

ABSTRACT

EDUCATIONAL LEADERSHIP

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ON TRACK FOR GRADUATION: AN INVESTIGATION OF CAUSAL FACTORS  
RELATED TO STUDENT OUTCOMES IN A CREDIT RECOVERY PROGRAM  
IN A METRO ATLANTA SCHOOL DISTRICT

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This study examined the relationship between credit recovery outcomes and select causal factors. In this study, credit recovery was defined as the extent to which students successfully complete the following courses: coordinate algebra, biology, physical science, and analytic geometry. Independent variables explored in this research were student motivation, student engagement, self-regulation, blended learning models, and formative assessments.

A mixed method design was used to triangulate the quantitative data with the teachers' perceptions data collected from the qualitative data. The qualitative data examined how teachers used formative assessments to improve student learning, the

perception of the effectiveness of the program, and how credit recovery helped students to graduate from high school. The quantitative data found that there was no significant relationship between the independent variables in the study and credit recovery outcomes.

Additionally, the data revealed that there was no significant relationship between teacher perceptions and credit recovery outcomes. Although there was no significant relationship between the dependent and independent variables in the study, the data did indicate there was a significant relationship between gender and credit recovery outcomes. The study found there was a highly significant relationship between formative assessments and student motivation, validating what research has already demonstrated about the effectiveness of formative assessments and its potential to engage and motivate students. The research also found that there was a highly significant relationship between blended learning and student motivation, suggesting implications for how blended learning can be used to engage and motivate students in credit recovery programs.

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## CHAPTER I

### INTRODUCTION

Some innovations change everything. The rise of personal computers in the 1970s decimated the mini-computer industry. TurboTax forever changed tax accounting, and MP3s made libraries of compact discs obsolete. Online learning appears to be a classic disruptive innovation with the potential not just to improve the current model of education delivery, but to transform it (Staker, 2011). Online learning started by serving students for whom there was no alternative setting for learning in the advanced courses that many schools struggled to offer in-house; in small, rural, and urban schools that were unable to offer a broad set of courses with highly qualified teachers; in remedial courses for students who needed to recover credits to graduate; and with home-schooled and homebound students. Nearly all these instances tended to be in distance-learning environments outside of a traditional school building and in-person teacher (Staker, 2011).

It started small. In 2000, roughly 45,000 K–12 students took an online course (Christensen, Horn, & Curtis, 2008), but by 2010, over 4 million students were participating in some kind of formal online-learning program. Online learning for students and for teachers is one of the fastest growing trends in educational uses of technology. Snyder, Dillow, and Hoffman (2008) estimated that the number of K-12

public school students enrolling in a technology-based distance education course grew by 65% in the two years from 2002-2003 to 2004-2005. On the basis of a more recent district survey, Picciano and Seaman (2007) estimated that more than a million K-12 students took online courses in school year 2007–2008.

Online learning has roots in the tradition of distance education which goes back at least 100 years to the early correspondence courses. With the advent of the Internet and the World Wide Web, the potential for reaching learners around the world increased greatly, and today's online learning offers rich educational resources in multiple media and the capability to support both real-time and asynchronous communication between instructors and learners as well as among different learners. Institutions of higher education and corporate training were quick to adopt online learning. Although K-12 school systems lagged behind at first, this sector's adoption of eLearning is now proceeding rapidly (Staker, 2011).

In 2007, the Sloan Consortium conducted a two-year follow-up survey of school district administrators to gauge the prevalence and rate of growth of K-12 virtual schooling. Two district surveys commissioned by the Sloan Consortium (Picciano & Seaman, 2007) produced estimates that 700,000 K-12 public school students took online courses in 2005–2006 and over a million students did so in 2007–2008, a 43% increase. Most of these courses were at the high school level or in combination elementary-secondary schools (Zandberg & Lewis, 2008). These district numbers, however, do not fully capture the popularity of programs that are entirely online. By fall 2007, 28 states had online virtual high school programs (Tucker, 2007). The largest of these, the Florida

Virtual School, served over 60,000 students in 2007–2008. In addition, enrollment figures for courses or high school programs that are entirely online reflect just one part of overall K–12 online learning. Increasingly, regular classroom teachers are incorporating online teaching and learning activities into their daily instructional program.

The U.S. Department of Education likens the origin of distance learning to the early correspondence courses over 100 years ago (Atkins, Bennett, Brown, Chopra, & Dede, 2010). Distance learning started as a type of distance education in the 1980s and 1990s as offerings aspiring to enhance the quality of learning experiences and outcomes (Vignare, 2008).

The term *online learning* is used interchangeably with other monikers such as distance education, virtual learning, cyber learning, and e-learning. For the purpose of this research, online learning is defined as education in which instruction and content are primarily delivered over the Internet or in a “hybrid” combination of face-to-face and online instruction. Online learning can be offered with synchronous (real-time) or asynchronous communication between instructors and learners, ultimately providing more flexible access for content and instruction at any time and from any place (Allen & Seaman, 2013). Some of the reasons online learning has become popular are that it increases the availability of learning experiences for learners who cannot or choose not to attend traditional face-to-face courses, it can be cost effective for school districts, and enables teachers to handle more students while maintaining learning outcome quality that may be equivalent to that of comparable face-to-face instruction.

Different technology applications are used to support different models of online learning. One class of online learning models uses asynchronous communication tools (e.g. e-mail, threaded discussion boards, dropbox) to allow users to contribute at their convenience. Synchronous technologies (e.g., webcasting, Skype, webcams, Blackboard collaborative) are used to approximate face-to-face teaching strategies such as delivering lectures and holding meetings with groups of students (Staker, 2011). A growing number of schools, however, are starting to introduce blended learning into their core programming for mainstream students. Several forces are accelerating this trend. First, budget shortfalls, coupled with looming teacher shortages are driving schools to find cost cutting and creative staffing alternatives. Blended-learning schools already have documented cost savings in personnel, facility, and textbook costs, with equal or improved academic results.

The Common Core initiative, which was developed by a group of governors and state officers, launched the effort to provide a clear, consistent understanding of what students are expected to learn across the nation. Against this more data-aware, competitive backdrop, school districts cannot ignore the possibility that online learning can unlock performance gains for certain students.

The proliferation of online learning has produced a variety of learning formats designed to improve student outcomes, meet the needs of districts facing teacher shortages, and push technology into the mainstream of education. Researchers have predicted that by 2019, 50% of all high school courses will be delivered in an online format (Horn & Staker, 2012).

Currently, several states are using blended-learning format to support students who are absent from school for extended periods of time, to provide instruction during inclement weather, and for homework assignments. Characterized as “disruptive innovation,” the move to blended or online courses in K-12 schools holds the potential to revolutionize education by making it more accessible and individualized (Horn & Staker, 2012). This explosion of technology has left many districts grappling with the question of which model best meet the needs of students, and how technology can address the age old challenge of improving the academic outcomes for low-achieving students.

The purpose of the development of the online school in the district in which this research was conducted was to offer a cost effective way to provide students with a variety of instructional options. It all began as a vehicle to drive technological innovation and a way to meet the needs of a diverse student population. The program promised schools a way to resolve scheduling conflicts, expand course offering, and graduate students on time. For students, the program’s goal was to offer them an opportunity to accelerate their learning, recover credit from failed course, and provide an option for flexible learning. But the most popular program proved to be the Credit Recovery program. The district’s online program has three components: during the school day program, extended day program, and a credit recovery program. Enrollment requests are submitted by the home school counselor. Students may take a course in the during the day program at no cost, if the course is not offered at their school. Students who need or desire to take a course outside of the regular school day must pay tuition.

Credit recovery courses are free to all students, and designed to be taken outside of the regular school day. Students must have a minimum grade of 60 in the failed course to enroll in credit recovery. Students may only acquire two Carnegie unit courses in all three programs. Teachers do not provide direct instruction to students in credit recovery. The online teachers are responsible for grading student work, recording grades, and communicating with students and parents regarding student progress. Credit recovery courses are comprised of course content material for review, a series of quizzes, and a final exam. Credit recovery is considered a self-paced course. Students are only required to pass 10 quizzes and a final exam to receive credit for the course. Students have two opportunities to take the quizzes in the course.

There is no district-wide model for the credit recovery program. Each high school develops its own model for the program. There is a lot of variation in the management of the program by the local school. Some schools have a dedicated computer lab for student access, while others do not provide any technology access. Additionally, some schools have an assigned counselor to oversee the program, while at some school each counselor manages the assignment of their students into the program. None of the high schools have a one-to-one program that provides technology to students. Students are expected to provide their own computer and have access to technology outside of the school day. Teachers at the local school do not provide support or resources to students enrolled in the credit recovery program.

Beginning with the 2015-2016 school year, all students who met the admission requirements can enroll in the credit recovery program. If a student fails the course, they



do not receive a failing grade, but a DR for dropped is placed on the transcript. Credit Recovery is an eight-week program. The content for the credit recovery program is a hybrid of courses downloaded from the state virtual school and teacher developed courses.

### **Statement of the Problem**

The high school dropout crisis in the United States claims more than one million students each year. This crisis costs the nation hundreds of billions of dollars in lost revenue, economic inactivity, and increased social services. The nation's graduation rate increased three and a half percentage points from 2001 to 2009, and inched up a half percentage point to 75.5% from 2008 to 2009. Even with these increases, nearly one in four Americans and four in 10 minorities, do not complete high school with their class (Balfanz, 2013). Lagging high school graduation rates come at a time when the demands of today's globally competitive economy have placed a premium on education. In the last 40 years, the equation has completely flipped (Balfanz, 2013).

In 1973, 73% of all U.S. jobs required only a high school diploma, while in this and future decades, most jobs will require not only finishing high school, but also some college. More than 53% of business leaders at large companies and 67% at small companies say it is difficult to recruit employees in the U.S. with the skills, training, and education their companies need, despite unemployment at over 8% and millions of Americans seeking jobs (Balfanz, 2013). Worse yet, the education gap between the rich and the poor is growing, signaling a growing opportunity divide. Addressing these realities and increasing high school graduation rates in America will improve the life

prospects of individuals, the nation's financial health, and competitiveness in the global economy (Balfanz, 2013).

The fourth annual update on America's high school dropout crisis shows that for the first time the nation is on track to meet the goal of a 90% high school graduation rate by the Class of 2020, if the pace of improvement from 2006 to 2010 is sustained over the next 10 years. The greatest gains have occurred for the students of color and low-income students most affected by the dropout crisis. Many schools, districts and states are making significant gains in boosting high school graduation rates and putting more students on a path to college and a successful career (Balfanz, 2013). This progress is often the result of having better data, an understanding of why and where students drop out, a heightened awareness of the consequences to individuals and the economy, a greater understanding of effective reforms and interventions, and real-world examples of progress and collaboration. These factors have contributed to a wider understanding that the dropout crisis is solvable.

While progress is encouraging, a deeper look at the data reveals that gains in graduation rates and declines in dropout factory high schools (schools that graduate less than 60% of its freshman class) occurred unevenly across states and subgroups of students (e.g. economically disadvantaged, African Americans, Hispanics, students with disabilities, and students with limited English proficiency). As a result, large "graduation gaps" remain in many states among students of different races, ethnicities, family incomes, disabilities and limited English proficiencies. To repeat the growth in graduation rates in the next 10 years experienced in the second half of the last decade,

and to ensure progress for all students, the nation must turn its attention to closing the graduation gap by accelerating progress for student subgroups most affected by the dropout crisis (Balfanz, 2013).

The national high school graduation rate is increasing at an accelerated pace and, for the first time, indicates the class of 2020 might meet the 90% goal. The graduation rate, as measured by the Adjusted Cohort Graduation Rate (ACGR), revealed that 29 of 50 states equaled or exceeded the national average of 81.4%, and six states were within two percentage points of reaching the 90% goal. Fourteen states, with graduation rates between 69% and 78%, still have much further to go. Hispanic/Latino and African-American students are starting to close the graduation rate gap with their white student peers. Hispanic/Latino students, the fastest growing population of students, have made the greatest gains in the ACGR reporting era, improving 4.2 percentage points from 2011 to 2013. African-American students also experienced significant improvement, rising 3.7 percentage points, from 67% in 2011 to 70.7% in 2013. One reason for the continuing improvement in graduation rates among Hispanic/Latino and African-American students is the decline in the number of high schools with low graduation rates. There are now fewer than 1,200 of these schools nationwide and 1.5 million fewer students attending them, and the number of African-American and Hispanic/Latino students in these schools has dropped below 20% and 15%, respectively. Despite these improvements, the number of low-income, special needs and ELL students graduating from high school still remains at unacceptable levels.

Significant graduation gaps impede progress, as graduation rates among states are uneven for students of different races, ethnicities, family incomes, disabilities and with limited English proficiency. Although there has been progress in boosting graduation rates for Hispanic and African-American students in recent years, the four-year graduation rate is still 66% or less for African-American students in 20 states and for Hispanic students in 16 states. For students from low-income families, graduation rates are at 66% or less in 18 states. For students with disabilities, graduation rates are often shockingly below 66% in 30 states, and the same is true for limited English proficient students in 33 states (Balfanz, 2013).

By contrast, there are no states in which the graduation rate for white students is below 66% and only four states in which it is 75% or less. Moreover, there are eleven states in which the graduation rate for white students is 89% or higher, but no state where this is true for African-American, Hispanic, or economically disadvantaged students. In 2001, the No Child Left Behind (NCLB) Act required states to set goals for improving high school graduation rates, and judge schools in part based on their progress. As a result of this federal mandate, Credit Recovery programs—many of them online—have sprung up to help schools graduate more students by giving students who have fallen behind the chance to “recover” credits through a multitude of different strategies, often through various online options.

