are boring or teachers do not care (Hendrickson, 2012; Shields & O'Dwyer, 2017).

Summary

Bahr (2012) showed that mathematics remediation has consequences on differing ability groups differently. Without question, taking students from their own basis and working through their zone of proximal development is key in allowing them to grow. The constructivist theory as present by Vygotsky (1978) relates directly to the issue as the disparate educative pawns enter the melting pot that is the college classroom. At the same time, the difference between teacher abilities, ability groups, and student outcomes in remedial reading seems peculiarly void. There are and have been questions about whether or not the use of a singular exit exam can capture the progress of a student, but those concerns echo those related to any testing process.

Essentially, any time a student is tested, those grading the test have to grade on the basis of the results given. All of the factors that relate to the efficacy of the test at that time – weather, room temperature, lighting, etc., -- cannot be given credence against the scores. The scores stand alone. Accordingly, this study compares testing after a period of instruction, but verifies the process by measuring the same group disparately among gender and as a whole against the education level of the teacher. Further, in times of fiscal constraint, and ongoing fiscal responsibility, there must be a balance between tenured professors and adjunct staff, as well as the cost and degree balance among the professors.

It may seem simple to mandate sweeping changes at a national level, but these students do not live at a national level. They live in farms and schools and communities. They live in cities and tenements and on the streets of America. Abraham Lincoln said, “The philosophy of the schoolroom in one generation is the philosophy of government in the next.” So, if we, as

educators, hesitate to find out what we can do to raise our students from the need for remediation and encourage them to feast on the richness of education, we are doing them and ourselves a grave disservice.

CHAPTER THREE: METHODS

Overview

Analysis of university-level remedial reading indicated an ongoing growth pattern of enrollment with a low rate of success for students who enroll. In this ex post facto study, the statistical difference between enrollment scores, academic progress, and teacher education were analyzed. This chapter provides a review of the project's design, sample, instruments, procedures, and data analysis. Further, this chapter reexamines the research questions and data collection procedures as well as statistical analysis. For this study, recently archived records of freshmen university students placed by test scores into remedial reading courses were studied against the educational degree level of the instructor and the passage or failure of the course as dictated by an exit exam. The well-established Compass® test and SPSS® software and TABLEAU® with accompaniment by Microsoft Excel® were used to analyze the data. In addition to the needed elements of gender, outcome, and teacher education, descriptive demographics were garnered for baseline statistical purposes.

Design

For this research, a non-experimental, quantitative causal-comparative research method was used for this study as it is one applied to ex post facto data. This design is appropriate because using a static-group (students who have completed one semester of remedial reading) were compared within their existing groups (male/female/all) as independent variables to determine the influence of teacher education (baccalaureate/masters) as independent variables on the academic progress (successful completion of exit exam as based on COMPASS exam score) as a dependent variable.

A non-experimental research design was anticipated for this study as it is one that does “not involve any manipulated treatment variable” (Warner, 2013, p. 19). While this research may not prove cause and effect, it was anticipated to identify trends and differences. There was no manipulation of the data. Identification and study of existing data and differences was the purpose of this study.

Research Questions

The proposed research questions for this study are:

RQ1: Is there a statistically significant difference between the exit exam test scores of students taught by instructors with a bachelor’s degree when compared to students taught by instructors with a master’s degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ2: Is there a statistically significant difference between the exit exam test scores of male students taught by instructors with a bachelor’s degree when compared to male students taught by instructors with a master’s degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ3: Is there a statistically significant difference between the exit exam test scores of female students taught by instructors with a bachelor’s degree when compared to female students taught by instructors with a master’s degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

Null Hypotheses

The null hypotheses for this study are:

H₀1: There is no statistically significant difference between the exit exam test scores of students taught by instructors with a bachelor’s degree when compared to students taught by

instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia.

H₀2: There is no statistically significant difference between the exit exam test scores of male students taught by instructors with a bachelor's degree when compared to male students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia.

H₀3: There is no statistically significant difference between the exit exam test scores of female students taught by instructors with a bachelor's degree when compared to female students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia.

Several types of analyses were weighed before deciding on *t*-Test. To limit error risk, the Bonferroni correction of $p < .05$ is applied to each comparison that will result in an overall effect size of $p < .02$ (Warner, 2013). This study used a nonexperimental, causal-comparative (ex post facto) research design to evaluate the effectiveness of a remedial reading course at a mid-sized university in a semi-rural community of the Midwest. When data has been previously collected and stored, this is the appropriate research design. No intervention or treatment was provided to the participants and the independent variable was not manipulated. Ex post facto research design is "any investigation using existing data rather than new, original data gathered specifically for the study. This means causes will be studied after (post) they have had their effect" (Vogt & Johnson, 2011, p. 135).

Enrollment in remedial reading and teacher degree were the independent variables. The dependent variable was success in the course as measured by the exit exam. This research design was selected to explore possible causative difference between an independent and dependent variable when a researcher is unable to control the independent variable (Gall, Gall, & Borg, 2007).

Participants and Setting

The participants for the study were drawn from records of freshmen college students enrolled in remedial reading in the two semesters of a recently archived school year. The convenience sample came from a mid-size four-year university in the foothills of Appalachia. Students from Appalachia face bigger challenges when approaching college than students from mainstream urban American high schools (Satterwhite, 2013). The cultural significance and historically strong work ethic of the Appalachian people lends them to not pushing for help for themselves. Satterwhite (2013) presents that if placed in a remedial course as many are, these Appalachian students cling to their regional peers rather than seeking deep friendships with others from outside the region. Consequently, these peers tend to form groups who share the same academic deficits. As a result, despite their hard work and intelligence, many will struggle in the more cosmopolitan setting of the university.

A substantial portion of students from Appalachia use the military as a method to advance out of the mountains and then use veteran's benefits to complete higher education before returning to the mountains from which they came. Studies of Appalachian veterans show that 50% of them will pursue higher education, and 85-90% will return to the region with their degrees in hopes of bringing industry and hope to the families they left there (Wright, 2012). While veterans are not the focus of this study, they do represent a significant number of students in this study, and a substantial percentage of students as a whole. These veterans are a special class of student, bringing maturity and a willingness to ask for help into the nature of the Appalachian student. Still, a great majority of them left home and high school unprepared for the challenges of college level academia.

Hendrickson (2012) looked at a reluctance among Appalachian students in rural Ohio when it came to school attendance. There is a highly verifiable link between attendance and success at schooling. That these students presented that schooling was “too hard” or “a waste of time” indicates that their needs were certainly not being met. Students who do not succeed in high school are not necessarily doomed to failure in college. It may be that they do not have the basic skills to ignite a fire for academic challenge, or it could be the expectations within the area are low. Regardless, these students will struggle when faced with the academic rigor of college coursework.

In 420 counties covering twelve states is the region known as Appalachia (Pollard & Jacobsen, 2012). In 2010, this region was known to contain 25 million of the 304 million people in the United States. While Appalachian students are not alone in the struggle to succeed in college today, they tend to be less well-defined as a populace. The geographic boundaries of Appalachia are easy to illuminate as they wander along the edges of the foothills of the Appalachian mountain range. The ethnocentric boundaries are more nebulous. Appalachians do not fit neatly into any slots of politics or other categories. Ludke and Obermiller (2014) identify the Appalachian as liberal and conservative, gay and straight, educated and ignorant. They are of all colors and immigrant nationalities though the larger heritage is Scotch-Irish, and many are of multiple cultural heritages that include the Cherokees that were pushed through during the Trail of Tears in the 1830s (Pollard & Jacobsen, 2013). Further, they largely claim Christianity, but few had Bibles until the Moody Crusade that seeded Bibles throughout Appalachia from 1921 through 1966 (Laats, 2006). Despite a historical identity of ignorance, 13.2% of the adult population have a college degree (Pollard & Jacobsen, 2012). Still, as in any group of people, there are those who desire to learn more, and do more, for the betterment of themselves, their

home culture, the nation, and even the world as a whole. Those students deserve a chance, and some need a bit of developmental or remedial education to get them there. Remediation exists just for students like these who are not quite ready, and has for centuries.

According to CollegeSimply.com. University Alpha averages 4250 student each year. While 89% of the students are considered in-state residents, these students have come from all 50 states in the United States, and 32 countries of which China, Saudi Arabia, and Germany are regular exchanges. Ethnicity includes 83.17% (3288) white students, 5.10% (198) black non-Hispanic students, 0.61% (24) Hispanic students, 1.06% (41) of Native American students, and 7.94% (308) of other ethnicities. Gender is divided between 43.34% (1682) of male and 56.66% (2199) of female students. These students range from dual enrollment students who have yet to graduate high school, through graduate students. Table 3.1 provides a visual analysis of some of this information.

Table 3.1.

General Distribution of Students for University A – – Fall 2015 + Spring 2016 (N = 3,881)

	<i>Number</i>	<i>% Of Total Population</i>
Men	1682	43.34%
Women	2199	56.66%
Ohio Resident	3780	89.00%
Graduate	151	03.89%
Total Students	3881	100.00%

During the period in question, 864 students were enrolled at the school as freshmen. Population aged from under 18 to over 50. The entire school population during that period was

3881. There were 1682 men and 2199 women. Among all students that term, 100% enrolling in remedial reading programs were enrolled in READ 0096 (Reading Development 2) as 0% were placed into READ 0095 (Reading Development 1). However, of all the freshmen enrolling that term, 136 were enrolled in remedial reading classes meaning 15.75% of newly enrolled freshmen were enrolled in remedial reading. While six sections of Reading Development were offered with 24 seats for an anticipated 204 students, by the end of the term, only 115 students were still registered.

Placement into remedial reading is based on results from a college placement tests. Among those students placed into remedial reading, 90 had taken the American College Test (ACT), fifteen had taken the Scholastic Aptitude Test (SAT), and 31 had taken the ACT/Compass placement test. Regardless of the placement test, an English subscore is required to be placed into freshman composition or remedial writing. Those with an English subscore lower than the threshold score are participants in the study.

For those who took the ACT, an English subscore of 19 or better was required to be placed into freshman composition. Those who placed with a score of 16, 17, or 18, were placed into a remedial writing course. The participants are those who scored 11-15 on the ACT reading subscore.

