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Impact of the Implementation of a Summer Credit Retrieval Online Program on the Academic Achievement of Grade-8 Students

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on the Academic Achievement of Grade-8 Students

by
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Abraham S. Fischler College of Education
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Abstract

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Keywords: credits, academic persistence, dropout prevention, online courses

The problem addressed in this study was that the Compass Learning Odyssey program, a self-paced online intervention, was being utilized to allow middle school students at the target school to recover course credits in the core subjects of language arts, mathematics, science, and social studies, but its effectiveness had not been studied. The Compass Learning Odyssey program provided remediation opportunities for students who had failed one or more academic core courses and allowed for credit retrieval, course completion and grade promotion. The purpose of this study was to determine the impact of the implementation of summer credit retrieval online program on the overall retrieval of credits by all Grade-8 student participants and student participants in subgroups of gender and ethnic groups. The credit retrieval program had been in effect in the school since the 2006-2007 school year, but its effectiveness had not been studied.

The researcher used deidentified retrospective data to answer the research questions. One-way analysis of variance and t tests were conducted to determine for each year and overall for the 4 years if there was a statistically significant difference in the impact of the implementation of the summer credit retrieval online program on (a) the overall retrieval of credits by Grade-8 students in the summer program, (b) the quality points earned by gender and ethnic subgroups, (c) the students retrieving core credits, and (d) the core courses retrieved by gender and ethnic groups.

The results of the study showed that all students passed the quarter modules with at least a grade of D, with 75% of students making average progress with a grade of C. There was not a statistically significant difference between subjects studied. Ninety-three percent of the students participating in the summer credit retrieval program were able to recover enough core credits to be promoted. Suggestions for program improvements and recommendations for future research are included.

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Chapter 1: Introduction

Statement of the Problem

The topic. The topic of this study involved self-paced online learning to give middle school students the opportunity to earn credits for failed courses by completing a summer credit retrieval online course using the Compass Learning Odyssey program (Compass Learning, 2014). Currently, computer technology offers a viable option for students to retake courses. According to McCabe and St. Andrie (2012), technology use is instrumental in the classroom, and it is often used for gaining credit for classes. Franco and Patel (2011) stated that, for many years, students' options were limited when they failed a course and were forced to repeat the class either in summer school or during the next school year with the possibility of retention in the previous grade. These researchers added that, although various educational agencies use it in different ways, today, the students have options in place in which they can recover the credit through online learning programs.

The online intervention is appropriate because many students today have grown up in an era in which the use of technology is the norm rather than the exception. Allen and Seaman (2014) suggested this causes a challenge for educators as they must be ready to meet the technological needs of today's students. Researchers (McCabe & St. Andrie, 2012; Mims-Word; 2012; Rall, Goonen, & Pittman-Shetler, 2013) have indicated that, although educators are taking advantage of the many new opportunities that have been provided through technology, it is important to determine the effect of Internet usage on student academic achievement.

The research problem. The problem addressed in this study was that the Compass Learning Odyssey program (Compass Learning, 2014), a self-paced online

intervention, was being utilized to allow middle school students at the target school to recover course credits in the core subjects of language arts, mathematics, science, and social studies, but its effectiveness had not been studied. The Compass Learning Odyssey program provides remediation opportunities for students who have failed one or more academic core courses and allows for credit retrieval, course completion, and grade promotion.

During the 2006-2007 school year, the need for the program was evident because of the students' failure to successfully complete their core classes. As shown in Table 1, many students at the target school were performing below grade level on the Florida Comprehensive Assessment Test in reading and mathematics before implementation of the program. There was an urgency to find additional safeguards to be put into place to allow students the opportunity to recover unearned credit. Therefore, the credit recovery program was begun in that year (Florida Department of Education, 2007, 2016).

Table 1

Percentage of Students Scoring Below Grade Level, 2003-2006

Grade	2003-2004	2004-2005	2005-2006
Sixth			
Reading	40	44	38
Mathematics	53	46	48
Seventh			
Reading	44	44	42
Mathematics	49	51	49
Eighth			
Reading	57	61	57
Mathematics	43	46	43

Background and Justification

Although the situation is not unique to the target school, the teachers in the classroom encountered all levels of student ability and saw various levels of student achievement (Hobgood & Ormsby, 2016). The challenge for teachers was to provide differentiated instruction to help all students become successful in meeting high academic standards (Stern, 2015). According to Yang (2010), teachers should be more cognizant of individual differences in students when teaching and provide a lower level instruction for students who are not on grade level. However, Knesting (2008) asserted that, even with interventions, staying in school is difficult for some students.

Watson, Murin, Vashaw, Gemin, and Rapp (2013) suggested that online learning is an alternative that has become a rapidly growing way of studying over recent years. According to Miron and Gulosino (2016), there are 33 states that have full-time virtual schools. The 447 schools in these states have an enrollment of approximately 262,000 students. There are also a total of 87 blended schools in 16 states, which have 26,155 students. These blended schools provide students enrolled in physical schools with supplemental courses. The U.S. Department of Education (2016), when describing the power of technology to transform learning, stated, "It can help affirm and advance relationships between educators and students, reinvent our approaches to learning and collaboration, shrink long-standing equity and accessibility gaps, and adapt learning experiences to meet the needs of all learners" (p. 1).

Online programs are also being used to address the challenge of students dropping out of school. Rumberger (2011) stated that predictors of the propensity of individuals to drop out are related to individual factors associated with students themselves, such as their attitudes, behaviors, school performance, and prior experiences, and contextual

factors found in students' families, schools, and communities. Behaviors such as lack of engagement, absenteeism, drug use, teenage parenting, association with others who have dropped out or are engaged in criminal behavior, and working are also factors that lead to dropping out of school (Rumberger, 2011). According to Spradlin, Cierniak, Shi, and Chen (2012), Indiana attendance data show that students who are habitually absent or missing 10% or more of the school year receive lower scores on standardized assessments and are more likely to drop out of school. Balfanz and Byrnes (2012) also indicated that students who miss or fail academic courses are more likely to stop attending school than their peers. The National Center for Education Statistics (2015) reported that the public high school dropout rate was approximately 3.3 percent in the 2010-2011 and 2011-2012 school years. In an attempt to minimize the dropout rate, some teachers and school counselors are identifying students who should be placed in credit recovery programs (Tigro, 2014).

The setting. The target school is located in a rapidly growing and developing area of a southern state. The district is the largest employer in the county in which it is located and had more than 63000 students and over 7,300 employees in the 2016-2017 school year. All of the teachers in the district are state certified and approximately 42% of them have advanced degrees. The school is a Title I-funded school located in one of the fastest growing cities in the county. The staff consists of 72 instructional staff members with 43% of them being newly hired in the 2014-2015 school year. The school currently enrolls 1,002 students. Seventy-four percent of the students are on free or reduced lunch, and 56% are considered members of ethnic minorities. Seventy percent of the students are in regular, nonexceptional student education or courses for English for speakers of other language. In the 2014-2015 school year, 36% of the students had 10 or more

absences from school. There were 830 in-school suspensions and 439 out-of-school suspensions. Seventy-five percent of parents participated in one or more school-based activities.

Deficiencies in the evidence. Sapers (2014) stated that there is very little quality research on credit recovery programs. Barbour (2011) agreed that little data existed on the effectiveness, and, as the numbers of students enrolled in the courses increased, more research was needed to ensure that all stakeholders, including teachers and students, are prepared to be successful in these environments. Barth (2013) concurred that, although technology has been in use in public schools for years, there is little known information about the impact of online education and the information that does exist gives contrasting views of its efficacy.

Research has shown that more than half of the nation's school districts have students enrolled in online courses with 62% of those doing so for credit recovery purposes (Barth, 2013; International Association for K-12 Online Learning, 2013). However, Stevens and Frazelle (2016) reported, "Despite the growing popularity of online credit recovery courses, there is little research about which students take these courses or how well they perform" (p. i). The International Association for K-12 Online Learning (2013) commented that school educators require scientific research in order to develop efficacious online credit retrieval programs. Needed research includes information regarding differences in success rates for specific subjects and subgroups of students (Stevens & Frazelle, 2016). Also, Frazelle (2016) maintained that more research is needed regarding the overall impact of these online courses and how they can be effectively implemented.

Audience. The audience for this study will be the teachers, students, and school

administrators at the target school as well as district administrators. Stakeholders will benefit because information gained from this study may be used to improve the credit retrieval implementation at the target school and in other middle schools within the district.

Purpose of the Study

The purpose of this study was to determine the impact of the implementation of summer credit retrieval online program on the overall retrieval of credits by all Grade-8 student participants and student participants in subgroups of gender and ethnic groups. In order to find whether the online credit retrieval program is doing what it was intended to do, assessments were analyzed for the 2012-2013 to 2015-2016 school years. The Compass Learning Odyssey online educational program (Compass Learning, 2014) was used in the summer program during these years.

Definition of Terms

For the purpose of this applied dissertation, the following terms are defined.

Achievement gap. This term refers to the statistical inequality in the academic performance between minority or low-income students and their White or Asian peers. Generally, students who experience the achievement gap are racial or ethnic minorities, English-language learners, students with disabilities, and students from low-income families (National Education Association, 2014). Grades, standardized test scores, course selection, dropout rates, and college completion rates among other success measures are in which the achievement gap typically show up (National Center for Education Statistics 2015).

Adjusted cohort graduation rate. This term refers to "the number of students who graduate in 4 years with a regular high school diploma divided by the number of

students who form the adjusted cohort for the graduating class" (National Center for Education Statistics, 2016, p. 1).

At-risk students. This term refers to students who are in danger of failing a course or of being unable to graduate from high school. They may also be students who are low achievers, have learning difficulties, behavioral difficulties, or face other issues including problems with family, home or community (International Association for K-12 Online Learning, 2011).

Brick-and-mortar school. This term refers to a physical building which houses a learning establishment (International Association for K-12 Online Learning, 2011).

Compass Learning Odyssey. This term refers to a credit retrieval program that is presented in an online, interactive environment, which allows students to work at their own pace. It provides remediation in the core courses, mathematics, language arts, science and social studies (Compass Learning, 2014).

Core classes. In the target middle school, this term refers to language arts, mathematics, science, and social studies. These are the courses in which students are required to earn credit in order to be promoted to the next grade level. The Florida Department of Education (2013) also adds reading to its list of core subjects and does not list social studies as one. However, reading is not used in the credit retrieval program, but social studies is a retrieved course at the target school.

Credit retrieval or recovery. The terms credit retrieval and credit recovery are used interchangeably in this study. Watson and Gemin (2008) suggested credit recovery means passing and earning credit for failed courses, previously taken without success, in order credit toward graduation.

Dropout. This term refers to someone who has not completed the academic

requirements necessary to receive either a diploma or a general education diploma and who is neither enrolled in school or on summer vacation (Gleason & Dynarski, 2002).

      Online learning programs. This term refers to programs that provide courses delivered over the Internet (International Association for K-12 Online Learning, 2011).

Chapter 2: Literature Review

Introduction

The purpose of this study was to determine the impact of the implementation of summer credit retrieval online program on the overall retrieval of credits by all Grade-8 student participants and student participants in subgroups of gender groups, ethnic groups, and socioeconomic groups. The relevant topics discussed in this review of the literature include a brief history of distance learning, the theoretical framework for the credit retrieval program, retention of at-risk students, middle school characteristics, high school dropouts, differentiated instruction, computer-assisted instruction, online credit retrieval programs, the Compass Learning Odyssey program (Compass Learning, 2014) The research questions will also be presented.

History of Distance Learning

Gemin, Pape, Vashaw, and Watson (2015) reported that current online learning programs in schools originated in the distance learning realm. According to Lease and Brown (2009), since the mid-1800s, distance learning has been in place in one form or another. Lease and Brown contended that the basic premise of completing learning activities away from the instructor has remained unchanged since an initial correspondence course in which students used the postal service to submit work on Isaac Pitman's shorthand system. In the higher educational realm, both Illinois Wesleyan University and the University of Chicago were pioneers in offering college level courses and degrees. Lease and Brown stated that standards for distance education were established in order to maintain high educational and ethical standards. Distance education went on to include print formats, radio and telephone, television, video conferencing, and most recently computers (Barron, 2009).