This requirement by NCLB has created a crop of programs designed to increase graduation rates. A host of school systems have used a variety of credit recovery models to increase their graduation. There is also much debate about the rigor involved in credit

recovery programs. Critics of the program question whether or not students are learning, and contend that the program often lack rigor, have low standards and high attrition rates. Conversely, proponents of the program point out the value of it by arguing that it allows students to obtain a high school diploma (Balfanz, 2013).

### **Purpose of the Study**

Currently, most states offer online programs to high school students for a variety of reasons. Some districts utilize online learning to address teacher shortages, reach underserved student populations in rural schools, provide advanced placement programs, or provide struggling students with the opportunity to recover credits towards high school graduation. The mandate from NCLB to increase the high school graduation rate has caused many school districts to use online programs to meet this requirement.

One of the most popular models is credit recovery. As credit recovery programs become mainstream, educators are beginning to see the merits of how it can be used to meet the needs of historically low-performing students. While useful, they have also found that credit recovery also comes with a unique set of issues and may not be suited to the needs of all students. This research examines some of the variables that may impact student outcomes in credit recovery programs and whether or not these programs truly provide a benefit for minority and low-performing students. This research also hopes to add new knowledge of pedagogical practices that may yield results for historically low-performing students.

### **Research Questions**

- RQ1: Is there a significant relationship between blended learning and credit recovery?
- RQ2: Is there a significant relationship between formative assessments and credit recovery?
- RQ3: Is there a significant relationship between self-regulation and credit recovery?
- RQ4: Is there a significant relationship between student engagement and credit recovery?
- RQ5: Is there a significant relationship between student motivation and credit recovery?
- RQ6: How do teachers use formative assessments to improve student outcomes?
- RQ7: How do teachers perceive the effectiveness of credit recovery?
- RQ8: How do students use credit recovery to graduate from high school?

### **Significance of the Study**

Online learning has been in existence for more than 10 years and has shown promising results for some groups of students. Credit recovery refers to a student passing and receiving credit for a course that the student previously attempted but was unsuccessful in earning academic credit towards graduation. Credit recovery often differs from “first time credit” in that the students have already satisfied seat time requirements for the course in which they were unsuccessful, and can focus on earning credit based on competency of the content standards for the particular course. Credit recovery programs,

in general, have a primary focus of helping students stay in school and graduate on time (Watson & Gemin, 2008).

Although Online learning has proven that it can be a viable option for students in danger of dropping out of school, accelerate learning for struggling students, and provide opportunity for high achieving students, there are still many unanswered questions about its effectiveness in helping students graduate from high school. This research may provide data about the effectiveness of credit recovery programs, and identify specific practices that result in student success. Moreover, this study will provide educational agencies and school districts with data that may aid in designing curriculum that is personalized, engages students, and provides insight into student behaviors that may be predictors of their success in the program.

## CHAPTER II

### REVIEW OF THE LITERATURE

The use of technology in public schools is not a new phenomenon, but the introduction of blended learning is changing the way technology is being used in the classroom and in the process yielding promising results for historically underachieving students. Although blended and online learning is being embraced by many school systems, there is still much to be learned about which practices maximize learning for students and its true rewards for school systems. There is also the question of pedagogy in which instructional practices engage students and produce measurable results.

Some researchers have discovered the power of blended learning to personalize learning. Blended learning takes many forms and there is no specific model that works best for all students or school districts. Studies have also demonstrated that the use of technology can provide tremendous benefits to some students by allowing them to learn at their own pace, and for others offer a second opportunity at success. This literature review will provide a definition of blended learning; examine how blended learning is changing the achievement landscape for students, providing schools systems with the avenue to increase graduation rates, explore student related variables and instructional practices that may impact student outcomes in credit recovery courses.



## Blended Learning

Blended learning is a formal education program in which a student learns, at least in part, through online delivery of content and instruction with some element of student control over time, place, and, at least in part, at a supervised location away from home (Horn & Staker, 2012). Interest in blended learning remains high, spurred partly by research offering support that blended learning is more effective than either online or face-to-face instruction on its own (Means, 2010). Blended learning means many things to many people. It is referred to as both blended and hybrid learning, with little or no difference in the meaning of the terms among most educators. In general terms, blended learning combines online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiate instruction from student to student across a diverse group of learners (Watson, 2008). Horn and Staker (2012) revised their definition of blended learning to include what they have identified as the four models of blended learning.

**1. Rotation model** is a program in which within a given course or subject, students rotate *on a fixed schedule or at the teacher's discretion* between learning modalities, at least one of which is online learning. Included in the rotation model are several different formats;

**A. Station Rotation** is a rotation-model implementation within a given course or subject; students rotate *on a fixed schedule or at the teacher's discretion* among classroom-based learning modalities. The rotation includes at least one station for online learning.

**B. Lab Rotation** is a rotation implementation within a given course or subject; students rotate *on a fixed schedule or at the teacher's discretion* among locations on the brick-and-mortar campus. At least one of these spaces is a learning lab for predominantly online learning, while the additional classrooms house other learning modalities.

**C. Flipped Classroom** is a rotation-model implementation within a given course or subject; students rotate *on a fixed schedule* between face-to-face teacher-guided practice (or projects) on campus during the standard school day and online delivery of content and instruction of the same subject from a remote location (often home) after school. The primary delivery of content and instruction is online, which differentiates a flipped classroom from students who are merely doing homework practice online at night. The flipped classroom model accords with the idea that blended learning includes some element of student control over time, place, path, and/or pace because the model allows students to choose the location where they receive content and instruction online and to control the pace at which they move through the online elements.

**2. Flex model** is a program in which content and instruction are delivered primarily by the Internet; students move on an individually customized, fluid schedule among learning modalities and the teacher-of-record is on-site. The teacher-of-record or other adults provide face-to-face support on a flexible and

adaptive as-needed basis through activities such as small-group instruction, group projects, and individual tutoring.

3. **Self-Blend model** describes a scenario in which students choose to take one or more courses entirely online to supplement their traditional courses and the teacher-of-record is the online teacher. Students may take the online courses either on the brick-and-mortar campus or off-site.
4. **Enriched-Virtual model** is a whole-school experience in which within each course, students divide their time between attending a brick-and-mortar campus and learning remotely using online delivery of content and instruction. Many enriched virtual programs began as full-time online schools and then developed into blended programs to provide students with brick-and-mortar school experiences (Horn & Staker, 2012).

### **Formative Assessments**

Formative assessments, done well, represent one of the most powerful instructional tools available to a teacher or a school for promoting student achievement. Teachers and schools can use formative assessment to identify student understanding, clarify what comes next in their learning, trigger and become part of an effective system of intervention for struggling students, inform and improve the instructional practice of individual teachers or teams, help students track their own progress toward attainment of standards, motivate students by building confidence in themselves as learners, fuel continuous improvements processes across faculties, and, thus, drive a school's transformation (Dufour & Stiggins, 2009).

Teaching and learning methods must be assessment-centered to offer learners opportunities to prove their emerging abilities and receive backing to enrich their learning. What students understand as imperative is often influenced by assessment and a lot of students are not eager to waste time on work that they feel will not contribute directly to their academic progress (i.e. work which as far as they are concerned is irrelevant) (Rust, 2002). Biggs (2007) used the term *backwash* to describe the influence assessment has on student learning, and concludes that assessment, and not the curriculum defines how and what students learn. Additionally, Biggs put forward the idea that the choice of assessment is critical, and properly aligning the assessment to the learning outcomes can produce a constructive learning practice even though the student is learning for the assessment.

Assessment practices affect students by leading their consideration to certain aspects of content and by stipulating how to process information. Students' focus their determination towards any information they believe will be assessed (Bull & McKenna, 2004). Therefore, assessment influences what material students spend time learning, as well as the type of learning taking place. Formative assessment plays a critical role in learning environments, specifically formative assessments that are embedded in the lesson. According to Bransford, Brown, and Cocking (2002), it is important to recognize the value of embedded formative assessment and its role in increasing student learning is essential to meeting the intended outcomes of the course and in closing the feedback loop in quality online courses. Additionally, the researchers pointed out that instruction and assessment are an integral part of each other; thus, assessment should be viewed as a

process used throughout the course, for summative purposes at the end. The researchers further explained that with accountability in mind and the explosion of online learning environments, the need for best assessment practices in online learning environments has become even more critical. The main criterion for the use of formative or summative assessment is that it must be used within a framework that is continually monitored by the teacher with a viable and steady feedback loop from the student (Bransford et al., 2002).

Speck (2002) raised several questions about the assessment of online learners, particularly concern over insufficient attention to pedagogical questions and concerns arising from the practice of online teaching. Culp, Honey, and Mandinach (2005) in a review of technology in the last 20 years also emphasized the need to identify effective assessment methods appropriate to online learning and understand how online learning changes the selection, monitoring and manning of assessment. It is important to investigate how assessment techniques can be used to make the feedback loop between instruction and assessment more meaningful (Culp et al., 2005).

Brophy (2004) believed the unique nature of online learning formative assessments become even more important and powerful in helping to engage and motivate students. His work on student motivation outlined how synchronous and asynchronous feedback is an important process in online learning, and can help teachers instill self-regulation learning characteristics in students. Brophy argued that activities that allow students to get immediate feedback and respond actively are highly engaging, which could explain the popularity of computer games.

Other researchers (Miller, 2009; Brosvic, Epstein, Cook, & Dioff, 2004) also agreed that synchronous, and asynchronous feedback performs a useful function, permitting reflection on its use and it is often more comprehensive and permanently recorded assessment evidence. Miller (2009) asserted that formative assessments are an essential component of online classes and technology offers unprecedented opportunities for educators to provide quality formative assessment tasks to assess students learning.

Researchers have explored the learning benefits associated with formative computer-based assessments. For example, computer-based assessment allows a number of new formative tasks to be available for use, including discussion boards, model answers, electronic feedback systems, reflections, and online small group discussions (Thelwall, 2000). Formative computer-based assessment can be completed at a time and place convenient for the student, allowing quicker, sometimes immediate feedback (Miller, 2009).

Conole and Warburton (2005) found that teachers formative computer-based assessment allows new and powerful modes of assessment evaluating a wide array of student abilities, and offer a more in-depth and current view of students' development. In graduate engineering classes, researchers found formative computer-based assessment supported student learning, provided feedback, contributed to deeper learning, and increased student satisfaction of the course (Burrow, Evdorides, Barbara, & Freer-Hewish, 2005). According to Dobbs, Waid, and del Carmen (2009), the benefits of formative assessment are not automatic. They caution that considerations are needed to ensure successful online formative computer-based assessment.

Other factors negatively influencing the effectiveness of computer-based assessment are the screen layout, mode of presentation, and amount of scrolling (Ricketts & Wilks, 2002; Miller, 2009). Miller (2009) and Conole and Warburton (2005) agreed that the type of feedback students find useful has been identified as an important area for future studies as the need for additional formative computer-based assessment research is needed.

Benson (2003) argued that the principles of assessment do not change in an online environment. Similarly, Brookhart (1997) found that summative and formative assessment will directly affect learning, whether online or traditional, by communicating messages about how students should study and what things are most important to learn; providing opportunities for students about how to review, practice, and apply what they have learned; nurturing student ownership; and promoting such skills as self-monitoring and self-evaluation.

According to Russell, Elton, and Swinglehurst (2006), an online learning environment enables assessment to contribute to learning through its potential to support collaborative learning, and through facilitating high quality feedback between teachers and students. The concept of assessment for learning places the student and learning in the center as an instructional practice. Both learners and instructors share the ownership and responsibility for assessing their own performance and learning outcomes (Russell et al., 2006). Benson (2003) also found that the online classroom environment provides challenging, unique, and exciting opportunities for assessing student learning, and suggested two key benefits of online assessments: (a) the ability of every learner to

respond to every question the instructor asks and (b) the ability of the instructor to provide immediate feedback to each learner.

### **Self-Regulation**

Zimmerman (2011) referred to self-regulated learning (SRL) as the self-directive processes and self-beliefs that enable learners to transform their mental abilities, such as verbal aptitude, into an academic performance skill, such as writing. He further explained that self-regulated learning is a proactive process that students use to acquire academic skill, such as setting goals, selecting and deploying strategies, and self-monitoring one's effectiveness, rather than as a reactive event. Additionally, Zimmerman pointed out that although self-regulated learning is especially important during personally directed forms of learning, such as discovery learning, self-selected reading, or seeking information from electronic sources, it was also deemed important in social forms of learning, such as seeking help from peers, parents, and teachers.

In his seminal work, Zimmerman (1986) also defined self-regulated learning to include the degree to which students are meta-cognitively, motivationally, and behaviorally active participants in their own learning process. Zimmerman contended that the core issue was whether a learner displayed personal initiative, perseverance, and adaptive skill. These proactive qualities of learners stemmed from advantageous motivational feelings and beliefs as well as metacognitive strategies. Additionally, this definition focused on students' specific process or responses to improve their academic achievement (Zimmerman, 2011).



In research using the Learning and Study Strategies Inventory (LASSI), Motivated Strategies for Learning Questionnaire (MSLQ), and the Self-Regulated Learning Interview Scale (SRLIS) as measures of students' self-regulatory strategies, these inventories were found to be significantly correlated with measures of course performance (Pintrich, Smith, Garcia, & McKeachie, 1993; Zimmerman & Martinez-Pons, 1988). A self-regulation strategy measure also predicted students' academic grades and teachers' ratings of their proactive efforts to learn in class (Zimmerman & Martinez-Pons, 1988).