For the SAT, an English subscore of 460 or better was required to be placed into freshman composition. Those scoring between 344 and 460 were placed in a remedial writing course. The participants are those who scored less than a 344 on the SAT reading subscore.

For the ACT/Compass (Compass) test, an English subscore of 70 and a reading subscore of 82 or better was required to be placed into freshman composition. Those scoring between 52

and 70 on the English subscore were placed into a remedial writing program. The participants are those who scored less than a 52 on the Compass subscore.

According to Gall, Gall, and Borg (2007), for a medium effect size and an alpha level of .05, a minimum of 100 participants are required for this sample (p. 145). For this study, the sample came from students who enrolled at the university during a recently available archived year. The sample consisted of 115 who were still enrolled at the end of the course. Among them, 59 were male, and 56 were female. Table 3.2 is provided for clarity.

Table 3.2.

Descriptive Statistics for Remedial Reading Placement at University A – Fall 2015 + Spring 2016 (N = 115)

	<i>Group</i>	<i>n</i>
Male	M	59
Female	F	56
Total		115

Successful completion, for purposes of this study, was defined as having met the requirements to not repeat the course. This requirement was established by placement test. Historically, University Alpha has used the COMPASS test for this purpose. Previously noted is the fact that to enter freshman composition is an English subscore of 70 on the COMPASS. Also noted is that a placement of 52 or less results in placement to remedial reading. Successful completion of remedial reading is, therefore, a COMPASS score greater than 52 on the exit exam. Granted, a score between 52 and 70 will result in the student requiring further remedial

coursework – remedial writing – the student will have, nonetheless, completed remedial reading and presumably be prepared to move forward towards educational goals.

The setting is a mid-sized mid-western university. The university has gone through iterations of being a remote location of a larger state university, an independent local community college, and is now a public four-year university with a plethora of certificate programs, two-year degree programs, four-year degree programs and a smattering of post-graduate programs. Like many throughout the mid-west, tuition is moderate, and attendance is divided between residential and commuter students. With an open enrollment program, students must have taken the ACT or SAT or must take the COMPASS placement test to determine readiness for academic rigor prior to enrollment in freshman coursework. Exceptions are made for non-degree seeking students who desire only to take a course or two for personal edification.

The student classroom for freshman composition classes are of a variety of types. Some courses are held in a lecture hall with available overhead projection tied to a computer, and black/white board access. Some courses are held in a standard desks-in-a-row classroom with overhead projector tied to a computer and black/white boards and/or a SMARTBoard® product. Some courses are held in a computer lab setting where each student has full access to an internet connected desktop unit throughout the course period. These classrooms also have overhead projectors, black/white boards, and SMARTBoards®. Rooms have banks of fluorescent lighting and are temperature controlled. Some have windows, most are interior rooms. While the use of food and beverages is generally frowned upon, the school has historically been lenient about such things, leaving them to the discretion of the instructor. Rooms with computer labs are generally locked by an electronic locking mechanism to which instructors have codes thus preventing student access outside of class hours. The university has several extensive computer

labs throughout the campus and offers free tutoring in all subjects including reading and composition.

Instrumentation

The ACT Compass essay test is the instrument used to verify readiness of the students to exit remedial reading. The 2012 version of the ACT Compass Reference Manual indicates an assured validity of 92% and reliability of 88% by the Mante-Haenszel scale of common odds ratio (pt. 3, ch. 1, p. 6). “The Mante-Haenszel test can be used to estimate the common odds ratio and to test whether the overall degree of association is significant” (NIST, 2015, p. 1)

The Compass test has a varied number of questions as it is an adaptable test pulling from a pool of questions which get harder or easier depending on the answers (ACT, 2015). The test has a written essay component which is scored by two separate readers and if those scores are more than one point apart, by a third reader. Compass also has an e-write program which uses either a 2-8 point or 2-12 point scale based on the preference of the administrators (ACT, 2015). While ACT does not publish a range of scores for the Compass test due to the adaptive nature of the test, it does publish benchmarks. These benchmarks indicate that a student achieving a 77 on the ACT COMPASS Writing Skills Test has a 50% chance of receiving a B or better in a general freshman college English composition course (ACT, 2015). The requirement at University Alpha was slightly more lenient requiring only an English subscore of 70 to enter freshman composition.

Once the term began, students were obliged to attend course sessions with an assigned instructor for two-and-a-half hours each week for sixteen weeks. The instructors all must use a proscribed curriculum, though teaching methods differ widely. At the end of the course, students take an “exit exam” that is the essay portion of the COMPASS placement test. The primary

criterion will be generally defined as college English entrance examination scores, specifically the scores that a student receives on the COMPASS writing skills placement test. Scores on this placement test range from 0 to 99 (ACT, 2012). Passing this test is required to move forward to either remedial writing or the freshman composition sequence, dependent on scores. The same scoring requirement (52 or greater to leave remedial reading for remedial writing; 70 or greater to enter freshman composition) exists as upon entrance.

The COMPASS is adaptive, computer-based, untimed test in reading, writing, and mathematics (numerical/pre-algebra, algebra, and higher). COMPASS is an American College Testing (ACT) standardized test nationally normed for validity and reliability (ACT, 2012). According to the COMPASS technical manual (1997), the predictive validity in writing, reading, numerical/pre-algebra, and algebra are 0.67, 0.67, 0.72, and 0.68 respectively. The standard test package covering the numerical, or prealgebra, set of questions and the elementary algebra sections has a reliability of 0.88. (p. 31). READ 0095/6 COMPASS posttest scores ranged from 0 to 74 ($M = 48.01$, $SD = 21.00$, $N = 136$). All who withdrew from the course ($n = 21$) were automatically assigned a post-test score of 0. For those who completed the course, the scores ranged from 38 to 74 ($M = 55.81$, $SD = 8.70$, $n = 115$). Among those students who completed and passed the course, the scores ranged from 52 to 74 ($M = 59.59$, $SD = 7.03$, $n = 79$).

Numerous studies have used the COMPASS exam to evaluate student readiness as well as the exams effectiveness in predicting student success. Letukas (2016) used COMPASS in comparison to ACCUPLACER along with SAT and ACT finding that all were comparative in placement, and all revealed discrepancies based on social disparity – defined as not considering social experience in context. Hassel and Giordano (2015), focused on mis-placing students into remedial courses, and determined that the more input into placement, the more accurate

placement would be, using COMPASS as one of the placement exams equally legitimate as any others. Scott-Clayton, Crosta, and Belfield (2014) found that the importance of placement using COMPASS, ACCUPLACER, SAT, ACT, and individual interviews would be much more likely to result in success among these college students as defined by program completion within six years.

Procedures

Following Institutional Review Board (IRB) requirements at both Liberty University and the university given the pseudonym University Alpha (UA) access to university archives was required. Data exists in the academic archives regarding student population. Among that archived data are the records of the students who were placed in remedial reading in school years recently archived. The archival records record the results of exit exam taken by each student. The exam has historically been recorded as a COMPASS score.

Students who did not pass the exit exam must re-take the course or request additional placement testing to proceed to either a remedial English course or on to the freshman composition series. The archival records also relate the student records to the professor of each class. Separate records at the school allow for the gender of the student. Yet another database links the professor of record and that teacher's education level Baccalaureate (B) or Masters (M). There are no teachers in this archival term with degrees other than Baccalaureate or Masters. General demographic data will be accessed as well for descriptive statistics. Upon completion, the final and completed report will be provided to the participating university. Thank you letters will be sent to all who assisted. Records and/or copies of records are in the Appendices, to include IRB approvals with identity of UA redacted.

Data Analysis

Once all data was collected, the data sets were analyzed by *t*-tests according to the research questions. The data was then transferred to an electronic spreadsheet in preparation for analysis. Data was checked for assumptions as necessary for the appropriate analysis. Microsoft Excel and Statistical Package for the Social Sciences (SPSS) software, version 21, were used to conduct the analysis. Output was then reviewed and interpreted for statistical significance and the appropriate post-hoc analyses conducted.

A *t*-test “is a statistic that can be used to test many different hypotheses about scores on quantitative variables” (Warner, 2013, p. 1121). The two different groups in this case are those instructed by teachers with bachelor’s degrees, and those instructed by teachers with master’s degrees. The *t*-test is robust within normal distribution (Warner, 2013). Table 3.3 provides visual representation of the test results.

Table 3.3

Descriptive Statistics Distributed by Teacher Degree

	Teacher Education B (<i>n</i> =56)		Teacher Education M (<i>n</i> =59)	
	Mean	Standard Deviation	Mean	Standard Deviation
Student Group M	52.0	6.71	60.5	1.44
Student Group F	50.70	7.59	59.6	7.59
Total Students	51.30	6.94	60.10	8.02

The information was processed through Excel and SPSS using *t*-tests. The independent variables were the teacher’s education. The dependent variable was the outcome determined. The

level of measurement was appropriate as the dependent variable was measured on an interval or ratio scale. The observations within each variable were independent. Assumptions were confirmed as tenable.

As per Warner (2013), reporting includes the following: The data was screened as needed for outliers using a Box and Whisker plot for each group and/or variable. Assumption of Normality was tested with a histogram reported by the bell curve. Assumption of Equal Variance was tested using the Levene's test. Warner (2013) indicates the hope that "the F ratio for the Levene's test will be nonsignificant" (p. 163). Descriptive statistics will also be reported a Mean and Standard Deviation (M , SD), Number (N), Number per cell (n), Degrees of freedom (df), t value (t), Significance level (p), and Effect size and power. In the performance of multiple significance tests, the Bonferroni correction is used to limit the risk of Type I error (Warner, 2013). The use of the Bonferroni correction is, however, extremely conservative. However, the procedure itself is quite simple. Per Warner (2013),

If a researcher wants to perform k number of t tests, with an overall experiment-wise error rate (EW_α) of .05, then the per-comparison alpha (PC_α) that would be used to assess the significance of each individual t test would be set at $PC_\alpha = EW_\alpha/k$. (p. 523)

Therefore, in this case, using an experiment-wise level of $\alpha=.05$ and $k=3$, the formula is $PC_\alpha = .05/3 = .02$.