In the public school setting, virtual schooling has existed since the early 1990s (Barbour, 2011). According to Barbour (2011), these programs were developed as a way for rural students to acquire courses they would not have access to in their traditional schools. However, computer-assisted instruction in schools did not begin until 1960 when the University of Illinois Urbana-Champaign developed the Programmed Logic for Automatic Teaching Operations project (Gemin et al., 2015). The Evergreen Education group suggested that online learning and computer-assisted instruction have come together under the banner of digital learning. Students in the public school setting now have an array of digital learning opportunities. In 2015, there were 24 state virtual schools that enrolled over 462,000 students and a total of 4.5 million supplemental online course enrollments (Gemin et al., 2015).

Theoretical Framework for the Credit Recovery Program

Ally (2008) stated that the design of online learning has been based on behaviorist, cognitivist, and constructivist schools of thought. Behaviorists such as Thorndike, Pavlov, and Skinner suggested that external influences cause changes in behavior and behavior that can be observed shows what has been learned. The behavioral approach to learning is the foundation on which early learning via computer was based. Ally stated that, in the online environment, behaviorists would indicate that expectations should be disclosed to the learner in advance so they would be able to gauge whether they are learning the content. Modritscher (2006) added that the material should be given in small, obtainable steps in logical sequences to maximize learning. Further, Ally warned that feedback is vital for both monitoring and correction.

Although Bandura (1977), whose theories have influenced online learning, is often categorized as a behaviorist, he considers himself a social cognitive psychologist.

Bauer (2016) indicated that Bandura's social cognitive theory was developed as a result of his belief that it is through observation that persons gain new knowledge. In the social cognitive theory, more than one factor is important to shape learning. Students learn through observation of success as experienced by others as well as through their own personal successes and develop self-efficacy, which is a belief that they are competent (Bauer, 2016). Modeling learning behavior and providing students with needed scaffolds to assist their learning are also important instructional strategies. Bauer stated that the Compass Learning digital curriculum provides modeling, scaffolding, and the fading of scaffolding when the learner is ready.

From the cognitivist perspective, learning is internal information processing (Ally, 2008). Moreover, because this processing is different for each learner, online learning must encompass differentiation of learning strategies. Learners are active participants in their learning in the cognitive classroom. Bruner, Piaget (1959), and Vygotsky (1978) are important supporters of cognitive learning. Modritscher (2006) suggested that the teacher should link new learning to the students' current knowledge. Additionally, the online learner should be aware of the reason for learning, and, once information is obtained, it is necessary that it be transferred into long-term memory immediately or be lost. The course should be presented in small doses and via varying methods (Modritscher, 2006).

The constructivist school of thought, which is most relevant today, is that learning happens when personal meaning can be applied to what is taught (Ally, 2008) Constructivists advised that learning is applied to assist in constructing knowledge by having students actively participating in learning activities. The control of the process is in the hands of the learner who needs time and opportunity to reflect and internalize

material (Ally, 2008). Because students build upon their own knowledge, content has to be effectively communicated and the learners initiate interaction with the teacher (Modritscher, 2006). Papert's (1976) groundbreaking work in using computers to teach children has led to the widespread use of computer and information technology in constructivist environments. Compass Learning (2015) explained that its program was developed based upon the Mayer and Moreno (2000) principle of personalization, Jensen's (1998) research on the difference between the child and adult brain, Hunter's (1982) method of direct instruction, Gardner's (1993) theory of multiple intelligences.

Characteristics of Middle School Students

Anderman (2013) asserted that it is generally agreed among educators that motivation is a key factor in student learning and that those who work with adolescents find it most important. Additionally, Buehler, Fletcher, Johnston, and Weymouth (2015) suggested that student perception of the learning environment, including rigor of the courses, support from teachers, and student safety, affect student motivation. Anderman also stated that students' motivation and performance in school declined as they left the elementary school, and these changes are the result of them going through puberty. As children grow, their bodies go through significant changes. However, during the adolescent years, which are when students are in middle school, the changes are most extreme (Caskey & Anfara, 2014; Hart, 2014).

It is the time in students' lives when they experience changes that are not only physical in nature, but also cognitive and psychosocial (Bucher & Manning, 2010). Caskey and Anfara (2014) declared that it is important for middle school educators to understand and respond to these unique characteristics and insisted that middle educators remember them when planning curriculum, instruction, assessment, and organization of

the learning environment. Scales (2010) cautioned that an adolescent can experience multiple developmental characteristics at the same time, and there are other factors that influence development, including race and ethnicity, as well social and environmental factors, such as family and community.

In study of 4,660 middle school students from 24 schools, who were making the transition from middle school to high school, Casillas et al. (2012) found that high school and postsecondary success is dependent on this transition. The results indicated that middle school academic achievement is the strongest predictor of high school academic achievement. Psychosocial factors, such as self-regulation, motivation, and social control, as well as behavioral factors, such as attendance and homework completion, also predict academic success in high school. In addition, Casillas et al. suggested that these factors can be used by middle school educators to predict students at risk of poor academic achievement and dropping out of school. Caskey and Anfara (2014) maintained, "Young adolescents warrant educational experiences and schools that are organized to address their physical, intellectual, emotional/psychological, moral/ethical, spiritual, and social developmental characteristics" (p. 1).

Characteristics of At-Risk Students

As indicated by Casillas et al. (2012), when students are not achieving academically or are having issues with psychosocial factors or behavior, they may be considered at risk of academic failure and dropping out of school. Powell, Roberts, and Patrick (2015) indicated that there are several academic and nonacademic factors that affect a student's propensity to be labeled at risk: not meeting academic requirements for promotion, being older than other students in the same grade, not reading at grade level, failing two or more courses, or not meeting graduation requirements. Other factors that

may place a student at risk include pregnancy, history of drug or alcohol abuse, incarcerated parents, low socioeconomic status, being from a single family home, having an older sibling drop out of school, repeatedly changing schools, and becoming disengaged from school. Having multiple risk factors combined increases the likelihood a student dropping out of school (Powell et al., 2015). Impoverished students are also more likely to be considered at risk of failure and having educational difficulties (Levy, 2011).

Grade Retention of At-Risk Students

The publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983), which was highly critical of the public education system, was a major contributor to greater attention being placed on grade retention. Because district, state, and national educators were challenged to improve student performance, grade retention as an intervention became a remedy for failing students (Kenneady, 2004). When students perform below academic standards, historically, they have been retained in their current grade levels in order to receive extra time to learn the subject matter before being promoted to the next grade. Those students with chronic behavior problems have also been retained because educators have viewed retention as a favorable solution to allow students to catch up and to mature in order for them to improve their academic performance, behavior, or social skills (Bowman, 2005; Jimerson & Renshaw, 2012).

Tingle, Schoeneberger, and Algozzine (2012), David (2008), and Hanover Research (2013) found that there is no verifiable evidence that academic achievement is enhanced through grade retention. Jimerson and Renshaw (2012) suggested that neither grade retention nor social promotion represented effective stand-alone strategies for student improvement of academic performance, behavior, or social skills. On the contrary, Jimerson and Renshaw argued that retention has detrimental effects on student

achievement, and there are no positive results of grade retention. Additionally, the researchers claimed that, although there may be a growth in achievement within the first year after the retention, students decline over time without targeted intervention. A study of promoted and retained Grade-8 students by Lamote, Pinxten, Den-Noortgate, and Van Damme (2014) supported the finding of Jimerson and Renshaw that the academic achievement of students deteriorated after they were retained in a grade.

Robles-Piña, Defrance, and Cox (2008), in a study of 191 Hispanic adolescents aged 12 to 18, found that grade-retained students had statistically significant (a) lower self-concept, (b) higher past feelings of depression, (c) lower grade point averages, and (d) higher levels of depression than students who were not grade retained. Adolescents who are retained often have fewer friendships and are stigmatized and socially isolated by their peers (Demanet & Van Houtte, 2013, 2016; Wu, West, & Hughes, 2010). This finding supports earlier research by Kenneady (2004).

Martin's (2010) study using data from 3,261 junior high, middle high, and senior high school students did not support the previous finding that retained students' relationships with peers were significantly affected. However, the statistically significant findings indicated that students who had been retained in a grade had lower academic self-concepts, achievement engagement, and academic motivation, even when results were controlled for ability, than students who had not been retained. In addition, the retained students had a lower rate of homework completion and were absent more often. When the retention outcomes were disaggregated for ability, gender, ethnicity, and grade, they were still negative. Also, Warren, Hoffman, and Andrew (2014) found that male, Hispanic, and African American students, as well as first-generation immigrant students, are most likely to be retained.

Furthermore, Hattie (2015) synthesized 1,200 meta-analyses of studies relating to influences on student academic achievement and ranked 194 influences from positive to negative effects. Grade retention is rated as number 191, $d = -.17$, which means that it had a negative effect on student learning outcomes. O'Hanlon (2009) found that grade-retained students will likely be unsuccessful in subsequent attempts to improve their academic achievement when presented with the same material in the same learning environment. This view was supported by the Marsico Institute for Early Learning and Literacy (2012), which reviewed studies that indicated retention is ineffective when it involves no change in teaching materials and instructional methods. When learning challenges are not adequately addressed and are not resolved, there are no benefits to students and several harmful effects such as increased aggression, reduced achievement, greater likelihood of dropping out of high school and much lower college attendance (Marsico Institute for Early Learning and Literacy, 2012). The summer credit retrieval online program at the target school is an alternative to grade retention.

The research-based negative consequences of grade retention indicate that there is a need to find alternatives. The National Association of School Psychologists (2011) exhorted educators to eliminate both social promotion and grade retention "by instead implementing systems that permit early identification of academic difficulties and that ensure individualized, evidence-based remediation plans with frequent progress monitoring for students who fall below grade level expectations" (p. 1). In a similar statement, the Florida Association of School Psychologists (2015) advocated for employment of "evidence-based supports and interventions" (p. 1) instead of grade retention. The position statement also indicated that students who are promoted must be provided with needed intervention services.

High School Dropouts

Using the matched samples of 4,352 students from the National Longitudinal Survey of Youth Child and Young Adult supplements in 1979 and the National Education Longitudinal Study in 1988, Andrew (2014) found that "retaining a child in early school reduces his or her odds of high school completion by about 60 percent in propensity score matching and sibling fixed-effects models" (p. 653). Furthermore, Rumberger (2011) found that students who are retained once in middle school are 10 times more likely to dropout than those who are not. The costs of retention and dropout are enormous because individuals without a high school diploma are more likely to end up in the penal system or be unable to attain employment (Dianda, 2008; Franco & Patel, 2011).

Slack, Johnson, Dodor, and Woods (2013) maintained that the dropout rate is fueled by students who experience many middle school failures. Additionally, Anderman and Midgley (1997) asserted that those students who experience failure in school struggle with maintaining motivation to keep trying, especially if they feel the situation is beyond their control. In 2008, each day there were more than 7,000 students who dropped out of school totaling over one million students per year. However, by 2012, this number had dropped to 744,193 students who dropped out (Alliance for Excellent Education, America's Promise Alliance, Civic Enterprises, and the Everyone Graduates Center at Johns Hopkins University, 2015). However, even this reduced rate is too high (American Graduate, 2014; Civic Enterprises, 2016; McFarland, Stark, & Cui, 2016).

McFarland et al. (2016) reported that, in the 2012-2013 school year, the national event dropout rate was 4.7%. This means that, of those students enrolled in public or private schools in October 2012, 508,000 students who were 15 to 24 years old left

school before October 2012 without high school completion. The authors declared, however, that this rate has trended downward from a high in 1972 of 6.1%. Males dropped out at a rate of 4.8 and the rate for female students was 4.5 in 2012. However, African American students and Hispanic students had a higher dropout rate than White students. African American students dropped out at a rate of 5.8%, Hispanic students dropped out at a rate of 5.7%, and White students left at a rate of 4.3%.