Research also showed that students who typically used self-regulation strategies sought help more frequently from peers, teachers, and parents and learned more than students who did not seek help (Pintrich et al., 1993; Zimmerman & Martinez-Pons, 1988). Research has shown that self-regulation is critical in determining students' successful learning experiences in an online learning environment (Cho & Kim, 2013). Additionally, Cho and Kim found that self-regulated learners set goals, plan ahead, and consistently monitor and reflect on their learning process. These findings were in line with earlier research by Pintrich et al. (1993) and Zimmerman (2011) whose research demonstrated that self-regulated learners effectively manage their time and learning resources and persist in a challenging learning context.

In their recent work, Cho and Shen (2013) found there was a relationship between self-regulation and achievement. In their study they sought to discover the role of goal orientation and academic self-efficacy in student achievement. They examined self-regulation through the multiple constructs of goal orientation, academic self-efficacy,

effort regulation, metacognitive regulation, and interaction regulation. What they found was that the intrinsic goal orientation and academic self-efficacy was positively associated with students' achievement mediated by three types of regulation, effort regulation, metacognitive regulation, and interaction regulation; but extrinsic goal orientation was not associated with any types of regulation nor did it influence student achievement. Their current study extends achievement goal theories to online learning environments.

The results of achievement goal research have shown that students who have intrinsic goal orientations tend to persist with learning in challenging tasks and report high involvement in learning process by regulating their cognition and motivation (Cho & Shen, 2013). On the other hand, students who have extrinsic goal orientation are not likely to engage in their learning process (Meece, Anderman, & Anderman, 2006; Pintrich et al., 1993). Cho and Shen's (2013) study also found that students' learning patterns are similar in online learning settings, depending on students' goal orientation in that intrinsic goal orientation was positively related to metacognitive regulation but extrinsic goal orientation was not associated with any types of regulations. In addition, Cho and Shen found a positive correlation between student efficacy and self-regulation. In another study, Cho and Shen went on to recommend that interaction regulation be explored as a result of research they conducted where they found that a significant portion of online assignments required students to interact with other students, suggesting that it would warrant investigating.

## Motivation

Motivation is an explanatory concept that helps explain why people act in certain ways (Schunk & Zimmerman, 2007) and forms a theoretical framework used to explain the initiation, direction, permanence and quality of behavior, especially goal-oriented behaviors (Maehr & Meyer, 1997). Furthermore, motivation plays an important role in student achievement (Eccles & Wigfield, 2002). Brophy's (2010) study on motivation found that motivation is one of the most important factors affecting learning. Though there has been much research on motivation and engagement in a variety of face-to-face learning contexts (Junco, 2013), Cho (2010) cautioned us about applying what we know about student motivation to online learning due to the unique nature of online learning. Social presence and its lack have been researched in many studies to understand learning processes in online courses (Shea, 2010). Agreeing with Cho (2010), other researchers argued that student motivation can be different depending on the quantity and quality of social presence (Borup, 2012; Shea, 2010). This may apply even more to adolescents who tend to heavily weigh the importance of peers (Berten, 2008). In fact, the K-12 online education literature highlights the role of students' interactions with their instructor and classmates (DiPietro, Ferdig, Black, & Preston, 2008).

Motivation and engagement do not always coexist. In other words, there could be motivation but without engagement, an example of this would be, only wanting something but not actually doing it. What transforms motivation to engagement is the effort and metacognitive regulation that students put into the process of their learning (Pintrich, Smith, Garcia, & McKeachie, 1993).

Halisch and Heckhausen (1977) defined effort regulation as the ability to control effort expenditure. Metacognitive regulation is to control “one’s own cognition” (Pintrich, Smith, Garcia, & McKeachie, 1993). According to Pintrich et al., (1993), effort regulation is part of resource management. An example of effort regulation and metacognitive regulation would be a student who reviews class notes over and over (rehearsal, a metacognitive strategy) demonstrates engagement in learning activities (Fredricks, Blumemfeld, & Paris, 2004).

Pintrich et al. (1993) explained that this action of rehearsal (i.e., engagement) would not happen without the desire to learn (i.e., motivation); at the same time, that desire alone does not guarantee engagement and the student would have to make an effort to rehearse. Managing both cognition (i.e., metacognitive regulation) and effort (i.e., effort regulation) is important in learning because it transforms motivation to engagement. Such regulation happens more easily when students engage in the learning tasks that are (a) perceived easy to execute and (b) interesting and enjoyable. Self-efficacy is defined as one’s perceived ability to successfully complete a task (Bandura, 1977). Intrinsic task value is defined as the value one perceives in a task that is inherently interesting and enjoyable (Schunk, Pintrich, & Meece, 2008).

In many different learning environments, self-efficacy has been steadily found to be a strong predictor for motivation and performance (Multon, Brown, & Lent, 1991). Self-efficacious students also tend to control their learning process (Bandura, 1977). According to Schunk and Mullen (2012), when a task is perceived to be easy to perform, students are likely to perceive high self-efficacy and to self-regulate. Self-efficacy

influences motivation directly and engagement indirectly. Students engage in tasks also for their own interests (Ainley, 2012) and enjoyment (Csikszentmihalyi, 1975), and when the intrinsic value of the tasks is high (Deci, 2008).

Several empirical studies reported the role of motivation in online self-regulated learning. For example, Cho and Kim (2013) found that students' mastery-oriented goals are positively related to their self-regulation for interaction in online learning environments. In addition, Cho and Shen (2013) found online students' intrinsic goal orientation, or disposition to master the content, is positively related to their self-efficacy for learning and performance as well as metacognitive self-regulation in an asynchronous online learning environment.

McIsaac and Gunawardena (1996) emphasized that while there are advantages to online learning, a variety of factors have been identified as crucial to the success of online courses. Motivation is one such factor (Bekle, 2010). Just as motivation is a key factor in learning and achievement in face-to-face educational contexts (Brophy, 2010), so it is in online learning environments (Jones & Issroff, 2007). Poor motivation has been identified as a decisive factor in contributing to the high dropout rates from online courses (Muilenburg & Berge, 2005). This, coupled with an increasingly diverse and inclusive student population (Rumble, 2004), has caused some to question previously held underlying assumptions that view online learners as independent, self-directed, and intrinsically motivated (Garrison, 1997).

Motivation can influence what we learn, how we learn, and when we choose to learn (Schunk, 1995). Motivated learners are more likely to undertake challenging

activities, to be actively engaged, to enjoy and adopt a deep approach to learning, and to exhibit enhanced performance, persistence, and creativity (Schunk, Pintrich, & Meece, 2008)). Contemporary views link motivation to individuals' cognitive and affective processes, such as thoughts, beliefs, and goals, and emphasize the situated, interactive relationship between the learner and the learning environment (Brophy, 2010).

Studies that explore motivation to learn in online contexts are relatively limited both in number and scope (Artino, 2008). Existing research has had a tendency to adopt a limited view of motivation that does not acknowledge the complexity and dynamic interplay of factors underlying and influencing motivation to learn (Brophy, 2010) but instead, has focused designing motivating learning environments (ChanLin, 2009). More frequently, motivation has been viewed as a personal characteristic that remains relatively stable across contexts and situations.

Studies adopting this model have focused on identifying lists of traits of successful online learners (Wighting, 2008) and indicated that intrinsic motivation is a common characteristic (Shroff, Vogel, & Coombes, 2008). Findings from comparative studies between online students and on-campus students (Rovai, 2007; Shroff & Vogel, 2009) also suggested that online students are more intrinsically motivated across the board than their on-campus counterparts at both undergraduate and postgraduate level.

Turner and Patrick (2008) reminded us that while intrinsic motivation may influence initial engagement as well as retention in online study, research that treats intrinsic and extrinsic motivation as a dichotomy may present an overly simplistic view of both contextual effects and motivation itself. The researchers contended that viewing

motivation solely as an effect of the learning environment or as a learner attribute does not recognize that individuals can be motivated to a greater or lesser degree, and in different ways, in any given context and time. In addition, Turner and Patrick (2008) cautioned that few studies of online learning environments have acknowledged this contemporary “person in context” view of motivation and have done so only in a limited way. Together, these factors pointed to the need to reconsider motivation to learn in technology-mediated environments.

### **Student Engagement**

Student engagement is considered the primary theoretical model for understanding dropout and promoting school completion, defined as graduation from high school with sufficient academic and social skills to partake in postsecondary educational options and /or the world of work (Christenson, Appleton, & Furlong, 2008; Finn, 2006). Further, engagement is the cornerstone of high school reform efforts.

Although interest in engagement has increased exponentially in recent years, its distinction from motivation remains subject to debate. As one conceptualization, motivation has been thought of in terms of the direction, intensity, and quality of one’s energies (Maehr & Meyer, 1997), answering the question of why for a given behavior. In this regard, motivation is related to underlying psychological processes, including autonomy, belonging and competence (Schunk, 1991). In contrast, engagement is described as energy in action, the connection between person and activity (Russell, Ainley, & Frydenberg, 2005). Researchers described it as the glue that binds the context of home, school, and community (Guthrie, Wigfield, & Von Secker, 2000). To illustrate

this distinction as it pertains to reading tasks, they identify the motivational aspects to include (a) perceptions of reading competency, (b) the perceived value of reading in order to obtain larger goals (better grades, parent/teacher praise), and (c) the perceived ability to succeed at the reading task, among others.

Engagement aspects include the number of words that were read or the amount of text that was comprehended with deeper processing of the content. This conceptualization suggests that motivation and engagement are separate but not orthogonal (Furrier & Skinner, 2003; Skinner & Belmont, 1993). That is, one can be motivated but not actively engage in a task. Motivation is thus necessary, but not sufficient for engagement.

In their research on the effects of teacher behavior on student engagement, Skinner and Belmont (1993) found a reciprocal relationship between teachers' behavior and students' engagement in the classroom. Their finding revealed that teachers' interactions with students predicted students' behavioral and emotional engagement in the classroom, both directly and through their effects on student's perceptions of their interactions with teachers.

Engagement in school is an important academic outcome in its own right. It improves performance and validates positive expectations about academic abilities (Skinner, Zimmer-Gembeck, & Connell, 1998). Moreover, engagement seems to serve as an important social signal, eliciting supportive reciprocal reactions. For example, when children are engaged, they are provided with more motivational support by their teachers (Skinner & Belmont, 1993). In contrast, children with low motivation become even more disaffected over time, especially when confronted with challenges or transitions



(Wigfield, Eccles, & Rodriguez, 1998). Engagement is also a good predictor of children's long-term academic achievement (Skinner, Zimmer-Gembeck, & Connell, 1998) and their eventual completion of school (Connell, Spencer, & Aber, 1994). Klem and Connell (2004) argued that there is strong empirical support for the connection between engagement, achievement and school behavior across levels of economic and social advantage and disadvantage. In addition, the construct of engagement captures the gradual process by which students disconnect from school (Finn, 1989). Conceptual and empirical work has shown that engagement is a multidimensional construct, including both behavioral and emotional components (Fredricks, Blumefeld, & Paris, 2004; Kindermann, Furrer, & Skinner, 2008). In academic settings, engagement refers to the quality of effort students make to perform well and achieve desired outcomes (Hu & Kuh, 2002).

Engaged students do more than attend or perform academically; they also put forth effort, persist, self-regulate their behavior toward goals, challenge themselves to exceed, and enjoy challenges and learning (Klem & Connell, 2004). Engagement is a multidimensional construct, one that requires an understanding of affective connections within the academic environment (e.g., positive adult-student and peer relationships) and active student behavior (e.g., attendance, participation, effort, pro-social behavior) (Appleton, Christenson, & Furlong, 2008; Newmann, Wehlage, & Lamborn, 1991).

Engagement, or students' participation and investment in learning activities, is important in online learning because it can increase learning and reduce educational risks such as dropping out (Eccles & Wang, 2012). Engagement enables meaningful

interactions between the student and the internal and external factors of learning, such as student participation, attention, and desire (internal factors), instructors, peer interactions, course design, and classroom climate (external factors) (Finn & Rock, 1997).

Engagement manifests itself in behavioral, cognitive, and affective spheres (Fredricks, 2004) especially in online environments where student participation and external factors vary from the traditional classroom model (Hoskins & Van Hoff, 2005). For example, in behaviorally engaged students log in, attend to course prompts, ask questions, read course materials, participate in discussions, complete assignments, and follow expectations.

### **Summary**

The potential of technology to change the learning landscape of K-12 education is limitless. Horn and Straker (2012) described its impact on learning as disruptive innovation. Although online learning made its debut in postsecondary schools and business, it has experienced explosive growth in K-12 schools. In 2012, 40 states had state-level virtual schools or state-led online initiatives (Watson, Murin, Vashaw, & Rapp, 2012), and many states reported a 100% growth in the number of students participating in online programs.

Some may argue that NCLB had an equally explosive impact on K-12 by requiring districts to disaggregate data by subgroups and increase graduation rates for minorities and special needs students. The scrutiny of these subgroups' academic performance has left many school systems struggling with effective ways to meet improve their achievement. This mandate arrived around the time the evolution of technology began to permeate every aspect of modern day culture. School systems sought

ways to parlay this technology revolution into effective ways to engage and meet the needs of students who are now “digital natives.” As blended learning became more pervasive, and technology a routine part of classroom instruction, inevitably the question of its effectiveness and how student fared in an online environment arose.

A 2009 report from the U.S. Department of Education in which they conducted a meta-analysis of evidence-based studies of online-learning programs, including 44 studies involving postsecondary students and seven studies involving K-12 students, found that students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction. As the technology developed and the programs became more common place, a number of researchers conducted studies to examine, online course instructional design, which practices were most effective, and the effects of student motivation, engagement, and self-regulation on student outcomes. What the researchers found was just as formative assessments contributed to what students focused on in the face-to-face classroom, it influenced what students studied in the online learning environment. Formative assessments proved to be just as critical to student success in synchronous and asynchronous environments as in regular classrooms.