CHAPTER FOUR: FINDINGS

Overview

As was discussed in Chapter One, the purpose of this non-experimental quantitative causal-comparative study was to determine the difference between completion affects (dependent variable) and teacher education (independent variable) on students of either gender or a combined gender pool in remedial reading at a mid-size four-year university in rural Appalachia. Within the three groups of males, females, and co-eds, the research questions were focused on the statistically significant differences between exit exam (COMPASS) test scores of students taught by instructors with a bachelor's degree or with a master's degree.

This study evaluated the statistically significant difference between the variables by a series of three *t*-tests. Enrollment in remedial reading and teacher degree were the independent variables. The dependent variable was success in the course as measured by the exit exam. After descriptive statistics for the subject pool by enrollment and performance on the COMPASS exams, this chapter is organized by reported findings according to the research questions and hypotheses described in Chapter One and in the following chapters and subsections.

Research Questions

RQ1: Is there a statistically significant difference between the exit exam test scores of students taught by instructors with a bachelor's degree when compared to students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ2: Is there a statistically significant difference between the exit exam test scores of male students taught by instructors with a bachelor's degree when compared to male students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ3: Is there a statistically significant difference between the exit exam test scores of female students taught by instructors with a bachelor's degree when compared to female students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

Hypotheses

H₀1: There is no statistically significant difference between the exit exam test scores of students taught by instructors with a bachelor's degree when compared to students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia.

H₀2: There is no statistically significant difference between the exit exam test scores of male students taught by instructors with a bachelor's degree when compared to male students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia.

H₀3: There is no statistically significant difference between the exit exam test scores of female students taught by instructors with a bachelor's degree when compared to female students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia.

Descriptive Statistics

Within this section the descriptive statistics for the COMPASS exit exam scores will be presented both in text and table form. Any student who had received a "W" indicating withdrawal from the course was removed from the pool prior to calculations. The entirety of the sample pool therefore includes only students who completed the course and took the COMPASS test.

Null Hypothesis H₀1

Table 4.1 shows the descriptive statistics for the COMPASS exit exam scores for all students who completed remedial reading during the testing period. The average of all test scores for students completing the course was 55.81. Test scores ranged from 39 to 74. Of the total number of students in this group ($N=115$), 56 had a teacher with a bachelor's degree ($n=56$), and 59 had a teacher with a master's degree ($n=59$).

Table 4.1

Descriptive Statistics for the COMPASS Exit Exam Scores for Students of Teachers of Remedial Reading During the Testing Period who completed the course

	Mean	Median	Mode	Standard Deviation
Teacher Group B ($n=56$)	51.27	52	52	6.94
Teacher Group M ($n=59$)	60.12	58	55	8.02
Total Students ($n=115$)	55.81	55	55	8.62

Null Hypothesis H₀2

Table 4.2 shows the descriptive statistics for the COMPASS exit exam scores for male students of teachers of remedial reading during the testing period. Of the total number of male students in this group ($n=59$), 25 were taught by teachers with bachelor's degrees ($n=25$), and 34 were taught by teachers with master's degrees ($n=34$).

Table 4.2

Descriptive Statistics for the COMPASS Exit Exam Scores for Male Students of Teachers of Remedial Reading During the Testing Period

	Mean	Median	Mode	Standard Deviation
Teacher Group B ($n=25$)	52.00	53	55	6.71
Teacher Group M ($n=34$)	60.53	58	72	8.41
Total Students ($n=59$)	56.92	55	55	8.77

Null Hypothesis H₀3

Table 4.3 shows the descriptive statistics for the COMPASS exit exam scores for female students of teachers of remedial reading during the testing period. Of the total number of female students in this group ($n=56$), 31 were taught by teachers with bachelor's degrees ($n=31$), and 25 were taught by teachers with master's degrees ($n=25$).

Table 4.3

Descriptive Statistics for the COMPASS Exit Exam Scores for Female Students of Teachers of Remedial Reading During the Testing Period

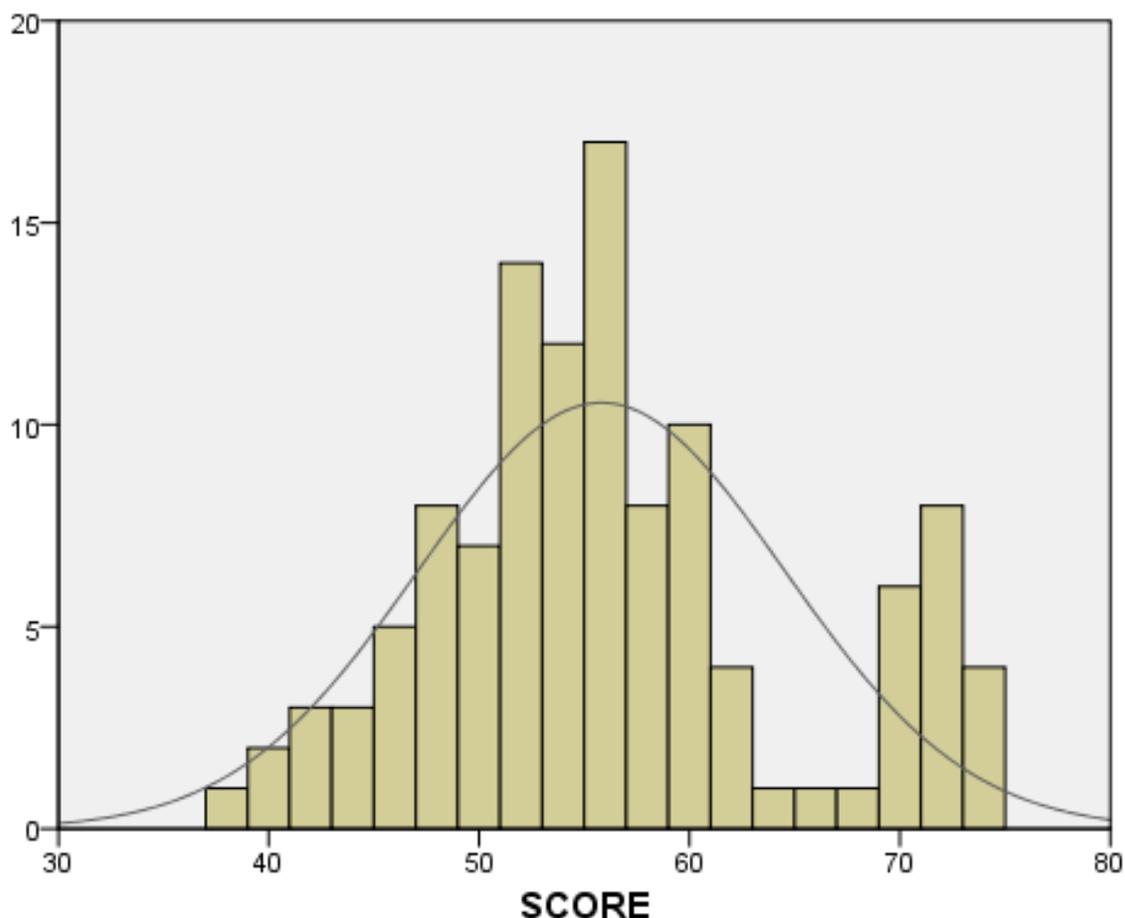
	Mean	Median	Mode	Standard Deviation
Student Group B ($n=31$)	50.68	51	48	7.17
Student Group M ($n=25$)	59.56	58	54	7.59
Total Students ($n=56$)	54.64	54	55	8.56

Assumption Tests

As to the question of total students within Teacher Group B and Teacher Group M, assumptions were evaluated using the Levene's Test for Equality of Variances. Per Warner (2013), "researchers hope that this assumption is not violated, and thus, they usually hope the F ratio for the Levene test will be nonsignificant" (p. 163). The assumption of normality was tested

by viewing the histogram for a normal, bell-shaped curve with a few outliers. Figure 4.1 displays the histogram for this sample ($N=115$).