Students living in low-income families left school at a rate of 7.3%, but only 3% of their peers from high-income households dropped out. Those students who fell within the normal age range for high school (i.e., 15 to 18 years old) had a lower event dropout rate (4%) than students who were 20 to 24 years old (14.4%). Also, students with disabilities dropped out at a rate of 7.8% compared to 4.6% of students without disabilities. The status dropout rate for the 2012-2013 school year indicated that the percentage of 16- to 24-year-olds who were not enrolled in school and had not earned a high school credential was 6.8%. However, the status dropout rate was higher for youths who were African American (9%), Hispanic (11.8%), and American Indian or Alaska Native (12.8%).

Civic Enterprises (2016) reported that, nationally and in Florida, half of all of the students in public schools are from low-income homes, and these students are not as likely to graduate from high school than their peers who are not from low-income homes. In Florida in 2014, 67.8% of the students from low-income households were graduating, and 83.9% of students who were not from low-income families were graduating. When the 2014 data are disaggregated by ethnicity, the adjusted cohort graduation rate is 81.7% for White students, 75% for Hispanic students, and 64.7% for African American students (Civic Enterprises, 2016).

Researchers have indicated that dropping out of school is not an event, but it is a process of gradual disengagement from school and learning that begins in elementary school or earlier (Casillas et al., 2012; Finn, 2006; Rumberger, 2011). Moreover, research has not determined just one risk factor that can accurately predict which students are at risk of dropping out (MacIver, 2010; Rumberger & Lim, 2008). Numerous factors influence dropping out of school and can be categorized in these four spheres of influence: individual (e.g., disengaged from school, high-risk behaviors), family (e.g., socioeconomic status, attitudes regarding education), school (e.g., school resources, school environment), and community, such as location or employment opportunities (American Psychological Association, 2012; Hammond, Linton, Smink, & Drew, 2007; Rumberger, 2011).

The impact of early family and school experiences can be crucial to a student's success in school and in life. Indicators of future school dropout include weak familial structures, lack of sufficient positive parental guidance, and drug and alcohol problems present within the home (Englund, Egeland, & Collins, 2008). Other risk factors, which include family socioeconomic status, gender, and family type, make a difference in whether a student stays in school or not. Dalton, Glennie, Ingels, and Wirt (2009) added that males dropped out more often than females. African American and Hispanic ethnic groups have the highest dropout rates, and Asian and Pacific Islanders have the lowest dropout rates. Additionally, Dalton et al. acknowledged that older students and those with lower family income dropped out of school at a higher rate.

Some students who do not graduate with their classes have experienced the effects of harsh disciplinary actions at school (Skiba, 2014). In response to the escalating numbers of students with problematic behavior, many schools adopted a zero-tolerance

mandate as a way of funneling away students who are disruptive to the learning environment (Skiba, 2014). Zero tolerance refers to harsh, inflexible, and exclusionary discipline with automatic, predetermined discipline (Gjelten, 2016). Being excluded from school either by suspension or expulsion can lead to participation in criminal activities that result in the school-to-prison pipeline (Wilson, 2014). Wilson (2014) argued that this resolute method of punishment causes attendance issues, course and grade failure, and eventually dropping out of school. However, according to Wilson, educators are finding ways to establish a learning environment in which students believe that they belong.

Hutchinson and Henry (2010) suggested that socioeconomic status, ethnicity, and location of the school have been linked to students being labeled at risk for dropping out. Additionally, African American and Hispanic boys are more likely to experience poverty and to drop out of school than any other sector of students (Hutchison & Henry, 2010). Furthermore, the authors declared that male students are more likely to become involved in criminal activities, gang activity violence, and drug use. In addition, students in rural areas are also at risk because their schools may not have access to adequate staffing, sufficient funds, and extracurricular activities. Further, Hutchison and Henry reported that students engaged in school succeed more often. Those who experience the lifestyle of at-risk students are more likely to become disengaged and emotionally disconnected.

Research has indicated that some of the most common reasons for dropping out include low test scores, familial issues related to starting a family, having to support a family, and instability within the family unit (Bridgeland, DiIulio, & Morison, 2006; Franco & Patel, 2011). Students are also more likely to drop out of school if they see others who have dropped out of school, such as a parent, sibling, or peer (Lamote et al., 2014), if they are from a low socioeconomic family (Dalton et al., 2009), and if they are

from a single-parent family or a family with a low level of education (Hammond et al., 2007). Additionally, attending multiple schools (South, Haynie, & Bose, 2007), failing academic high school courses (Silver, Saunders, & Zarate, 2008), high absenteeism (Rotermund, 2007), classroom misbehavior (Finn, Fish, & Scott, 2008), delinquency in the community (Siegel & Welsh, 2014), having been retained in a grade or being over age for a grade level (Hammond et al., 2007) are also factors that affect graduation.

Balfanz (2007) indicated these are four broad classes of dropouts: individuals who drop out due to life events, those who fade out, those who are pushed out, and others who fail to succeed. Life events that cause students to drop out of school include teen pregnancy, foster care placement, being arrested, or having to work to support their family. Some students fade out of school due to frustration and boredom with school even though they have not repeated or failed any grades. Although these students have been promoted from grade to grade on time and may possess skills that are above grade level, they stop seeing the reason for attending school.

Upon reaching the legal dropout age, they leave with the belief that they will attain viable employment without a high school diploma. Pushouts are students who are encouraged, whether subtly or explicitly, to withdraw or transfer to another school because they are perceived to be difficult or detrimental to the success of the school. Although many students believe they have no choice but to drop out of school, the reasons for leaving school may be supported by family and others or may be seen as a good idea at the time (Bridgeland et al., 2006).

When Bridgeland et al. (2006) interviewed 467 students between 16 and 25 years old from 25 locations, who had dropped out of high school, they gave a range of reasons for not completing their high school journey. The reasons included the lack of

connectedness to the school, boredom, being ill prepared, lack of parental support, too much freedom, and problems with academics. The interviewees expressed that they were saddened by the fact that they missed the opportunity to finish school, and 74% stated that they would stay in school if they could do it all over again. They also stated that they wished they had listened to those who had tried to warn them of the problems they would face in the future if they dropped out.

Slack et al. (2013) insisted that, once students drop out of school, they start a cycle of dropouts in their families as their children are more likely to follow suit. Rumberger (2011) stated that the economic impact of dropping out of school is high because dropouts tend to earn less money over their working lives than those who graduate from high school. Additionally, Rumberger found that costs to both the dropout and society, as a whole, are significant as sometimes these students cannot find employment. If employment is attained, high school dropouts are more likely to earn lower wages and have overall lifetime earnings lower than those who have received a diploma (Bowers, Sprott, & Taff, 2013). Ultimately, the cost to taxpayers is approximately $17 billion in medical expenses alone (Slack et al., 2013).

Rumberger (2011) noted that dropouts experience other negative outcomes that include poorer health and higher incarceration rates. In addition, Krueger, Tran, Hummer, and Chang (2015) found that adults who did not graduate from high school had a higher mortality rate than high school graduates. The researchers reported that studies (Cutler & Lleras-Muney, 2008; Goldman & Smith, 2011; Hummer & Hernandez, 2013) indicate that this higher mortality rate is likely do to higher income and social status, enhanced cognitive development, better adherence to medical treatments, healthier behaviors, and improved social connections and psychological well-being.

According to the American Psychological Association (2012), the quality and quantity of the workers can be affected by high dropout rates. The quantity of policy makers in the professional or political ranks is lowered because of the number of persons not completing school (American Psychological Association, 2012). Because many students never finish high school, there is a negative impact on the country's long-term prospects regarding economic outlook. Kena et al. (2016) reported that, in 2014 for young adults aged 25 to 34 who worked full time, year round, the median income for those who dropped out of high school was $25,000. At the same time, the median income for young adults who completed high school was 20% higher at $30,000.

The business world also has concern of the dropout problem in the United States, according to Bridgeland, Milano, and Rosenblum (2011). The researchers emphasized that approximately 40% of the nation's dropouts are both out of work and out of school, leaving businesses with a large portion of their workforce unable to compete in a competitive workplace because of lack of proper education. Bridgeland et al. claimed that, despite the increase in graduation rates, there are still about 25% of all public high school students and almost 40% of minorities who do not graduate on time.

Differentiated Instruction

When students struggle with learning expectations, they need opportunities to experience academic success and become motivated to fully participate in their learning. Students need a great deal of support to help them become engaged and stay engaged in the learning process and successfully complete their courses (Balfanz, Herzog, & MacIver, 2007). Smith (2013) emphasized that differentiation of instruction can help to improve students' academic performance, which may lead to increased engagement with school and a reduced likelihood of dropping out of schools. Differentiated instruction was

defined by Landrum and McDuffie (2010) as "a pedagogical approach to teaching and learning for students of differing readiness levels, interests, and modes of learning within the same classroom" (p. 9). It recognizes students have individual differences and learning styles and responds to these differences.

Differentiated instruction addresses the individual learning levels of each student and is a form of modification with the appropriate levels of rigor to meet each student's needs (Drapeau, 2004). Additionally, the learning needs are addressed as instructional techniques vary based on student needs. Tomlinson (2014) suggested that instruction can be differentiated via changes in process, content, and product, based on students' readiness, interest, and learning profiles. Although differentiated instruction is widely used and accepted in education, there has been little research conducted to support its effectiveness on increasing student outcomes (Ernest, Thompson, Heckaman, Hull, & Yates, 2011). However, there is evidence that it is considered to be "rooted in years of educational theory and practice" (Ernest et al., 2011, p. 33). Ernest et al. (2011) suggested that differentiated instruction is necessary in increasingly diverse classrooms. In a study to exam the impact of 35 teachers using differentiated instructional strategies at the elementary, middle, and high school levels, Ernest et al. described these positive results: "There was a consistent 30% change from pretest to posttest scores for the students" (p. 40).

Demands on teachers to raise the learning bar and have each student perform at grade level or above have increased with the proliferation of accountability standards since the introduction of the No Child Left Behind Act of 2001, which stated that all students must reach state standards of performance. A difficulty with the No Child Left Behind Act was that nonschool variables, such as home environment and socioeconomic

status, were not to be taken into account in the fixed proficiency levels (Yeh, 2006).

However, there was the assumption that teachers have the knowledge, skills, and time to

adequately analyze and interpret assessment data for each student and implement

instructional strategies targeted to the individuals for their unique academic needs. The

Every Student Succeeds Act, which was signed by President Obama on December 10,

2015, reinforced the need to improve students' academic outcomes by continuing to

increase high school graduation rates and reduce dropout rates (U.S. Department of

Education, 2015).

Although students have varying levels of readiness for the curriculum, they

continue to be expected to learn the content regardless of their learning styles or

academic needs (Ernest et al., 2011). This causes a challenge for the teachers to

adequately address the range of academic diversity with which they are faced because

students need varying amounts of attention from the teacher and their learning paces or

content needs are diverse. Therefore, differentiated instruction will continue to be viewed

as a means to have all children succeed by responding to their individual needs.

Computer-Assisted Instruction

One method of individualizing instructional strategies is through computer-

assisted instruction. Gemin et al. (2015) stated that, as noted earlier in this chapter, the

Plato project at the University of Illinois Urbana-Champaign was a forerunner in using

computer-based instruction. Beginning in 1960, the system delivered higher education,

corporate and military training courses ranging from French to organic chemistry, and

advanced military training (Gemin et al., 2015). Later, as the project evolved, Plato

formed Plato Learning, which became Edmentum (Edmentum, 2016), and NovaNet,

which was taken over by Pearson Education (2016) after being terminated in 2015 (Plato

History Foundation, 2015).