The current research around motivation, self-regulation and student engagement in an online environment, suggests the impact of these factors in an online environment behaves in much the same way as a regular face-to-face environment. Just as research proved motivation is critical to learning in the regular classroom, student motivation in the online environment may be influenced by the interaction students have with the

teacher and with each other. As more research became available self-regulation, motivation, engagement, also impacted students' success in online learning environments. Studies also found that the nature of online learning which provides limited interaction, made the ability of students to regulate their behavior meta-cognitively and motivationally as critical to their success in the online learning environments. Additionally, self-efficacy and intrinsic goal orientation emerged as positively related to student behavior in online courses.

One major use for online courses is to provide K–12 students the opportunity to retake required courses to make up graduation credits for courses they failed previously, known as credit recovery. Many states, particularly in the Regional Educational Laboratory Southeast Region, identified credit recovery as a major objective for online courses (Queen & Lewis, 2011). However, little research has compared student outcomes in online courses with student outcomes in face-to-face courses, whether for credit recovery or more generally (Hughes, Zhou, & Petscher, 2015).

According to Means, Toyama, Murphy, Bakia, and Jones (2009), A U. S. Department of Education survey found that public school districts considered the following variables important or very important when deciding to offer online education: offering courses for credit recovery (72%), providing courses not available (71%), reducing scheduling conflicts (68%), offering AP or college courses (61%), meeting the needs of students with disabilities or who are homebound (55%), providing accelerated credit accumulation for early graduation (42%), resolving space limitations (16%), and generating new revenue (13%).

With credit recovery comprising the bulk of courses for K-2 schools, it becomes even imperative to examine variables related to student outcomes. This research examined how blended learning, formative assessments, self-regulation, motivation, and engagement were related to student outcomes in credit recovery courses.

## CHAPTER III

### THEORETICAL FRAMEWORK

The researcher explored the relationship of blended learning, self-regulation, motivation, student engagement, and formative assessments to credit recovery outcomes. The learning theories that may potentially impact the variables included in this study are (a) Vygotsky's social developmental theory (1978) as it relates to the use of formative assessments to scaffold instruction in credit recovery courses and (b) Sansone and Thoman's self-regulation theory (2005) as it relates to motivation and engagement.

#### **Theory of the Variables**

Collaboration has become common place in today's classroom and has been touted as one of the most effective ways to not only engage students, but a required skill for the 21<sup>st</sup> century learner. Collaborative learning has its roots in Vygotsky's (1978) theory of social development. Vygotsky's social developmental theory emphasizes the role of social interaction in the development of cognition. One of principles of Vygotsky's work that may influence the development and use of formative assessments in this research is the Zone of Proximal Development (ZPD). Taken together these two principles form the foundation of scaffolding instruction.

Vygotsky suggested that when a student is at the ZPD for a particular task, providing the appropriate assistance (scaffolding) will give the student the support to achieve the task. Once the student, with the benefit of scaffolding, masters the task, the

scaffolding can then be removed and the student will then be able to complete the task again on his own (Vygotsky, 1978). This research examined the use of formative assessments as a scaffolding tool.

Decades later, educational research still supports this theoretical stance: socialization and collaboration play a vital role in learning (Fawcett & Garton, 2005; Gooch & Saine, 2001). Academic self-regulation refers to the self-generated, reflective, and strategic engagement in academic tasks (Zimmerman, 2000). Self-regulation is described as the ability to monitor learning and other self-regulated learning processes, such as goal setting, self-monitoring, self-evaluation and strategy use. Self-regulation may explain why some students are more successful in online courses than others. Models of self-regulation typically include motivation in terms of goals. According to Sansone and Thoman (2005), people are motivated to engage in an activity (e.g., studying) because they see it as a means to achieve or reach some outcome (e.g., getting a good grade).

The degree of motivation will vary as a consequence of how much they value the outcome and of their expectations of attaining it (Eccles & Wigfield, 1983). Sansone and Thoman (2005), following the viewpoint of Eccles and Wigfield (1983), theorized that while having sufficient motivation to begin an activity, subsequent motivation will be based on the evaluation of progress towards the goal. In other words, some people's motivation to persist at a task may be based on their assessment of their ability to reach the goal. Sansone and Thoman stressed that most self-regulation research has been done

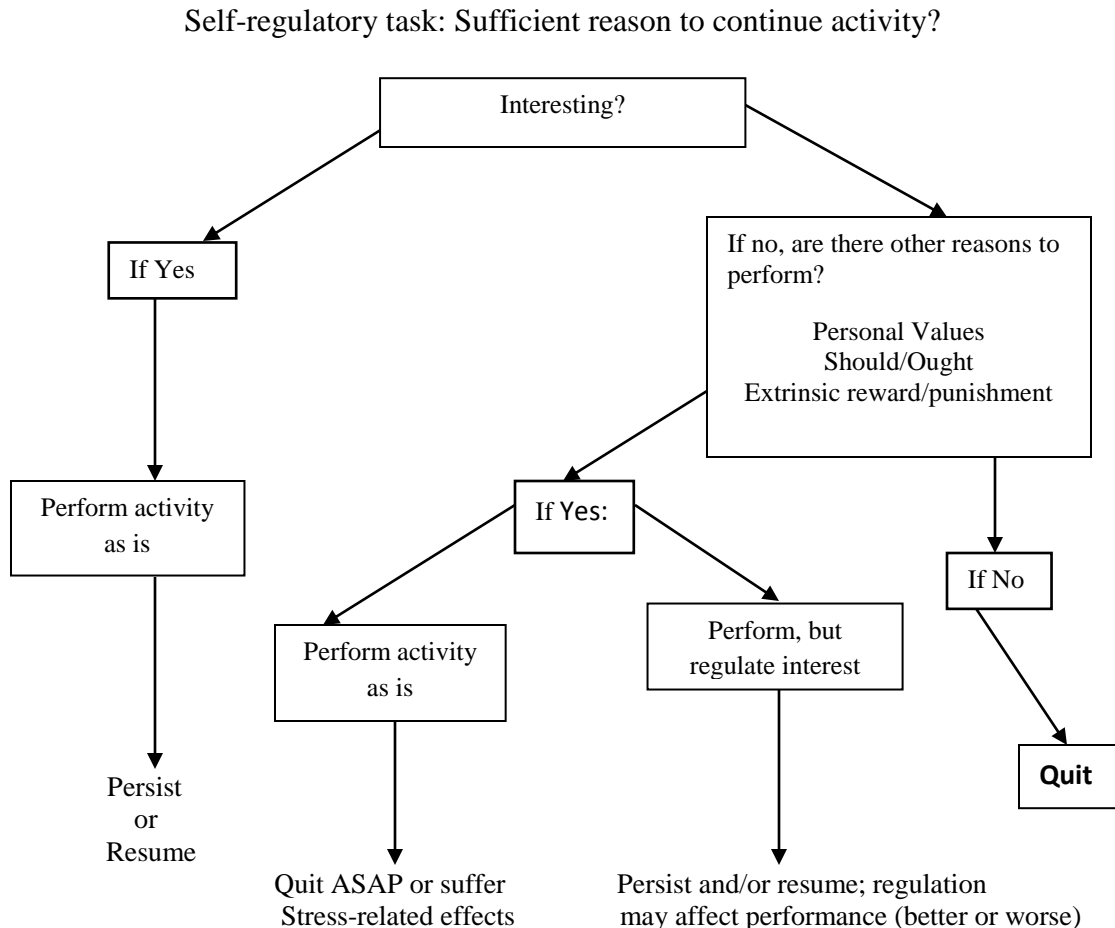
on extrinsic motivation and the metacognitive variables that contribute to the process, such as goal setting, and strategies.

Researchers have begun to investigate the role of emotional and affective variables in the self-regulation process (Pekrun, Geortz, Titz, & Perry, 2002). In particular, there is a growing recognition that in addition to monitoring progress toward goals, an important part of the self-regulation process involves monitoring how we feel (Efklides & PetKaki, 2005). In their work on self-regulation, Sansone and Thoman (2005) put forward the idea that people are intrinsically motivated when their behavior is motivated by the anticipated, actual, or sought experience of interest. The researchers defined interest as a phenomenological experience involving both cognitive and affective components. According to Sansone and Thoman, attention is directed and focused, if the general affective tone is positive. Their definition of interest was closer to *situational* than *individual* interest (Hidi, 2006), although it was not derived solely by situational factors. Sansone and Thoman (2005) emphasized the *experience* of interest as a dynamic state that arises through an ongoing transaction among individuals' goals, activity characteristics, and the surrounding context. The researchers suggested that interest reliably predicts task choice and persistence and argue it also predicts the nature of activity engagement.

Research has also examined how interest affects attention during and retention after a learning task (Alexander, 1995). Although individuals appear to pay more attention when the target is interesting (Renninger & Wozniak, 1985), it is also the case that individuals need less time attending to interesting material in order to learn it (Shirey



& Reynolds, 1988). There is clearly overlap in many of the variables that are relevant to goal-striving and to the experience of interest. For example, individuals' goals guide whether they choose to engage in an activity and why, and individuals will experience greater interest when the activity and the surrounding context are experienced as goal-congruent. In addition, individuals experience greater interest when they value the goals and feel confident that they can reach them. Furthermore, the interest experience predicts many of the variables important to self-regulation, including behavioral outcomes (subsequent choice and persistence) and cognitive processes (attention and retention). Sansone and Thoman (2005) suggested that an important aspect of self-regulation is monitoring and regulating motivation in addition to progress towards goals. Although the researchers contended that motivation can be regulated by enhancing the value or expectancy of the outcome, they also suggested that regulating the interest experience can be just as powerful. Figure 1 illustrates Sanson and Thoman's (2005) theory of the role of interest in the process of motivating and evaluating motivation.



*Figure 1.* Sanson and Thoman's (2005) theory of the role of interest in the process of motivating and evaluating motivation.

Sanson and Thoman's (2005) theory of the role of interest in the process of monitoring and evaluating motivation explained the following:

Once we engage an activity (whether for its own sake or because it provides a means toward some goal); we consider (not always consciously) whether there is sufficient reason to continue. If the experience is interesting and involving (intrinsically motivating), we will continue to perform the activity as is. If

uninteresting, we consider whether there are sufficient extrinsic reasons to perform the activity anyway. If not, we will quit. If there are sufficient reasons to continue, however, we have two choices. We can continue to perform the uninteresting activity as is, holding on for as long as we can, and hopefully until we reach the goal. (p. 178)

This is the path addressed in many self-regulation models, and researchers propose that more autonomous forms of extrinsic motivation (e.g., personal value rather than extrinsic reward) will result in greater persistence (Deci & Ryan, 1987). “We focus on the remaining path, however but as we continue to perform the uninteresting activity, we actively change how we perform it, using strategies to make performance more interesting” (Sanson & Thoman, 2005, p. 179). Thus, extrinsic factors can paradoxically lead to greater intrinsic motivation if they motivate use of interest-enhancing strategies. The activity itself may no longer be identical to the one with which the person began, if these strategies are now seen as part of the activity. Because of the independent nature of online learning, self-regulating behavior and motivation may play a significant role in the success of students in credit recovery courses.

Affectively engaged students feel satisfied from their achievement, enjoy interesting activities, and maintain a sense of self-worth in peer interactions. Each form of engagement is imperative for students to fully immerse in learning and successfully complete the course (Fredricks, 2004).

Equally important to engagement in online courses is motivation, as engagement has been conceptualized as the manifestation of students’ motivation (Schunk & Mullen,

2012). Students' motivation is translated into engagement where students not only have the desire to participate, but also actively participate in learning tasks. Self-determination theory suggests that motivation can range from controlled regulation (completing an activity to gain a certificate or avoid a demotion) to autonomous motivation (the award arises from completing the activity) (Ryan & Deci, 2000). Ryan and Deci suggested that the highest form of motivation is closely linked to satisfaction arising from a sense of autonomy, which in turn influences engagement, performance, and persistence. Online students come to class with complex blends of motivational levels (Artino, 2008; Hartnett, St. George, & Drone, 2011) which makes it an important consideration for course completion.

Researchers and online teachers consistently identify several key factors, including the students' comfort and efficacy with the online environment and their self-management abilities. For example, researchers found that online students who identified themselves as having low computer skills were far more likely than other students to blame technical problems for their failure to complete coursework (Oliver, Patel, & Keilman, 2009). Brown and Keith (1998) tried to define academic motivation by listing the important features of individuals with high academic motivation as being enthusiastic about learning, enjoying learning related activities, and beliefs about school. On the other hand, academic motivation is also defined as the enthusiasm of a student about participating in classes and learning activities, and the extent of attention and effort the student puts into different engagements (Cave, 2003). Motivation is critical in learning. This is no less true in online learning (Carpenter & Cavanaugh, 2012). However,

motivated students do not always engage in learning (Keller, 2008). Motivation to learn is only a desire to be involved in activities for learning (Kim & Bennekin, 2013). What makes students actually learn is mindful engagement in those learning activities because *engagement leads to outcomes* such as achievement, and *motivation underpins engagement* (Martin, 2012).

The purpose of this study was to determine the relationship between blended learning, formative assessments, student motivation, engagement, self-regulation and credit recovery outcomes. A survey was developed to collect data on blended learning, formative assessments, engagement, motivation, and self-regulation relationship to credit recovery outcomes. Online teachers were interviewed in order to gain insight on how they use formative assessments and their beliefs about the relationship between motivation, self-regulation and engagement on credit recovery outcomes. Figure 2 demonstrates the variables that impact student outcomes in online credit recovery courses. This research investigated the relationship of those variables to credit recovery outcomes.

