COMPARING PERCEIVED COLLEGE PERSISTENCE BETWEEN STUDENTS TAKING

ONLINE OR RESIDENTIAL DUAL ENROLLMENT IN HIGH SCHOOL

by

Dustin Joseph Miller

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

Dual enrollment and online education are two factors of education that have become prevalent over the past decade. This rapid growth has resulted in higher attendance rates, but also higher dropout rates. It is the students' persistence to graduation that demands the attention of all stakeholders. There is an abundance of research showing the value of dual enrollment leading to student success at the collegiate level, but the purpose of this study is to differentiate between online and residential dual enrollment. This study used a causal comparative design to compare the two group means of first-year residential college students taking online dual enrollment courses or residential dual enrollment courses in high school. The research took place at a faith-based university. A survey was sent out to over 4,000 first-year residential students, creating a sample size of 222 students after removing unqualified participants. A *t*-test was used to determine that there was no significant difference in favorability scores between students taking online dual enrollment and residential dual enrollment. Prior research shows that the location of learning does not drastically affect the outcome, which is also the result of this study. It is apparent that the differences between online and face-to-face interaction continue to decrease with the advancement of technology. For future research, it is recommended to follow students through to graduation, as this study only looks at the favorability scores from an instrument predicting the likelihood to persist.

Keywords: dual enrollment, online education, persistence, retention, traditional education

Table of Contents

List of Tables

List of Figures

List of Abbreviations

Advanced Placement (AP)

College Persistence Questionnaire (CPQ)

Grade Point Average (GPA)

National Center for Education Statistics (NCES)

Social Cognitive Theory (SCT)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school. With the advancement of dual enrollment, it is important for stakeholders to understand the benefits of and limitations on college persistence. The content of Chapter One includes background, problem statement, purpose statement, significance, and helpful definitions.

Background

Attending college is an expectation for most students, but a recent study by the National Center for Education Statistics (NCES) (2018) found the six-year graduation rate for first-time students enrolled at a degree-granting four-year institution to be only 60 percent. In other words, 40 percent of students begin a bachelor's track but do not finish. This leads to many downfalls for students such as discouragement, lack of opportunity for employment in certain fields, and perhaps most devastating is the possible requirement to payback student loans without obtaining a degree. While high school counselors continue to push students towards post-secondary education, almost half of those students will not persist to college graduation. Knowing this, it is important that high school and college administrators find helpful tips and patterns to prepare their students before stepping foot on a college campus.

The issue of college persistence is a major topic of discussion in the field of education. The definitions of persistence and retention often vary depending on the source, and many times they are used as synonymous terms. The general definition for both terms refers to students staying enrolled in an institution from term to term or through graduation. The most common

theories of persistence reference the works of Alexander Astin and Vincent Tinto. Astin (1977) argued that students' involvement in college life experience correlates with student persistence to graduation. In order to improve retention, get the students involved in the overall college experience. Tinto (1999) specified that students' academic classroom experience lead to a greater feeling of involvement and persistence. Tinto frequently covered the rate of student departure and determined that many students did not persist to graduation due to lack of enjoyment of the academic components of college.

In the past decade, the rapid advancement of dual enrollment has been linked to consistent growth in college attendance. Students earning dual enrollment credits in high school are far more likely to enroll in community college and four-year institutions (Lichtenberger, Witt, Blankenberger, & Franklin, 2014). Once they take at least one dual enrollment course, students tend to continue to college upon high school graduation. Students taking dual enrollment courses learn to self-identify as college students, making it easier to adjust once beginning their bachelor's degree (Lile, Ottusch, Jones, & Richards, 2018).

While the student population in college continues to increase, it is the students' persistence to graduation that demands the attention of stakeholders. Many studies have shown that students taking dual enrollment courses in high school perform better at the college level and have a greater rate of completion to graduation (Ganzert, 2014; Jones, 2014; Karp, 2012). Students who participated in dual enrollment courses are better prepared for college than those that did not earn college credit in high school (An & Taylor, 2015). Earning college credits through dual enrollment builds confidence before students begin their four-year degree (Karp, 2012). There is a positive correlation between the number of dual enrollment courses completed and higher student grade point average (GPA) and persistence (Ganzert, 2014). The first-year

GPA at a four-year institution of students that earned dual enrollment credit in high school tend to be higher than first-year GPA of students that did not take dual enrollment (Crouse & Allen, 2014). In fact, earning dual enrollment credits increases the likelihood of student persistence at the college level more than taking advanced coursework in high school (Giani, Alexander, & Reyes, 2014). Dual enrollment also positively influences college degree attainment for low socioeconomic students and first-generation college students (An, 2013).

While it is apparent that dual enrollment has many benefits, there are also some important recommendations for guidance counselors to consider. It is a risk to introduce dual enrollment to students not prepared for the coursework (Kanny, 2015). It is important that students do not get a poor taste of the college experience before they are ready for it, as it may deter them from continuing. College and high school administrators must have a better understanding of how dual enrollment participation prepares students for academic success at the next level (Jones, 2014). Counselors should recommend specific dual enrollment courses that relate to students' interests. Students that complete dual enrollment courses in their career path are more likely to persist than students earning general studies courses (D'Amico, Morgan, Robertson, & Rivers, 2013).

Dual enrollment is a great option for many students, but there is limited research on the impact of various forms of dual enrollment on college persistence. Not all students have the option to earn dual enrollment credits at a local campus. Dual enrollment courses are only beneficial for students that have access to take them, and many areas of the country are less suitable to provide physical access to a college or community college campus (Pretlow & Wathington, 2013). For these students, earning college credits through online dual enrollment is a valuable solution. While the college experience differs between online and residential

coursework, the academic result of earning college credits remains the same. The comparison of online and residential college persistence will continue to be a popular topic of education in future years.

Problem Statement

Many studies show the overall benefits of dual enrollment on college experience and retention through graduation (Ganzert, 2014; Jones, 2014; Karp, 2012). Ganzert (2014) concludes that students taking dual enrollment courses are more prepared and have a lighter load at the four-year institution, which adds to a higher rate of degree completion. Ganzert also encourages further research in the student motivation factor of taking dual enrollment coursework. Jones (2014) summarizes that students earning dual enrollment courses at a residential community college are likely to have a higher GPA and persistence rate in their first year at their four-year institution, but the research did not follow those students through to graduation. Karp (2012) argues that dual enrollment prepares students' overall college readiness along with academic factors. However, there is a gap in literature regarding the differences found in college preparedness comparing students earning online or residential dual enrollment in high school. Dual enrollment credits can be earned online through distance learning college courses, or they can be earned at a residential college campus or community college. The problem is that students are earning dual enrollment credits through online and residential platforms, and stakeholders are unaware which avenue better prepares students to succeed and persist to college degree attainment.

Purpose Statement

The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to

first-year residential college students who earned residential dual enrollment credits in high school. This causal comparative design is a quantitative investigation that seeks to compare existing groups (Gall, Gall, & Borg, 2007). The independent variables for this study are students earning online dual enrollment credits and students earning residential dual enrollment credits. Dual enrollment is an accelerated program in which high school students participate in college-level courses and receive college credit, and students can also receive high school credit depending on the school (An & Taylor, 2015). Dual enrollment credits can be earned online through distance learning college courses, or they can be earned at a residential college campus, community college, or high school classroom taught by an approved professor. The dependent variable for this study is the perceived persistence measured by the *College Persistence Questionnaire – V3* (CPQ-V3). For this study, perceived persistence is defined as the likelihood or unlikelihood to persist from first-year fall semester to second-year fall semester based on the student favorability score from the CPQ-V3. The *College Persistence Questionnaire* (CPQ) was developed by Davidson, Beck, and Milligan (2009). The CPQ rates a favorability score based on 53 questions arranged into six subscales of satisfaction. Davidson, Beck, and Milligan (2009) compared the scores with the actual data showing which students persisted from freshman to sophomore year. The CPQ was developed to give administrators a tool to reduce the rate of attrition, meaning the process of not persisting to the next term. Later, they developed the CPQ-V3 which lists 32 questions arranged into ten subscales of satisfaction. Answers are converted to favorability scores based on whether the response indicated something positive or negative about the participant's college experience. In this study, participants were gathered from a large, faith-based university in southcentral Virginia.

Significance of the Study

Attending college is the expectation after finishing high school for most students; however, many students incur a substantial debt and some do not persist to earn their degree based on different factors. Understanding college satisfaction and retention is an important concept for many stakeholders. College administrators desire to recruit and retain students that will finish their degree and become alumni. Students looking for ways to reduce school loans and earn cheaper college credits can explore dual enrollment options (An, 2013). Many students unable to attend residential campus during high school can take online dual enrollment as a way to work ahead (Pretlow & Wathington, 2013). Additionally, high school students earning dual enrollment credits have an advantage over students taking advanced or honors coursework, as the college credits easily transfer to their bachelor's track (Giani, Alexander, & Reyes, 2014). Both online and residential dual enrollment are great options at the high school level, but for students who have the choice of doing online or residential, it is important to understand which track may lead to higher satisfaction once attending a residential university classroom.

Research Question(s)

The research question for this study is:

RQ1: Is there a difference in perceived persistence between first-year residential college students who earned dual enrollment credits online while in high school and students who earned dual enrollment credits from a residential college while in high school?

Definitions

1. *Attrition* – Students that drop out and do not finish their degree.

2. *College Persistence Questionnaire (CPQ)* – This instrument was developed by Davidson, Beck, and Milligan (2009) and predicts the likelihood to persist based on favorability scores resulting from positive or negative responses towards college experience.

3. *College Persistence Questionnaire – V3 (CPQ-V3)* – This is a condensed version of the CPQ and includes four extra subscales.

4. *Dual Enrollment* - Dual enrollment is an accelerated program where high school students participate in college-level courses and receive college credit, and students can receive high school credit depending on the school (An & Taylor, 2015).

5. *Dual Enrollment Online* – Students earn dual enrollment credits by completing coursework online.

6. *Dual Enrollment Residential* – Students earn dual enrollment credits by attending class on campus either at a university, community college, or high school classroom taught by an approved professor.

7. *Grade point average (GPA)* – Students' GPA is a number representing the average value of the accumulated final grades earned in courses over a period of time.

8. *Perceived Persistence* – The likelihood or unlikelihood to persist from first-year fall semester to second-year fall semester based on the student favorability score from the CPQ-V3.

9. *Persistence/Retention* – Students that continue from one year to the next, or until graduation, without breaking enrollment at one location.

CHAPTER TWO: LITERATURE REVIEW

Overview

The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school. The contents of Chapter Two include the review of prominent theories from Alexander Astin, Vincent Tinto, and Albert Bandura along with reviews of related literature studies incorporating college persistence, dual enrollment, and online vs. face-to-face learning. It concludes with a summary on why this study aims to fill a gap in the literature regarding the comparison between online and residential dual enrollment as pertains to persistence at the college level.