The programs were used mainly for remediation and credit retrieval with struggling students in several thousand schools across the United States. Students often had little interaction with either a teacher or other students as they worked on the programs. Gemini et al. (2015) suggested that computer-assisted instruction was influenced heavily by the need for credit recovery, which continues to be an important purpose for the use of digital learning in schools today. The authors contended that millions of students are taking online courses while attending physical schools, and many of them are doing so for credit recovery. Some students take these courses while in the physical school building, but others receive little to no support from school and take the courses from home. Gemini et al. stated that the largest users of online learning are the traditional public schools, as nearly all districts are using some type of online learning.

Today, technology is seen as a way to reduce learning barriers for many students (Center for Mental Health in Schools at UCLA, 2014). In June 2013, President Obama described the ConnectED initiative, which has the goals of increasing high-speed digital connectivity for all schools and libraries, training teachers to maximize the use of technology in instruction, and increasing the involvement of private-sector partners (White House, 2013). In 2011, Levy argued that poor students were affected by the digital divide as they do not have access to the technology that their more affluent peers do. Rideout and Katz (2016), in a telephone survey of 1,191 parents in lower income or low- and moderate-income families who had children ages 6 to 13, regarding digital connectivity, found that the divide still persisted. The researchers' findings show that 44% of low- and moderate-income families, 52% of families below the poverty level, and 65% of immigrant Hispanic families do not have high-speed Internet access at home.

Technology provides an outlet in which students can explore new information and gain new knowledge while synthesizing the information that is brought to them in unique formats (Yildiz & Aktas, 2015). Computer-based teaching offers the use of computer technologies, which allow the user to use self-learning principles. Yildiz and Aktas (2015) also suggested that, because of advancements in technology, instruction given via the computer applications is often interesting and effective because it captures students' attention. It also tends to have a more lasting effect on learning (Yildiz & Atkas, 2015).

Computer-assisted instruction's primary purpose is the incorporation of technology to increase student achievement (Slavin & Lake, 2007). One of its advantages is that, when the student's individual strengths and weaknesses are found, supplemental instructional activities can be provided to fill in the learning gaps. According to Carr (2014), computer-based courses allow students to work at their own speed and avoid distractions from other students. However, Carr also noted that some students have indicated that there are times they would prefer to be in a regular classroom in order to get assistance from and ask questions of a teacher who would provide hands-on experience with the learning objectives and provide better understanding of confusing concepts. As educational technology becomes more sophisticated, more school districts are employing the use of a credit retrieval program (Hasselbring, 2012).

Yildiz and Aktas (2015) added that the use of computer-based instruction should be used as a supplement to the instruction of a classroom teacher and offered ways in which computers could be used in education. When students are absent or confused about a topic, the computer could be used as a teaching tool. The computer can be used as practice and evaluation after a subject is taught. In addition, computers can be used as an interactive tool for teachers to counsel students on the content or to keep them focused on

learning tasks (Yildiz & Aktas, 2015).

Hughes, Zhou, and Petscher (2015) stated that the greatest area of growth of virtual schools has been seen in the southeastern portion of the United States, in which 78% of school districts have at least one enrollee in distance education courses. Fifty percent of the national enrollment of students in virtual schools are enrolled in the Florida Virtual School, which is the first state virtual school (Watson et al., 2013). In the 2014-2015 school year, the Florida Virtual School had 5,595 full-time students at the state level and more than 5,606 full-time students at the district level (Florida Department of Education, 2015). There were also 527,682 course completions by part-time students at the state and district levels.

In its embracing of the online learning trend, Florida has adopted legislation that requires all students to take at least one online course for graduation and has enlarged its offering of both blended and other online learning options (Hughes et al., 2015). The required online course prior to graduation can be completed through blended courses, courses taken online through Florida Virtual Schools, or digital learning content offered through either the student's home school or a charter school (Florida Department of Education, 2011). Florida is not, however, the only state that requires its students to take online courses for graduation. Alabama, Arkansas, Michigan, and Virginia also require at least one online or technology-enhanced course before graduation. However, their programs are not as extensive as the requirements in Florida (National Conference of State Legislatures, 2014).

Rice (2006) highlighted five types of online programs for public schools. In the statewide supplemental programs, students are physically enrolled and attending schools within the state but are taking individual courses through the online component. The

programs are authorized by the state and administered by state education governing agencies. District-level supplemental programs are usually run and tracked by the district and are not overseen by the state. Many individual districts offer virtual courses for students that are alternatives to face-to-face learning. Multidistrict cyber schools are the largest growth sector in the public school online learning population. These are operated within individual school districts but enroll students from other districts within the state. Cyber charters can draw students from across the state. However, they are chartered within a single district and usually provide content that is commercially produced (Rice, 2006).

Online Credit Retrieval Programs

The National Center for Education Statistics (2015) reported that 55% of school districts enrolled distance education students during the 2009-2010 school year and that 60% of the classes were credit recovery classes. Carr (2014) added that credit recovery is an important issue in 80% of urban schools. However, Carr explained that no accurate data were available regarding student enrollment. McCabe and St. Andrie (2012) agreed that, due to the lack of federal oversight and collection of school data, there are no definitive numbers to support the claims of for-profit courseware providers who state that they have seen tremendous increases in the use of their products for credit retrieval purposes.

Before digital learning options were available, students who were not on the path to graduation depended on alternative schools that served students who were most in need of support and flexibility. Rath, Rock, and Laferriere (2012) stated, "The phrase 'over-age, under-credited' describes the academic background of a population of youth at the heart of our nation's dropout crisis" (p. 3). Many of these students were no longer

interested in school or had been pushed out due to disciplinary issues (Powell et al., 2015). Powell et al. (2015) pointed out that these older students are better served via an online curriculum, as they may not have the time to attend a repeated course or the desire to do so. Online courses, according to Powell et al., allow a student to master content in small doses and ultimately to circumvent the gaps in learning that may result from retaking the course in a physical setting.

Repetto, Cavanaugh, Wayer, and Liu (2010) reported that, in response to mandates to close achievement gaps and raise graduation rates, virtual schools have added credit recovery and remediation to their missions. Researchers (Dessoff, 2009; Franco & Patel, 2003; Queen & Lewis, 2011) have indicated that a credit recovery program provides the opportunity for students to earn credit for courses they had previously failed, and some districts also allow students to make up grades while also recovering credits. A credit retrieval program makes it possible for students to graduate from high school. Additionally, Retroia-Bonito, Goncalves, and Jorge (2015) emphasized that e-learning makes it possible to innovatively deliver a cost-effective education and argued that it essentially improves pedagogy, how students gain access to materials, and content development.

Hughes et al. (2015) conducted a study using Florida high school students' course transcripts for the 2007-2008 to 2010-2011 school years to determine if there was a difference in the academic performance of students in online courses and face-to-face courses. The results indicated that, overall, students participating online academic courses were more likely to earn a C course grade or higher than were students in face-to-face courses. When the data were disaggregated, this result was true for most subgroups. Additionally, in credit recovery courses, overall, students were more likely to earn a C

course grade or higher than were students in face-to-face courses. This result was the same for all subgroups except English-language learners for whom there was no statistically difference in the result. Hughes et al. cautioned that this study did not provide causal evidence of the greater efficacy of online course, as there may have been differences in the students taking the online and face-to-face courses.

Wolff (2013) described the Iowa School District's program for credit retrieval in which learning is completed on a face-to-face platform over the summer to assist students in earning credits for courses they had previously failed. Wolff indicated that the schools give the initial opportunity to students who are most likely to retrieve the credits and caution that some students are not as likely to succeed in the program due to having a very low F grade, an inability to work independently, or behavior issues. Additionally, Wolff suggested that using student tutors or those who had recently graduated from school and building positive relationships with the students would be useful in giving additional motivation to students to achieve. Further, Wolff stressed that it is important to have students recover credits as soon as possible, so they can increase the probability of graduating from high school. Several for-profit credit retrieval programs are available to school districts around the nation, and, although they vary in their approach, the premise of the programs, which is to give students the opportunity to retrieve credits, is the same. Instead of creating a unique program for credit recovery, many districts rely on one of these companies for content (Franco & Patel, 2011).

McCabe and St. Andrie (2012) asserted that there are positive and negative factors regarding credit recovery programs. A positive factor is that the 47% of dropouts who indicated that uninteresting classes was the reason for leaving school could possibly be convinced to remain in school because online credit recovery programs allow

struggling students to direct their own learning. Additionally, because courses are completed at the students' pace rather than led by a classroom teacher, the 43% of dropouts who are chronically absent from school would have a viable option. Also, with mastery being the key goal of credit recovery, students could skip over concepts they can already master to concentrate on those needing more attention.

Conversely, McCabe and St. Andrie (2012) noted that data are not widely available regarding the effectiveness of the programs causing skeptics to wonder if students really learn from them. Also, teacher qualification requirements vary from district to district. Additionally, McCabe and St. Andrie suggested that some students choose to not perform to their potential in their classrooms, so they can take credit recovery courses that lack rigor or include what they expected when they first had the course. McCabe and St. Andrie also questioned the fairness of grade reporting because it is not standardized across districts.

Compass Learning Odyssey

Compass Learning Odyssey, which was acquired in August, 2016, by Edgenuity (Molnar, 2016), is a program that has been in existence since 1969 and is used in over 10,000 schools in which it currently serves over two million students for credit retrieval of failed core subjects (Compass Learning, 2015). The core subjects are language arts, mathematics, science, and social studies. Students who fail courses in their teacher-led classrooms are assigned to completed the required the material. Compass Learning (2014) asserted that the program is aligned to state and common core standards and that there is less frequency of students dropping out because students are afforded the opportunity to recover credits needed for promotion. The program prescribes a personalized program that allows the students to work at their own pace and to complete

sections of the course that they have not passed. Students receive explicit instruction along with both supported and independent practice and are assessed on knowledge gained on a frequent basis (Compass Learning, 2015).

Davis (2011) commented that one of the fastest growing ways that online education is being delivered is through credit recovery. Students can relearn concepts while continuing with their regular school day in order to continue learning new material in their regular classrooms. With credit recovery as an option, students are less likely to drop out of school because they know they have an option of recovering missed credits and graduating. Compass Learning Odyssey provides material and instruction that is research-based and tailored to the needs of the individual learner (Davis, 2011). The content is aligned with both national and state standards (Compass Learning, 2014). The program offers an interactive, flash-based learning environment to teach and review course material.

The Compass Learning Odyssey program's platform has many interesting graphics to keep students' attention. The animation and media interfaces along with instruction provides an enjoyable experience (Davis, 2011). Additionally, students can repeat concepts in order to make sure they understand what is being taught. Students use headphones to eliminate distractions from other users of the program and to allow them to focus on their individualized content. This allows them to work on their own. Students receive feedback immediately when working in the program (Davis, 2011). This immediate feedback also allows teachers the ability to stay up to date on students' scores and to conference with them about their progress.

Because the students participating in the Compass Learning Odyssey Lab are retrieving credit for courses they failed, they work through the program at different rates.

In the target school, students are assigned to the Compass Learning lab when they have failed a course. During the school year, if multiple courses are needed to be retrieved, students are assigned multiple class periods in order to make up the work. Students are able to review concepts they were not able to master in the traditional classroom and could possibly retrieve the credit in less time than they would in a traditional classroom.

The Compass Learning Odyssey instructor plays a major role in the implementation of the program and the success of the students. The instructor is highly qualified by being certified in the core subject areas: language arts, mathematics, science, and social studies. These are the courses that students remediate within the lab. Therefore, the teachers are expected to be organized, to have great coaching skills, and to maintain a positive learning environment as they monitor and assist the students as needed. Additionally, classroom-management skills are paramount as extra coaching may be necessary to ensure students remain on task and successfully complete all assignments in the lab. Also, training on the correct usage of the program is necessary for teachers.

According to Wijekumer, Hitchcock, Turner, Lei, and Peck (2009), the Odyssey program offers training packages both during the summer and during the school year. The average length of this training is 5 days. When teachers are trained on the use of the program, they can then go on to create classrooms and assign students to individual tasks. The Compass Learning Odyssey platform is web based. This allows unlimited access to the program from school, the library, home, or any other place in which there is Internet access 24 hours a day, 7 days a week. Having unlimited access to the program allows the students more on-task time.