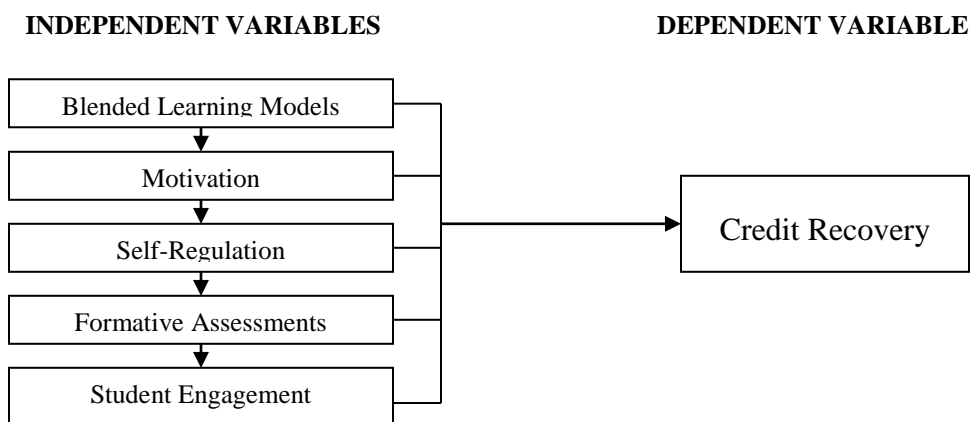


Figure 2. Variables that impact student outcomes in online credit recovery courses.

### Definition of Variables

**Blended learning.** Blended learning is a formal education program in which a student learns: at least in part through online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home (Horn & Staker, 2012). They identify four blending learning models:

- A. **Rotation Model.** The rotation model includes the following, formats: station, lab, flipped classroom, and individual.
- B. **Flex model.** The flex model is a program in which content and instruction are delivered primarily by the Internet, students move on an *individually customized, fluid schedule* among learning modalities, and the teacher-of-record is on-site.
- C. **Self-blend model.** The self-blend model describes a scenario in which students choose to take one or more courses entirely online to supplement their traditional courses and the teacher-of-record is the online teacher.
- D. **Enriched virtual model.** This model is a whole-school experience in which within each course (e.g., math), students divide their time between attending a brick-and-mortar campus and learning remotely using online delivery of content and instruction level.

**Credit recovery.** For the purpose of this research, credit recovery is defined as the extent to which students successfully complete Coordinate Algebra, Biology, Physical Science and Analytic Geometry. The credit recovery program is comprised of teacher-made courses that consist of 10 formative quizzes and a final exam. Students have two

opportunities to take the quizzes within the course. Credit recovery is a “teacherless” course. Students do not receive direct instruction or support from online teachers.

**Formative assessments.** Formative assessment is defined as assessment carried out during the instructional process for the purpose of improving teaching or learning. “What makes formative assessment formative is that it is immediately used to make adjustments as to form new learning” (Shepard, 2008, p. 281). For the purpose of this research formative assessments will be defined as the online teacher made quizzes in recovery courses. Students have two opportunities to re-take formative assessments.

**Motivation.** This study used the definition by Brown and Keith (1998) that defines academic motivation as students who are enthusiastic about learning, enjoying learning related activities, and have positive beliefs about school.

**Self-Regulation.** This term can be described as a process that helps learners to plan organize and, persist in learning activity towards a goal. Self-regulation also includes cognitive, affective and behavioral aspects of motivation.

**Student engagement.** Student engagement refers to involvement in learning tasks and environments such as time-on-task and attendance; cognitive engagement refers to psychological investment in the process of learning such as the use of learning strategies; and emotional engagement refers to affective reactions to learning tasks and environments such as emotions (Fredricks, 2004).

### **Definition of Terms**

**Asynchronous learning.** where students acquire knowledge from interacting with, reading, watching, and listening to different types of content at their own pace. There is limited interaction with the teacher.

**Dropout Factory.** A school that graduate less than 60% of the freshman class within four years is referred to as a dropout factory.

**Synchronous learning.** This term employs elements of the regular classroom, such as group discussions, team activities, and other elements that an instructor supervises. Learning is completed on a schedule, like a regular classroom, and there is plenty of interaction between the students and the instructor. Synchronous learning can take place either in a classroom setting, in an online chat room, a video conference, or using a web-conferencing application.

**Web 2.0.** This term is defined as technology that allows users to create, collaborate, and interact with content on the internet.

### **Research Questions**

RQ1: Is there a significant relationship between blended learning and credit recovery?

RQ2: Is there a significant relationship between formative assessments and credit recovery?

RQ3: Is there a significant relationship between self-regulation and credit recovery?



RQ4: Is there a significant relationship between student engagement and credit recovery?

RQ5: Is there a significant relationship between student motivation and credit recovery?

RQ6: How do teachers use formative assessments to improve student outcomes?

RQ7: How do teachers perceive the effectiveness of credit recovery?

RQ8: How do students use credit recovery to graduate from high school?

### **Limitations of the Study**

Within any research are limitations that may hamper the ability of the research to be generalized to the general population and may impact the results of the research. Some of the limitations that may be present in this research are:

1. The sample size was not randomized and was limited to only those students enrolled in a specific course.
2. The teachers may have felt pressured to respond in a certain way to appear knowledgeable.

### **Delimitations of the Study**

1. The research was conducted at only three high schools within the district and may not represent the general demographics of the district.
2. The researcher is employed in the district in which the research was conducted.

## Summary

Researchers have long since come to understand the impact of student engagement, self-regulation motivation, and formative assessments on student learning in the regular classroom, but are just now beginning to explore their impact in the digital world and the implications for students learning. The advent of new technologies and online learning has transformed the way students access, create, and receive information. Along with this transformation comes a new way of learning and with it new opportunities for school districts to individualize instruction and meet the needs of students.

Web 2.0 technology not only allows students and teachers to access, retrieve and receive information from the internet, but also to connect, collaborate and interact with people, places and all over the world. Along with this new technology come new competencies for learning. This requirement necessitates the need for research on how traditional constructs like motivation, engagement, and self-regulation behave in this new learning environment. This research hopes to explore how student learning in the virtual classroom is affected by these constructs, and the implications for 21<sup>st</sup> century pedagogy.

## CHAPTER IV

### RESEARCH DESIGN

Creswell (2003) defined a mixed methods approach as one in which the researcher tends to base knowledge claims on pragmatic grounds that may be consequence-oriented, problem-centered or pluralistic. A mixed-methods approach suggests strategies of inquiry that involve collecting data either simultaneously or sequentially as the best way to understand research problems. The data collection also involves gathering both numeric information through survey instruments as well as text information through interviews so that the final database represents both quantitative and qualitative information (Creswell, 2003).

Recognizing that all methods have limitations, Creswell (2003) and others felt that biases inherent in any single method could neutralize or cancel the biases of other methods. He advocates triangulating data sources as a means for seeking convergence across qualitative and quantitative methods (Jick, 1979) from the original concept of triangulation emerged additional reasons for mixing different types of data. For example, the results from one method can help develop or inform the other method (Caracelli, Graham, & Green, 1989). Alternatively, one method can be nested within another method to provide insight into different levels or units of analysis (Tashakkori & Teddlie, 1998).

According to Creswell (2003), using a mixed method approach allows the researcher to base the inquiry on the assumption that collecting diverse types of data best

provides an understanding of a research problem. The study began with a broad survey in order to generalize results to a population and then focused, in a second phase, on detailed qualitative, open-ended interviews to collect detailed views from participants (Creswell 2003). A quantitative method was used to gather data through a survey in hopes of generalizing the data to similar population and a qualitative method utilizing interviews was used in an effort to gain insight into the probable causes behind the data.

A mixed methods design utilizing both quantitative and qualitative methods was used in order to determine the relationship between student motivation, student engagement, self-regulation, formative assessments, and blended learning models on credit recovery outcomes. An Ex Post Facto quasi-experimental design was used for the quantitative portion of the study. For the Qualitative portion of the study online teachers were interviewed to explore their perception of the relationship between student motivation, self-regulation, engagement, formative assessments, and blended learning and student outcomes in credit recovery.

### **Description of the Setting**

The research was conducted in three large high schools located in a suburban district in the metropolitan area of Atlanta, Georgia. The district is a large diverse school system with 100, 000 students and 27 high schools. The district is classified a Title I district due to the large number of students who receive free or reduce lunch. The state of Georgia uses the College and Career Ready Performance Index (CCRPI) as its measure of accountability for schools. The College and Career Ready Performance Index measures college and career readiness of students and rates school performance on the

indicators in the following categories; academic performance, graduation rates, achievement gap and student growth.

The CCRPI score is based on a 100 point scale. The district's average high school 2014 CCRPI score is 60 and the cohort graduation rate for 2014 is 71%. The district offers credit recovery to 11<sup>th</sup> and 12<sup>th</sup> grade students. The failure rate for credit recovery in the spring of 2015 was 46% for 11<sup>th</sup> grade students and 21% for 12<sup>th</sup> grade students. The 2014 CCRPI scores for the three high schools selected for the study were as follows: School A = 57, School B = 62, and School C = 67. The CCRPI score also measures the school's cohort graduation rate, the percentage of students who graduate within 4 years. The 2013-2014 cohort graduation rate of the schools involved in the study were 63% for School A, 72% for School B, and 68% for School C. For all of the schools in the study, the CCRPI score and cohort graduation rate fell below the state's average CCRPI of 68 and cohort graduation rate of 74%. Schools A and B's graduation rate was below the district's average of 71% and School C's graduation rate was above the district's graduation rate of 71%. Two of the schools in the study had a predominately African-American student population: School A = 98% and School B = 95%. School C had a diverse student population with 66% African American, 13% Asian, 9% Hispanic, and 10% white (see Table 1).

Table 1

*Demographics of Schools Included in the Study*

School	Enrollment	2014 CCRPI Score	2014 Cohort Graduation Rate	% of Economically Disadvantaged	% of Special Education
State		68	74	62	11
District		60	71	74	9
School A	1,232	57	63	81	14
School B	1,560	62	72	66	10
School C	1,832	64	68	65	8

The schools in the study used a variety of models for credit recovery. School A provided credit recovery students with support during the school day. Students enrolled in credit recovery in School A were scheduled into a remedial course during the school day that allowed them to complete credit recovery course work. The students in School A also had access to a manned computer lab before school and during the school day. Schools B and C did not provide additional time during the school day, access to a manned computer lab, or teacher support during the school day. Students in schools B and C were expected to complete credit recovery courses on their own time and outside of the school day. None of the schools in the study had staff dedicated to manage student enrollment, monitor student progress, or parent communication for students enrolled in credit recovery. Credit recovery enrollment and monitoring in all three schools was done by the student's counselor. All three schools had a coordinator for the state's virtual school, this was usually a counselor, whose role was to enroll students, reset tests, and update transcripts once courses were completed.

### **Sampling Procedures**

A convenience sample was used for the study that consisted of students enrolled in the 8-week course during the fall and spring semesters. The sample size included 27 students enrolled in coordinate algebra, analytic geometry, biology, and physical science courses. Students were referred to credit recovery by the school counselor. Students had to have a grade of 60 on the previously failed course in order to be eligible for the program.

Teacher interviews were coded by grade level and subject. The sample size for the teacher group consisted of eight online teachers who taught in the online program. Seventy percent of the teachers had been with the program 5 years or more. The majority of the teachers (70%) had a master's degree and two of them were certified in instructional technology. All of the teachers in the program were veteran teachers with 6 years being the minimum level of teaching experience. Only three of the 11 teachers were hired specifically for the program; the remaining teachers were reassigned by the district to the program.

### **Instrumentation**

#### **Quantitative**

The quantitative data were collected using a survey that was created by the researcher in collaboration with the researcher's dissertation committee chairperson (see Appendix A). The survey was administered to students using a paper and pencil survey. The survey was conducted before school and coded using the student's course, grade, and student number on the class roster. For example, a student named Green in coordinate

algebra who was a senior was coded CA127 (CA for coordinate algebra, grade 12, G for the seventh letter of the alphabet). The survey consisted of 32 questions that used a Likert scale to measure student responses (see Table 2). Demographic data were also collected from the survey that included, gender, race, grade, and age, the number of times they had taken the course, and how often they logged into the course.

Table 2

*Survey Questions Related to Research Questions*

Survey Questions	Research Questions
22, 23, 24, 25, 26	Question 1
18, 19, 20, 21	Question 2
6, 7, 8, 9, 10, 11	Question 3
1, 2, 3, 4, 5	Question 4
12, 13, 14, 15, 16	Question 5

### **Qualitative**

Online teachers in the study were interviewed to determine how effective they believed formative assessments were in helping students complete the course, whether or not the blended learning contributed to student success in the credit recovery and the role of student engagement, motivation, and self-regulation on student outcomes in the course. The teacher interview response sheets were coded to protect the identity of the teacher.



### **Data Collection Procedures**

Once approved to conduct research, the researcher contacted principals of the schools selected for the study and provided them with an overview of the study and explained the data collection process. A schedule was developed for each school that allowed the researcher to meet with students before school and during their lunch period in the school media center. The researcher explained the purpose of the study to the students and outlined the data collection process. Students under the age of 18 were given a consent letter for their parents to sign and asked to return it within 24 hours (see Appendix B).