Figure 4.1 Histogram for entire sample ($N=115$) by scores



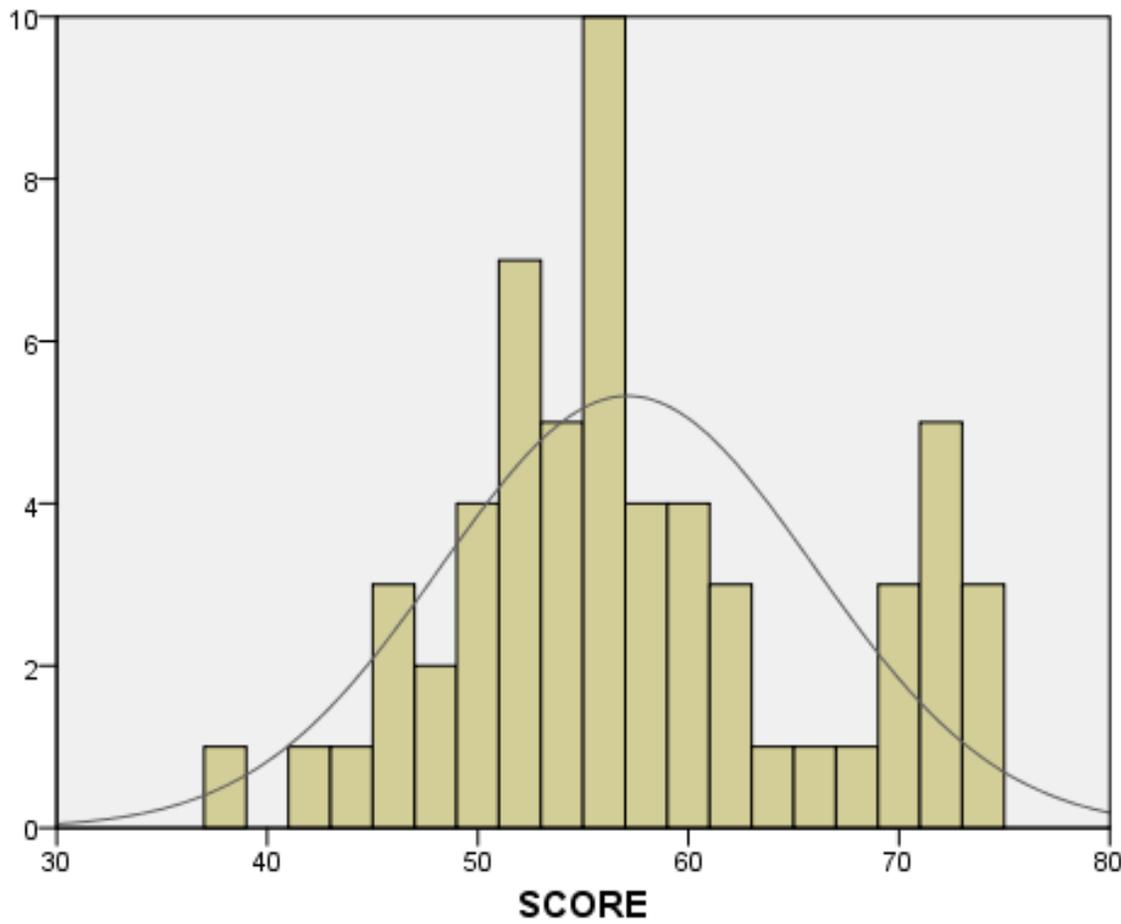
Null Hypothesis H_0 1

As to the question of all students ($N=115$) within Teacher Group B ($n=31$) and Teacher group M ($n=84$), the Levene's Test for Equality of Variances reflects an F of .018. This being less than .05, the equal variance is not assumed, thus the equal variances not assumed measure is used for this hypothesis. The assumption of normality was tested by viewing a histogram showing a normal, bell-shaped curve.

Null Hypothesis H₀2

As to the question of male students within Teacher Group B and Teacher Group M, the Levene’s Test for Equality of Variances reflects an *F* of .040. This being less than .05, the equal variance is not assumed, thus the equal variances not assumed measure is used for this hypothesis. The assumption of normality was tested by viewing a histogram showing a normal, bell-shaped curve with a few outliers. Figure 4.2 displays the histogram for this sample (*n*=59).

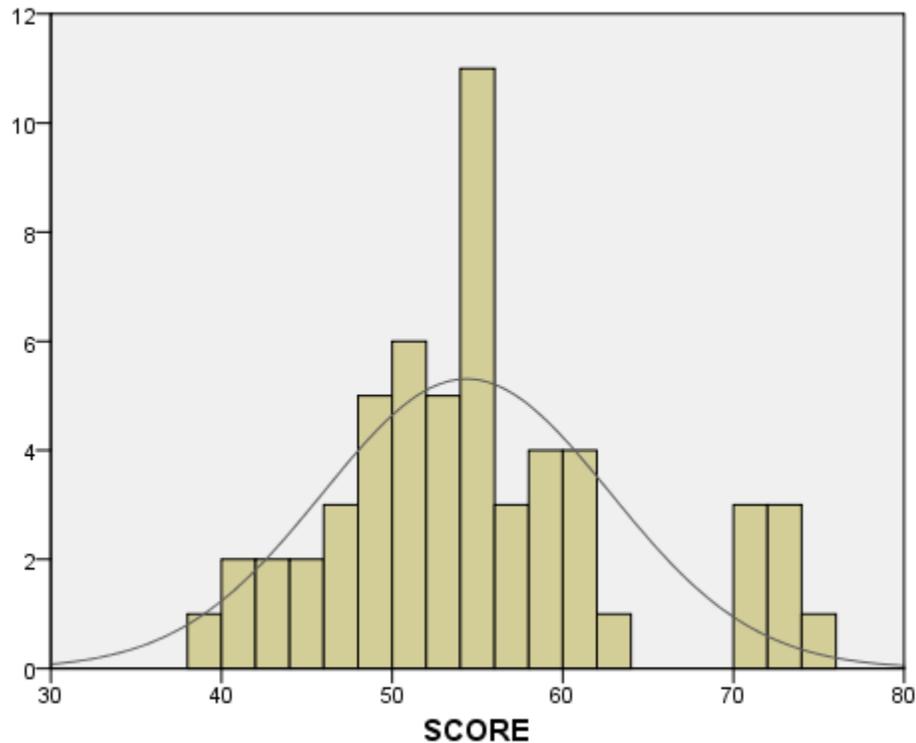
Figure 4.2 Histogram for male students (n=59) by scores



Null Hypothesis H₀₃

As to the question of female students within Teacher Group B and Teacher Group M, the Levene's Test for Equality of Variances reflects an F of .133. This being greater than .05, the equal variance is assumed, thus the equal variances assumed measure is used for this hypothesis. The assumption of normality was tested by viewing a histogram showing a normal, bell-shaped curve with few outliers. Figure 4.3 displays the histogram for this sample ($n=56$).

Figure 4.3 Histogram for female students ($n=56$) by scores



Results

A series of independent t -tests were conducted to evaluate whether a statistically significant difference exists between the males, females and total student population taking the

COMPASS exam as an exit criteria for remedial reading courses taught by teachers with both bachelor's and master's degrees. A total of 115 of students completed the COMPASS test which was used as an exit exam. There were 59 males and 56 females within the testing groups. Of these, 56 total students had teachers with bachelor's degrees, among which 25 were male and 31 were female. Of the total, 59 students had teachers with master's degrees, among which 34 were male and 25 were female.

Null Hypothesis One

An independent *t*-test was conducted to evaluate whether a statistically significant difference exists between the mean COMPASS scores of all students who were enrolled in a remedial reading course taught by teachers with bachelor's degrees (Teacher Group B) and those who were enrolled in a remedial reading course taught by teacher with master's degrees (Teacher Group M). The results of the independent *t* test were significant, $t(113) = -6.31, p = 0.01$, indicating that there is a significant difference between the scores of teacher group B ($M = 51.27, SD = 6.94, n = 56$) and the scores of teacher group M ($M = 60.12, SD = 8.02, n = 59$). The 95% confidence interval indicates the true mean to be within the field 54.75 and 56.87. Effect size as rated by Cohen's $d = 1.171$ indicating a very large difference in the means. The 95% confidence interval indicates the true mean to be within the field 54.20 and 57.42.

If $t \text{ stat} < -t \text{ critical}$, then the null is rejected. In that $t \text{ stat}$ equals -6.62 and $t \text{ critical}$ is 1.66 , the formula applies thusly: $-6.62 < -1.66$, ergo, the null must be rejected: H_01 : There is no statistically significant difference between the exit exam test scores of students taught by instructors with a bachelor's degree when compared to students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia.

Cohen's d is calculated using the difference of means in two groups divided by the pooled standard deviations which is calculated by taking the square root of the result of the square of the first standard deviation and the square of the second standard deviation and dividing that sum by 2. This information indicates if the difference is significant enough to have practical meaning. The effect size was determined use the formula Cohen's d ($M_1 - M_2 / \sqrt{SD_1^2 + SD_2^2 / 2}$). In this case, that means that $60.1 - 51.3 / \sqrt{8.02^2 + 6.94^2 / 2}$ which equals 1.171. Under Cohen (1988), this is a "Very Large" effect size (p. 40), and indicates a substantial indicator for the difference in means is likely to be degree level of the instructor. Based on the results of the independent t test even using a Bonferroni correction of an experiment-wise level of $\alpha=.05$ and $k=3$, such that the formula is $PC_\alpha = .05/3 = .02$, were $t(113) = -6.31$, $p = 0.01$, thus null hypothesis one was rejected.

Null Hypothesis Two

An independent t -test was also conducted to evaluate whether a statistically significant difference exists between the mean COMPASS scores of male students who were enrolled in a remedial reading course taught by teachers with bachelor's degrees (Teacher Group B) and those who were enrolled in a remedial reading course taught by teacher with master's degrees (Teacher Group M). The results of the independent t test were not significant, $t(57.00) = 4.33$, $p = 0.02$, Cohen's $d = 1.10$ indicating that there is not a significant difference between the scores of students of Teacher Group B ($M = 52.00$, $SD = 6.71$, $n = 25$) and the scores of students of Teacher Group M ($M = 60.53$, $SD = 8.41$, $n = 34$). Effect size as rated by Cohen's $d = 1.102$. Under Cohen (1988), this is a "Very Large" effect size (p. 40), and indicates a substantial indicator for the difference in means is likely to be degree level of the instructor. The 95% confidence interval indicates the true mean to be within the field 55.27 and 57.47. Due to the

application of the Bonferroni correction, this null hypothesis cannot be rejected. However, this issue requires further study.

If $t_{\text{Stat}} > t_{\text{Critical}}$ two-tail then the null is rejected. In that t_{stat} equals 4.33 and t_{critical} is 2.00, the formula applies thusly: $4.33 > 2.00$, ergo, it would seem the null would be rejected: H_0 : There is no statistically significant difference between the exit exam test scores of male students taught by instructors with a bachelor's degree when compared to male students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia. However, as explained below, the Bonferroni correction applies. The effect size was determined use the formula Cohen's d ($M_1 - M_2 / \sqrt{SD_1^2 + SD_2^2 / 2}$). In this case, that means that $60.53 - 52.00 / \sqrt{8.41^2 + 6.71^2 / 2}$ which equals 1.102. Under Cohen (1988), this is a "Very Large" effect size (p. 40), and indicates a substantial indicator for the difference in means is likely to be degree level of the instructor. Based on the results of the independent t test using a Bonferroni correction of an experiment-wise level of $\alpha = .05$ and $k=3$, such that the formula is $PC_{\alpha} = .05/3 = .02$, where $t(57.00) = 4.33$, $p = 0.02$, null hypothesis two cannot be rejected. However, this issue requires further study.

Null Hypothesis Three

A third independent t -test was conducted to evaluate whether a statistically significant difference exists between the mean COMPASS scores of female students who were enrolled in a remedial reading course taught by teachers with bachelor's degrees (Teacher Group B) and those who were enrolled in a remedial reading course taught by teacher with master's degrees (Teacher Group M). The results of the independent t test were not significant, $t(50.00) = 4.46$, $p = 0.02$, Cohen's $d = 1.21$ indicating that there is not a significant difference between the scores of students of Teacher Group B ($M = 50.68$, $SD = 7.17$, $n = 31$) and the scores of students of

Teacher Group M ($M = 59.56$, $SD = 7.59$, $n = 25$). Effect size as rated by Cohen's $d = 1.21$ indicating a very large difference in the means. The 95% confidence interval indicates the true mean to be within the field 52.86 and 55.27. Due to the application of the Bonferroni correction, this null hypothesis cannot be rejected. However, this issue requires further study.