Compass Learning Odyssey in Florida

The CompassLearning Odyssey program is used in many school districts in the

state of Florida. Palm Beach County Schools has the Middle School Course Recovery

Program, which uses the Compass Learning Odyssey program for remediation purposes

(Palm Beach Schools, 2016). The program is employed to benefit students who have

failed a quarter in any of the core courses or who have been conditionally promoted to

prevent failure of the grade. Students are allowed to access the Compass Learning

platform from home, the library, or any other place that has internet access (Palm Beach

Schools, 2016). Palm Beach County also provides a checklist that their teachers may use

to assist with managing the classroom. This checklist gives recommendations for setting

up the lab as well as reminders for student tools and teacher duties while in the lab.

Osceola County Schools uses the Compass Learning Odyssey program in some schools

(Osceola County Schools, 2014). The program is used as a prescribed personal learning

program for both remediation and enrichment (Osceola County Schools, 2014).

Seminole Middle School, which is located in Broward County, Florida, uses the

Compass Learning Odyssey program to run a virtual learning boot camp for students to

get them ready for the Florida Standards Assessment test (Seminole Middle School,

2015). The students are enrolled in a 6-week program and may work from home or

anywhere with Internet access to complete weekly activities in both reading and

mathematics. This format replaces the Saturday School Program previously used for test

preparation. The program is not mandatory, but teachers do monitor the students'

progress. If weekly goals are not met, parents are notified and reminded via text message

to have the student sign into the program. If a student does not access the program for a

3-week period, he or she is removed from the program. However, if additional help is

needed, students are allowed to sign into a group on Edmodo (2016) for assistance.

Conway Middle School adheres to the Pupil Progression Plan for Orange County,

Florida, which states that students must successfully pass the four core courses in each middle school grade in order to continue to high school (Conway Middle School, 2012). The school offers the Compass Learning Odyssey program for recovery of courses students fail and there are three options in place in which to do so. Some students are placed in the online course within the school day and other students work either before or after school during the extended school day time. Still others are allowed to retrieve courses online from home. Students placed in the online recovery class during the school day lose an elective class until they have successfully completed the course. All students must show mastery of least 70% of the required material in order to receive a grade change (Conway Middle School, 2012).

In the county in which this study was being conducted, there are several ways in which the Compass Learning Odyssey program is implemented in addition to the summer credit retrieval online program. The program was initially brought to the county as a tool for credit retrieval. As the district continued to use the program, more uses were found for the program. Currently, the program is used at all secondary schools within the district, in alternative settings such as the juvenile justice center and alternative school, and as a virtual component for students who do not attend a brick-and-mortar school on a regular basis. During the school year at the target school, there is one learning lab with one teacher who monitors student work in six class periods of 22 students each.

The students are in the lab to recover credits in the core curriculum courses. Additionally, there are seven blended learning classrooms that use the program on an as-needed basis for immediate remediation of concepts failed in the classroom. That course work is used under the core classroom teacher's supervision. The classrooms for the emotional behavioral disorder program also use the Compass Learning Odyssey program.

The students are in a self-contained classroom with teachers and assistants who guide them through the use of the program.

Summary

Students who are not achieving academically may be at risk of dropping out of school. Rumberger (2011) found that costs to both the dropout and society, as a whole, are significant, as these students sometimes cannot find employment. Researchers have found no verifiable evidence that academic achievement is enhanced through grade retention (David, 2008; Hanover Research, 2013; Tingle et al., 2012). Jimerson and Renshaw (2012) suggested that neither grade retention nor social promotion represented effective stand-alone strategies for student improvement of academic performance, behavior, or social skills. Therefore, the target school has invested in a summer credit retrieval online program, which is an intervention that gives students the opportunity to be remediated and earn credits in a timely manner and allows them to remain with their peers in traditional classrooms at the same time.

Research Questions

The following research questions were established to guide this applied dissertation:

1. What was the impact of the implementation of the summer credit retrieval online program on the overall quality points earned by Grade-8 students in the summers of 2013 to 2016?

2. How did the quality points earned by Grade-8 students in the summer credit retrieval online program in the summers of 2013 to 2016 vary for gender and ethnic groups and by core course?

3. What was the overall impact of the implementation of the summer credit

retrieval online program on Grade-8 students retrieving core course credits in the summers of 2013 to 2016?

     4. How did the retrieval of credits for core courses by Grade-8 students in the summer credit retrieval online program vary for gender and ethnic subgroups and by core courses?

Chapter 3: Methodology

Introduction

The purpose of this study was to determine the impact of the implementation of summer credit retrieval online program on the overall retrieval of credits by all Grade-8 student participants and student participants in subgroups of gender and ethnic groups. The credit retrieval program had been in effect in the school since the 2006-2007 school year, but its effectiveness had not been studied. In order to find whether the online credit retrieval program was doing what it was intended to do, assessments were analyzed for the summers of 2013 to 2016. The Compass Learning Odyssey online educational program (Compass Learning, 2014) was used in the summer credit retrieval online program during these years. This chapter includes a description of the participants, data-collection instruments, procedures, and data analysis. The limitations are also included.

Participants

The participants, whose data were gathered for this study, included the 73 eighth-grade students who participated in the summer credit retrieval online program in the 2013 to 2016 school years. This sample was selected using nonprobability purposive sampling, rather than being randomly selected. Johnson and Christensen (2016) stated, "In purposive sampling (sometimes called judgmental sampling) the researcher specifies the characteristics of a population of interest and then tries to locate individuals who have those characteristics" (p. 264). Thus, the selection of participants was based on the purpose of the study, as well as the judgment of the researcher (Lund Research, 2012).

Nonprobability purposive sampling was an appropriate choice for this study because it was necessary to gather academic data from students who participated in the credit retrieval program. However, although eighth-grade student data were gathered and

analyzed, the information was retrospective, deidentified data; therefore, the students were not direct participants in this study. The participants whose data were gathered for this study were Grade-8 students who failed one or more core subjects in their traditional classroom settings during the year before they attended the summer credit retrieval online program. The students were striving to catch up with their age peers by retrieving credit during the summer. The participants were both male and female and encompassed the White, African American, and Hispanic ethnicities that were represented in the target school.

At the end of each school year, school counselors identified students eligible for the program based upon grades and quality points earned in core courses in each quarter of the course. Students were required to earn four quality points in the core courses in order for them to successfully pass the course each school year. An A grade resulted in 4 quality points being given. A grade of B received 3 points, a C grade received 2 points, and a D grade received 1 point. An F grade was a failure that resulted in no points being given and the need to attend the summer credit retrieval online program. Students who earned a combination of grades in the core course throughout the year were able to pass the subject even if they had an F grade in a quarter.

If students had failed any portion of a language arts, mathematics, science, or social studies course and had not earned enough points to pass the course for the year, they were invited to participate in the summer credit retrieval online program. Students were then required to complete the quarter or quarters that they failed. If the students continued to fail with the online work, they were given additional assistance from the credit retrieval instructor to remediate concepts with the hope that they would achieve success in the course and earn a passing grade.

Priority access to the summer credit retrieval online program was given to eighth-grade students who had shown propensity to be able to complete the work but were unsuccessful in the regular classroom and had only a portion of one or two core courses to complete. Once the eighth-grade students had all been placed for remediation through the lab, seventh-grade students were then given the opportunity to receive the services provided through the credit retrieval program. Finally, sixth-grade students who needed the credit retrieval program were placed. If necessary, however, students, in all grades who had traditionally not shown ability to complete the work but had exhausted all other remediation options were placed in the summer program in a final effort to help them retrieve credit for failed courses.

Instruments

To answer the research questions, the researcher obtained deidentified retrospective data from (a) the state database in which stakeholders can access school information, (b) the school district data system, and (c) the final D and F target school grade reports that give details of student grade failures. These data were provided to the researcher by the target school data clerk who deidentified the data.

Procedures

Design. This study used an ex-post-facto research design to gather data to answer the research questions. This design is also called a retrospective design (Gall, Gall, & Borg, 2014) or a causal-comparative design (Walliman, 2011). In the ex-post-facto design, the intervention occurs before research is initiated (Vogt, 2005). Therefore, all data were collected before the research questions were developed (Schiavetti & Metz, 2002). According to Silva (2010), because both ex-post-facto research and experimental research have some of the same "basic logic of inquiry" (p. 911), ex-post-facto research

can be used to determine cause-and-effect relationships when experimental research is not possible. The ex-post-facto research design is considered nonexperimental because, although it can be used to establish the relationship the independent variable and dependent variable, the researcher has no control over the independent variable (Silva, 2010). In this study, the independent variable was the summer credit retrieval online program, and the dependent variable was student academic achievement in retrieving core course credits.

Data collection. Data collection began after approval was given by the school district's research department and the university's Institutional Review Board. The researcher obtained archived course grade scores and demographic information for students who participated in the summer credit retrieval online program in the 2013, 2014, 2015, and 2016 school years from the target school's data clerk. The data clerk deidentified all of the data by removing all of the students' names and giving students a code so that their academic achievement in relation to courses passed or failed before and after the credit retrieval program could be tracked. Any keys to decipher the codes that may be used by the data clerk when developing the coded lists were destroyed by shredding the information before the data were given to the researcher, and the research began. No personal identifiable information was provided to the researcher in order to protect the identity of participants. The investigators could not ascertain the identity of the students to whom the coded private information pertained.

Data analysis. The researcher used the deidentified retrospective data to answer the research questions. To answer Research Question 1, related to the impact of the implementation of the summer credit retrieval online program on the overall quality points earned by Grade-8 students in the summers of 2013 to 2016, the researcher entered

the data on an Excel spreadsheet to calculate the number of quarter modules completed and the number of quality points earned each year. Then the data were consolidated for the 4 years, and descriptive statistics were used to determine the mean and mode number of quality points earned and letter grades.

To answer Research Question 2, regarding how the quality points earned by Grade-8 students in the summer credit retrieval online program in the summers of 2013 to 2016 varied for gender and ethnic groups, as well as by core course, an independent-samples t test was conducted to statistically significant difference in the quality points earned by male and female students. Lund Research (2013) and Trochim (2006) indicated that the independent t test is appropriate test to use to establish if the means of two groups are statistically significantly different. To determine if there was a statistically significant difference in the quality points earned by the three ethnic groups, one-way between-subjects analysis of variance was conducted.

Researchers (Creswell, 2008; Lund Research, 2012; Seltman, 2015) have advised that this is an appropriate statistical procedure to examine differences in population means when there is one independent variable (i.e., summer credit retrieval online program) and one dependent variable (i.e., student academic achievement in retrieving core course credits). Because there were small numbers of quarter modules passed and quality points earned in science and social studies, it was not possible to conduct a 4-way analysis of the results. Therefore, an independent-samples t test was conducted to statistically compare only the quality points earned in language arts and mathematics.

To answer Research Question 3, regarding the overall impact of the implementation of the summer credit retrieval online program on Grade-8 students retrieving core course credits, the researcher entered the data on an Excel spreadsheet to

calculate the number of core course credits earned each year. Then the data were consolidated for the 4 years, and an independent-samples *t* test was conducted to compare the number of students participating in the credit retrieval online program and the number of students who retrieved core course credit and were eligible to enroll in high school.

To answer Research Question 4, regarding how the retrieval of credits for core courses by Grade-8 students in the summer credit retrieval online program varied for gender and ethnic subgroups and by core courses, Fisher's exact test was conducted to statistically compare the course credits earned by the male and female students. McDonald (2014) suggested that Fisher's exact test is the most accurate test to use with 2×2 contingency tables when the sample sizes are small. The chi-square test was conducted as a test for statistical significance determine if any differences in the courses attempted and the courses retrieved among the African American, Hispanic, and White students were statistically significant. LaMorte (2016 stated that the chi-square test can be used with two more independent groups "to compare the distribution of responses to the discrete outcome variable among several independent comparison groups" (p. 1). Because there were small numbers of core course retrieval attempts in science and social studies, it was not possible to conduct a 4-way analysis of the results. Therefore, Fisher's exact test was conducted to statistically compare only the course credits earned in language arts and mathematics.