Conceptual or Theoretical Framework

It is important to understand the concepts provided by theorists before embarking on a study, as many topics of research have foundational theories that have contributed to past studies. In order to advance the field of education, a researcher looks to fill in the gaps that theories cannot answer with the changing times. Education is constantly shifting to new initiatives, and past theories provide a good foundation. For this study, the topics of persistence, cooperative learning, self-efficacy, and transactional distance are presented, with multiple theories covered.

Persistence or Retention

In the field of education, college persistence or retention is a widespread topic of interest for many stakeholders. For the purpose of this study, both persistence and retention refer to the completion of school through graduation, unless directly defined otherwise. With the growth of online education and the increased demand of companies to employ individuals with post-

secondary credentials, many colleges are seeing an influx of students. The advancement of distance education produces many more students, but graduation rates are lower (Shea & Bidjerano, 2014). Increasing graduation rates is a necessity for college administrators, as tuition and alumni relations play vital roles. Vincent Tinto and Alexander Astin are two leading theorists as it relates to college persistence.

Vincent Tinto.

Vincent Tinto spent many decades of his life studying the effects of dropout rates on colleges and individuals. His most prominent contribution to the field of education, the Student Departure Theory or Student Attrition Theory, was introduced in 1975. As the years progressed, Tinto continued to add to his theory, and much of his work can be found in years as late as 1999. Tinto's theory can be summarized in one statement: The greater the level of social and academic integration, the greater the level of commitment to graduating (Tinto, 1999). Social integration is defined as the environment of campus activities, moral standing, and relationships built inside and outside the classroom. Academic integration relates to classroom learning, relationships with faculty and advisors, and overall success as pertains to grades and enjoyment.

In order for students to feel socially integrated to their institution, they must agree with and adhere to the vision of the school. Students are more likely to persist to graduation in a setting in which they feel involved in the growth and mission of the institution (Tinto, 1999). Colleges should clearly portray their driving force as they speak with potential students, as the wrong match more likely leads to student attrition. This is imperative during orientation seminars. Institutions must provide clear direction for the students and consistent information regarding social standards and academic requirements. The first few days living on campus is a vital time that correlates to departure or persistence, and students need to understand the

roadmap ahead of them for their collegiate career (Tinto, 1999). When students have confidence in their school and are shown a path to succeed, they more likely overcome the difficult beginning stages of a new environment.

Students ultimately attend college to learn, so having faculty that are passionate for what they teach greatly improves the learning experience (Tinto, 1999). Being socially involved is an important aspect of college, but enjoying the academic format and degree path leads to persistence. Tinto (1999) discusses the importance of quality academic advising, as it needs to be an integral part of the first-year experience. Students often have no expectations or limited knowledge on the course-selection process, and it is the responsibility of the advisor to ask those questions. When students select wrong courses, they feel frustrated that they wasted their time and money on a course sequence that does not relate to their desired major. This is another aspect of first-year orientation that must be improved in order to increase persistence.

Tinto (1999) summarizes that there are four conditions that stand out for persistence: information, support, involvement, and learning. Students must be given accurate information during the recruitment phase and initial orientation. When the school provides limited or conflicting information, students lose trust in the institution and it diminishes their social integration. Students need support from their advisors, teachers, and residential leaders to enhance their academic and social experience (Tinto, 1999). To have an enjoyable overall experience leading to persistence, the classroom and dorm room should be supportive. Student involvement at the collegiate level may mean improving learning communities inside and outside the classroom (Tinto, 1999; Stocksdale, 2015). Faculty should be encouraging both independent and group work, as learners have different strengths. Campus life outside the classroom should have standards that encourage social activities, but they must also be learning communities.

Computer labs and libraries must remain conducive to learning, but they can have a variety of levels to encourage collaboration and solitude.

Persistence is the result of a student's ability and motivation lining up with a school's academic and social structures (Tinto, 1999). Tinto's Student Attrition Theory views both social and academic integration as equally important aspects of persistence. If students are not engaged by faculty in their learning or campus leaders in their social activities, they will tend to isolate themselves and feel as though they are not a part of the institution. This mindset discourages learning communities, as individuals do not relate to the overall growth and mission of the school. When the individual's goals do not line up with the institutional goals, there will be discontentment which many times leads to attrition (Tinto, 1999).

Alexander Astin.

Along with Vincent Tinto, Alexander Astin is widely considered the leading theorist in college persistence. Astin's Student Involvement Theory, introduced in 1984, has been studied and used as foundational thought for persistence in the field of education for decades. Student involvement refers to the amount of physical and psychological energy that students want to give to their academic experience (Astin, 1984/1999). Institutions cannot mandate that students invest their time and energy into their experiences, but they can encourage it by making it common and practical to do so. Many students are not as intrinsically motivated to succeed, but colleges can add external motivations to increase involvement.

The theory of student involvement encourages faculty to focus less on what they do and more on what the students do (Astin, 1984/1999). Many institutions follow the subject-matter theory which encourages professors to lecture students in order to transfer knowledge. This method does not allow students to feel involved in the academic process. The resource theory

states that adequate supplies provided by the institution will lead to student development; however, many colleges have a plethora of supplies online and on campus while graduation rates are still dropping. Astin's theory closely resembles the individualized theory which states that no single approach is sufficient for all students. Although that mindset is attractive in the abstract, reality dictates that there are not enough resources and time to meet the needs of each learner (Astin, 1984/1999). While perfection is never to be attained, it is always the goal.

Student involvement can be measured quantitatively through hours invested in studying and social activities and qualitatively through experiences (Astin, 1984/1999). The amount of time students invest in their involvement may not lead to success if those experiences were poor. Conversely, students may feel immediately connected to their institution if the first handful of experiences are positive. Astin (1984/1999) determines that new-student orientation programs and campus activities during the first month of college are important programs to increase persistence. The amount of student learning and personal development is directly related to the quantity and quality of student involvement with the institution (Astin, 1984/1999). Both academically and socially, students will become more involved and ultimately succeed if the institutions produce a variety of quality programs of support.

In order for students to feel involved and appreciated, they must agree with and follow standards set by their college. This is especially true of religious institutions. Students are more likely to persist at religious institutions that hold to their same beliefs (Astin, 1984/1999). Some students that attend secular colleges while trying to grow in their personal faith find the academic and social atmospheres conflicting to their values. For example, a student that adheres to intelligent design may struggle in their introduction Biology course, or a student that is a recovering alcoholic may need to avoid many social outings. This is also true of students

attending faith-based institutions. Attending mandatory chapel services for students that do not believe what is being taught may discourage involvement. While some students label these conflicting environments as opportunities to enhance their beliefs and convictions, others are not able to enjoy their time and transfer to another institution with the same beliefs.

As his research continued, Astin (1993) developed the Input-Environmental-Outcome (IEO) model as a part of his theory. In this model, Astin (1993) states that the input of pre-college variables combined with the college experience will lead to a predictable outcome. Many institutions focus on the environmental variables alone, as they feel those factors are what they can control. However, with the advancement of earning college credits while in high school through dual enrollment, many institutions can now contribute to the input variables. While his model was developed before the growth of dual enrollment, institutions can use this idea to improve how they select and prepare students for the college atmosphere before becoming a full-time college student.

Cooperative Learning

One major aspect of education that has been widely studied is the comparison of learning techniques. Learners process visual and auditory information, and it is important that curriculum designers understand the different methods. The theory of multiple intelligences states that learning is formed through multiple modalities rather than a single trait or ability (Gardner & Hatch, 1989). Many students are able to succeed independently or in groups. However, students should understand the differences and be able to make a decision based on their personal preparation and not solely on availability. High schools and colleges should also provide opportunities for students to choose their desired method when at all possible. With the advancement of online education at the high school and college levels, many classes are

becoming available in both formats. By observing differences or similarities in success rates, schools can determine what they would like to provide for their students. Whether online or face-to-face, both methods should embrace cooperative learning. To study cooperative learning, there are two prominent theories to address: Zone of Proximal Development and Social Cognitive Theory.

Zone of Proximal Development.

The Zone of Proximal Development (ZPD) displays what a learner can accomplish with help from others or without any assistance. There is only so much a student can learn without the guidance of an instructor or peers. The concept of ZPD was originated from the teachings of Leo Vygotsky (1896-1934). Vygotsky's perspective as a child psychologist was that children learn from others, either from peers or from teaching figures such as instructors or parents (Harland, 2003). As children grow, they continue to progress from the examples given by others. Similarly, just as children mature, adolescents becoming young adults develop their intellect in the classroom.

An essential component of Vygotsky's ZPD is the social interaction between those that are less experienced and more experienced in the classroom (Doolittle, 1997). While some students understand concepts quickly, others need extra time and support to truly grasp the material. ZPD determines that in the midst of different strengths and experiences, learning can happen together for all students (Doolittle, 1997). This concept correlates with peer mentoring, as the more experienced learners can help guide others (Harland, 2003; Collings, Swanson, & Watkins, 2014). The idea of peer mentoring works in some situations, but it is also important to continuously challenge gifted students. Some students will rise to the occasion and enjoy the opportunity to teach concepts to others, while others will not be fulfilled and have a yearning to

learn more themselves. Schools must find a way to keep all students engaged while maintaining cooperative learning.

Cooperative learning improves students' attitude and interest in a subject; when a concept clicks, students are encouraged to continue learning (Rabgay, 2018). As students continue to learn, they are satisfied with their education. At the college level, when cooperative learning works, it improves students' overall experience both academically and socially. It is a snowball effect where learning material increases confidence, grades improve, students feel less stress, and they then have more time to engage in social activities (Braxton, Milem, & Sullivan, 2000). Students that enjoy their college experience are more likely to continue their education through to graduation.

In the ideal scenario, cooperative learning is the equal desire of all students in the group to contribute and learn together. However, when some students do not want to collaborate on learning, the system becomes flawed. Group projects turn into burdensome tasks to get all members on the same page, and usually the members with dominant personalities control the rest. When students do not share equal responsibility, cooperative learning just becomes individualized learning of different sections. Group members individually do their part, and then the group leader puts it together for submission. In those cases, students are actually learning less as they do not know what other group members have completed. The students that miss their opportunity to learn an important concept may suffer in their next course as curriculum continues to build (Braxton, Milem, & Sullivan, 2000).

With online education continuously growing, the major point of concern is the limited availability to implement cooperative learning. While courses may still require group projects or forum posts, students rarely are able to collaborate on issues with immediate feedback. The

benefit of online learning is the flexibility; students can access curriculum and assignments at any point. However, this is also the drawback of online learning, as students do not work together at the same time. This leads to communication issues and frustration. Group projects are a great way to implement cooperative learning, but there is still work to be done in the online setting to make sure it is successful (Arkorful & Abaidoo, 2015).

  Social Cognitive Theory.

  The Social Cognitive Theory (SCT) was developed by Albert Bandura in 1986. As Bandura continued to improve this theory along with others, he produced many updated versions. The SCT states that people learn from others as they model behavior and environment settings as they change (Bandura, 1991). As relates to the field of education, Bandura closely studied students to determine their strategies for learning. While students tend to learn from others going before them, they also compare with others to judge their own performance (Bandura, 1991). For example, a student who scores a 90% on an exam has no basis for self-approval unless comparing to other students in the course. While a 90% may seem like a good score, if others that are compared scored higher, the student may feel inferior. Conversely, if those other students scored lower, that person may feel a sense of superiority.