The researcher returned to the schools after the consent forms were distributed. The researcher had to visit the schools several days in order to collect consent letters. Once the student returned the consent letter, they were given the survey to complete. All of the surveys were coded based on the course, grade, and student number on the class roster. Teacher interviews were conducted at the online school location. The researcher met with the online teachers in a group session to explain the purpose of the study. Online teachers were given the informed consent letter and asked to return it the next day. Eight of the 11 online teachers agreed to participate in the survey. A schedule of the teacher interviews was sent to those teachers who agree to participate in the study and the interviews were scheduled to last approximately 30 minutes. The interviews took a week to conduct. The teacher interview sheets were coded using the state program code for their course and the first four digits of their employee identification (ID) number. The

teacher interviews were coded and organized around common themes and used to corroborate data from the student surveys.

### **Summary**

The latest estimates of the high school dropout crisis indicate that the United States loses approximately 7,000 students daily (Alliance For Excellent Education, 2010). Of those students who drop out, a disproportionate number are students of color, students living in poverty, and students with disabilities. The negative effects of dropping out of high school are well documented.

To counteract these statistics and meet the accountability requirements of the NCLB and many state accountability measures, many school districts are turning to virtual learning as a way to improve graduation rates. With the onslaught of online programs targeting at-risk students, the question arises about the success of these programs. The quantitative and qualitative data collected in this research were analyzed to determine the relationship between motivation, self-regulation, engagement, formative assessments and blended learning model, and student success in credit recovery courses. Surveys were selected for students to allow them to be anonymous in the hopes that they would allow them to be candid about their experiences in credit recovery courses. While candidness is also desired of teachers, interviews were chosen to hopefully obtain an explanation of the data the survey may contradict or buttress.

CHAPTER V  
PRESENTATION OF DATA AND ANALYSIS

The survey data for the examination of causal factors related to student outcomes in a credit recovery program in a metro Atlanta school system were collected from 27 students in two schools within the district: 15 from School A and 12 from School B. School C did not have a sufficient number of students enrolled in the selected courses and did not yield any survey results.

Approximately 27 students participated in the survey. Ninety-six percent of the students were seniors. Only a small percentage of students (8%) was classified as juniors and the remaining 4% were sophomores (see Table 3).

Table 3

*Grade Level of Survey Participants*

Grade Level	Frequency	Percent	Valid Percent	Cumulative Percent
10 <sup>th</sup>	1	3.7	3.8	3.8
11 <sup>th</sup>	2	7.4	7.7	11.5
12 <sup>th</sup>	23	96.3	100.0	100.0
Missing	1	3.7	3.7	
Total	27	100.0	100.0	

With respect to the age of the participants, 78% were 18 years old or older. Approximately 11% of the participants were 17 years old and the remaining participants 16 years old or younger (see Table 4).

Table 4

*Age of Survey Participants*

Age	Frequency	Percent	Valid Percent	Cumulative Percent
15 years old	1	3.7	3.7	3.7
16 years old	2	7.4	7.4	7.4
17 years old	3	11.1	11.1	11.1
18 or older	21	77.8	77.8	100.0
Total	27	100.0	100.0	

The majority of the survey participants, 59% logged in daily, while the remaining 40% logged in weekly (see Table 5).

Table 5

*Frequency of Login to the Course*

Frequency of Logins	Frequency	Percent	Valid Percent	Cumulative Percent
Daily	16	59.3	59.3	59.3
Weekly	11	40.7	40.7	100.0
Total	27	100.0	100.0	

Females made up the majority of the students enrolled in credit recovery courses at 57% of the enrollment; males accounted for 44% of the enrollment (see Table 6).

Table 6

*Gender of Survey Participants*

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	15	55.6	55.6	55.6
Male	12	44.4	44.4	44.4
Total	27	100.0	100.0	

Of the number of students who took the survey, 74% were African American. The remaining students were Hispanic, 22% and 4% (1 student) selected other. Males made up 44% of the survey (see Table 7).

Table 7

*Race of the Survey Participants*

Race	Frequency	Percent	Valid Percent	Cumulative Percent
African American	20	74.1	74.1	74.1
Hispanic	6	22.2	22.2	22.2
Other	1	3.7	3.7	100.0
Total	27	100.0	100.0	

The number of times students were taking the same course was almost evenly split between first-time takers and students who had taken the same course more than once (see Table 8).

Table 8

*Number of Times Taking the Same Course*

No. of Times Taking Course	Frequency	Percent	Valid Percent	Cumulative Percent
Once	13	48.1	48.1	48.1
Two or more	14	51.9	51.9	100.0
Total	27	100.0	100.0	

**Quantitative Data Analysis**

The quantitative data were used to answer the following research questions:

RQ1: Is there a significant relationship between blended learning and credit recovery?

RQ2: Is there a significant relationship between formative assessments and credit recovery?

RQ3: Is there a significant relationship between self-regulation and credit recovery?

RQ4: Is there a significant relationship between student engagement and credit recovery?

RQ5: Is there a significant relationship between student motivation and credit recovery?

RQ6: How do teachers use formative assessments to improve student outcomes?

RQ7: How do teachers perceive the effectiveness of credit recovery?

RQ8: How do students use credit recovery to graduate from high school?

A Pearson's correlation coefficient was used to examine the relationship between the dependent variable of credit recovery outcomes, and the five independent variables, blended learning, formative assessments, self-regulation, student engagement, and student motivation. In this study, the data indicated there was not a significant relationship between credit recovery outcomes and the independent variables of student engagement, self-regulation, motivation, formative assessment, and blended learning (see Table 9); this is probably related to the relatively small size of the sample which included 27 students. The data for the survey were collected based on scores from four courses in the program: coordinate algebra, analytic geometry, biology, and physical science.

Table 9

*Correlation of Dependent and Independent Variables*

	Student	Self-		Formative	Blended
Credit Recovery	Engagement	Regulation	Motivation	Assessment	Learning
Pearson Correlation	.190	.238	.136	.108	.274
Sig. (2-tailed)	.343	.232	.506	.599	.167
N	27				

A Pearson's correlation was run to determine if there was a relationship between credit recovery and the demographic variables. The only variable that had a significant relationship to credit recovery outcomes was gender which was highly significant at .032 (see Table 10). This indicated that girls did better in credit recovery than boys.

Table 10

*Correlation of Credit Recovery and Demographics*

Credit Recovery	Grade	Age	Number of Times		Number of Times	
			Taking Course	Gender	Race	Logged Into Course
Pearson Correlation	.255	.294	.142	-.413	-.78	.214
Sig. (2-tailed)	.209	.137	.489	.032	.698	.284
N	26	27	26	26	26	26

When using Likert-type scales, it is imperative to calculate and report Cronbach's alpha coefficient for internal consistency reliability for any scales or subscales one may be using. The analysis of the data then must use these summated scales or subscales and not individual items. If one does otherwise, the reliability of the items is at best probably low and at worst unknown (Gliem & Gliem, 2003). The Cronbach Alpha test was conducted to determine reliability of the instrument. The data revealed that the instrument was highly reliable in measuring the variables (see Table 11).

Table 11

*Cronbach Alpha Reliability*

Student			Formative	
Engagement	Self-Regulation	Student Motivation	Assessment	Blended Learning
.681	.703	.737	.746	.775
N = 6	N = 7	N = 7	N = 6	N = 7



The data were analyzed to examine the distribution of the credit recovery scores across the demographic variables. The mean score for the credit recovery was calculated to allow further comparison (see Table 12).

Table 12

*Descriptive Statistics*

Credit Recovery Scores	N	Minimum	Maximum	Mean
N=27	27	0	88	49.7

The credit recovery score was the students' final grade in the course. The mean score for the credit recovery grades was 49.7. The mean score was used to divide the scores into two categories: high (49.7 +) and low (<49.7). The cross tabulation of student scores by grade level demonstrated that seniors did better in the program than lower classmen, with seven seniors scoring higher than the mean credit recovery score of 49.7 (see Table 13).

Table 13

*Cross Tabulation: Grade*

Grade	0	5	7	30	33	42	43	74	75	81	82	86	88	Total
10 <sup>th</sup>	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11 <sup>th</sup>	1	0	1	0	0	0	0	0	0	0	0	0	0	2
12 <sup>th</sup>	11	0	0	1	1	1	1	1	1	1	2	1	1	23
N = 26														

Cross tabulation by students' age also demonstrated that students' grades were consistent with the grade level. Twenty-five percent (7) of the students 18 or older had a passing grade, and of the students under 18, five failed the course (see Table 14).

Table 14

*Cross Tabulation: Age*

Age	0	5	7	30	33	42	43	74	75	81	82	86	88	Total
15	1	0	0	0	0	0	0	0	0	0	0	0	0	1
16	2	0	0	0	0	0	0	0	0	0	0	0	0	2
17	1	1	0	0	0	0	0	0	1	0	0	0	0	3
18+	9	0	0	1	1	1	1	1	1	1	2	1	1	21
Total	13	1	0	1	1	1	1	1	1	1	2	1	1	27

The cross tabulation of students indicated that the majority of students that participated in the study were African American. This lack of diversity was indicative of the demographics of the credit recovery program (see Table 15).

Table 15

*Cross Tabulation: Race*

Race	0	5	7	30	33	42	43	74	75	81	82	86	88	Total
AA*	9	1	0	1	1	1	0	1	1	2	1	1	1	20
Hispanic	4	0	1	0	0	0	0	0	0	0	1	0	0	6
Other	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	13	1	1	1	1	1	0	1	1	2	2	1	1	27

\*AA = African American

The cross-tabulation indicated that students that logged in to the course more frequently had a higher score than those who logged in less frequently.

Table 16

*Cross Tabulation: Frequency of Login*

Login	0	5	7	30	33	42	43	74	75	81	82	86	88	Total
Daily	8	0	1	0	0	0	0	0	2	1	2	1	1	16
Weekly	5	1	0	1	1	1	1	1	0	0	0	0	0	11
Total	13	1	1	1	1	1	1	1	2	1	2	1	1	27

### Qualitative Data Analysis

Qualitative data were collected through interviews with online teachers at the research school. The interview consisted of a 10-question instrument. The data were collected from eight online teachers. The purpose of interviewing the online teachers was to determine if common themes emerged from both teacher and student data. The average tenure of the online teachers at the research school was 4 years. Fifty percent of the staff had worked at the school 5 years or more, making it a relative stable faculty.

While the majority of the online teachers at the school were veteran teachers; the average years of experience was 18 years. Only one teacher had a degree in online technology and only one teacher had prior experience teaching in an online school. The district did not provide professional learning specifically for online teachers.

The data were transcribed according to the survey questions and grouped around emerging themes. Three themes emerged from the data:

1. Online teachers believed motivation was a key requirement for success in the program.
2. Online teachers attributed students' success in the program to intrinsic characteristics such as self-regulation, initiative, and self-advocacy.
3. Online teachers perceived interaction and communication as important components to students' success in the program.

Qualitative data were used to answer the following 10 interview questions:

1. **Do you believe online programs are successful in helping students graduate from high school?**

All of the online teachers agreed that online programs helped students graduate from high school. Teachers believed that online learning provided more opportunity for students to recover credit for courses failed during the regular school year. They also listed flexibility as an added benefit in helping students graduate from class. Online teachers saw the ability to access the course at any time was an added benefit to students. Teacher E9W stated, "Online courses provide options for students and allowed students flexibility without attendance requirements (personal communication, March 9, 2016).

2. **Why do you believe some students are successful or unsuccessful in credit recovery courses?**

The most frequent reason online teachers gave for students' success was motivation. The responses varied more for why students were unsuccessful. Teachers cited intrinsic motivation, parental support, and engagement as key reasons they felt students were successful in the program. Online teachers frequently saw poor academic

skills and lack of access to technology as the primary reasons for why students may not be successful in credit recovery programs. Teacher E11G listed the following reasons for successful students: “high motivation, parental involvement, communication with the teacher. This same teacher also felt students were unsuccessful because of “lack of communication” which included “face-to- face interaction” (personal communication, March 9, 2016).

**3. Which blended learning model do you believe would provide students with the best opportunity for success? Why?**

Online teachers believed the interaction provided by the enriched virtual model would provide the best opportunity for student success. Communication was emphasized by most of the teachers as an important component for student success. Teachers believed students did not fare as well with limited or no interaction from the teachers. Although technology allows for synchronous communication, they all felt it was important to meet with students face-to-face. Teacher S11T felt that the “flipped model would allow students to view the lesson, and then have an opportunity to ask questions.” Teacher S11T also expressed that “the best model was one that allows students an opportunity for some interaction with the teachers” (personal communication, March 10, 2016).

**4. Do you believe students work hard to pass credit recovery courses? Why or why not?**

Seventy-five percent of the online teachers believed students worked hard to pass the course, but felt many of the students did not put forth a lot of effort to pass the course. One of the reasons teachers felt accounted for the lack of effort on the part of students

was the lack of rigor in the courses. Several teachers believed the courses were too easy. Teacher E11G felt students did not work hard because “you can’t fail too many students, and students don’t have to work hard to pass” (personal communication, (personal communication, March 9, 2016).

**5. What are some reasons you believe students are not successful in the credit recovery courses?**

Motivation, lack of effort, and accountability were the top three reasons given by online teachers for lack of success in the program. Another common theme that emerged across all the interviews was students’ academic level and parental support. When asked if they believed these reasons were true for the majority of students, teachers indicated that students in certain high schools seemed to do better in the program. Teacher Econ11E attributed this to initiative or *self-advocacy*. The teacher explained it as “the ability to ask for help when needed, and to persist in the work” (personal communication, March 11, 2016).

Many of the online teachers perceived scheduling, time management, and communication as other factors that influenced students’ success in the program.

**6. What are some important characteristics students should have to be successful in an online course?**

Online teachers were consistent in describing characteristics of students that were successful in the program. The characteristics they listed were self-directed, good study habits, technical skills, seeks help, and puts forth effort. The teachers found these students to be more successful in credit recovery.