If $t_{Stat} > t_{Critical}$ two-tail then the null is rejected. In that t_{stat} equals 4.46 and $t_{critical}$ is 2.01, the formula applies thusly: $4.46 > 2.01$, ergo, the null would seem to be rejected: H_{03} : There is no statistically significant difference between the exit exam test scores of female students taught by instructors with a bachelor's degree when compared to female students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia. However, the Bonferroni correction applies as explained below. The effect size was determined use the formula Cohen's d ($M_1 - M_2 / \sqrt{SD_1^2 + SD_2^2 / 2}$). In this case, that means that $59.56 - 50.68 / \sqrt{7.17^2 + 7.59^2 / 2}$ which equals 1.21. Under Cohen (1988), this is a "Very Large" effect size (p. 40), and indicates a substantial indicator for the difference in means is likely to be degree level of the instructor. The results of the independent t test using an Bonferroni correction of an experiment-wise level of $\alpha = .05$ and $k=3$, such that the formula is $PC_{\alpha} = .05/3 = .02$, were $t(50.00) = 4.46$, $p = 0.02$, thus null hypothesis three cannot be rejected. This issue requires further study.

Summary

The statistical analysis of the three research questions has resulted in the rejection of the null hypotheses in one area. Null hypothesis one was rejected, and a statistical significance determined when comparing COMPASS scores among all students enrolled in remedial reading during the testing period with teachers assigned to group based on holding a bachelor's degree (Teacher Group B) or a master's degree (Teacher Group M). Null hypothesis two cannot be

rejected and a statistical significance determined when comparing COMPASS scores among male students enrolled in remedial reading during the testing period with teachers assigned to group based on holding a bachelor's degree (Teacher Group B) or a master's degree (Teacher Group M). Null hypothesis three cannot be rejected and a statistical significance determined when comparing COMPASS scores among female students enrolled in remedial reading during the testing period with teachers assigned to group based on holding a bachelor's degree (Teacher Group B) or a master's degree (Teacher Group M).

CHAPTER FIVE: CONCLUSIONS

Overview

This chapter provides a discussion of the study including the problem statement, a review of the methodology, and a summary of the results. There will also be a discussion on conclusions reached, implications of the study, limitations of the study, and recommendations for future research.

Discussion

The purpose of this non-experimental quantitative causal-comparative study was to determine the difference between completion affects (dependent variable) and teacher education (independent variable) on students of either gender or a combined gender pool in remedial reading at a mid-size four-year university in rural Appalachia. This study sought to address a gap in the literature specific to if greater educational achievement on the part of the instructor relates directly to greater educational efficacy for the remedial reading student. Efficacy for the remedial reading student was to be measured using the COMPASS exit exam scores recorded within the school archives for a period of terms sufficient to provide an effective sample size. The students taking the COMPASS exam were analyzed in three sets (total, males, females) against two levels of teacher degree (bachelor's and master's). The research applied a theoretical framework that greater degree level would provide greater efficacy in remedial reading programs.

Doyle (2012) presented that there was “no such thing as remediation” (p. 60). However, the wealth of information provided suggests not only is there such a thing, but that it is a prevalent focus of effort for many of the incoming college students (Bahr, 2012; Glessner, 2015; Howell, 2011). A variety of efforts have been put towards these students in a goal toward greater success. Some have been more helpful than others for all the differing students. While ability-

grouping may reflect improvements for some students, others may benefit more from computer-integrated learning systems that adapt to learning paces. Engaging students in the college community and providing mentorship helps some students, while other benefit more from seminar, gateway, or bridge programs. The elimination of programs for financial reasons or due to the statistical deficit of graduates among remediation students has been suggested as well. The reduction in teaching staff both in quantity and degree level must also affect these issues.

The students at this mid-size, midwestern, four-year university in the foothills of Appalachia are an eclectic set. As such, they are no more or less deserving than students in urban areas, or students of the rural areas. The caliber of instruction is a critical facet. An increasing number of adjunct faculty nationwide are filling a gap created by funding deficits. While many of these adjuncts are qualified, credentialed, and capable, some are more specialized in their own field rather than the field of education. Further, the degrees they hold may or may not match the field in which they are teaching. Regardless, the advanced degree holders can offer more to the students who have the greatest needs. That, then, was the focus of this study. If greater education for the instructor can engage the student more and enhance that student's learning better, then that student will more likely stay in the school. Retention is critical to degree attainment. Students cannot graduate if they do not stay.

While studies (Chingos, 2016; Glessner, 2015; Shields & O'Dwyer, 2017) have indicated better educated teachers produce higher level scholars, none of them focused on remedial reading. Remedial readers have some of the greatest deficits to education at the collegiate level. University level reading is tedious and complicated. It is also, however, required for completion of higher level classwork. The ability to read requires fluency and comprehension and can be difficult to judge. That is where the qualified teacher is essential.

This study used the COMPASS test to evaluate reading proficiency. The results to this study were “cloudy” due to the need to include the Bonferroni correction which is extremely conservative. The fact is that this study focused only on degree level of the teacher as well, and not the nature of the degree nor the experience in or since the degree was earned. Still, this study shows an impact. Teacher education does make a difference, at least in the group of all students. While this study could not reject the null hypothesis when the groups were divided by gender, that was due largely to the application of the Bonferroni correction. The Bonferroni correction requires a multiplication factor based on the results of the independent t test even using a Bonferroni correction of an experiment-wise level of $\alpha=.05$ and $k=3$, such that the formula is $PC_{\alpha} = .05/3 = .02$ causing an extremely low level of effect size to reject the null hypothesis.

Implications

The researcher chose a convenience sample of students enrolled in remedial reading at a mid-sized mid-western four-year university. All students enrolled in the course and desiring to move onward with their education had to take and pass an exit exam. During the period in consideration for this study, the exit exam was the COMPASS writing test. The participants were identified among the genders male and female. No participants indicated other than binary gender types.

Teachers engaged in the process were identified solely by degree level. The only degree levels indicated were baccalaureate and master’s. Consequently, the implications of this study apply only to those specific situations.

Limitations

This study was limited to students assigned to a remedial reading class on the basis of entrance exam scores. Further, the study evaluated only those students who were registered

throughout completion of the term and took the COMPASS exit exam. Those students in the sample were evaluated in comparison to their teachers to whom they had been randomly assigned. The teachers had either a Baccalaureate (Teacher Group B) or a Master's Degree (Teacher Group M). The tests compare results of the students against the two teacher groups as a whole and then as divided by gender into male and female. There were no other gender assignments available. There were no other degree levels of teachers involved.

Ex post facto data was used from the 2015-2016 school year. While data was closely held and no manipulation is involved, there is always a risk of data entry error aligning the student to class or the gender to the student. Further, there are external factors to student performance that were not evaluated for this study. For example, no student requiring accommodations was recognized; no indicators of extraneous impacts (i.e. weather, temperature control, illness, etc.) were given consideration. Students were not evaluated to see if there had been prior attempts to complete this course. Nor were student-teacher relationships evaluated to determine prior knowledge or understanding of one another. In that these things can all certainly impact the test scores on a placement exam such as COMPASS, these are limitations to this study.

Recommendations for Future Research

Due to the Bonferroni correction, the alpha level was such that the null could not be rejected. This study should be replicated at schools of similar sizes and regions as well as other sizes and in other regions. Schools of differing class sizes may have differing results as well. Further, studies like this should evaluate other aspects of teacher professionalism, to include: continuing education, experience, areas of study, etc. Student populations can be modified to classify relationships by age, ethnicity, commuter status, and class size, among other items.

Course content can be selected to be in the realms of mathematics, writing, first year experience; or to be specific to higher level studies.

While this study indicates that greater degree level among teaching staff may provide a statistically significant benefit for remedial reading students at a mid-size, mid-western, four-year university, the interactions between teacher and student and environment are multifaceted and each angle is worthy of study. Another perspective deals with the longitudinal factors.

This study should also be varied to determine if the impact of having higher educated teaching staff goes beyond the achievements of the term. Researchers should endeavor to evaluate retention and graduation rates of students who start with more qualified teachers. While this study focused on the post-secondary environment, the same question can be raised at every level of instruction. If we, as a society, place our most qualified teachers with our lowest achieving students, who knows what the impact may be. At the same time, we must question the impact if we fail to challenge our highest achieving students with our most qualified teachers.

Every student deserves the best possible education. That, however, must be balanced within an available pool of resources and allocated to best use. It is the perspective of this researcher that considering the large percentage of early drops and withdrawals from the courses, perhaps a larger student population per class size would allow for fewer, but more educated teachers. Still, such a program needs to give every student a chance. They deserve nothing less.

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APPENDICES

Contents

Appendix A (IRB from University Alpha) 109

Appendix B (IRB from Liberty University) 110

Appendix A

IRB from University Alpha

From: Ed Kehres <ekehres@[REDACTED]>

Sent: Tuesday, September 12, 2017 3:44:26 PM

To: Davis, Deb

Subject: RE: IRB Exemption 2945.080717: Remedial English: Teacher Input Student Output

As Chair of the [REDACTED] IRB, I approve your study as exempt from IRB review. This approval is secondary to the primary approval from Liberty University. Please note that any changes to your research require approval from Liberty University and [REDACTED].

Good Luck with your research.

Edward Kehres, PhD., OTR/L
Chair, IRB Committee



Appendix B

IRB from Liberty University

LIBERTY UNIVERSITY
INSTITUTIONAL REVIEW BOARD

August 7, 2017

Deborah Davis

IRB Exemption 2945.080717: Remedial English: Teacher Input Student Output

Dear Deborah Davis,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under exemption category 46.101(b)(4), which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46.101(b):

(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Please note that this exemption only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued exemption status. You may report these changes by submitting a change in protocol form or a new application to the IRB and referencing the above IRB Exemption number.