Chapter 4: Results

Introduction

The purpose of this applied dissertation was to determine whether summer participation in the Compass Learning Odyssey program contributed to the success rate of eighth-grade students being promoted to high school upon the completion of the term. The study used retrospective data for 73 students over four summers who were invited to participate in the summer program because they had failed one or more core courses during the regular school term. The dissertation presents information related to the various populations of the school and their success rates. Statistical results from this applied dissertation are summarized in this chapter.

Demographics of Participants

Tables 2 and 3 presents the demographic data of the students who participated in the summer credit retrieval program. During the summers of the 2013 to 2016 school years, 73 students attempted to retrieve credits in order to be able to be promoted to Grade 9 and start high school. These 73 students were enrolled in 107 quarter modules in the core courses that they failed during the regular school year because they did not earn enough quality points. Students were eligible to attempt as many quarter modules as needed in as many subjects as needed in order to earn four quality points in each of their core courses of language arts, mathematics, science, and social studies. Seventy percent of the students participating in the online credit retrieval program over the 4 years were male students. There were nearly twice as many Hispanic participants ($n = 29$) and White students ($n = 29$) than there were African American students ($n = 15$) who participated.

Results for Research Question 1

What was the impact of the implementation of the summer credit retrieval online

program on the overall quality points earned by Grade-8 students in the summers of 2013 to 2016? Table 4 shows the number of quality points earned for each of the quarter modules attempted in the summer credit retrieval program. Additionally, the mean and mode letter grades are included.

Table 2

Demographics of Participants by Gender

School year	No. students	%
2013		
Male	9	64
Female	5	36
2014		
Male	11	73
Female	4	27
2015		
Male	22	92
Female	2	8
2016		
Male	9	45
Female	11	55

As shown in Table 4, all students passed the quarter modules that they attempted with at least a D letter grade. Each letter grade, except F, is worth quality points: A = 4 points, B = 3 points, C = 3 points, D = 1 point. The school district in which the target school is located uses these descriptions of the academic achievement ascribed to each letter grade: A = outstanding progress or mastery, B = above-average progress, C = average progress or proficiency, D = lowest acceptable progress, and F = failure. Overall, the 73 students earned 230 quality points for the 107 quarter modules passed. The mean

number of quality points earned across the 4 years was 2.15, which equates to a C letter grade, which was also the mean letter grade for 3 of the 4 years. Only in 2013, when all 14 participating students earned a D letter grade was the credit retrieval online program also a D. The mode, which was the most frequently occurring letter grade, was a C.

Table 3

Demographics of Participants by Ethnicity

School year	No. students	%
2013		
African American	2	14
Hispanic	6	43
White	6	43
2014		
African American	4	27
Hispanic	4	27
White	7	46
2015		
African American	4	16
Hispanic	10	42
White	10	42
2016		
African American	5	25
Hispanic	9	45
White	6	30

Results for Research Question 2

How did the quality points earned by Grade-8 students in the summer credit retrieval online program in the summers of 2013 to 2016 vary for gender and ethnic groups and by core course? As shown in Table 5, the mean quality points earned by male students was only slightly higher than the mean quality points earned by female students.

This difference was tested using an independent-samples *t* test at an alpha of .05. There was no significant difference in the mean quality points for male students (*M* = 46.00, *SD* = 40.21) and female students (*M* = 12.00, *SD* = 9.56), *t*(6) = 1.6454, *p* = .1510. Thus, there was no statistically significant difference in the quality points earned by male and female students.

Table 4

Quality Points and Grades Earned in Quarter Modules

School year	No. QM	A	B	C	D	F	TQP	Mean
2013	14	0	0	0	14	0	14	1.00
2014	17	0	9	7	1	0	42	2.47
2015	47	1	21	18	7	0	110	2.34
2016	29	2	5	19	3	0	64	2.20

Note. QM = Quarter modules. TQP = Total quality points.

Table 5

Quality Points Earned in Quarter Modules by Gender

School year	Male			Female		
	QMP	QPE	Mean	QMP	QPE	Mean
2013	9	9	1.00	5	5	1.00
2014	12	32	2.67	5	10	2.00
2015	44	103	2.34	3	7	2.33
2016	18	40	2.22	11	26	2.36

Note. QMP = Quarter modules passed. QPE = Quality points earned.

As indicated in Table 6, the mean quality points earned by African American, Hispanic, and White students also varied only slightly. The differences were tested using

one-way between-subjects analysis of variance. There was no significant difference in the

mean quality points for African American students ($M = 1.86$, $SD = 0.5093$), Hispanic

students ($M = 2.1825$, $SD = 0.8237$), and White students ($M = 2.098$, $SD = 0.6426$), $F =$

0.30669, $p = .74193$. Thus, there was no statistically significant difference in the quality

points earned by the three ethnic groups.

Table 6

Quality Points Earned in Quarter Modules by Ethnicity

_____

	African American			Hispanic			White		
School year	QMP	QPE	Mean	QMP	QPE	Mean	QMP	QPE	Mean
2013	2	2	1.00	6	6	1.00	6	6	1.00
2014	6	14	2.33	4	10	2.50	7	18	2.57
2015	7	14	2.00	21	61	2.90	19	48	2.53
2016	10	21	2.10	12	28	2.33	7	16	2.29

_____

Note. QMP = Quarter modules passed. QPE = Quality points earned.

As shown in Table 7, the mean quality points in the quarter modules in which the

student participants earned quality points throughout the 4 years of the study were

slightly different for the four subject areas: language arts ($M = 2.17$), mathematics ($M =$

1.78), science ($M = 2.00$), and social studies ($M = 2.25$). The small instances of quarter

modules passed and quality points earned, as well as the years when there were none in

science and social studies, precluded the possibility of conducting a 4-way analysis of the

results. Therefore, an independent-samples *t* test at an alpha of .05 was conducted to

statistically compare only the quality points earned in language arts and mathematics.

There was not a significant difference in the mean quality points earned in language arts

($M = 2.1675$, $SD = 0.8199$) and mathematics ($M = 0.5656$, $SD = 9.56$), $t(6) = 0.7731$, $p =$

.4688.

Table 7

Quality Points Earned in Quarter Modules by Core Course

_____

	Language arts			Mathematics			Science			Social studies		
School year	QMP	QPE	Mean	QMP	QPE	Mean	QMP	QPE	Mean	QMP	QPE	Mean
2013	6	6	1.00	4	4	1.00	4	4	1.00	--	--	--
2014	7	20	2.86	6	14	2.33	4	8	2.00	--	--	--
2015	24	62	2.58	20	36	1.80	1	3	3.00	2	4	2.00
2016	13	29	2.23	10	20	2.00	--	--	--	6	15	2.50

Note. QMP = Quarter modules passed. QPE = Quality points earned.

Results for Research Question 3

What was the overall impact of the implementation of the summer credit retrieval online program on Grade-8 students retrieving core course credits in the summers of 2013 to 2016? Although all Grade-8 students participating in the credit retrieval program retrieved some quality points for each quarter module attempted in the summer credit retrieval program, 64% students passed with a C or D letter grade and earned only 1 or 2 quality points. Unfortunately, for some of these students, the quality points they earned did not give them the 4 quality points required to retrieve credit for a core course and be promoted Grade 9, the entry high school grade. This affected 7% of the students.

As shown in Table 8, over the 4 years, 68 of the 73 students (93%) retrieved credits to pass core courses and to be eligible to enroll in high school. An independent-samples *t* test was conducted to compare the number of students participating in the credit retrieval online program and the number of students who retrieved core course credit and were eligible to enroll in high school. No significant difference existed in the number of students participating in the credit retrieval course ($M = 18.25$, $SD = 4.65$) and those who retrieved credit ($M = 17.00$, $SD = 5.23$), $t(6) = 0.3574$, $p = .7330$. Thus, most students

retrieved credits to pass core courses and to be eligible to enroll in high school.

Table 8

Students Who Retrieved Credit and Were
Eligible to Enroll in High School

School year	No. students	%
2013	13	93
2014	13	87
2015	24	100
2016	18	90

Results for Research Question 4

How did the retrieval of credits for core courses by Grade-8 students in the summer credit retrieval online program vary for gender and ethnic subgroups and by core courses? In this section, the course retrieval data presented in Research Question 3 were disaggregated to determine any differences in the course retrieval rates related to gender, ethnicity or the core courses retrieved.

Gender. Male students retrieved 94% of the courses the attempted in the summer online credit retrieval program, and female students retrieved 90% of the courses they attempted (see Item 1 in Appendix). The small number of female students may have contributed to the percentage of course retrievals being lower than that for the male students. Three of the male students did not retrieve the courses credits they attempted, and two of the female students did not retrieve the courses credits they attempted. Fisher's exact test was conducted to statistically compare the course credits earned by the male and female students. The results indicated that the difference between the percentage of the credits earned by male and female students was not significant. The

two-tailed *p* value was .4353.

Ethnicity. African American, Hispanic , and White students all retrieved over 91% of the courses that they attempted (see Item 2 in Appendix). The chi-square test was conducted as a test for statistical significance determine if any differences in the courses attempted and the courses retrieved among the African American, Hispanic, and White students were statistically significant. The result was not significant, $\chi^2(2, N = 1117) = 0.002$, $p = .99902$. Thus, there were no statistically significant differences in the percentage of courses attempted and retrieved that were related to ethnicity

Core course. The mean percentages for core courses retrieved were above 87% The lower percentages for science (91.7%) and social studies (87.5%) when compared to language arts (97.7%) and mathematics (95.85%) are likely due to the fact that there were fewer attempted core course retrievals in those subjects (see Item 3 in Appendix). The small instances of core course retrieval attempts and years when there were none precluded the possibility of conducting a 4-way analysis of the results. Therefore, Fisher's exact test was conducted to statistically compare only the course credits earned in language arts and mathematics. The results indicated that the difference between the percentage of the credits earned by students for language arts and mathematics core courses was not significant. The two-tailed *p* value was 0.6827.

Chapter 5: Discussion

Students throughout the United States are tasked with meeting the expectations of more rigorous standards in order to be considered on grade level and to be promoted to the next grade. However, learning is not the same for every child and every child deserves the opportunity to learn. Unfortunately, there are students who do not achieve sufficient credits to move on to the next grade and, therefore are forced to either stay in their current grade to participate in an intervention program in order to retrieve credits (Balfanz, 2007). The Compass Learning Odyssey program was implemented in the target middle school to provide a way for students to remediate and retrieve course credits for those core classes which they had failed in the traditional teacher-based classroom during the regular school year. This chapter presents an overview of the study a discussion of the results, implications of findings, limitations, and recommendations for future research.

Overview of the Study

The problem addressed in this study was that the Compass Learning Odyssey program, a self-paced online intervention, had been implemented in the summers of 2013 to 2016 to allow middle school students at the target school to recover course credits in the core subjects of language arts, mathematics, science, and social studies, but its effectiveness had not been studied. The purpose of this study was to determine the impact of the implementation of summer credit retrieval online program on the overall retrieval of credits by all Grade-8 student participants and student participants in subgroups of gender and ethnic groups. In order to find whether the online credit retrieval program is doing what it was intended to do, assessment data were analyzed for the 2012-2013 to 2015- 2016 school years.

Each year, near the end of the school year, the school counselors determine which

students will be promoted and which students will need credit retrieval in order to proceed to the next grade. For Grade-8 students, this means being able to go to high school in the next school year. Each core course consists of four quarters that must be passed. Therefore, students may need to retrieve credits from one or more quarters in one or more courses. In the Compass Learning Odyssey program, each quarter is considered a quarter module. Those students needing the remediation in the summer program are offered the chance to attend the 4-week summer credit retrieval session in order to replace the failing grade earned during the school year in the core courses. Some of the students identified have been in the credit retrieval program throughout the school year and have not completed all course work needed for promotion while others are new to the program and need to be introduced to it. Although this applied dissertation focused on the eighth-grade students who needed to retrieve credits, students in sixth and seventh grades were also invited when a space became available after an eighth-grade student completed the needed courses.