  While students learn from the examples of others and resources provided to them, they also want to earn their accomplishments. Students are most likely to take pride in their work if they do not depend on external aids or special support (Bandura, 1991). It is a challenge for teachers to find a balance of directing struggling students without feeding them too much information. Some learners want to discover their results alone without the assistance from others. However, even if they do not realize it, these same students are constantly learning from the example of others. The SCT summarizes that people do not simply try or learn new things

with no understanding; rather they first see it modeled or hear about it in some form (Bandura, 1991).

As students learn from others, they will discover that they have different strengths and weaknesses. Seeing others succeed does not necessarily mean the students will succeed themselves, and they may find that they are unable to replicate the outcome. How a learner grows depends on their response to successes and failures (Bandura, 1991). After students learn, they may feel a sense of pride and accomplishment, which will lead to more confidence and future successes. However, if they fail, they may lose confidence and become discouraged. It is the job of the teacher to help students focus on their successes (Bandura, 1991). All students have strengths and weaknesses, and while it may seem difficult in a classroom setting focused on academic accomplishments, teachers must combat those learning struggles by pointing out positive aspects of each student. If students can self-monitor their own successes while teachers aim to create a positive atmosphere in the classroom, learning can continue as students' confidence is not hindered.

Self-efficacy

While it is important to learn from others, people must believe in their own abilities to succeed in life. No one can force self-assurance on others, and teachers cannot demand that their students have confidence in their schoolwork. Albert Bandura (1977) summarizes that self-efficacy is constructed from one's experiences rather than examples from others. This concept does not negate Bandura's Social Cognitive Theory; rather, they can be paired together. Students are able to learn from others while still not believing in their own strengths. A student on the right path replicates the examples from others and then discovers truth from their personal experiences.

People can certainly learn in groups, but it may limit their belief in their own abilities (Bandura, 1977). False humility teaches us to credit our achievements to external factors, but it is a good practice to indulge in self-praise at times. Students must realize that they can accomplish many things in their life, including conquering difficult circumstances. Efficacy displays how much effort people will exert in the face of obstacles. The stronger the perceived self-efficacy of a person, the stronger that person will put forth effort on future challenges (Bandura, 1977). Individuals who have conquered obstacles in the past have higher self-efficacy than those that have failed or never tried at all (Bandura, 1977).

Verbal praise from others is not as powerful as self-praise. Students can be told how to feel and act in the classroom in order to be successful, but until they believe in themselves, they will not succeed. Educators have the responsibility to impart both knowledge and confidence in their students. These traits are diminished if not partnered together. College professors may not feel that it is their job to coddle students, and they may think at the collegiate level, students must already trust and believe in their own abilities. However, many students get through the secondary education system without ever developing their self-efficacy. It is certainly a challenge for college professors, but it is a reminder that all administrators must relay to their faculty in order to improve persistence.

Transactional Distance

In the later years of the 20th century, distance education began to take shape. As an option aside from the traditional classroom setting, students were given an opportunity to learn at home. This process started with books and audio discs, but with the advancement of the internet, distance education has become a very familiar option in the field of education. Michael Moore is commonly known as the theorist to propose transactional distance. Distance education is not

simply a geographical separation between the teacher and learner; rather, it is a pedagogical concept describing the teacher-learner relationships that exist while separated by space or time (Moore, 1993). With separation there is a psychological and communications gap which could lead to potential misinformation between the inputs of the teacher and understanding of the learner. This gap to overcome is never the exact same, which is why transactional distance must be constantly evaluated for individual teacher-learner interactions.

Just as in a traditional classroom, the value of education is founded on the teacher-learner relationship. Unfortunately, it can be difficult for this relationship to cultivate while separated by location. It is important that teachers attempt to maintain lines of communication at all costs. Instructional dialogue is not just communication between teacher and learner; rather, it is a positive interaction that adds value to the relationship and course progress (Moore, 1993). There are many factors that affect instructional dialogue such as teacher practices, learner autonomy, curriculum design, and methods of communications media.

Distance education works best when all parties do more than is expected of them. Instructors can easily fall into the temptation to follow guidelines, the sequence of the course syllabus, and never attempt to provide extra support. Good teachers in a traditional classroom can immediately reflect on instruction based on the learners' reactions and can alter quickly. However, in distance education, it is more difficult for the instructor to realize when learners are struggling to comprehend the material. It is important that the instructor constantly evaluates student progress and opens lines of communication. Students may struggle if they feel they are out on an island to learn for themselves, so an active and involved instructor can support those struggling learners.

At the same time, the autonomy of the learner is just as important as the instructor providing support. Instructors may find it very difficult to communicate with learners that are unresponsive. If students do not respond to emails in a timely manner, or at all, instructors are at a loss to provide support. Learners that are used to spoon-fed instruction will struggle with the self-directed learning method, and they must ask for support. The independent learning structure entails students to review syllabi and determine the best ways to accomplish assignment requirements through their self-determined methods. The autonomy of the learner may also be dependent on the course interest and course design.

The curriculum design is an important aspect of transactional distance. In many distance education programs, the instructor of the course did not design the layout or assignments. The instructor is simply a facilitator to provide extra support and grade material, but the learner can see all expectations through the syllabus and rubrics. In these self-taught course layouts, autonomous students can get through the course with little to no interaction with the instructor. Other curriculum designs require students to interact with others through group projects, or some designs require constant feedback from instructors before additional assignments can be submitted. The layout of the course is an important factor in the decision-making process for administrators in distance education, as it will determine the student-to-teacher ratio and persistence of the student population.

Lastly, a major component of distance education is communications media used. This has dramatically changed with the advancement of technology. Distance education used to involve books or audio tapes, and the student would have to learn all material through self-directed processes. Through the internet, this process began to improve by incorporating email and other methods of communication. More recently, many courses implement live streaming

videos where teachers and students can immediately interact and ask any questions. This mirrors the benefits of a traditional classroom while adding the flexibility of working from home. Students can also develop relationships with classmates that may help those struggles with the autonomous learning expectations.

In their study on transactional distance, Weidlich and Bastiaens (2018) conclude that the technological communication method is the single most predictor of satisfaction in distance education. While other factors such as instructor involvement and peer relationships have smaller effects, the communications media more directly impact satisfaction. This conclusion is not surprising, as students may choose online education for the convenience of a flexible and independent schedule, so they are less concerned with instructor involvement and peer interaction. However, this does give administrators direction to improve the technology components of the coursework in order to increase satisfaction.

Summary

The field of education has produced many useful concepts and theorists over the years, but with the changing times there is always the need to further the research. The contributions of Astin and Tinto provide insight to the importance of getting students involved and integrated into the college scene. Vygotsky's reminder to continuously develop learners through peer and teacher assistance speaks to the significance of methods of teaching curriculum. Bandura's statements on self-efficacy reinforce that students must believe in themselves, and be encouraged to do so, if they truly want to learn together. With the advancement of online education, Moore's efforts to limit the gap of communication through distance learning is pivotal for college administration. All of these theorists have provided helpful foundations in which future research can enhance.

Related Literature

It is important to review previous studies in the beginning stages of any research project. In the field of education, researchers are constantly looking to improve practices and methods. Replicating the same study rarely adds to the body of literature, but there are usually gaps to be found where researchers can add their own notions. In the literature review below, the concepts of college persistence, dual enrollment, and online vs. face-to-face learning are addressed. While all three concepts have been compared separately, there is no current literature that compares online and traditional learning as it relates to dual enrollment courses leading to college persistence.

College Persistence

College administrators, high school administrators, parents, students, and employers all have invested interest in the persistence rate of students. For the purpose of this study, college persistence, also called retention, is the process of completing a collegiate degree. High school administrators can no longer be satisfied by simply getting students to attend college. They can do much more to prepare students for the next level. When students attend college and do not finish, it usually puts them in a worse place than if they had never started college at all. Not only do they lose confidence for not finishing something they began, they likely lost money spent on college tuition.

Tinto (1999) and Astin (1984/1999) agree that pre-college factors, social experiences, and academic achievement affect student persistence. While some pre-college factors cannot be controlled, the important thing stakeholders can do is educate themselves. High school students need a firm grasp of the collegiate expectations, as the fear of the unknown causes much unnecessary stress. Both college and high school administrators should work together to provide

tips for success and accurate information to students. Before they ever step foot on campus, students should understand their financial, academic, and social responsibilities (Collings, Swanson, & Watkins, 2014).

The financial pressures of attending college can weigh on students if they do not have a plan of attack. Students that believe they can pay for college have a higher desire to engage socially and academically and persist to graduation (Braxton, Doyle, Hartley III, Hirschy, Jones, & McLendon, 2014). There are strategies that high school administrators can encourage students to do. Earning dual enrollment credits can reduce college tuition at the next level. Applying for a variety of scholarships is an effective way to lower the overall cost. Students can also set their high school schedule to allow for a part-time job, which would teach responsibility along with saving money for college. All of these strategies can lower financial stress to improve their overall college experience.

During the first week of college, it is imperative that students feel involved and socially engaged. Many students struggle in the first days and weeks of college, which are the most pivotal moments to determine persistence (Collings, Swanson, & Watkins, 2014). Freshmen seminar and orientation courses should not simply be a protocol to inform students of their expectations; rather, it is a time for the institution to immediately engage students. It is also important that accurate information is provided. What is taught in orientation must be displayed by others in the initial weeks, or students will feel the institution is not genuine to its values and beliefs (Walters & Kanak, 2016).

Once new students step foot on campus, those that are invested both socially and academically have a greater level of persistence. Social systems in colleges focus on daily needs, events, and community involvement, and academic systems focus on traditional education

in the classroom and faculty involvement (Reisinger, 2016). Social events and campus activities should adhere to the values that the institution claims to follow, and they should also provide a fun and safe environment for the students. Students must believe the institution has a genuine desire and care for welfare of its students (Braxton, Doyle, Hartley III, Hirschy, Jones, & McLendon, 2014).

Academically, students that are committed to their coursework and program of study are more likely to persist to graduation (Reisinger, 2016). However, many students are undecided on their major in the first semester of college, so it is vital to at least have them persist to their second semester in order for them to get plugged into their school department. Students that are able to accrue at least 20 credits by the end of their first year are more likely to persist to graduation (Lile, Ottusch, Jones, & Richards, 2018). Academic success builds confidence and allows for increased involvement in other activities. Students should believe in their own abilities while also taking pride in their institution's mission and vision. Students that are committed to their school have a greater level of persistence (Braxton, Doyle, Hartley III, Hirschy, Jones, & McLendon, 2014).