If you have any questions about this exemption or need assistance in determining whether possible changes to your protocol would change your exemption status, please email us at irb@liberty.edu

Sincerely,



Administrative Chair of Institutional Research
The Graduate School

LIBERTY
UNIVERSITY

2100 College Street, Lynchburg, Virginia 24501-3440

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INSTITUTIONAL REVIEW BOARD

APPLICATION FOR THE USE OF HUMAN RESEARCH PARTICIPANTS

IRB APPLICATION #: (To be assigned by the IRB)

I. APPLICATION INSTRUCTIONS

1. Complete each section of this form, using the gray form fields (use the tab key).
2. If you have questions, hover over the blue (?), or refer to the [IRB Application Instructions](#) for additional clarification.
3. Review the [IRB Application Checklist](#).
4. Email the completed application, with the following supporting documents (as separate word documents) to irb@liberty.edu:
 - a. Consent Forms, Permission Letters, Recruitment Materials
 - b. Surveys, Questionnaires, Interview Questions, Focus Group Questions
5. If you plan to use a specific Liberty University department or population for your study, you will need to obtain permission from the appropriate department chair/dean. Submit documentation of permission (email or letter) to the IRB along with this application and check the indicated box below verifying that you have done so.
6. **Submit one signed copy of the signature page (available on the [IRB website](#)) to any of the following:**
 - a. Email: As a scanned document to irb@liberty.edu
 - b. Fax: 434-522-0506
 - c. Mail: IRB 1971 University Blvd. Lynchburg, VA 24515
 - d. In Person: Green Hall, Suite 1887
7. Once received, applications are processed on a first-come, first-served basis.
8. Preliminary review may take up to 3 weeks.
9. Most applications will require 3 sets of revisions.
10. The entire process may take between 1 and 2 months.
11. *We cannot accept applications in formats other than Microsoft Word. Please do not send us One Drive files, Pdfs, Google Docs, or Html applications.*

Note: Applications and supporting documents with the following problems will be returned immediately for revisions:

1. Grammar, spelling, or punctuation errors
2. Lack of professionalism
3. Lack of consistency or clarity
4. Incomplete applications

Failure to minimize these errors **will** cause delays in your processing time

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II. BASIC PROTOCOL INFORMATION

1. STUDY/THESIS/DISSERTATION TITLE (?)

Title: Remedial English: Teacher input student output

2. PRINCIPAL INVESTIGATOR & PROTOCOL INFORMATION (?)

Principal Investigator (person conducting the research): Deborah Rushing Davis

Professional Title (Student, Professor, etc.): Student

School/Department (School of Education, LUCOM, etc.): School of Education

Phone: 740-820-5768

LU Email: ddavis77@liberty.edu

Check all that apply:

- | | |
|---|---|
| <input type="checkbox"/> Faculty | <input checked="" type="checkbox"/> Online Graduate Student |
| <input type="checkbox"/> Staff | <input type="checkbox"/> Residential Undergraduate Student |
| <input type="checkbox"/> Residential Graduate Student | <input type="checkbox"/> Online Undergraduate Student |

This research is for:

- | | |
|--|--|
| <input type="checkbox"/> Class Project | <input type="checkbox"/> Master's Thesis |
| <input type="checkbox"/> Scholarly Project (DNP Program) | <input type="checkbox"/> Doctoral Dissertation |
| <input type="checkbox"/> Faculty Research | <input checked="" type="checkbox"/> Other: |

If applicable, indicate whether you have defended and passed your dissertation proposal:

- N/A
- No (Provide your defense date):
- Yes (Proceed to Associated Personnel Information)

3. ASSOCIATED PERSONNEL INFORMATION (?)

Co-Researcher(s): None

School/Department:

Phone:

LU/Other Email:

Faculty Chair/Mentor(s): Dr. Sarah E. Horne

School/Department: College of General Studies/English Department

Phone: 434-547-7186

LU/Other Email: sehome@liberty.edu

Non-Key Personnel (Reader, Assistant, etc.):

School/Department:

Phone:

LU/Other Email:

Consultant(s) (required for Ed.D Candidates): Dr. Michelle Barthlow

School/Department: School of Education/Teacher Education

Phone: 770-833-6657

LU/Other Email: mebarthlow@liberty.edu

4. USE OF LIBERTY UNIVERSITY PARTICIPANTS (?)

Do you intend to use LU students, staff, or faculty as participants OR LU students, staff, or faculty data in your study?

No (Proceed to Funding Source)

Yes (Complete the section below)

<input checked="" type="checkbox"/> If Participants/Data Sets:	Department:
Class(es)/Year(s):	Department Chair:

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Obtaining permission to utilize LU participants <i>(check the appropriate box below):</i> SINGLE DEPARTMENT/GROUP: If you are including faculty, students, or staff from a single department or group, you must obtain permission from the appropriate Dean, Department Chair, or Coach and submit a signed letter or date/time stamped email to the IRB indicating approval to use students from that department or group. You may submit your application without having obtained this permission; however, the IRB will not approve your study until proof of permission has been received. <input type="checkbox"/> I have obtained permission from the appropriate Dean/Department Chair/Coach, and attached the necessary documentation to this application. <input type="checkbox"/> I have sought permission and will submit documentation to the IRB once it has been provided to me by the appropriate Dean/Department Chair/Coach.
MULTIPLE DEPARTMENTS/GROUPS: If you are including faculty, students, or staff from multiple departments or groups (i.e., all sophomores or LU Online), the IRB will need to seek administrative approval on your behalf. <input type="checkbox"/> I am requesting that the IRB seek administrative approval on my behalf.

5. FUNDING SOURCE (2) Is your research funded? <input checked="" type="checkbox"/> No (<i>Proceed to Study Dates</i>) <input type="checkbox"/> Yes (<i>Complete the section below</i>) Grant Name/Funding Source/Number: Funding Period (Month & Year):
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6. STUDY DATES (2) When will you perform your study? <i>(Approximate dates for collection/analysis):</i> Start <i>(Month Year):</i> August 2017 Finish <i>(Month Year):</i> December 2017

7. COMPLETION OF REQUIRED CITI RESEARCH ETHICS TRAINING (2) List Course Name(s) <i>(Social and Behavioral Researchers, etc.):</i> School of Education Date(s) of Completion: 4/27/2016
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III. OTHER STUDY MATERIALS AND CONSIDERATIONS

8. STUDY MATERIALS LIST (2) Please indicate whether your proposed study will include any of the following:	
Recording/photography of participants <i>(voice, video, or images)?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Participant compensation <i>(gift cards, meals, extra credit, etc.)?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Advertising for participants <i>(flyers, TV/Radio advertisements)?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
More than minimal psychological stress?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Confidential material <i>(questionnaires, surveys, interviews, test scores, etc.)?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Extra costs to the participants <i>(tests, hospitalization, etc.)?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The inclusion of pregnant women <i>(for medical studies)?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
More than minimal risk?*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Alcohol consumption?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Waiver of the informed consent document?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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Protected Health Information (from health practitioners/institutions)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
VO ₂ Max Exercise?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Pilot study procedures (which will be published/included in data analysis)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Please indicate whether your proposed study will include the use of blood:	
Use of blood?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Total amount of blood:	
Blood draws over time period (days):	
Please indicate whether your proposed study will include any of the following materials:	
The use of rDNA or biohazardous material?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
The use of human tissue or cell lines?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Fluids that could mask the presence of blood (including urine/feces)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Use of radiation or radioisotopes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>*Note: Minimal risk is defined as "the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in everyday life or during the performance of routine physical or physiological examinations or tests. [45 CFR 46.102(i)]. If you are unsure if your study qualifies as minimal risk, contact the IRB.</i>	

9. INVESTIGATIONAL METHODS (?)	
Please indicate whether your proposed study will include any of the following:	
The use of an Investigational New Drug (IND) or an Approved Drug for an Unapproved Use?	
<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Yes (Provide the drug name, IND number, and company):	
The use of an Investigational Medical Device or an Approved Medical Device for an Unapproved Use?	
<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Yes (Provide the device name, IDE number, and company):	

IV. PURPOSE

<p>10. PURPOSE OF RESEARCH (?)</p> <p>Write an original, brief, non-technical description of the purpose of your research.</p> <p>Include in your description your research hypothesis/question, a narrative that explains the major constructs of your study, and how the data will advance your research hypothesis or question. This section should be easy to read for someone not familiar with your academic discipline: Across America, high school students exhibit varying levels of stress-induced anxiety as they sit for the four hour college placement exam. After years of exposure from teaching to the test to meet established curriculum guidelines in the classroom, many of these students did not take a test preparation program before sitting for their college placement exam. Whether it is the American College Test (ACT), the Scholastic Aptitude Test (SAT) or the Computer Adaptive Placement And Support Assessment (Compass) placement exam, students enter the test and the outcome indicates, among other things, whether or not they enter freshman coursework or remedial coursework.</p> <p>It would seem that students entering college could already read and read well, but the test results and studies present a different view. Students who are placed into remedial reading are there for a variety of reasons. Some may have undiagnosed learning disabilities. Others may have emotional or physical stressors that impacted their ability to perform on the test. Regardless, for the reason for placement into remedial reading, the impact of the instructor's</p>
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education level on those students' ability to increase skill levels and progress from remedial to college coursework can be measured by the exit exams and warrants study. Other studies related to beginning and ending abilities abound (Bahr, 2012; Chou C., 2013; Methvin & Markham, 2015). However, despite the abounding work on remedial or developmental courses, few focus on the issues of concern in reading competency.

Gaal (2014) posits the importance of follow-on education for instructors not to be underrated, particularly as regards the impact on students at the post-secondary level. Guy, Cornick, and Beckford (2015) present, "While cognitive measures influence student outcomes, there are additional non-cognitive, affective student characteristics which are related to student performance" (p. 1). These student characteristics are better understood and more effectively applied by professors better instructed in the arts and sciences of education.

Research Questions:

RQ1: Is there a statistically significant difference between the exit exam test scores of students taught by instructors with a bachelor's degree when compared to students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ2: Is there a statistically significant difference between the exit exam test scores of male students taught by instructors with a bachelor's degree when compared to male students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

RQ3: Is there a statistically significant difference between the exit exam test scores of female students taught by instructors with a bachelor's degree when compared to female students taught by instructors with a master's degree after one semester of remedial reading at a mid-size four-year university in the foothills of Appalachia?