In order to be eligible for the summer credit retrieval program, students had to have failed at least one core course during the school year that caused them to fail the eighth grade. These students were invited to attend the 16-day, 3-hours-per-day summer program in order to retrieve the credit needed to advance to high school. It was expected that students would finish the summer program with at least a D average in the course quarter modules they were recovering in order to satisfy the requirements. In the courses in which they had a quarter or two to complete, they were required to earn a grade high enough to give them the required 4 quality points they needed to pass a core course in language arts, mathematics, science, or social studies. All of the students had failed at least one core course in the previous school year and were attempting to complete their

eighth-grade credits in order to be promoted to high school upon completion.

All of the students did not start at the same time as some were on vacation or did not respond to the invitation to attend summer school immediately. There was a rolling admission whereby the students started the courses when they decided to enroll and when there was a seat available. An ex-post-facto research design using retrospective data was employed to answer the research questions. The researcher obtained archived course grade scores and demographic information for students who participated in the summer credit retrieval online program in the 2013, 2014, 2015, and 2016 school years from the target school's data clerk. There were 73 students, 51 male students and 22 female students, who attempted 107 quarter modules.

Discussion of Results

Research Question 1. What was the impact of the implementation of the summer credit retrieval online program on the overall retrieval of credits by Grade-8 students in the summers of 2013 to 2016? The answer to Research Question 1 is that the summer credit retrieval online program had a positive impact on the overall quality points earned by Grade-8 students. The summer credit retrieval program enrolled 73 students in the summers from 2013 to 2016 who passed 107 quarter modules and earned 230 quality points. The data showed there were 14 students who were eligible to participate in the program in 2013. That year, a student who failed a core course during the regular school year was required to complete an entire school years' worth of work in the summer program in order to retrieve credit for the course. This was a large volume of work to complete in a short period of time and may, therefore, explain why each student gained only 1 quality point and a D letter grade in all the quarter courses passed.

In 2014, the requirement to complete an entire course to retrieve credit for it

changed to allow students to complete only the quarters they had failed during the school year. Therefore, when they earned four quality points, they received credit for the course and were promoted to ninth grade. Additionally, in 2015, the demographics of the students changed to include all students in the school who had failed a core course whether they were reading and performing math tasks at the level expected for their grade or not. Therefore, in that year, more students ($n = 24$) were enrolled in the summer program than in 2013 ($n = 13$) and 2014 ($n = 15$).

All of the students who participated in the program during the 4 years passed the quarter modules they enrolled in with at least a D letter grade, which is the lowest acceptable progress category. There were 25% of the students in this category, but the remaining 75% of students made average progress of C or above. This is consistent with Hughes et al. (2015), indicating that 207,561 Florida high school students in online credit retrieval courses were more likely to earn a C letter grade than those in face-to-face credit recovery courses. In a meta-analysis of 45 empirical online learning studies, the authors concluded that stronger student learning outcomes were produced in classes that included online learning.

It is noteworthy that the students at the target school were able to pass all of the quarter modules attempted in only a few weeks when they were unable to do so during the traditional school year. School district administrators, interviewed by Stevens and Frazelle (2016), reported that students in credit retrieval classes have often had poor attendance and low engagement with school during the regular school year. However, teachers at the target school observed that students in the summer credit retrieval program were both excited and anxious to get through the program. Therefore, with only 16 days of school, they worked with consistency and with great speed to be finished before the

final class date as they were told that they would not be allowed to continue the course once the final class day was complete.

There may be several reasons for the students' increased motivation and attendance in the summer program. Yildiz and Aktas (2015) suggested that online courses often hold students' attention because they are visually interesting. When Pettyjohn and LaFrance (2014) interviewed 12 students in Grades 10 and 12 who had participated in an online credit recovery program, the students highlighted these characteristics of the online courses that helped them learn: "frequent summarization, worked out examples and models, especially in math, the use of visuals and video, the avoidance of excessive text, and an accessible readability level" (p. 216).

In addition, students working on online courses can proceed at their own pace without having their focus diverted by their classmates (Carr, 2014) This gives students the opportunity to manage their learning and to individualize it. The students in the Pettyjohn and LaFrance (2014) study were positive about the credit retrieval program, as the students indicated that they appreciated being able to control the pace of their learning and becoming more confident that they may be able to graduate from high school. The students also stated that they had learned transferable skills in areas such as writing, reading, and finding online information.

Research Question 2. How did the quality points earned by Grade-8 students in the summer credit retrieval online program vary for gender and for ethnic subgroups, and by subject? The answer to Research Question 2 is that, when the data were disaggregated, there was no statistically significant difference in the mean quality points earned by gender, ethnic subgroup, or subject. The 51 male students earned 161 quality points in the 82 quarter modules they passed, which was a mean of 2.05 quality points per quarter

module. Also, the 22 female students earned 48 quality points in the 25 quarter modules they passed, which was a mean of 1.92 quality points per quarter module that was not statistically significantly different from the mean for the male students.

When the data were disaggregated for ethnicity, it showed that the 29 Hispanic students earned a total of 105 quality points in the 43 quarter modules they passed, which was a mean of 2.18 quality points per quarter module. In addition, 29 White students earned 88 quality points in the 39 quarter modules they passed, which was a mean of 2.10 quality points per quarter module. Fifteen African American students earned 51 quality points in the 25 quarter modules they passed, which was a mean of 1.86 quality points per quarter module. These differences in mean quality points were not statistically significant. This finding was not supported by research indicating that there was a lower percentage of African American students who achieved proficiency in online course work for credit retrieval than any other ethnicity. However, the African American students were more successful in future course work in the same subject area as the course they recovered. Additionally, if the students were successful in their course work, they did graduate on time (Pettyjohn, Kennedy, & LaFrance, 2013).

The data for the current study indicate that, in each summer term, 47% of the total quarter modules passed by students were in language arts, which was more than for mathematics (37%), science (8%), or social studies (7%) quarter modules. It is interesting to note that, although language-arts quarter modules had the highest enrollment, students passed all of the quarter modules. This trend could be in attributed to the fact that the language-arts courses have extensive animation, to increase students' interest, and they also tend to be shorter courses can be completed in a short amount of time. The high passing rate for language arts at the target school is inconsistent with the finding of

Stevens, and Frazelle (2016), indicating that, in the 2013-2014 school year, 37% of the courses attempted in the Montana Digital Academy credit recovery program were English-language courses, but students only passed 52% of them. Although there was a difference in the percentage of quarter modules completed in each subject, there was not a statistically significant difference in the percentage of mean quality points earned per quarter module in each of subjects.

Research Question 3. What was the overall impact of the implementation of the summer credit retrieval online program on Grade-8 students retrieving core course credits in the summers of 2013 to 2016? The answer to Research Question 3 is that 93% of Grade-8 students participating in the summer credit retrieval online program in the 2013 to 2016 summers earned sufficient quality points to retrieve core course credits and to be promoted. When students retrieved the credits they needed for core courses, they were promoted to the next grade level and the students' records were provided to their high school for registration purposes. As explained in Chapter 4, although all students passed the quarter modules with at least a D letter grade (i.e., 1 quality point), the quality points earned by 7% of the students were not enough for them to retrieve the credits needed for the core course for courses that they had failed. The quarter models passed and quality points earned by the students not retrieving core course credits included all four core courses and a C letter grade was earned for six of the seven modules passed.

In the summers of 2013 to 2015, the students who completed credit recovery quarter modules but did not retrieve the credits needed for core courses stayed at the middle school and worked online to retrieve credits for five periods of the seven-period school day for first semester of the school year. If they completed the required course retrievals, they could register in high school at the beginning of the second semester. The

students were also allowed to take up to three high school courses for credit while completing their middle school requirements. However, in 2016, the policy was changed to allow students to continue working in the online program to retrieve core course credits at the beginning of the school year school during the full school day and to matriculate to high school as soon as they had successfully completed their courses.

The 93% passing rate for the core courses retrieved at the target school supports the finding in a study of online credit retrieval in Boston schools by the Donahue Institute (2012) indicating that 79% of participants were able to graduate from high school after retrieving course credits. Conversely, the passing rate of 93% for the core courses retrieved at the target school was higher than the rates reported in some other studies. For example, the first online credit retrieval program in Boston schools graduated 89 (32%) of approximately 280 participants. In addition, in a study of a blended (i.e., online with teacher support) credit retrieval program in a large suburban high school in the midwestern United States, Franco and Patel (2011) reported that all ninth-grade participants passed the 60 one-semester, half-credit courses they attempted.

This result is consistent with the 100% passing rate for the quarter-module courses attempted by the students in the current study. However, of the 13 students who needed to earn a minimum of five full credits to be promoted to the sophomore level (i.e., Grade 10), only three students (25%) were successful. Eddy (2014) reported a credit retrieval rate of 71% in the four core courses for a cohort of 1,048 students who attempted 2,723 half-credit courses using an online credit retrieval program during their 4 years of high school. Similar results were found in a large-scale study of 24 credit recovery programs in Massachusetts high schools conducted by the Donahue Institute (2012).

The researchers reported that the passing rate for the online courses completed by 649 courses during the 2013-2014 school year was 55% and for courses completed by 268 students during the summer of 2014 was 78%. Overall, students received credit for 60% of the courses attempts. A 55% passing rate was also reported by Boyd (2015) for the 16,698 students attempting online credit recovery courses in the 2012-2013 school year. The 93% passing rate for the core courses retrieved at the target school was also higher that the rate for 599 students in Georgia, taking an online credit recovery course, who had a passing rate of 70% and were able to graduate from high school (Volkerding, 2013).

Research Question 4. How did the retrieval of credits for core courses by Grade-8 students in the summer credit retrieval online program vary for gender and ethnic subgroups and by core course? The answer to Research Question 4 is that, when the data were disaggregated, there was no statistically significant difference in the retrieval of credits for core courses earned by gender, ethnic subgroup, or core course. During the summers of 2013 to 2016, 51 male students and 22 female students participated in the summer credit retrieval program. Female students were able to retrieve 90% of the core courses they attempted, and male students retrieved 94% of the core courses they attempted. This difference was not statistically significant. In a study with results inconsistent with the target school results, Stevens and Frazelle (2016), in a study of students taking 3,763 courses in Montana Digital Academy courses for credit retrieval, found that a higher percentage of female students than male students passed the courses they attempted. Boyd (2015) also found that, for the 16,698 students taking online credit recovery courses, female students had a statistically significantly higher passing rate (57%) than male students (54%).

Also, in the summer credit retrieval program, there were 15 African American students who retrieved 97% of the core courses they attempted, 29 Hispanic students who retrieved 91% of the core courses they attempted, and 29 White students who retrieved 92% of the core courses they attempted. If the high passing rates for students of the reported ethnicities could be maintained throughout the students' high school years, it may have a positive impact on the reduction of the of the adjusted cohort graduation rate gaps between the ethnicities. In the 2013-2014 school year in Florida, the gap between African American students (65%) and White students (82%) was 17 percentage points, and, between Hispanic students (75%) and White students (82%), it was 7 percentage points (Kena et al., 2016).

Kena et al. (2016) found that 76% of the 491 students who passed online credit recovery courses over their 4 high school years graduated from high school compared to 78% of students in face-to-face credit recovery programs. The overall state graduation rate was 80% (National Center for Education Statistics, 2015). Researchers have suggested that online credit recovery programs may offer a promising option for a population of students for whom finding the right academic experience is critical to their academic success and often a challenge. Increasing graduation rates for all students is essential.