Overall, college persistence is a very important topic that administrators are desperately aiming to improve. While student enrollment increases, persistence should also be increasing. The cost of retaining a student is much less than the cost of bringing in a new student, so the finances of the institution suffer when persistence drops (Raisman, 2009). All stakeholders have a large investment in seeing persistence increase, and while much research has been done involving students at the college level, limited studies focus on pre-college factors. Administrators in higher education should seek to recruit and enroll students that previously earn college credit through dual enrollment, as those students are more likely to persist to graduation.

This strategy will result in more revenue and alumni support for higher education institutions. Instead of studying students upon arrival, implementing strategies before students step foot on campus as a full-time freshman may lead to greater persistence (Collings, Swanson, & Watkins, 2014). One pre-college factor that has caused much discussion is dual enrollment.

Dual Enrollment

There are many different ways that students can prepare for college. They can save funds and search for scholarships. They can study and ensure that their high school GPA is satisfactory along with good scores on their achievement tests. They can speak with college students and ask them for advice or information regarding the collegiate lifestyle. However, the most efficient way to prepare for college is by fulfilling all three of those methods at the same time. Students that earn dual enrollment credits do just that.

Dual enrollment courses are college courses taken by high school students. According to the National Alliance of Concurrent Enrollment Partnerships (2013), over 82% of public schools enrolled students in college courses through dual enrollment in the 2010-11 school year. This can be done a multitude of ways. High school teachers can be certified by a college to teach in the high school classroom. Students can physically attend college campus courses or community college courses. Students can also take dual enrollment courses online. According to the National Center for Education Statistics (2013), during the 2010-11 school year, 83% of institutions offered dual enrollment courses taught on college campus, 64% of institutions reported that courses were taught on high school campus, and only 48% of institutions offered college courses through distance education. While the NCES has not conducted a more recent study at this time, distance education has significantly grown in interest and availability over the past decade. There are benefits and drawbacks to each method, but the overall practice of

earning college credits as a high school student remains the same. Students also earn high school credit for these courses, so it is not a matter of taking extra courses; rather, it is a method of taking more advanced courses and fulfilling two requirements simultaneously.

The beginning months of college can be very stressful for students as they learn to adjust to many new responsibilities and expectations, and it is in these months where persistence and future success are strongly developed. Students with dual enrollment experience have one less obstacle to overcome, as they are already familiar with the collegiate academic rigor. Students who do not need to spend their initial months trying to acclimate to the classroom atmosphere are much better suited to succeed (Karp, 2012). It is crucial that students are not pressured to take dual enrollment courses if they are not socially and academically prepared (Lichtenberger, Witt, Blankenberger, & Franklin, 2014). While students are certainly still developing in their high school years, there is no reason to believe that high school students are not prepared to take collegiate coursework, as academic and emotional development is not solely centered around age (An & Taylor, 2015).

Students that complete collegiate coursework while in high school show themselves that they are academically ready for the next level. Dual enrollment provides a great transition from high school to college as it can be seen as a rehearsal for the true college experience. It is important that students understand how to teach themselves and know when to ask for assistance in the final year of high school, or the jump to college academia will be very difficult (Rabgay, 2018). Due to the nature of high school education and the pressures that teachers face to improve students' passing rates, high school teachers are typically more involved than college professors. This can lead to students growing accustomed to spoon-fed curriculum, and the

collegiate level is a shock to their learning. A healthy transition through dual enrollment allows for students to experience both methods while fading into the collegiate system.

Students that earn dual enrollment credits in high school not only prove to themselves that they are capable of succeeding at the next level, but they also show college administrators that they are ready, thus improving their chance for admission (Crouse & Allen, 2014). When college administrators are deciding on which students to accept into their institution, they are looking for students that they believe will succeed. Ultimately, for academic and financial reasons, administrators want to bring in students that are more likely to persist to graduation. Because of the academic rigor and preparation methods, dual enrollment coursework exhibits a larger influence on college degree completion than high school GPA (An, 2013).

The concept of college readiness is more than being academically prepared. Conley's (2012) framework of college readiness focuses on cognitive strategies, content knowledge, learnings skills, and transition methods. By earning dual enrollment credits, high school students learn the norms and behaviors of college students (An & Taylor, 2015). Content knowledge is important, but the process of students learning how to study, take notes, review material, and prepare for class are all vital for success. College readiness, much like other aspects of adolescence, can be improved through confidence and clarity. Dual enrollment builds confidence as students see they can succeed, and it only helps enhance students' clarity of the college-student role (Lile, Ottusch, Jones, & Richards, 2018). As students remove the fear of the unknown in regards to collegiate expectations, their doubts will dwindle, and they will more likely conquer the beginning stages of the college experience where many students retreat and decide not to persist to completion.

By earning dual enrollment credits, students improve their self-efficacy by already believing they can succeed (Bandura, 1977). Collegiate success is important, but it is only one aspect of an overall confidence and belief that one can succeed in life. Students taking dual enrollment feel a greater sense of responsibility and independence at a younger age, both in their academic and home lives, even though most high school students still live with their families (Lile, Ottusch, Jones, & Richards, 2018). Earning college credits while in high school is a great accomplishment and can improve the process of breaking away from a dependent lifestyle of relying on others. These students learn to take an ownership of their learning and their lives, which allows them to focus more on schoolwork once attending college (Lile, Ottusch, Jones, & Richards, 2018).

It is apparent that dual enrollment increases college readiness, but these students also have an academic advantage once entering the classroom as a full-time collegiate learner. Students that earn dual enrollment credits in high school have a higher GPA during their first year of full-time college work as compared to students who earned no dual credits. Further, those students earning dual enrollment credits also have a higher persistence rate from first year to second year in college as compared to those students not earning any dual credits (Jones, 2014). In the same study, Jones (2014) concludes that with the costs of higher education increasing each year, a program such as dual enrollment that reduces the overall cost of tuition for a college degree and decreases the times it takes to earn that degree has great value. The cost of higher education may discourage potential students, so it is important to encourage programs such as dual enrollment to help relieve some of those obstacles.

The benefits of taking dual enrollment do not only apply to students entering a four-year degree track. Ganzert (2014) specifically studied dual enrollment students that continued into

the technical field instead of a bachelor's track, and they earned higher GPAs and graduated at higher rates than other students in the technical program. Students learn how to conquer challenges at an earlier time in their academic life, and they are better prepared to graduate at the next level with a degree or vocational certification. Because a plethora of dual enrollment courses can be offered, courses can apply to both the bachelor's degree and professional certificate path.

While dual enrollment is a great option for many students, it is not offered in some schools. There are districts that only allow students to participate in Advanced Placement (AP) courses. In these AP courses, students participate in a normal high school course and prepare to take an exam at the end of the school year. If they score high enough on that exam, they can earn college credits. While AP is an option, dual enrollment provides students with better opportunities. Some higher education institutions will not accept AP credits, but mostly all institutions accept dual enrollment credits. Additionally, in the AP process, the college credit can only be earned by scoring high enough on the final test. The work completed throughout the course has no bearing on earning college credits; whereas, students that take dual enrollment courses know they will earn credits by passing the course. Dual enrollment provides greater benefits to students than advanced courses (Giani, Alexander, & Reyes, 2014).

There is only a certain amount of AP courses that are offered, but there are many more dual enrollment courses offered either on campus or online. Because students learn best when they have an opportunity to choose courses in their field of interest, it is important to provide options for dual enrollment. Colleges can deliver dual enrollment electives outside the traditional AP courses, and more online courses are being developed each year (Westberg & Leppien, 2017). Students can choose to take a plethora of introduction courses through dual

enrollment to prevent taking remedial courses during their first year of college. A schedule that includes college coursework during the final year of high school reduces the apathetic "senioritis" state in which high school students slack off the year before college (Lile, Ottusch, Jones, & Richards, 2018). Additionally, students that are able to take multiple dual enrollment courses fair better than students that only take one course (An, 2013). The role of high school administrators and stakeholders must be to encourage challenging schedules by taking multiple dual enrollment courses, as more credits correlates to more success at the next level.

Dual enrollment provides a great opportunity for both high schools and colleges. High school administrators can offer collegiate coursework to their students and college administrators can begin recruiting the students they want to attend their institution (Jones, 2014). High school counselors must be aware of the benefits and prepare students accordingly. Unfortunately, many high schools do not properly implement what could be offered in their schools, because changing the curriculum would affect the staff. Decisions are not always made in the students' best interest, but schools with compassionate counselors will provide the best options. From the college perspective, institutions want to increase the number of their dual enrollment courses, as many students would rather stay at the college institution from where they earned credits rather than transfer to another school. Overall, the offering of dual enrollment courses should positively affect all stakeholders including students and administrators from both high schools and colleges.

Dual enrollment has received intense scrutiny due to its popularity. Stakeholders want to know if it truly prepares students for the collegiate level, or if it is another gimmick that college administrators apply to lock students into their institutions. Kanny (2015) interviewed students taking dual credits and concluded some benefits and drawbacks. Students enjoyed the exposure

to college academics, lifestyle independence and freedom, and learning the process of understanding hidden curriculum with faculty. However, students also mentioned drawbacks to taking dual enrollment courses unprepared. If students are not ready for dual enrollment, and they do not do well, it will negatively affect their college GPA. Many high school students also did not receive the desired interactions with college classmates or support from faculty. Most faculty will not stop to review past concepts, and it is the responsibility of the students to seek out additional support if needed. There can be a significant difference in the delivery and teaching methods between high school and dual enrollment curriculum, and some students are unprepared for the change (Kanny, 2015).

Not all dual courses are created equal (Giani, Alexander, & Reyes, 2014). While the overall product of receiving college credits at the high school level remains the same, there are many differences in delivery methods and products. Residential dual enrollment courses could involve students physically attending a college campus, or the instructor in the high school classroom is certified to teach a collegiate course. Courses taken at a college campus allow students to experience a true college setting; yet, there are drawbacks. Sending a high school student on a college campus can be a difficult decision for some parents regarding safety concerns. Transportation can also be an issue for students that do not have their own vehicle (D'Amico, Morgan, Robertson, & Rivers, 2013). Academically, the quality of courses on campus may decline if underprepared high school students commonly join the classroom (Giani, Alexander, & Reyes, 2014). It is important to give high school students the best opportunities, but many college students may find it distracting and demeaning to share their classroom with high school students.

The other aspect of residential dual enrollment course involves certified teachers leading the classroom on the high school campus. It is a common concern for stakeholders to question the validity of qualified teachers leading dual enrollment curriculum (Lichtenberger, Witt, Blankenberger, & Franklin, 2014). Students that follow this path are simply meeting academic requirements, but they are not vastly improving their overall college readiness, as many students fail to notice a difference in learning and teaching style. If coursework between high school and dual enrollment curriculum is too similar, students do not gain as much confidence or momentum before entering the collegiate scene.

Dual enrollment has been compared between the high school and college campus setting, but online courses provide an additional element (Lile, Ottusch, Jones, & Richards, 2018). With online dual enrollment, there are no issues with transportation or student safety on a college campus. Professors are qualified and do not even recognize if they are addressing a high school student or adult student. Dual enrollment students can completely blend themselves into the course and the professor and other students will not treat them any differently. The independent learning style of online dual enrollment differs from most high school traditional teaching methods, and it better prepares them for the next level. Academically, the quality of the courses are not dependent on the learner (Giani, Alexander, & Reyes, 2014).