V. PARTICIPANT INCLUSION/EXCLUSION CRITERIA

II. STUDY POPULATION (?)
Provide the inclusion criteria for the participant population (<i>gender, age range, ethnic background, health status, occupation, employer, etc.</i>): Male and female freshman students who were assigned and enrolled in remedial reading between Fall 2012 and Spring 2017 at a mid-size, mid-western, four-year university in the foothills of Appalachia of any ethnicity, background, health status, or occupation. Age is between 18 and 65.
Provide a rationale for selecting the above population: Convenience sample
Are you related to any of your participants? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (<i>Explain</i>):
Indicate who will be excluded from your study population (<i>e.g., persons under 18 years of age</i>): Persons under 18 years of age.

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If applicable, provide rationale for involving any special populations (e.g., children, ethnic groups, mentally disabled, low socio-economic status, prisoners); N/A

Provide the maximum number of participants you plan to enroll for each participant population and justify the sample size (You will not be approved to enroll a number greater than the number listed. If at a later time it becomes apparent that you need to increase your sample size, submit a *Change in Protocol Form* and wait for approval to proceed): 150. The data from each term will be added until sufficient data exists for a study of at least 100 students. Since there is no access to data prior to approval for the study, when the study begins data will be added by term allowing for excess that may be excluded by age as those under 18 will be eliminated.

ANSWER THE FOLLOWING QUESTION ONLY IF YOU ARE CONDUCTING A PROTOCOL WITH NIH, FEDERAL, OR STATE FUNDING:

Researchers sometimes believe their particular project is not appropriate for certain types of participants. These may include, for example, women, minorities, and children. If you believe your project should not include one or more of these groups, please provide your justification for their exclusion. Your justification will be reviewed according to the applicable NIH, federal, or state guidelines: N/A

12. TYPES OF PARTICIPANTS (2)

Who will be the focus of your study? (Check all that apply)

<input checked="" type="checkbox"/> Normal Participants (Age 18-65)	<input type="checkbox"/> Pregnant Women
<input type="checkbox"/> Minors (Under Age 18)	<input type="checkbox"/> Fetuses
<input type="checkbox"/> Over Age 65	<input type="checkbox"/> Cognitively Disabled
<input checked="" type="checkbox"/> University Students	<input type="checkbox"/> Physically Disabled
<input type="checkbox"/> Active-Duty Military Personnel	<input type="checkbox"/> Participants Incapable of Giving Consent
<input type="checkbox"/> Discharged/Retired Military Personnel	<input type="checkbox"/> Prisoners or Institutional Individuals
<input type="checkbox"/> Inpatients	<input type="checkbox"/> Specific Ethnic/Racial Group(s)
<input type="checkbox"/> Outpatients	<input type="checkbox"/> Other potentially elevated risk populations
<input type="checkbox"/> Patient Controls	<input type="checkbox"/> Participant(s) related to the researcher

Note: Only check the boxes if the participants will be the focus (for example, ONLY military or ONLY students). If they just happen to be a part of the broad group you are studying, you only need to check "Normal Participants." Some studies may require that you check multiple boxes (e.g., Korean males, aged 65+).

VI. RECRUITMENT OF PARTICIPANTS

13. CONTACTING PARTICIPANTS (2)

Describe in detail how you will contact participants regarding this study (include the method(s) used—email, phone call, social media, snowball sampling, etc.): This student uses archived data from a university. The students will be completely anonymous. Within the archived data, they are identified only by an identification number. The researcher will not have access to the crossover database which links student name to identification.

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14. SUBMISSION OF RECRUITMENT MATERIALS (?)
Submit a copy of all recruitment letters, scripts, emails, flyers, advertisements, or social media posts you plan to use to recruit participants for your study as separate Word documents with your application. Recruitment templates are available on the IRB website.
Check the appropriate box:
<input type="checkbox"/> All of the necessary recruitment materials will be submitted with my application.
<input checked="" type="checkbox"/> My study strictly uses archival data, so recruitment materials are not required.

15. LOCATION OF RECRUITMENT (?)
Describe the location, setting, and timing of recruitment: N/A

16. SCREENING PROCEDURES (?)
Describe any screening procedures you will use when recruiting your participants (<i>i.e.</i> , screening survey, database query, verbal confirmation, etc.): N/A

17. RELATIONSHIPS (?)
Does the researcher have a position of grading or professional authority over the participants (<i>e.g.</i> , is the researcher the participants' teacher or principal)?
<input checked="" type="checkbox"/> No (<i>Proceed to Procedures</i>)
<input type="checkbox"/> Yes (<i>Explain what safeguards are in place to reduce the likelihood of compromising the integrity of the research, e.g., addressing the conflicts in the consent process and/or emphasizing the pre-existing relationship will not be impacted by participation in the research.</i>)

VII. RESEARCH PROCEDURES

18. PROCEDURES (?)		
Write an original, non-technical, step by step, description of what your participants will be asked to do during your study and data collection process. If you have multiple participant groups, (<i>ex: parents, teachers, and students</i>) or control groups and experimental groups, please specify which group you are asking to complete which task(s). You do not need to list signing/reading consent as a step:		
Step/Task/Procedure	Time (Approx.)	Participant Group(s) (All, Group A, Group B, Control Group, Experimental Group, etc.)
1. Information will be requested from the Shawnee State University Department of Institutional Research.		gbaker25 2017-08-03 14:34:15

Please provide information about your data collection plans.

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2. I give a list of required fields, they give me raw data. Fields requested are: Student identification number, course registration number and section, age, ethnicity, gender, and residency of student, faculty identification number and degree level of faculty member, exit exam (COMPASS) score.	
3.	

19. SUBMISSION OF DATA COLLECTION INSTRUMENTS/MATERIALS (?)
Submit a copy of all instruments, surveys, interviews questions, outlines, observation checklists, prompts, etc. that you plan to use to collect data for your study as separate Word documents with your application. Pdfs are ONLY acceptable for proprietary instruments.
Check the appropriate box:
<input type="checkbox"/> All of the necessary data collection instruments will be submitted with my application.
<input checked="" type="checkbox"/> My study strictly uses archival data, so data collection instruments are not required.

20. STUDY LOCATION (?)
Please describe the location(s)/site(s) in which the study will be conducted. Be specific (include city, state, school district, clinic, etc.): Shawnee State University, Portsmouth, Ohio. Electronic Institutional Review Board to be forwarded to IRB Liberty.

*Note: For School of Education research, investigators must submit documentation of permission to use the research site (district level is acceptable) to the IRB prior to receiving approval. You must submit this documentation to submitting your IRB application, however, **do not** begin recruiting participants. If you receive a conditional approval letter from the IRB in order to obtain permission, one can be provided once all necessary documentation has been received and are accepted. Contact the IRB with any questions regarding the process.*

gbaker25
2017-08-03 14:38:09

Please see the note concerning the documentation of permission/approval from Shawnee.

VIII. DATA ANALYSIS

21. NUMBER OF PARTICIPANTS/DATA SETS (?)
Estimate the number of participants to be enrolled or data sets to be collected.

22. ANALYSIS METHODS (?)
Describe <i>how</i> the data will be analyzed and what will be done with the data and the resulting analysis, including any plans for future publication or presentation: To answer these research questions, the use of three t-tests was employed to analyze the exit exam scores for remedial reading students from courses with teachers of varying educational levels. The use of SPSS®, Excel®, Tableau®, and Word®, are anticipated. Data will be collected and compiled reporting only resulting statistical data to include basic demographics and those data needed to answer the research questions. Copy of the finished product will be provided to the subject university.

IX. PARENTAL/GUARDIAN CONSENT

23. PARENTAL/GUARDIAN CONSENT REQUIREMENTS (?)
Does your study require parental/guardian consent? (If your participants are under 18, parental guardian consent is required in most cases.)
<input checked="" type="checkbox"/> No (Proceed to Child Assent)
<input type="checkbox"/> Yes (Answer the following question)
Does your study entail greater than minimal risk without the potential for benefits to the participant?

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<input type="checkbox"/> No <input type="checkbox"/> Yes (<i>Consent of both parents is required</i>)
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X. ASSENT FROM CHILDREN

24. CHILD ASSENT (2)
Is assent required for your study? (<i>Assent is required unless the child is not capable due to age, psychological state, or sedation OR the research holds out the prospect of a direct benefit that is only available within the context of the research.</i>) <input checked="" type="checkbox"/> No (<i>Proceed to Consent Procedures</i>) <input type="checkbox"/> Yes
<i>Note: If the parental consent process (full or part) is waived (See XIII below) assent may be also. See the IRB's informed consent page for more information.</i>

XI. PROCESS OF OBTAINING INFORMED CONSENT

25. CONSENT PROCEDURES (2)
Describe in detail <i>how and when</i> you will provide consent information (<i>If applicable, include how you will obtain consent from participants and/or parents/guardians and/or child assent</i>): N/A

XII. USE OF DECEPTION

26. DECEPTION (2)
Are there any aspects of the study kept secret from the participants (<i>e.g., the full purpose of the study</i>)? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (<i>describe the deception involved and the debriefing procedures</i>):
Is deception used in the study procedures? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (<i>describe the deception involved and the debriefing procedures</i>):
<i>Note: Submit a post-experiment debriefing statement and consent form offering participants the option of having their data destroyed. A debriefing template is available on our website.</i>

XIII. WAIVER OR MODIFICATION FOR REQUIRED ELEMENTS IN THE INFORMED CONSENT PROCESS

27. WAIVER OF INFORMED CONSENT ELEMENTS (2)	<input checked="" type="checkbox"/> N/A
Does the research pose no more than minimal risk to participants (<i>i.e., no more risk than that of everyday activities</i>)? <input type="checkbox"/> No, the study is greater than minimal risk. <input type="checkbox"/> Yes, the study is minimal risk.	
Will the waiver have no adverse effects on participant rights and welfare? <input type="checkbox"/> No, the waiver will have adverse effects on participant rights and welfare. <input type="checkbox"/> Yes, the waiver will not adversely affect participant rights and welfare.	
Would the research be impracticable without the waiver? <input type="checkbox"/> No, there are other ways of performing the research without the waiver. <input type="checkbox"/> Yes, not having a waiver would make the study unrealistic. (<i>Explain</i>):	