The positive results for the ethnic groups at the target school are consistent with the findings of Boyd (2015) that, among 16,698 students passing online credit recovery courses, the passing rates for African American students (53%), Hispanic students (57%), and White students (57%) were similar. In contrast, the target school results based on ethnicity do not support the findings of Alexis (2015) that, among the 237 students in a credit recovery course, the passing rates varied statistically significantly by ethnicity. The

passing rate for Hispanic students was 75.7%. For African American students, it was 67.9%. For White students, the passing rate was 14.3%.

Disaggregation of core courses retrieved for each core course attempted indicated that, similar to the results for quarter modules, there was a difference in the percentage of in core courses completed, but there was not a statistically significant difference in the percentage of core courses passed compared to those attempted. As was stated in Chapter 4, Fisher's exact test of independence was conducted between the language arts and mathematics high enrollment core courses and then between the science and social studies the low enrollment core courses. The passing rates were 97.7% in language arts, 95.8% in mathematics, 91.7% in science, and 87.5% in social studies.

These results do not support the findings of Stevens and Frazelle (2016), indicating that, for Montana students enrolled in the credit recovery courses in the 2013-2014 school year, 71% of students recovered credits in social studies, compared to 52% in English-language arts and 49% in mathematics. The target school results for the passing rates for each course are also inconsistent with the findings of Boyd (2015) that, among 16,698 students passing online credit recovery courses, the passing rates for the courses were statistically significantly different for English (47%), history and social science (64%), mathematics (55%), and science (58%).

Of the 61 students at the target school attempting only one core course for credit recovery, 56 (82%) of them passed the courses they attempted. Eleven students who attempted two core courses, and one student who attempted three core courses at the same time, retrieved credit for 100% of the core courses attempted and were promoted. Again, these results contrast with the results of Stevens and Frazelle (2016), showing that 40% of students attempting one credit recovery course passed the course compared to an

85% passing rate for students attempting four courses, an 82% passing rate for students attempting three courses, and a 68% passing rate for students attempting two courses. The passing rate for credit retrieval of core courses at the target school are also not consistent with the passing rate results in the Eddy (2014) study of 1,048 students who participated in online credit retrieval program and had a passing rate of 71% in English, 70% in mathematics, 80% in science, and 62% in social studies.

Implications of Findings

The findings of this study show that the summer credit retrieval online program had a positive effect on quarter modules passed (100%), quality points earned (230), and core courses retrieved (93%). Based on this evidence that the credit retrieval program is a viable option for students to recover credits for failed courses, it is recommended that the target school continue use of the program. For students who are over age for their grade level, are failing courses, do not have sufficient credits to be promoted or graduate, or have dropped out of school, credit recovery can make a difference in their lifetime possibilities of gaining employment and being a contributing member of society (Hanover Research, 2013; Powell et al., 2015).

After completing courses in a credit recovery program, African American female participants gained a reinvigorated perception of education as well as a reversal of lowered expectations, behaviors, standards, and attitudes. The results from this study add to the research stream regarding online credit retrieval programs, which researchers have suggested needs additional evidence about this intervention (McCabe & St. Andrie, 2012). School and district leaders who are looking to continue to use the program or those who are looking for an intervention that will allow students to recover credits may be interested in this study.

Factors that may have contributed to the success of students in the credit retrieval program were the support for students and the monitoring of student progress by the program teacher. The program teacher worked closely with students to provide encouragement as they worked. The teacher implemented a program in the classroom in which students were required to take notes of each lesson they did while working on the program. The notes provided a source of information to study before taking a quiz. It also gave the teacher and student a guide to discuss any misunderstandings a student may have had before commencing the quiz. The teacher also had weekly individual progress chats with each student.

During the chats, the teacher focused on the students' progress on the online lesson assigned to them. It was during these chats that the teacher reviewed assignment grades and quality points with the students and set goals with them to achieve the four quality points needed for retrieval of credit for core courses and promotion. This duality of an online program with face-to-face support, as offered at the target school, qualifies this program as a blended credit recovery model. McCabe and St. Andrie (2012) reported, "Blended learning models are designed to leverage the benefits of online programs by adding organizational structures, personal instruction strategies, and student support strategies to minimize online learning's potential drawbacks" (p. 9). The positive benefits leveraged included students being able to control the pace of their learning, obtain immediate feedback, and work within a mastery-based learning model. The potential drawbacks minimized included students needing support related to motivation, academic work, or self-discipline.

Heppen et al. (2017), in a study to compare online and face-to-face credit recovery for high school algebra, highlighted the importance of consistent monitoring of

student progress. Pettyjohn and LaFrance (2014) found that, because students retrieving credits are most often at risk, they have unique concerns that require the support of a teacher who has the knowledge and temperament to meet their needs. Cornelius (2015) argued that students completing courses online need teacher support "to answer questions, give feedback on assignments, and provide motivation and accountability" (p. 1).

Teachers will need professional-development opportunities to learn about the unique characteristics of the students retrieving credits, the course material at all levels, managing student records, and the ways to offer support that may vary from the face-to-face classroom (Cornelius, 2015; Donahue Institute, 2012). Frazelle (2016) suggested that the teacher should be certified and active with helping students to set goals, tutoring them, and following up with them regarding their progress. Frazelle also observed that students comply with class requirements when they know they have a caring support system. The U.S. Department of Education (2014) indicated that many students in credit retrieval programs do not have the intrinsic motivation or self-control to complete the required work on their own and may require considerable reinforcement and encouragement.

Some schools are limiting enrollment in the online credit recovery classes to ensure that adequate support can be provided to all students (Stevens & Frazelle, 2016). In a study of online credit retrieval in Boston schools, the Donahue Institute's (2012) analysis of online credit retrieval in Boston schools credited the lab-based instructors and case managers with contributing to the students' success. Researchers have indicated that students may not have a successful experience with online credit recovery if they do not receive academic, technical, and socioemotional support from an on-site teacher

(Donahue Institute, 2012; McCabe & St. Andrie, 2012).

Educators at the target school should find ways to increase the number of students being successful in the credit retrieval courses during the regular school year. Some school districts are working to provide additional support for students who are failing courses in regular classrooms. When students are not experiencing academic success in the classroom, there is a need for a program that will offer a way for them to recover credits during the traditional school year. By carefully monitoring student progress, teachers can identify these students and provide them with an online personalized learning recovery course that is also a means to retrieve credits (McCabe & St. Andrie, 2012).

Additionally, educators can begin to find ways to move toward the proficiency-based learning feature of online credit recovery programs, in traditional classrooms (McCabe & St. Andrie, 2012). This feature, which allows students to progress after demonstrating they have mastered the content of a section of learning, is also referred to as mastery-based learning, performance-based learning, or competency-based learning. In survey responses from questionnaires completed by 128 teachers and 862 students, both groups indicated that students were motivated by being able opt-out of content when they had achieved mastery of it.

The impetus for moving toward this goal included the common core state standards, as well as school improvement, the dropout crisis, and expansions in online and blended learning, but the process will require deep analysis and wide-reaching creativity. When adopting performance-based measures in place of time spent in class, it is important that academic standards remain high. Some school districts are embarking on the path to proficiency-based learning by eliminating the 10-day absence policy, which

states that, when a student has 10 or more absences, the student cannot receive credit for a course even if a mastery of the course content is demonstrated (Stevens & Frazelle, 2016). Removal of this barrier will allow school administrators to provide an online credit retrieval option to students with poor attendance.

Edgenuity (2017a, 2017b), the company that recently purchased Compass Learning Odyssey, the target district's online credit retrieval program, reported that the program can no longer be purchased, but it is still being supported by Edgenuity. Therefore, it should be monitored by educators at the target school to ensure that the content is current, challenging, and engaging (McCabe & St. Andrie, 2012). There is a need to be vigilant as the academic rigor of online courses is sometimes challenged (Donahue Institute, 2012; McCabe & St. Andrie, 2012). Powell et al. (2015) argued that credit recovery programs are designed to be helpful and offer additional pathways for student success, but if they are not of high quality, if the courses are low rigor, or if they do not meet the actual academic needs of students, these programs could be providing a lesser quality of education.

Limitations

Because the study was conducted in only one middle school, the results may not be applicable in other settings. Also, the small sample sizes affected the calculation of some tests of statistical significance among variables and these results must be viewed with caution. Sauro (2013) maintained that, with small samples, the researcher is limited to detecting large differences between designs or measures. Moreover, Gall et al. (2014) suggested that because, in the nonexperimental ex-post-facto design, the researcher is unable to manipulate the independent variable (i.e., the summer credit retrieval online program), the causal relationship between the independent and dependent variable (i.e.,

student academic achievement) is not as strong as in an experimental study.

Despite this, Johnson and Christensen (2016) indicated that this is often an essential design that can contribute to the educational research literature. In addition, participants in the study were not be randomly selected; therefore, selection bias is a threat to validity (Fraenkel, Wallen, & Hyun, 2011; Johnson & Christensen, 2016). Researchers have indicated that maturation of students, history, and participant attrition may also threaten validity (Edmonds & Kennedy, 2013; Gay, Mills, & Airasian, 2008; Mitchell & Jolley, 2013). However, regarding maturation, Creswell (2008) suggested that the selection of participants who are the same age, as is the case in this study, may mitigate this threat.

Recommendations for Future Research

The researcher makes the following suggestions for future research:

1. Further research should be replicated across the district to include other middle schools in the district to evaluate the effectiveness of the credit retrieval program. This would provide a larger sample of students to be evaluated.

2. The impact of the credit retrieval program for students participating during the traditional school year should be investigated.

3. This study analyzed the short-term effects of implementation of an online credit retrieval program. More research is needed regarding longer term effects such as the participants' success on the annual state standardized assessments, academic achievement in the high school years, and graduation rates.

4. Additional research is also needed to examine the impact of the credit retrieval program on the recovery of credits for specific populations including economically disadvantaged students, English-language learners, and those students who are in

exceptional student education programs including gifted students as well as those with learning and other disabilities.

5. Qualitative research to study student and teacher perceptions of the credit retrieval program would also provide useful information, as would research to determine if participants experience changes in motivation to learn and engagement in the learning process.

6. Research is needed to determine the characteristics of students who would be suited to retrieving credits in an online program.

7. It is also recommended that future research should be conducted to determine if the Compass Learning Odyssey program is the best software available to meet the needs of students across the district. Programs from other providers should be evaluated for effectiveness.

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Appendix

Retrieval of Courses by Gender, Ethnicity, and Core Courses

Retrieval of Courses by Gender, Ethnicity, and Core Courses

Item 1: Gender

Year	All Students	Male			female		
	N	Courses Attempted	Courses Retrieved	%	Courses Attempted	Courses Retrieved	%
2013	14	9	9	100	5	4	80
2014	15	12	11	91	5	4	80
2015	24	33	33	100	2	2	100
2016	20	13	11	85	11	11	100
Consolidated Data	73	67	64	94	23	21	90

Item 2: Ethnicity

Year	All Students	Black			Hispanic			White		
		Courses Attempted	Courses Retrieved	Percentage	Courses Attempted	Courses Retrieved	Percentage	Courses Attempted	Courses Retrieved	Percentage
2013	14	2	2	100	6	6	100	6	5	80
2014	15	6	6	100	4	3	75	7	6	86
2015	24	6	6	100	13	13	100	16	16	100
2016	20	7	6	86	10	9	90	7	7	100
Total	73	21	20	97	33	31	91	36	34	92

Item 3: Core Courses

Year	All Students	Language Arts			Mathematics			Science			Social Studies		
		Courses Attempted	Courses Retrieved	Percentage	Courses Attempted	Courses Retrieved	Percentage	Courses Attempted	Courses Retrieved	Percentage	Courses Attempted	Courses Retrieved	Percentage
2013	14	6	6	100	4	3	100	4	4	100	0	-	-
2014	15	7	7	100	6	5	83.3	4	3	75.0	0		-
2015	24	18	18	100	14	14	100	1	1	100	2	2	100
2016	20	11	10	91	9	9	100	0	-	-	4	3	75.0
Total	73	42	41	97.7	33	31	95.8	9	8	91.7	6	5	87.5