Additionally, online dual enrollment offers opportunities for students in rural or economically distressed areas to still get ahead on their college credits (Lile, Ottusch, Jones, & Richards, 2018; D'Amico, Morgan, Robertson, & Rivers, 2013). There are certain areas where high school students do not have any local community colleges or college campuses, and their teachers are not qualified to lead college curriculum. Without the option of online education, these students would be unable to earn dual enrollment credits.

Increasing the percentage of adults with college credential is paramount for the economic success of our country (Goldrick-Rab, 2016; Tyndorf & Martin, 2018), but dual enrollment can both help and hinder this cause. Residential dual enrollment may actually contribute to the stratification of educational opportunity, as high school students from wealthy areas are given more opportunity than those from rural or poor areas. The advancement of online education brings students on an even playing field, and students do not need to feel entitled or behind their peers (Pretlow & Wathington, 2013).

Online vs. Traditional Learning

It is no secret that distance learning has greatly impacted how students and administrators view college education. The growth of online education has allowed many learners additional opportunities to earn their degree; subsequently, raising expectations for workers to have higher qualifications. While the flexible format works well for adult learners, many stakeholders have concerns that the quality of education greatly differs between online and traditional settings (Atchley, Wingenbach, & Akers, 2013). It is important that students understand the expectations of both online and face-to-face collegiate coursework before deciding which format they want to pursue.

In a report series that tracked ten years of online education from 2002 to 2012, Allen and Seaman (2013) provide many interesting findings. The rate of educational administrators that believe online education is crucial to the success of their institution has risen from less than half to nearly three-fourths. At least 32% of all traditional college students have taken at least one online course. In a similar 2013 study, it was estimated that between 25% and 33% of face-to-face college campus students took at least one online course (Shea & Bidjerano, 2014). The

statistics show that students are continuing to enroll in online courses, and all stakeholders are

invested in the exploration of data that shows if this trend will be beneficial or detrimental.

Students are taking online college courses for a variety of reasons, and it is the goal of the

administrators and faculty to ensure the value of education is not diminished. Over 77% of chief

academic officers believe that online learning outcomes are equal to or better than traditional

learning outcomes (Allen & Seaman, 2013). It is apparent to all parties that online education

provides a lot of benefits, so it is no surprise that chief academic officers are constantly looking

to add new courses. For college administrators, online courses allow a no-cap policy, as they can

simply hire more adjunct faculty. The market for potential students has virtually no limit, and

many safety and logistical concerns of traditional education can be avoided. The distance

learning phenomenon is likely the future of education, so it is important that students, parents,

and administrators all understand how to prepare for and enact this transition.

Online education increases access and opportunity for many learners that never would

have considered completing or starting their degree track. Adults already in the workforce have

taken advantage of the online setting as the primary format to obtain their degree. Most adults

cannot find time to physically attend a college campus, but distance learning can fit into their

already busy schedules. Online courses are mostly self-paced, meaning that students do not need

to attend set lecture times. Students are able to read the material around their schedule and

submit assignments before deadlines. The self-paced format allows students to also slow down

on material that is difficult and breeze through easier content.

Online education has received a bad reputation by many individuals for a few reasons.

Once the online craze began, some people took advantage of the educational department by

receiving financial aid and living off of loan money. These online students did not intend to

learn; they simply found a loop hole in the system to continue in their debt. Other adult learners are required to take courses as professional development, but they have no intent of graduating. While these people helped increase the expansion of online education, they also devalued the education received by others.

Students with difficulty keeping up in the classroom greatly benefit from online learning. By taking an introduction online course, international students are given the opportunity to learn the foundations of collegiate coursework before stepping foot on campus. As they must overcome many obstacles, such as language barriers in the classroom, online education allows them to study at their own pace (Harrison, Hutt, Thomas-Varcoe, Motteram, Else, Rawlings, & Gemmell, 2017). Language barriers for international students provide a specific learning challenge, but many students also enjoy the independent model of distance education to avoid other learning challenges in the classroom. Learners have unique modalities, and independent work is a strength for many students.

Being able to problem-solve independently can increase student learning, enhance intrinsic motivation, create self-directed learners, and develop creative innovators (Westberg & Leppien, 2017). Online learning allows students to challenge themselves in ways they may not have known in the classroom (Arkorful & Abaidoo, 2015). Traditional classroom settings are teacher-led, and when there is student involvement, it is still possible for students to rely on others for answers. With online education, each student is personally responsible to understand the material, and success can lead to intrinsic rewards. While distance learning was not prevalent is Bandura's era, his concepts of self-praise, self-efficacy, and social motivation may lead to comparisons between online and face-to-face education. Online courses have the potential to build and destroy confidence in one's abilities and motivation.

Whether taking online or traditional courses, students must self-regulate their commitment and passion for learning. They must set personal goals, experience different modes of instruction in the classroom or online, and learn to manage their time efficiently (Shea, Hayes, Smith, Vickers, Bidjerano, Gozza-Cohen, Jian, Pickett, Wilde, & Tseng, 2013). Most schools encourage students to take at least one online course to see how they enjoy the challenges, as there are certainly life skills that are attained upon completion. Students need to be given options in their education. Some students will learn better online by themselves, while others will flourish with a community in the classroom. Most students will academically succeed or fail in whichever setting they choose, but it is the intangible experience outside of grades that will help shape a person for their personal growth (Tinto, 2003).

The advancement of distance education produces many more students, but graduation rates are lower. Colleges that are looking to simply make money are more likely to ignore academic drawbacks and recruit all students. Shea and Bidjerano (2014) summarize that online education is actually on the right path, but the growth happened too quickly for some schools. However, when used properly, online education is a great benefit to students. Their study concludes that students taking at least one online course as a residential student are more likely to attain their degree. The students that enroll in both online and traditional courses are exposed to various learning techniques and develop into well-rounded learners.

In a similar study, Johnson and Mejia (2014) also find that online education produces lower completion rates, but residential students taking at least one online course have a higher persistence rate than students taking all traditional courses. Students taking all online courses may not be as committed, and students taking all traditional courses may be resistant to change.

These studies seem to indicate that students that choose to attempt both online and traditional courses are setting themselves up for a higher chance of success.

Common teaching styles consist of professor-dominant lectures where students are not engaged. Teachers take the center stage while students rarely get opportunities to talk, share ideas, or ask questions (Rabgay, 2018). In these settings, students have become passive learners and developed a low-level sense of academic achievement. The focus is passing the course and earning the credit rather than learning the material and improving one's education. Many students rely on teachers to tell them what to study and how to learn, which diminishes creativity and scientific thinking. This flaw in education takes place in both the online and traditional course settings (Rabgay, 2018).

While students may see the benefits of online education, many are resistant to leave the traditional setting because they have grown accustomed to the social environment of learning. Students often internalize understanding from experiences in social settings (Doolittle, 1997). Many people will argue that knowledge is not obtained in a textbook; rather, it comes through experience. Instead of trying something new, people want to hear how it worked when other tried in the past. The classroom environment can justify and secure any knowledge that the individual learner may have been hesitant to recognize in an independent setting. The collective goal of passing a course is encouraging in a traditional setting, and it is something lacking in distance learning. If online education can improve the collaboration methods with other students without forcing fabricated contact, one major obstacle would be solved (Arkorful & Abaidoo, 2015). Students need to be engaged at the beginning of the course and remain engaged throughout its entirety, but that is a difficult task to accomplish for a classroom of learners across the world.

Many studies have been performed as the online education world increases, and stakeholders are interested in the results. Atchley, Wingenbach, and Akers (2013) compare studies that show course completion in online education is higher than traditional classrooms, and studies that show the opposite results. They find that students complete courses and score higher overall grades in the online format. Students that take courses online tend to graduate at a quicker pace; thus, increasing their rate of persistence (Shea & Bidjerano, 2016). Conversely, Jaggars (2013) concludes that online students are more likely to fail or withdraw from courses than students taking traditional face-to-face classes. Attrition rates are 10-20% higher for students in distance education (Angelino, Williams, & Natvig, 2007). Other studies compare both models and find no significant difference in regards to scores and persistence (Stack, 2015; James, Swan, & Daston, 2016). Stack (2015) also reviews evaluations from students in online or residential courses led by the same instructor, and no significant difference appears in the results. Students in traditional classrooms with higher GPAs will also score higher using the online format, which shows no partiality to instructional modes (Cavanaugh & Jacquemin, 2015). Online and traditional formats do not significantly lead to positive or negative results; rather, it is the student that determines the success rate no matter the instructional platform.

While the growth of online education certainly provides many benefits to stakeholders, it is important to note obstacles to avoid. One obstacle that over 88% of administrators mention is online integrity, safety, and discipline of students (Allen & Seaman, 2013). While cheating occurs regularly in traditional face-to-face classrooms, the secrecy of distance learning creates new barriers for teachers and administrators. Students may complete assessments using unapproved notes or textbooks, and teachers have a difficult time monitoring integrity. All student work is saved online, so previous students can share coursework with the next class.

There are many creative ways that students can cheat in an online atmosphere, as the accountability is lacking. However, because college coursework is sequential in nature, those students that may avoid initial punishment tend to struggle in future coursework (Moten, Fitterer, Brazier, Leonard, & Brown, 2013).

Online safety is a major concern for administrators, as students can be bullied or harassed by classmates or teachers. There is an aspect of online correspondence that can lead to dangerous encounters, as predators tend to be more bold when not face-to-face with their victims. Online education provides more opportunities for people to take advantage of others, and it can affect the integrity of the institution. Schools are attempting to raise awareness for these issues as online education expands.

Overall, as online education is growing, it is imperative that students are informed of their options. Some institutions offer certain degrees only online or only on campus, but the majority of schools allow courses to be taken in either setting. While there is research on each side of the argument that shows comparison between online and traditional courses, it does tend to agree that students who are exposed to both formats fair better than those that stick to only online or residential. Students, parents, high school administrators, and college administrators must do a better job of being informed. If students attempt both tracks and decide which works better for their learning, then they grew in confidence and decision-making abilities, and they are one step closer to entering the world.

Summary

College administrators are experiencing an increase in student enrollment, but the dilemma to increase persistence to graduation remains an important issue. The cost to recruit a new student is greater than the cost to retain present students. In addition, students that persist

become alumni that often contribute financially and continue to promote your institution. The reputation of institutions often hinges on the success and appreciation of alumni, so persistence is a vital obstacle to overcome. Theorists provide valuable insight on factors including student involvement, integration, proximal learning, self-efficacy, and transactional distance. It is also just as valuable to reflect on past literature from other researchers.