**7. Why do you think students don't utilize all of the attempts on the quizzes?**

Online teachers indicated that some students did not retake the quizzes if they made a passing grade on the first quiz. Teachers S10H and E9W stated, "A lot of the students were overwhelmed, had too many classes, and possessed poor time management skills" (Teacher S10H, personal communication, March 10, 2016; Teacher E9W personal communication, March 9, 2016). Other reasons listed were that students were unmotivated, had poor test taking skills, and lacked the knowledge base to do well on the quizzes. Teacher E10CW felt that due to the *teacher-less* nature of the program, students often didn't know they could take the quizzes twice" (personal communication, March 11, 2016).

**8. How can credit recovery courses be improved to help students be more successful?**

Online teachers E11G and S10H expressed a desire for "more rigorous course content and a need to hold students accountable for their work" (Teacher E11G, personal communication, March 9, 2016; Teacher S10H, personal communication, March 10, 2016).

Teachers also found communication to be a significant barrier to helping students improve their performance and found it difficult to contact students due to outdated phone numbers or lack of response. They also stressed the importance of a parent and student orientation and monitoring at the local school would help.

**9. Do you think the students review the content before taking the quizzes?**

**Why or Why not?**

Teacher M10D stated that students “didn’t read the content, because they didn’t need to in order pass the test” (personal communication, March 9, 2016). The structure of the course requires students to take 10 quizzes and a final exam in order to receive credit for the course. Online teachers felt these minimal requirements allowed students to bypass reading course content to prepare for the quizzes. Teacher E9W also felt most of the students enrolled in the credit recovery program were “struggling readers, which made reading the content difficult; the content was not engaging and the quizzes were easy” (personal communication, March 9, 2016).

**10. How do teachers use the formative assessments to improve student outcomes?**

Online teachers used the formative assessment quizzes in a multitude of ways to assist students. Teacher P12T indicated he “provided students with additional support” (personal communication, March 11, 2016). Online teachers E9W and S10H also stated they “revised assignments and gave students additional opportunities” when they saw that students were failing (Teacher E9W, personal communication, March 9, 2016; Teacher S10H, personal communication, March 10, 2016). The most common way teachers used the formative assessments was to provide feedback to students.

**Summary**

This chapter included the presentation of both the quantitative and qualitative results that were from the data. The quantitative data were analyzed using the Statistical



Package for the Social Sciences (SPSS). The survey reliability was tested using the Cronbach alpha test, and Pearson's  $r$  correlation coefficient was used to evaluate how the independent variables of motivation, student engagement, self-regulation, formative assessment, and blended learning were related to credit recovery outcomes. Cross tabulation was done to examine the relationship between the demographics data and the credit recovery outcomes. The qualitative data were transcribed, grouped around themes, and all responses were summarized for each question.

Although the teacher interviews yielded rich data, the teachers' perceptions did not support any of the quantitative data findings. However, the data did show that there was a highly significant relationship between formative assessments and students engagement with a value of .003. These findings were consistent with what has been learned about formative assessments. This proved to be true for student engagement and motivation as well with a value of .026; highly motivated students were engaged in the course. Additionally, the relationship between blended learning, motivation, and formative assessments was also significant with a value of .047 for blended learning and motivation, and .001 for blended learning and formative assessment. Students felt the opportunity to re-take quizzes, and the immediate feedback they received from the quizzes helped them to be better prepared for the final exam and assisted them with ultimately passing the course.

CHAPTER VI  
FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

**Quantitative Findings**

The purpose of this research was to determine if there was a relationship between student engagement, motivation, self-regulation, blended learning, and formative assessments. The data were analyzed using the SPSS software package. Additional tests included the Cronbach alpha test which tested the reliability of the survey instruction and the Pearson *r* Correlation was conducted to determine if there was a relationship between the independent variables and credit recovery outcomes. The study addressed the following research questions:

RQ1: Is there a significant relationship between blended learning and credit recovery?

RQ2: Is there a significant relationship between formative assessments and credit recovery?

RQ3: Is there a significant relationship between self-regulation and credit recovery?

RQ4: Is there a significant relationship between student engagement and credit recovery?

RQ5: Is there a significant relationship between student motivation and credit recovery?

RQ6: How do teachers use formative assessments to improve student outcomes?

RQ7: How do teachers perceive the effectiveness of credit recovery?

RQ8: How do students use credit recovery to graduate from high school?

In this study, the data indicated there was not a relationship between the independent variables and credit recovery outcomes. However, the data did demonstrate there was a significant relationship between formative assessment and student engagement, motivation, and blended learning. A Pearson  $r$  correlation was also conducted to determine if there was a relationship between the demographic variables: gender, grade, race, number of times taking the course, frequency of log in, and credit recovery outcomes. The only demographic variable that had a significant relationship to credit recovery outcomes was gender which was statistically significant at .032.

### **Qualitative Findings**

The qualitative data were collected from interviews with 8 of the 11 online teachers. The data were examined to determine if common themes that emerged from the online teachers' perceptions were congruent with the data. The teacher interviews sought to answer the following research questions.

RQ6: How do online teachers use formative assessments to improve student outcomes?

All of the online teachers indicated that they used formative assessments both in the course and in the required quizzes to improve student performance. Online Teachers stated that they used the assessments to provide feedback to students and to determine if they needed to revise an assignment in its entirety or just for a particular student. Some

online teachers used formative assessments to provide additional assignments for students as well as allow students opportunities to revise or make up assignments. Although teachers felt formative assessment was important to improving student learning, they expressed their frustration with the current format of the assessment. Teacher M10D stated, “The multiple choice assessments are too easy and allow students to guess.” She went on to say she wished the course had “more rigorous assessments” (personal communication, March 9, 2016).

RQ7: How do teachers perceive the effectiveness of credit recovery?

Online teachers believed the credit recovery program allowed students the opportunity to recover credits to graduate from high school. Flexibility was the most frequently cited reason for why they felt the program was effective. Teachers did, however, express a desire for program improvements that they believed would further enhance the success rate of the program, namely communication, rigor, and accountability. Many of the online teachers wished to improve the communication with home schools, students, and parents. They believed this was a serious barrier to students being successful in the program. The ability to communicate with students and parents, program orientation, and the opportunity to provide feedback to students were expressed as a need by most of the online teachers.

RQ8: How do students use credit recovery to graduate from high school?

The online teachers acknowledged the role credit recovery played in the district in helping students graduate from high school. Online teachers shared that it was particularly critical for struggling students which was evident in the number of students

enrolled in the program. In the spring of 2015, the program enrolled more than 1,000 students district wide, in addition to enrolling more than 800 in the spring of 2016. Although the online program has three programs which include a supplemental program and a during-the-school-day program, the bulk of the students enrolled in the program were credit recovery students. Online teachers stressed how important the program was to allowing students to make up credit for failed courses. Teacher Econ11E explained, “It helps students with attendance, it provides flexibility, and helps them recover credit” (personal communication, March 11, 2016).

### **Conclusion and Implications**

Schools face increasing pressure to improve the graduation rate as a result of federal mandates of NCLB. This scrutiny has caused school districts to develop a variety of programs and initiatives to meet these mandates. The introduction of Common Core and more rigorous state standards have complicated these efforts. A national study of graduation rates estimated the average graduation rate to be 75% (Stillwell, 2010). The state level and the graduation rate averages between 51.7 in Nevada to 89.6 in Wisconsin. This has proven to be a challenge in Georgia as well, with the graduation rate at 78.6 in 2014, up from 72.5 in 2011.

The explosion of technology into the mainstream, coupled with the proliferation of online content providers, have allowed many school districts to develop a cost efficient way to meet the needs of students who are in danger of dropping out or not graduating on time. In districts with a small number of students in danger of not graduating on time, this typically is accomplished through face-to-face interaction with teachers. In large

urban districts with large numbers of failing students or small districts where this may prove expensive, districts are looking for cost-efficient but effective ways to keep students on track for graduation. Given the abundance of online programs that have sprung up in the last 10 years and the infusion of technology into the classroom, inevitably the question of their effectiveness is raised.

Picciano and Seaman (2007), in one of the first studies on online learning, found that “nearly two thirds of all districts (63.1%) currently have students taking either online or blended courses with another 20% planning to introduce them over the next three years” (p. 7). The increase in online learning has led to an increase in students enrolling for a variety of reasons. According to Watson and Gemin (2008), online learning programs are designed to expand high-quality educational opportunities and to meet the needs of diverse students. While the primary reason online courses are offered in school districts is to expand offerings to courses that would otherwise be unavailable, the second most commonly cited reason for offering online learning is to meet individual student needs, according to a survey done by the National Center for Education Statistics (Queen & Lewis, 2005).

Although the interjection of technology into public schools has created greater access and opportunity to a diverse population of students, it has also highlighted what some researchers have termed the “digital divide.” This is a term coined by Darling-Hammond (1994) and Irving (1999) to describe the differences between those communities that reap the full benefit of technological innovations and those who do not. This gap includes access to technology both at home and at school. While online

learning has the potential to answer the perennial question of how to solve the problem of increasing the graduation rate, the question of its effectiveness must also be answered.

This research was conducted because of the need to understand how a program that seemed to check all the boxes when it came to meeting the needs of diverse students fared when used to help students graduate from high school. Schools have for many years offered ways for students to recover credit for courses they failed. The long-standing practice of summer school was the closest schools got to a credit recovery program. For many students this solution did not work, as Susan Patrick, CEO of the North American Council for Online Learning stated, “When students have completed the attendance required in a course, and were unsuccessful, the options for earning credit towards graduation are often limited to using the same book, often with the same teacher, with the same seat time approach” (cited in Watson & Gemin, 2008, p. 16). This lack of success may have led schools to utilize credit recovery as the remedy for an age old, but complex problem of helping struggling students graduate from high school.

Success in online credit recovery programs may be due to a number of variables. Although this study did not demonstrate a relationship between the student motivation, engagement, self-regulation, formative assessments, blending learning, and credit recovery outcomes, it did yield some promising information. As suggested in previous research (Dufour & Stiggins, 2009), formative assessments play a powerful role in improving student performance. This proved to be true in online courses as well, with the data revealing a positive relationship between formative assessments, student engagement, and motivation. This study also found there was a positive relationship

between blended learning, formative assessments, and motivation. This seems to reinforce what we know about the power of formative assessments: it engages and motivates students. This rich but unexpected information should lead educators to think more about what is known about blended learning and formative assessments and how these variables can be leveraged to engage and motivate students.

As research has shown (Finn, 2006), student engagement has proven to be a critical factor in high school dropouts and the demographics of high school dropouts is well documented. Therefore, what are the recommendations for local leaders, districts, and the nation at large? The primary implication for education practitioners would be the potential to increase the number of students that are successful in credit recovery programs, thereby increasing the number of students graduating from high school. The Evergreen Education Group in their report on digital learning found that 24 states offer online learning to 462,000 students who took more than 815,000 semester-long courses (cited in Gemin, 2015). These numbers suggest a major influence of online learning and a huge opportunity for schools to use a format that has the potential to address not only the individual needs of students, but have a tremendous impact on learning in the 21<sup>st</sup> century.

## **Recommendations**

### **Recommendations for Principals**

1. Provide students with access to technology through a lap-top checkout program, or an open computer lab available before and after school.



Qualitative data from the teacher interviews stated this was a problem for many of the students in the program.

2. Dedicate a staff member in the school to coordinate enrollment, monitor student progress, communicate with parents, and serve as a liaison between the credit recovery program and the school. Online teachers felt the inability to effectively communicate with students and parents as a significant barrier to student success. The cross-tabulated demographic data indicated that 44% of students who logged in daily were passing their courses; this rate far outweighed students who logged in weekly who had a pass rate of 9%. The data suggested that better monitoring of student log-in may impact student outcomes.
3. Incorporate credit recovery into the school schedule to allow students to recover credit for failed courses in a timely manner (within one semester). The cross tabulation of demographic data revealed that many of the students enrolled in credit recovery programs were seniors (77%) and 33% of them had a grade of zero; only 25% of them were passing. The pass rate may be affected by the amount of time between the original course and retaking the course in credit recovery.
4. Utilize credit recovery to reduce failure rates and increase graduation opportunities for students. The data indicated there was a significant relationship between blended learning, student motivation and engagement. The data indicated that students were engaged and motivated by the blending

learning aspect of the course. The data also indicated that blended learning allowed them to work at their own pace and believed it helped them graduate from high school.

### **Recommendations for the District**

1. Provide funding for the online program that includes digital content and professional learning for online teachers. The current content for the credit recovery program is teacher-made and has not been updated in the last 5 years. Online teachers frequently characterized the courses as easy and felt the assessments lacked rigor, were not engaging, and not aligned with the standards. Teachers working in the program currently do not receive any professional learning related online teaching and instructional design.
2. Develop a process for program evaluation to assess the effectiveness of credit recovery on student outcomes and its impact on graduation rates. The current cross-tabulated data revealed only 25% of seniors in the study were passing their courses.
3. Develop a communication protocol to raise district-wide awareness of the program.

### **Recommendations for Further Study**

Based on the results of the study, the following may warrant further investigation:

1. The role of gender in online programs.
2. Which types of formative assessments were most effective in engaging students in online programs?

3. Which models of blended learning yield the best results in helping students graduate from high school?
4. What are the characteristics of successful students in credit recovery programs?