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<p>Will participant debriefing occur (i.e., will the true purpose and/or deceptive procedures used in the study be reported to participants at a later date)?</p> <p><input type="checkbox"/> No, participants will not be debriefed.</p> <p><input type="checkbox"/> Yes, participants will be debriefed.</p> <p><i>Note: A waiver or modification of some or all of the required elements of informed consent is sometimes used in research involving deception, archival data, or specific minimal risk procedures.</i></p>

XIV. WAIVER OF SIGNED INFORMED CONSENT DOCUMENT

<p>28. WAIVER OF SIGNED CONSENT (?) <input checked="" type="checkbox"/> N/A</p> <p>Would a signed consent form be the only record linking the participant to the research?</p> <p><input type="checkbox"/> No, there are other records study questions linking the participants to the study.</p> <p><input type="checkbox"/> Yes, only the signed form would link the participant to the study.</p> <p>Does a breach of confidentiality constitute the principal risk to participants?</p> <p><input type="checkbox"/> No, there are other risks involved greater than a breach of confidentiality.</p> <p><input type="checkbox"/> Yes, the main risk is a breach of confidentiality.</p> <p>Does the research pose no more than minimal risk to participants (i.e., no more risk than that of everyday activities)?</p> <p><input type="checkbox"/> No, the study is greater than minimal risk.</p> <p><input type="checkbox"/> Yes, the study is minimal risk.</p> <p>Does the research include any activities that would require signed consent in a non-research context (e.g., liability waivers)?</p> <p><input type="checkbox"/> No, there are not any study related activities that would normally require signed consent</p> <p><input type="checkbox"/> Yes, there are study related activities that would normally require signed consent</p> <p>Will you provide the participants with a written statement about the research (i.e., an information sheet that contains all of the elements of an informed consent form but without the signature lines)?</p> <p><input type="checkbox"/> No, participants <u>will not</u> receive written information about the research.</p> <p><input type="checkbox"/> Yes, participants <u>will</u> receive written information about the research.</p> <p><i>Note: A waiver of signed consent is sometimes used in anonymous surveys or research involving secondary data. This does not eliminate the need for a consent document, but it eliminates the need to obtain participant signatures.</i></p>

XV. CHECKLIST OF INFORMED CONSENT/ASSENT

<p>29. STATEMENT (?)</p> <p>Submit a copy of all informed consent/assent documents as separate Word documents with your application. <u>Informed consent/assent templates</u> are available on our website. Additional information regarding <u>consent</u> is also available on our website.</p> <p>Check the appropriate box:</p> <p><input type="checkbox"/> All of the necessary consent/assent documents will be submitted with my application.</p> <p><input checked="" type="checkbox"/> My study strictly uses archival data, so consent documents are not required.</p>

XVI. PARTICIPANT PRIVACY AND CONFIDENTIALITY

<p>30. PRIVACY (?)</p>

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Describe what steps you will take to protect the privacy of your participants (e.g., *If you plan to interview participants, will you conduct your interviews in a setting where others cannot easily overhear?*): N/A

Note: Privacy refers to persons and their interest in controlling access to their information.

31. CONFIDENTIALITY (?)

How will you keep your data secure (i.e., *password-locked computer, locked desk, locked filing cabinet, etc.*)?: The researcher will not have access to the linking data between student population identification numbers and names, nor between faculty identification numbers and names, thus ensuring privacy.

Who will have access to the data (i.e., *the researcher and faculty mentor/chair, only the researcher, etc.*)?: NoOne

Will you destroy the data once the three-year retention period required by federal regulations expires?

- No
 Yes (Explain how the data will be destroyed):

Note: All research-related data must be stored for a minimum of three years after the end date of the study, as required by federal regulations.

32. ARCHIVAL DATA (?)

Is all or part of the data archival (i.e., *previously collected for another purpose*)?

- No (Proceed to Non-Archival Data)
 Yes (Answer the questions below)

Is the archival data publicly accessible?

- No (Explain how you will obtain access to this data): The subject university Department of Institutional Research will provide the data.
 Yes (Indicate where the data is accessible from, i.e., a website, etc.):

Will you receive the raw data stripped of identifying information (e.g., *names, addresses, phone numbers, email addresses, social security numbers, medical records, birth dates, etc.*)?:

- No (Describe what data will remain identifiable and why this information will not be removed):
 Yes (Describe who will link and/or strip the data—this person should have regular access to the data and should be a neutral party not involved in the study): The Department of Institutional Research will strip any links from the data.

Can the names or identities of the participants be deduced from the raw data?

- No (Place your initials in the box: I will not attempt to deduce the identity of the participants in this study): DRD
 Yes (Describe):

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<p>Please provide the list of data fields you intend to use for your analysis and/or provide the original instruments used in the study: Student identification number, course registration number and section, age, ethnicity, gender, and residency of student, faculty identification number and degree level of faculty member, exit exam (COMPASS) score. I will have no access to the linking database which would allow access to student names or other identifying information.</p>	
<p><i>Note: If the archival data is not publicly available, please provide the district letter or email. If you will receive permission.</i></p>	<p>gbaker25 2017-08-03 14:26:26</p>
<p>33. NON-ARCHIVAL DATA</p> <p>If you are using non-archival data, please provide the list of data fields you intend to use for your analysis and/or provide the original instruments used in the study: Student identification number, course registration number and section, age, ethnicity, gender, and residency of student, faculty identification number and degree level of faculty member, exit exam (COMPASS) score. I will have no access to the linking database which would allow access to student names or other identifying information.</p> <p><input checked="" type="checkbox"/> Yes, or other means—for study purposes only?</p> <p><input type="checkbox"/> N/A: I will not use non-archival data.</p> <p>No (Complete the "No" section below) Yes (Complete the "Yes" section below)</p>	
<p>**COMPLETE THIS SECTION IF YOU ANSWERED "NO" TO QUESTION 31**</p>	
<p>Can participant names or identities be deduced from the raw data?</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes (Describe):</p>	
<p>Will a person be able to identify a subject based on other information in the raw data (i.e., title, position, sex, etc.)?</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes (Describe):</p>	
<p>Describe the process you will use to collect the data and to ensure the confidentiality of the participants (i.e., you may know who participated, but participant identities will not be disclosed or pseudonyms will be used):</p>	
<p>Do you plan to maintain a list or codebook linking pseudonyms or codes to participant identities?</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes (Please list where this list codebook will be stored, whether it will be separate from your study data, and who will have access):</p>	
<p>**COMPLETE THIS SECTION IF YOU ANSWERED "YES" TO QUESTION 31**</p>	
<p>Describe the process you will use to collect the data to ensure that it is anonymous:</p>	

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<p>Place your initials in the box: I will not attempt to deduce the identity of the participants in this study:</p>
<p><i>Note: If you plan to use participant data (i.e., photos, recordings, videos, drawings) for presentations beyond data analysis for the research study (e.g., classroom presentations, library archive, or conference presentations) you will need to provide a materials release form to the participant.</i></p>

34. MEDIA USE (?)	
Will your participants be audio recorded?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Will your participants be video recorded?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Will your participants be photographed?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
COMPLETE THIS SECTION IF YOU ANSWERED "YES" TO ANY MEDIA USE	
<p>Include information regarding how participant data will be withdrawn if he or she chooses to leave the study*:</p>	
<p>Will your participants be audio recorded, video recorded, or photographed without their knowledge? **</p> <p><input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes (Describe the deception and debriefing procedures):</p>	
<p><i>*Note on Withdrawal: Add the heading "How to Withdraw from the Study" on the consent document and include a description of the procedures a participant must perform to be withdrawn.</i></p> <p><i>**Note on Deception: Attach a post-experiment debriefing statement and a post-deception consent form, offering the participants the option of having their recording/photograph destroyed and removed from the study.</i></p>	

XVII. PARTICIPANT COMPENSATION

35. COMPENSATION (?)	
<p>Will participants be compensated (e.g., gift cards, raffle entry, reimbursement)?</p> <p><input checked="" type="checkbox"/> No (Proceed to Risks)</p> <p><input type="checkbox"/> Yes (Describe):</p>	
<p>Will compensation be pro-rated if the participant does not complete all aspects of the study?</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes (Describe):</p>	
<p><i>Note: Research compensation exceeding \$600 per participant within a one-year period is considered income and will need to be filed on the participant's income tax returns. If your study is grant funded, Liberty University's Business Office policies might affect how you compensate participants. Contact the IRB for information on who to contact for guidance on this matter.</i></p>	

XVIII. PARTICIPANT RISKS AND BENEFITS

36. RISKS (?)

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Describe the risks to participants and any steps that will be taken to minimize those risks. (Risks can be physical, psychological, economic, social, or legal. If the only potential risk is a breach in confidentiality if the data is lost or stolen, state that here): N/A – Data will be stripped of identifiers other than student id with no access to linking data. Student numbers will be used only to preclude duplication.



Will alternative procedures or treatments that might be advantageous be made available?

- No
- Yes (Describe):

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[Note for IRB]: Confirmation of data is needed. If data will not be stripped of identifiers, risk exists.

ANSWER THE FOLLOWING QUESTION ONLY IF YOU ARE CONSIDERED GREATER THAN MINIMAL RISK

Describe provisions for ensuring necessary medical or professional in event of adverse effects to the participants (e.g., proximity of the research site to medical facilities, or your ability to provide counseling referrals in the event of distress):

37. BENEFITS (2)

Describe the possible direct benefits to the participants. (If participants are not expected to receive direct benefits, please state "No direct benefits." Completing a survey or participating in an interview will not typically result in direct benefits to the participant.): N/A

Describe any possible benefits to society: Through this study, it is hoped that the university will be better able to provide appropriate assignment to students to enhance the learning experience and best facilitate student academic success.

Evaluate the risk-benefit ratio. (Explain why you believe this study is worth doing, even with any identified risks.): There are no risks to participants.