Literature shows that many pre-college factors such as earning college credits before arriving on campus, work experience, interest in the physical campus, and financial pressure impact a student's persistence. This information allows administrators to target their ideal student population before they ever step foot on campus. Other first-impression factors that impact persistence include the school's orientation protocols, academic support by advisors, and social life around campus. Students attend college with the hopes of finishing to obtain a degree, and it is important that institutions take steps to increase those percentages.

High school students that earn college credits through dual enrollment are more likely to attend a four-year institution, and those same students are more likely to succeed at that institution than students that did not earn dual enrollment credits. Dual enrollment students often build a high level of self-efficacy before stepping foot on campus, as they already know they can academically succeed. In addition, these students were able to earn college credits at a cheaper rate, which often means they are not required to take out as many student loans; thus, reducing financial stress.

Finally, it is important to explore the differences in online and residential education. As distance education increases, college administrators are becoming more accepting of this method and often believe learning outcomes are just as valuable as found in the traditional classroom. Online education offers flexibility for students, faculty, and administrators. Hiring online

adjunct faculty is much easier on administration than full-time faculty on campus. Students are able to register for courses without dramatically altering their schedules, and they can complete their degrees on a quicker pace. Online education also can be offered at a cheaper rate, which allows a larger student population. While there are benefits and drawbacks to both online and residential education, research has not determined which method may produce students that are more likely to persist to graduation.

CHAPTER THREE: METHODS

Overview

The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school. The probability of college persistence is measured through instrumentation rating favorability of college experience. The content of Chapter Three includes design, research question, hypothesis, participants, instrumentation, procedure, and data analysis.

Design

A causal-comparative design was used for this study to determine the difference in college experience between students earning online dual enrollment credits and students earning residential dual enrollment credits. A causal comparative design is a quantitative investigation that seeks to compare existing groups (Gall, Gall, & Borg, 2007). The independent variables for this study are students earning online dual enrollment credits and students earning residential dual enrollment credits. Dual enrollment is an accelerated program in which high school students participate in college-level courses and receive college credit, and students can receive high school credit depending on the school (An & Taylor, 2015). Dual enrollment credits can be earned online through distance learning college courses, or they can be earned at a residential college campus, community college, or high school classroom taught by an approved professor. The dependent variable for this study is the perceived persistence measured by the *College Persistence Questionnaire – V3* (CPQ-V3). For this study, perceived persistence is defined as the likelihood or unlikelihood to persist from first-year fall semester to second-year fall semester based on the student favorability score from the CPQ-V3. The *College Persistence*

Questionnaire (CPQ) was developed by Davidson, Beck, and Milligan (2009). The CPQ rates a favorability score based on 53 questions arranged into six subscales of satisfaction. The six influencers of experience that were tested as factors for this instrument were Academic Conscientiousness, Academic Integration, Social Integration, Institutional Commitment, Degree Commitment, and Support Services Satisfaction. Davidson, Beck, and Milligan (2009) compared the scores with the actual data showing which students persisted from freshman to sophomore year. The CPQ was developed to give administrators a tool to reduce the rate of attrition, meaning the process of not persisting to the next term. Later, they developed the CPQ-V3 which lists 32 questions arranged into ten subscales of satisfaction. The ten influencers of experience that were tested as factors for this instrument were Scholastic Conscientiousness, Academic Integration, Social Integration, Institutional Commitment, Degree Commitment, and Advising Effectiveness, Motivation to Learn, Academic Efficacy, Financial Strain, and Collegiate Stress. Answers are converted to favorability scores based on whether the response indicated something positive or negative about the participant's college experience.

Research Question(s)

The research question for this study is:

RQ1: Is there a difference in perceived persistence between first-year residential college students who earned dual enrollment credits online while in high school and students who earned dual enrollment credits from a residential college while in high school?

Hypothesis

The null hypothesis for this study is:

H$_0$1: There is no statistically significant difference in the perceived persistence of first-year residential college students as measured by the *College Persistence Questionnaire – V3*

between students who earned dual enrollment credits online while in high school and students who earned dual enrollment credits from a residential college while in high school.

Participants

Population

Participants for this study were selected from the student body located at a large, faith-based university in southcentral Virginia. This university had 3,943 first-year residential students during the 2019/20 school year.

Sample

A convenience sample was selected from the population. The researcher identified students that earned dual enrollment credits while in high school. Student information was attained by the researcher with the permission and assistance of the university registrar department. Surveys with missing data, unqualified participants, and outliers were removed, leaving a total sample size of 222, which according to Gall, Gall, and Borg (2007) exceeds the minimum requirement of 120 for a sample t-test to obtain a medium effect size with statistical power of 0.7 at the 0.05 alpha level. Sample demographics of first-year residential students ranged in age from 18 years old to 21 years old. There were 75 males and 147 females. The ethnicity breakdown was 4 Asian, 6 Black, 5 Hispanic, 204 White, and 3 chose to not report ethnicity. The sample size was divided into two groups: students earning online dual enrollment credits in high school and students earning residential dual enrollment credits in high school. These groups were determined by students self-reporting their past dual enrollment credits earned.

Group 1 (Online Group)

The first group was students that earned online dual enrollment credits in high school.

Sample demographics of these students ranged in age from 18 years old to 20 years old. There were 21 males and 52 females. The ethnicity breakdown was 2 Asian, 2 Black, 1 Hispanic, and 68 White.

Group 2 (Residential Group)

The second group was students that earned residential dual enrollment credits in high school. Sample demographics of these students ranged in age from 18 years old to 21 years old. There were 54 males and 95 females. The ethnicity breakdown was 2 Asian, 4 Black, 4 Hispanic, 136 White, and 3 chose to not report ethnicity.

<div align="center">

Instrumentation

</div>

Understanding the experience of students at the college level is a major initiative for school administrators. Enjoyable experience not only leads to persistence, but it also generates more revenue and success for institutions. In order for college administrators to recognize variables that produce lower rates of attrition and higher rates of persistence, the *College Persistence Questionnaire* (CPQ) was developed by Davidson, Beck, and Milligan (2009). The purpose of this instrument is to identify students at risk of dropping out, discover why students are likely to discontinue their education, and to determine variables that lead to persistence. The CPQ was developed after Davidson, Beck, and Milligan (2009) found common variables over dozens of previous studies covering the persistence and drop-out rate of college students. The six influencers of experience that were tested as factors for this instrument were Academic Conscientiousness, Academic Integration, Social Integration, Institutional Commitment, Degree Commitment, and Support Services Satisfaction. Of these six factors, Institutional Commitment was found to be the highest predictor of retention in other studies (Betts, Shirley, Kennedy, 2017 & Gore, 2010). This closely relates to the prominent theories of Alexander Astin and Vincent

Tinto that state student involvement in college activities correlates to persistence to graduation (Astin, 1984/1999 & Tinto, 1999).

In the development of the instrument, Davidson, Beck, and Milligan (2009) found the CPQ to be both reliable and valid. Reliability was tested in their first study using over 2,200 participants that yielded six subscales that were internally consistent using Cronbach's alpha. Their second study concluded both predictive and incremental predictive validity by administering the questionnaire to first-semester freshman and using the scale scores to predict their return for their sophomore year. Predictive validity is defined as using the CPQ to identify at-risk students; whereas, incremental predictive validity is defined as using the CPQ in unison with other predictors such as high school GPA or standardized test scores. For this study, the researcher used incremental predictive validity to measure the perceived persistence between students who earned dual enrollment credits online while in high school versus students who earned dual enrollment credits from a residential college while in high school.

Davidson, Beck, and Milligan (2009) conclude their study by stating additional subscales would amplify the research. Upon receiving permission for this study (see Appendix A), the researcher was provided the *College Persistence Questionnaire - V3* (CPQ-V3). The CPQ-V3 lists 32 questions arranged into ten subscales of satisfaction. The ten influencers of experience that were tested as factors for this instrument were Scholastic Conscientiousness, Academic Integration, Social Integration, Institutional Commitment, Degree Commitment, and Advising Effectiveness, Motivation to Learn, Academic Efficacy, Financial Strain, and Collegiate Stress. Questions will be answered using a 5-point Likert scale. A sixth option, "not applicable," will be included for participants that do not relate with the question. Favorability scores will be determined based on positive and negative experiences (+2 = very favorable, +1 = favorable, 0 =

neutral, -1 = unfavorable, -2 = very unfavorable). Questions were altered between regular

scoring and reverse scoring to ensure accuracy in participant responses. The answers will be

converted to represent satisfaction, with raw scores of -64 to 64. For each participant, raw scores

were divided by the number of questions answered after removing any "not applicable"

responses. For example, if a participant answered "not applicable" for one question, the

participant's raw score was divided by 31. The total average scores for each participant ranged

from -2 to 2. Higher scores reflect higher favorability with their college experience and predict a

higher persistence rate.

To administer the instrument, the researcher provided a digital version to each participant

by email after obtaining consent. No compensation or incentive was given to those who

participated. Participants submitted the questionnaire over a three-week period. Completion of

the instrument took less than fifteen minutes on average. Upon receiving the data, the researcher

scored the results by correcting the reverse scoring and taking the average of each participant.

Procedures

After obtaining approval from the Institutional Review Board (see Appendix B), the

researcher gained approval from the administration at the university (see Appendix C). Once

obtained, the researcher worked with the administration to formulate a list of all first-year

residential students. The students were sent an email through Qualtrics asking for consent to

participate in the study (see Appendix D). This email explained the rationale of the study and

had a Qualtrics survey link, and the participants were asked to click the link if they wished to

participate. Upon clicking into Qualtrics, the first page included the participant consent form

(see Appendix E). Once the consent form was completed, the next page began the survey.

The first page of the survey provided the participant with instructions. The instructions

informed participants of their expectations (see Appendix F). After reading the instructions, the

participants began the demographics portion of the survey (see Appendix G). Along with other

personal information, participants reviewed a definition of dual enrollment and were asked to

self-report if they earned any dual enrollment credits while in high school. Participants had the

option to select one of the four choices: online dual enrollment credits, residential dual

enrollment credits, both online and residential dual enrollment credits, or no dual enrollment

credit. Participants that responded with "both online and residential dual enrollment credits" or

"no dual enrollment credit" were discarded from the primary purpose of the study. Next, the

participants answered the 32 questions of the CPQ-V3. Upon answering all 32 questions, the

participants clicked "Finish" and received a completion notification page.

When the survey period closed after three weeks of availability, the researcher collected

the data. All data was automatically stored in Qualtrics, and the researcher was able to gather

information at any time. The data was generated into a spreadsheet, and the researcher

completed the scoring process. After converting the scores based on the regular and reverse

scoring, the researcher loaded the information into SPSS, and the data analysis was configured.

Data Analysis

The quantitative data was analyzed by comparing group means. A *t*-test was used for this

study to determine the difference in college experience between students earning online dual

enrollment credits and students earning residential dual enrollment credits. Gall, Gall, and Borg

(2007) state that a *t*-test is used to determine the significance of the difference between two

sample means.

Data screening was conducted on the dependent variable of college experience scores

among participants regarding data inconsistencies, errors, and outliers. An examination of a Box

and Whisker plot showed no outliers or data inconsistencies. The assumption of normality was examined using a Kolmogorov-Smirnov test. In order to test the assumption of homogeneity of variance, Levene's test of equality of error variances was analyzed. The null was tested at 95% confidence level, and effect size will be measured using partial eta squared.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school. The independent variable was online or residential dual enrollment and the dependent variable was the college experience score. An Independent Samples t-test was used to test the hypothesis. The Findings section includes the research question, null hypothesis, data screening, descriptive statistics, assumption testing, and results.

Research Question

RQ: Is there a difference in perceived persistence between first-year residential college students who earned dual enrollment credits online while in high school and students who earned dual enrollment credits from a residential college while in high school?

Null Hypothesis

H_0: There is no statistically significant difference in the perceived persistence of first-year residential college students as measured by the *College Persistence Questionnaire – V3* between students who earned dual enrollment credits online while in high school and students who earned dual enrollment credits from a residential college while in high school.

Data Screening

Data screening was conducted on each group's dependent variable. The researcher sorted the data on each variable and scanned for inconsistencies. No data errors or inconsistencies were identified. Box and whiskers plots were used to detect outliers on each dependent variable. No outliers where identified. See Figure 1 for box and whisker plots.
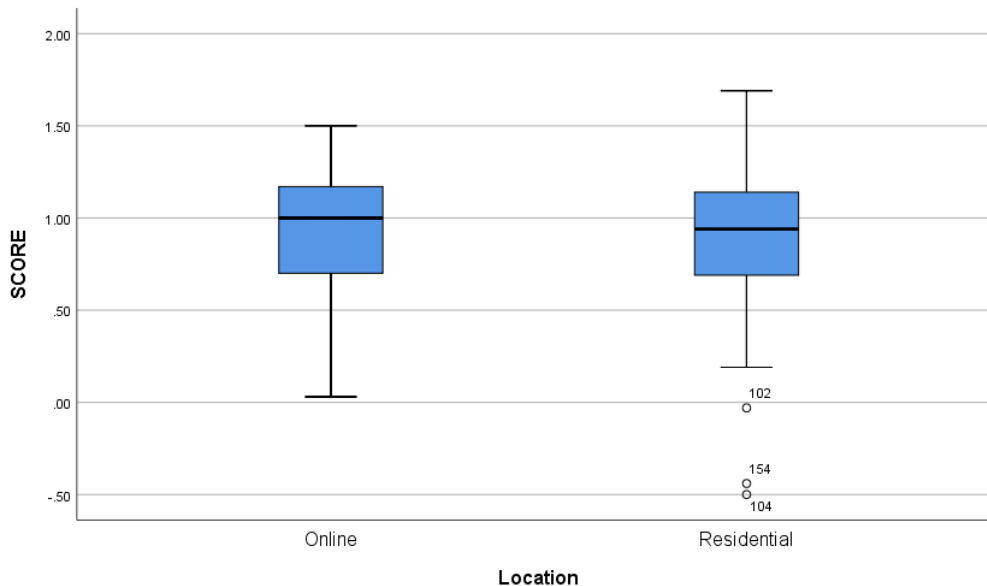
Figure 1. Box and whisker plots.

Descriptive Statistics

Descriptive statistics were obtained on the dependent variable for each group. The sample consisted of 222 participants. Scores for each question of this instrument range from -2 to 2. Higher scores reflect higher favorability with their college experience and predict a higher persistence rate. Descriptive statistics can be found in Table 1.

Table 1

Descriptive Statistics

Descriptive Statistics

Location		N	Minimum	Maximum	Mean	Std. Deviation
Online	SCORE	73	.03	1.50	.9000	.36366
	Valid N (listwise)	73				
Residential	SCORE	149	-.50	1.69	.9017	.35319
	Valid N (listwise)	149				

Assumption Testing

Assumption of Normality

The Independent Samples *t*-test requires that the assumption of normality be met.

Normality was examined using Kolmogorov-Smirnov because the sample size was greater than

50 participants. The assumption of normality was met for students earning residential dual

enrollment credits ($p = .052$). The assumption of normality was not met for students earning

online dual enrollment credits ($p = .000$). However, the *t*-test is robust enough to handle this

violation, so the researcher continued with the evaluation. See Table 2 for Tests of Normality.

Table 2

Tests of Normality

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Location	Statistic	df	Sig.	Statistic	df	Sig.
SCORE	Online	.152	73	.000	.933	73	.001
	Residential	.073	149	.052	.959	149	.000

a. Lilliefors Significance Correction

Assumption of Homogeneity of Variance

The Independent Samples *t*-test requires that the assumption of homogeneity of variance

be met. The assumption of homogeneity of variance was examined using the Levene's test. The

assumption of homogeneity of variance was met where ($p = .547$). See Table 3 for Levene's test

of Equality of Error Variance.

Table 3

Levene's Test of Equality of Error Variance

Levene's Test of Equality of Error Variances[a,b]		Levene Statistic	df1	df2	Sig.
SCORE	Based on Mean	.364	1	220	.547
	Based on Median	.053	1	220	.817
	Based on Median and with adjusted df	.053	1	217.915	.817
	Based on trimmed mean	.290	1	220	.591

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: SCORE

b. Design: Intercept + Location

Results

An Independent Samples *t*-test was conducted to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school. The independent variable was online or residential dual enrollment and the dependent variable was the instrument score. The researcher failed to reject the null hypothesis at the 95% confidence level where $t(220) = -.034$, $p = .973$. Eta square equaled ($\eta^2 = .000$). The effect size was small. Eta square was calculated using the formula $\eta^2 = t^2/(t^2 + df)$. There was not a statistical difference between the scores of students earning online dual enrollment credits ($M = .900$, $SD = .364$) and students earning residential dual enrollment credits ($M = .902$, $SD = .353$). See Table 4 for Independent Samples *t*-test results.

Table 4
Independent Samples t-test

Independent Samples Test

			SCORE	
			Equal variances assumed	Equal variances not assumed
t-test for Equality of Means	t		-.034	-.034
	df		220	139.436
	Sig. (2-tailed)		.973	.973
	Mean Difference		-.00174	-.00174
	Std. Error Difference		.05095	.05147
	95% Confidence	Lower	-.10216	-.10350
	Interval of the Difference	Upper	.09867	.10001

CHAPTER FIVE: CONCLUSIONS

Overview

The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school. The content of Chapter Five includes a discussion on the results of this study while comparing past research, implications of the study, limitations, and recommendation for future research.

Discussion

The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school. The researcher surveyed 222 qualified participants at a university and found that there is no statistical difference between the students earning online dual enrollment credits or residential dual enrollment credits. Both groups provided similar results that indicate a strong likelihood to persist.

With the advancement of dual enrollment, it is important for stakeholders to understand its effect on college persistence. Vincent Tinto and Alexander Astin are seen as the two theoretical leaders of persistence. Tinto (1999) summarizes that the greater the level of social and academic integration, the greater the level of commitment to graduating. Astin (1993) states that the input of pre-college variables combined with the college experience will lead to a predictable outcome. Students earning dual enrollment credits are often more motivated than their peers and want to succeed at the collegiate level.

Prior research solidifies the overwhelming benefits of dual enrollment on collegiate success (Karp, 2012; Rabgay, 2018; Crouse & Allen, 2014; An & Taylor, 2015; Jones, 2014), which falls in line with the results of this study. The scoring system for the instrument used (CPQ-V3*)* ranges the total average from -2.00 to 2.00. In this study, students earning online dual enrollment credits scored .900, and students earning residential dual enrollment scored .902. Both groups scored high signifying a strong social and academic commitment to finish their degree. Students coming into their first year with collegiate experience at the dual enrollment level do not need to spend their initial months trying to acclimate to the collegiate lifestyle and are much better suited to succeed (Karp, 2012).

Due to the growth of online education, many research studies aim to better understand this method of learning. Albert Bandura's work on the topic of self-efficacy is a common point of interest. Bandura (1977) summarizes that self-efficacy is constructed from one's experiences rather than examples from others. But this concept does not negate Bandura's Social Cognitive Theory; rather, they can be paired together. Students are able to learn from others while still not believing in their own strengths. People can certainly learn in groups, but it may limit their belief in their own abilities.

Ultimately, research shows that the location of learning does not dramatically affect the outcome, which is also the result of this study. In fact, over 77% of chief academic officers believe that online learning outcomes are equal to or better than traditional learning outcomes (Allen & Seaman, 2013). Whether taking online or traditional courses, students must self-regulate their commitment and passion for learning. They must set personal goals, experience different modes of instruction in the classroom or online, and learn to manage their time efficiently (Shea, Hayes, Smith, Vickers, Bidjerano, Gozza-Cohen, Jian, Pickett, Wilde, &

Tseng, 2013). Students in traditional classrooms with higher GPAs will also score higher using the online format, which shows no partiality to instructional modes (Cavanaugh & Jacquemin, 2015). Online and traditional formats do not significantly lead to positive or negative results; rather, it is the student that determines the success rate no matter the instructional platform. Other studies compare both models and find no significant difference in regards to scores and persistence (Stack, 2015; James, Swan, & Daston, 2016). Stack (2015) also reviews evaluations from students in online or residential courses led by the same instructor, and no significant difference appears in the results.

Because education is founded on the teacher-student relationship, the setting is often times irrelevant to learning outcomes. It is the duty of the teacher to help students focus on their successes (Bandura, 1991), and online teachers should have the same credentials as residential teachers. Whether in an online or face-to-face setting, the curriculum takes the center stage while students rarely get opportunities to share ideas, ask questions, or alter assignment. While this rote method of learning may not be ideal, this flaw in education takes place in both the online and traditional course settings (Rabgay, 2018).

There are arguments that could be made using prior research to show that online education is more successful (Atchley, Wingenbach, & Akers, 2013; Shea & Bidjerano, 2016). There are also other studies concluding that online education is less successful (Jaggars, 2013; Angelino, Williams, & Natvig, 2007). However, Johnson and Mejia (2014) compromise by concluding that online education produces lower completion rates, but residential students taking at least one online course have a higher persistence rate than students taking all traditional courses. Students taking all online courses may not be as committed, and students taking all traditional courses may be resistant to change. Overall, the gap between online and face-to-face

education continues to decrease with the advancement of technology. Research studies in past years may show differences depending on the setting, faculty, or methods of teaching online and in the classroom.

There are benefits and drawbacks to both online and residential education. However, it is apparent that the differences between the methods continue to decrease with the advancement of technology. As this progresses, online education will further rise in popularity due to the convenience it provides to all stakeholders. As students are given more opportunities and options, it is the hope that the rate of persistence will also increase.

Implications

The results of this study showing that both groups of students earning online or residential dual enrollment credits are likely to persist add to the prior research stating similar findings. Not only is dual enrollment clearly a benefit to students, but this study reinforces that there are limited differing results between online and face-to-face education. Students, parents, teachers, high school guidance counselors, and college administrators must be aware that earning dual enrollment credits will likely increase collegiate success, whether online or residentially. Because of this, students have been given much more opportunities to succeed. They can choose either format and know that they control their destiny. This is especially important for students in rural areas. Some schools simply may not be able to provide residential dual enrollment, but every student can earn online dual enrollment credits. There is a limitless scope to how many courses one can take, so all students have a chance to get ahead on their college experience.

This study is also very beneficial for college administrators. It is important that colleges seek students that will be a right fit for many reasons. If students persist to graduation, they will financially contribute more to the college, and they will become alumni to a growing community.

Colleges want to recruit students that will invest back into their school, and dropouts will not have any ties to support. Academic success at the dual enrollment level will increase confidence in the learners, and they will have more time to invest in the school activities when they attend college. Overall, the social and academic confidence of students will increase their likelihood to persist, so administrators want to find the best students to follow through on that path.

Limitations

While the results of this study follow similar results from other research, it is important to note a few limitations. First, this study did not actually follow the participants through to graduation. The instrument is meant to predict the likelihood of persistence, but the results may vary had the researcher followed the students over the next few years. Next, the participants were contacted within the first two months of their freshman year. Results may have been different had the study occurred later in the year. Finally, the researcher only performed this study to one freshman class for one year. It would be more effective to perform the same procedure for multiple years at the same institution.

Recommendations for Future Research

The results of this study were conclusive but also limited due to certain factors. It is recommended that future research is performed to follow students through to graduation. This study used an instrument to predict persistence, but it is unknown which participants will actually finish their degree. Another recommendation would be to compare other groups of students. In this study, the researcher compared students that took online dual enrollment only or residential dual enrollment only, but students that took both or neither were excluded. Finally, it is recommended to compare results over multiple years at the same institution.

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learning. *Gifted Child Today, 41* (1), 13-18.

Appendix A – Instrument Approval

From: Bill Davidson
Sent: Sunday, February 04, 2018 9:00 AM
To: Miller, Dustin Joseph (Online Academy)
Subject: Re: Permission to use College Persistence Questionnaire

Thanks for your interest in the CPQ, Dusty. Yes, you have our permission to use it in your doctoral research. I am attaching the instrument and scoring instructions.

Best wishes,

Bill

William B. Davidson, PhD
Professor of Psychology

████████████████████████

From: Miller, Dustin Joseph (Online Academy)
Sent: Saturday, February 3, 2018 11:16:44 AM
To: Bill Davidson
Subject: Permission to use College Persistence Questionnaire

Dr. Davidson,

I am writing to request permission to use the College Persistence Questionnaire as the primary instrument in my doctoral study. Your instrument will allow me to gather pertinent data as I analyze the below research question:

Is there a difference in college experience among students earning no online dual enrollment credits, up to 59 online dual enrollment credits, or earning an Associate of Arts degree while in high school.

I would greatly appreciate your assistance by providing me with the CPQ and allowing me access to use it for this study. Your team will, of course, receive acknowledgement in my dissertation.

Thank you for your help,

Dusty Miller, Ed.S.
Director of Academic Advising
Liberty University Online Academy

Appendix B – IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

March 18, 2019

Dustin Miller
IRB Exemption 3703.031819: Comparing Perceived College Persistence Between Students
Taking Online or Residential Dual Enrollment in High School

Dear Dustin Miller,

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)(2), which identifies specific situations in
which human participants research is exempt from the policy set forth in 45 CFR 46:101(b):

> (2) Research that only includes interactions involving educational tests (cognitive,
> diagnostic, aptitude, achievement), survey procedures, interview procedures, or
> observation of public behavior (including visual or auditory recording) if…the following
> criteria is met:
>> (i) The information obtained is recorded by the investigator in such a
>> manner that the identity of the human subjects cannot readily be ascertained,
>> 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
 Research Ethics Office

Appendix C – Liberty University Approval

4/5/2019

██████████   ██████████
Chief Information Officer   Registrar
Liberty University   Liberty University
1971 University Blvd   1971 University Blvd
Lynchburg, VA 24515   Lynchburg, VA 24515

Dear ████████████████████████████:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The title of my research project is *Comparing Perceived College Persistence Between Students Taking Online or Residential Dual Enrollment in High School,* and the purpose of my research is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school.

I am writing to request your permission to conduct my research at Liberty University and contact first-year residential students in the Fall 2019 to invite them to participate in my research study.

Participants will be emailed and asked to complete a Qualtrics survey. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

I am requesting the permission of Registrar and assistance of Analytics Decision Support team. Participant email addresses will need to be limited to students over the age of 18 years old. Further details on the specific requirements for data will be determined with the researcher and ADS team.

Thank you for considering my request. If you choose to grant permission, please respond by email to djmiller3@liberty.edu with your signed approval. A permission letter document is attached for your convenience.

Sincerely,

Dustin Miller
Doctoral Student

4/30/2019

███████

Chief Information Officer
Liberty University
1971 University Blvd
Lynchburg, VA 24515

Dear Dustin Miller:

After careful review of your research proposal entitled *Comparing Perceived College Persistence Between Students Taking Online or Residential Dual Enrollment in High School,* I have decided to grant you permission to conduct your research at Liberty University and contact first-year residential students in the Fall 2019 to invite them to participate in your research study.

Check the following boxes, as applicable:

X   My team will aim to contact all participants with the link to your Qualtrics survey internally, allowing you as the researcher to not worry about viewing personal data of participants.

       If my team is unable to do the above, we will send you a list of email addresses, and the requested data WILL BE STRIPPED of identifying information before it is provided to you as the researcher.

X   I/We are requesting a copy of the results upon study completion and/or publication.

Sincerely,

███████

Chief Information Officer
Liberty University

5/17/2019

█████████

Registrar
Liberty University
1971 University Blvd
Lynchburg, VA 24515

Dear Dustin Miller:

Thank you for reaching out to me and providing me with the IRB approval documentation. I also thank you for sending the approval from ████████ and Liberty University's ADS department. I am happy to see that ADS will be helping with the data collection process and contacting all participants on your behalf. It is important that you will be unable to review personal information of participants.

After careful review of your research proposal entitled *Comparing Perceived College Persistence Between Students Taking Online or Residential Dual Enrollment in High School,* I have decided to grant you permission to conduct your research at Liberty University and contact first-year residential students in the Fall 2019 to invite them to participate in your research study.

Check the following box, if applicable:

X   I/We are requesting a copy of the results upon study completion and/or publication.

Sincerely,

█████████

Registrar
Liberty University

Appendix D – Email Sent to Students Seeking Participants

Dear Student,

As a doctoral candidate in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Education degree. The purpose of my research is to identify whether first-year residential students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential students who earned residential dual enrollment credits in high school.

If you are 18 years of age or older and are willing to participate, you will be asked to complete the survey below. It should take approximately 5-10 minutes for you to complete the survey. Your participation will be completely anonymous, and no personal, identifying information will be collected.

To participate, click on the link to the survey below and complete the survey.

https://liberty.co1.qualtrics.com/jfe/form/SV_e2U5FcS6OuxMN7f

A consent document is provided as the first page of the survey. The consent document contains additional information about my research. Please click on the link at the end of the consent information to indicate that you have read the consent information and would like to take part in the survey.

The following page of the survey includes instructions and further information on dual enrollment.

This study has been approved by both LU administration and the Institutional Review Board. The IRB approval number is 3703.031819.

Sincerely,

Dustin Miller
Ed.D. Candidate

Appendix E – Participant Consent

CONSENT FORM

Comparing Perceived College Persistence Between Students Taking Online or Residential Dual
Enrollment in High School

Dustin J. Miller
Liberty University
School of Education

You are invited to be in a research study that will look to determine the drop-out rate of college
students based on courses taken or not taken in high school. You were selected as a possible
participant because you are a first-year residential student of Liberty University and above the
age of 18 years old. Please read this form and ask any questions you may have before agreeing to
be in the study.

Dustin Miller, a doctoral student in the School of Education at Liberty University, is conducting
this study.

Background Information: The purpose of this study is to identify whether first-year residential
college students who earned online dual enrollment credits in high school are more likely to
persist as compared to first-year residential college students who earned residential dual
enrollment credits in high school.

Procedures: If you agree to be in this study, I would ask you to do the following things:
1. Complete the anonymous survey. It should take no more than 15 minutes to complete.

Risks: The risks involved in this study are minimal, which means they are equal to the risks you
would encounter in everyday life.

Benefits: Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to stakeholders (college administrators, high school administrators, students, and
parents) may find the results beneficial to know which students are more likely to persist at the
college level.

Compensation: Participants will not be compensated for participating in this study.

Confidentiality: The records of this study will be kept private. Research records will be stored
securely, and only the researcher will have access to the records. Participants will not provide

their name or any identifying demographic information. Data will be stored on a locked computer in a secure system. After three years, data will be deleted.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time, prior to submitting the survey, without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Contacts and Questions: The researcher conducting this study is Dustin Miller. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact at ▇▇▇▇▇▇▇▇▇. You may also contact the researcher's faculty chair, ▇▇▇▇▇▇▇, at ▇▇▇▇▇▇▇

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

_____

Signature of Participant   Date

Appendix F – Instrument Instructions

Instructions

Thank you for agreeing to participate in this research study. Please take a few minutes to read through the steps in order to understand your expectations for this quick survey.

Step 1: You will read a quick description of the study along with helpful explanations of important terms.

Step 2: You will be asked to fill out a few personal questions about yourself (age, gender, and race).

Step 3: You will be asked to provide information on if you earned dual enrollment credits and specific details (online, residential, both, number of credits, etc.).

Step 4: You will answer 32 questions describing your current satisfaction at the university.

Step 5: Submit the survey, and thank you for participating!

Appendix G – Participant Demographics Questions

Background Information: The purpose of this study is to identify whether first-year residential college students who earned online dual enrollment credits in high school are more likely to persist as compared to first-year residential college students who earned residential dual enrollment credits in high school.

Demographic Information

1. My current age at the time of this survey is:
2. I am Male/Female:
3. My ethnicity is:
    a. Caucasian
    b. African American
    c. Asian American
    d. Hispanic
    e. Choose not to report

Residential College Students: You have been chosen in this study because the Registrar has identified this to be your first year enrolled in a residential degree program at this university.

Dual Enrollment: Dual enrollment is an accelerated program in which high school students participate in college-level courses and receive college credit, and students can also receive high school credit depending on the school.

Online Dual Enrollment: Students that took online dual enrollment courses earned college credits through a distance education program while in high school. There was no face-to-face interaction in these courses.

Residential Dual Enrollment: Students that took residential dual enrollment courses earned college credits through a local college campus while in high school. Residential dual enrollment courses can also include students earning college credit in their high school classroom taught by credentialed professors. There is face-to-face interaction in these courses.

Dual Enrollment Information

1. I earned dual enrollment credits while in high school through which platform(s):
    a. Online only
    b. Residential only
    c. Both online and residential
    d. I did not earn dual enrollment credit in high school
2. I earned _____ college credits through dual enrollment while in high school:
    a. 0-6
    b. 7-12
    c. 13-24
    d. 25+