## APPENDIX A

### Student Survey

Please indicate the extent you agree with each statement by checking the appropriate box

**SA = Strongly Agree**

**A = Agree**

**SD = Strongly Disagree**

**D = Disagree**

Research Questions		SA	A	SD	D
Relationship between student engagement and credit recovery					
1	School is important to me				
2	I have some friends at school				
3	If I have a problem at school , my family or guardians are willing to help me				
4	I retake the quiz to get a better grade even if I pass the quiz				
5	I study and take notes to prepare for a quiz or test				
Relationship between self-regulation and credit recovery					
6	When I take tests I think of the consequences of failing				
7	When I study the readings for this course, I outline the material to help me organize my thoughts				
8	When I become confused about something I'm reading for this class, I go back and try to figure it out				
9	When studying for this course I try to determine which concepts I don't understand well				
10	I usually study in a place where I can, concentrate on my course work				
11	I keep track of my progress on my goals				
Relationship between student motivation and credit recovery outcomes					
12	I know I will graduate from high school				

Research Questions		SA	A	SD	D
13	I have a plan for what I want to do after high school				
14	I can get a good grade if I work hard				
15	In this class I prefer course material that really challenges me so I can learn new things				
16	I complete my assignments without my parents or teachers reminding me				
17	Learning this subject is important to me				
Relationship between formative assessments and credit recovery outcomes					
18	Being able to re-take the quizzes helps me to pass the course				
19	The quizzes help me monitor my grade in the course				
20	I retake the quiz to get a better grade even if I pass the quiz				
21	I read the course material before I take the quizzes				
22	The quizzes help me to prepare for the final exams				
Relationship between blended learning and credit recovery					
23	I prefer taking an online course				
24	I like being able to the work at my own pace				
25	Because of online courses, I am more likely to graduate				
26	I have resources at school or home to complete my credit recovery course				
27	I have adequate time at school to complete the course				
28	I can get help if I need it				

### **Demographic data**

1. Grade \_\_\_ 9<sup>th</sup> \_\_\_ 10<sup>th</sup> \_\_\_ 11<sup>th</sup> \_\_\_ 12<sup>th</sup>
2. Age \_\_\_ 14 \_\_\_ 15 \_\_\_ 16 \_\_\_ 17 \_\_\_ 18+
3. Number of times taking the same course \_\_\_ 1 \_\_\_ 2 or more
4. Gender \_\_\_ female \_\_\_ male
5. Race \_\_\_ Caucasian \_\_\_ African American \_\_\_ Hispanic \_\_\_ Asian \_\_\_ Other
6. I log into the course \_\_\_ daily \_\_\_ weekly

## APPENDIX B

### Letter of Informed Consent to Parents

March 9, 2016

Dear Parents,

I am currently enrolled as a graduate student at Clark Atlanta University. As a requirement for my doctoral degree, I will be conducting a research project entitled "On Track for Graduation; An Investigation of Causal Factors Related to Student Outcomes in A Credit Recovery Program in A Metro Atlanta School District" This research study is designed to determine the relationship between assessments, online learning, and student related factors that may impact how students perform in credit recovery courses. I am requesting your permission to include your child as a participant in this study.

This project will begin on March 9 and end April 1, 2016. The project will involve completing a 34-question survey. Students will not be identified individually therefore participants will not receive direct benefit from the project. However, information gained from the study can benefit the district and provide information related to teacher practices as it relates to the credit recovery courses.

There are no foreseeable risks or discomforts for students in this project. All personally identifiable information will be kept confidential. Any identifiable information will be known only to the researcher. The name of the school or the school district will not be included in the final report.

Participation is voluntary. Students will not be penalized or lose any benefits to which they are otherwise entitled if you decide not to allow your child to participate in this research. If you decide to allow your child to participate, they may withdraw at any point in the study. Students may decline to answer any question that they are not comfortable answering. Parents have the right to inspect any instrument or materials related to the study. Your request will be honored within a reasonable period after the request is received.

Researcher: Shelia Johnson-Reese  
Institution: Clark Atlanta University  
Phone: 404-992-3852  
Email: Shelia.Johnson@students.cau.edu

Dissertation Chair: Dr. Trevor Turner  
Institution: Clark Atlanta University  
Phone: 404-880-8089  
Email: tturner@cau.edu

If you agree to participate in this research, please complete the information below:

\_\_\_\_\_  
Participant's Name (please print)

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

*Please retain the second copy for your records.*

## APPENDIX C

### Letter of Informed Consent to Teachers

February 29, 2016

Dear Teachers,

I am currently enrolled as a graduate student at Clark Atlanta University. As a requirement for my doctoral degree, I will be conducting a research project entitled “*On Track for Graduation; An Investigation of Causal Factors Related to Student Outcomes in A Credit Recovery Program in A Metro Atlanta School District*” This research study is designed to determine the relationship between assessments, online learning, and student related factors that may impact how students perform in credit recovery courses. I am requesting your permission to include you as a participant in this study.

This project will begin on February 22, 2016 and end in April of 2016. The project will involve completing a 10-question interview. You will not be identified individually therefore participants will not receive direct benefit from the project. However, information gained from the study can benefit the district and provide information related to teacher practices as it relates to the credit recovery courses.

There are no foreseeable risks or discomforts for participants in this study. All personally identifiable information will be kept confidential. Any identifiable information will be known only to the researcher. The name of the school or the school district will not be included in the final report.

Participation is voluntary. You will not be penalized or lose any benefits to which you are otherwise entitled if you decide not to participate in this research. If you decide to participate, you may withdraw at any point in the study. Participants may decline to answer any question that they are not comfortable answering. You have the right to inspect any instrument or materials related to the study. Your request will be honored within a reasonable period after the request is received.

Researcher: Shelia Johnson-Reese  
Institution: Clark Atlanta University  
Phone: 404-992-3852  
Email: Shelia.Johnson@students.cau.edu

Dissertation Chair: Dr. Trevor Turner  
Institution: Clark Atlanta University  
Phone: 404-880-8089  
Email: tturner@cau.edu

If you agree to participate in this research, please complete the information below:

\_\_\_\_\_  
Participant’s Name (please print)

\_\_\_\_\_  
Participant’s Signature

\_\_\_\_\_  
Date

*Please retain the second copy for your records.*

APPENDIX D

Teacher Interview Questions

1. Do you believe online programs are successful in helping students graduate from high school? Why or why not?

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2. Why do you believe some students are successful or unsuccessful in credit recovery courses?

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3. Which blended learning model do you believe would provide students with the best opportunity for success? Why?

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4. Do you believe students work hard to pass credit recovery courses? Why or why not?

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5. What are some reasons you believe students are not successful in the credit recovery?

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6. What are some important characteristics students should have to be successful in an online course?

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7. Why do you think students don't utilize all of the attempts on the quizzes?

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8. How can credit recovery courses be improved to help students be more successful?

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9. Do you think the students review the content before taking the quizzes? Why or why not?

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10. How do teachers use the formative assessment data to improve student outcomes?

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***Disclaimer: The researcher reserves the right to ask follow up questions for clarification.***

## REFERENCES

- Ainley, M. (2012). Student interest and engagement in classroom activities. In S. Christenson, A. Reschly, & C. Wylie, *Handbook of research on student engagement* (pp. 283-303). New York: Springer.
- Alexander, P. J. (1995). Interrelation of knowledge, interest, and recall: Assessing a model of domain learning. *Journal of Educational Psychology, 84*(4), 559-575.
- Allen, E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Babson Park, MA: Pearson; Babson Survey and Research Group.
- Alliance For Excellent Education. (2010). *High drop outs in America*. Washington, DC: Alliance for Excellent Education.
- Appleton, J., Christenson, S., & Furlong, M. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*(5), 369-386.
- Artino, A. (2008). Motivational beliefs and perceptions of instructional quality: Predicting satisfaction with online training. *Journal of Computer Assisted Learning, 24*(3), 260-270.
- Atkins, D., Bennett, J., Brown, J., Chopra, A., & Dede, C. (2010). *Transforming American education, learning powered by technology*. Washington, DC: U.S. Department of Education.

- Aud, S., Hussar, W., Johnson, F., Kena, G., & Roth, E. (2012). *The condition of education*. Washington, DC: US Department of Education.
- Balfanz, R. (2013). *Building a grad nation; Promise and challenge in ending the dropout epidemic*. Washington, DC: Civic Enterprises, John Hopkins University, America's Promise Alliance & Alliance for Excellent Education.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Barbour, M. H. (2010). Distance education: U.S. virtual school trial period and course. *The American Journal of Distance Education*, 24(1), 5-20.
- Bekle, T. (2010). Motivation and satisfaction in internet-supported learning environments: A review. *Educational Technology & Society*, 13(2), 116-127.
- Benson, A. (2003). Assessing participant learning in online environments. *New Direction for Adults and Continuing Education*, 2003(100), 69-78.
- Berten, H. (2008). *Peer influences on adolescent risk behavior: A network analysis of social influence processes among adolescents in Flemish secondary schools*. Paper presented at the annual meeting of the American Sociological Association, Boston, MA.
- Biggs, J. (2007). Teaching for quality learning at university; Assessing for learning quality. In J. Biggs, & C. Tang, *Teaching for quality learning university* (pp. 1-35). New York: McGraw Hill.
- Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university*. New York: McGraw Hill.

- Black, P., & William, D. (1998). Assessment and classroom learning. *Assessment in Education*, 5(1), 7-74.
- Bloom, B. (1969). Some theoretical issues relating to educational evaluation. *Educational Evaluation: New Roles, New Means: The 63rd Yearbook of the National Society for the Study of Education (Part II)*, 69(2), 26-50.
- Bonk, C., & Graham, C. (2005). *Handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer Publishing.
- Borup, J. G. (2012). The nature of adolescent learner interaction in a virtual high school setting. *Journal of Computer Assisted Learning*, 153-167.
- Bransford, J., Brown, A., & Cocking, R. (2002). *How people learn: brain, mind, experience and school*. Washington, DC: National Academy Press.
- Brookhart, S. (1997). A theoretical framework for the role of classroom assessment in motivating student effort and achievement. *Applied Measurement in Education*, 10, 161-180.
- Brookhart, S. (2003). Developing measurement theory for classroom assessment purposes and uses. *Educational Measurement: Issues and Practices*, 22, 5-12.
- Brophy, J. (2004). *Motivating students to learn*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Brophy, J. (2010). *Motivating students to learn*. New York: Taylor Francis.
- Brosvic, G., Epstein, M., Cook, M. J., & Dioff, R. (2004). Provision of feedback during preparation for academic testing; Learning is enhanced by immediate , not delayed feedback. *The Psychological Record*, 54, 207-231.

- Brown, M., & Keith, P. (1998, October 16). *Academic motivation; A handout for parents*. Bethesda, MD: United States of America.
- Bull, J., & McKenna, C. (2004). *Blueprint for computer-assisted assessment*. New York: RoutledgeFalmer.
- Burrow, M., Evdorides, H., Barbara, H., & Freer-Hewish, R. (2005). Developing formative assessments for postgraduate students in engineering. *European Journal of Engineering Education, 11*, 255-263.
- Callahan, C. M. (2010). Describing learning in an advance online case-based course in environmental science. *Jornal of Advance Academics, 22*, 10-50.
- Carpenter, J., & Cavanaugh, C. (2012). Increasing student motivation through mentoring practices. In L. Archambault, & K. Kennedy, *Lessons learned in teacher mentoring: Supporting educators in K-12 online learning environments* (pp. 103-114). Vienna, VA: iNacol.
- Cave, S. L. (2003). The effects of strengths education on the academic motivation of first-year college students. *Dissertation Abstracts International, 417-570*. Retrieved from ProQuest.
- ChanLin, L. (2009). Applying motivational analysis in a web-based course. *Innovations in Education and Teaching Internationa, 46(1)*, 91-103.
- Cho, M. D. (2010, November 24). *Relationships between self-regulation and social experiences in asynchronous online learning environments*. Retrieved from EdITLib: <http://www.editlib.org/p/29491>

- Cho, M.-H., & Kim, J. (2013). Students' self-regulation for interaction with others in online learning environments. *Internet and Higher Education, 17*, 69-75.
- Cho, M.-H., & Shen, D. (2013). Self-regulation in online learning. *Distance Education, 34*(3), 290-301.
- Christensen, C. H. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York: McGraw-Hill.
- Christensen, C., Johnson, C. W., & Horn, M. B. (2008). *How disruptive innovation will change the way the world learns*. New York: McGraw-Hill.
- Cicconi, M. (2014). Vygotsky meets technology: A reinvention of collaboration in the early childhood mathematics classroom. *Journal of Early Childhood Education, 42*(1), 57-65.
- Clark, T. E. (2001-2002). *Illinois virtual high school evaluation*. Carbondale, IL: TA Consulting and Southern Illinois University.
- Connell, J. P., Spencer, M. B., & Aber, L. (1994). Educational risk and resilience in African-American youth: Context, self, action, and outcomes in School. *Child Development, 65*, 493-506.
- Conole, G., & Warburton, B. (2005). A review of computer-assisted assessment. *Research in Learning Technology, 13*(1), 17-31.
- Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed methods*. Thousand Oaks, CA: Sage Publications.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco, CA: Jossey and Bass.

- Csikszentmihalyi, M., & Csikszentmihalyi, I. (1988). *Optimal experience: Psychological studies of flow in consciousness*. New York: Cambridge University Press.
- Culp, K., Honey, M., & Mandinach, E. (2005). *A retrospective of twenty years of educational technology policy*. Washington, DC: US Department of Education; Office of Educational Technology.
- Deci, E. R. (2008). Facilitating optimal motivation and psychological well being across life's domains. *Canadian Psychology, 49*(1), 14-23.
- Diomede, S. R. (2013). Effects of using the quality matters (QM) programme as an intervention for online education. *International Journal of Social Media and Interactive Learning Environments, 9*(1), 93-105.
- DiPietro, M., Ferdig, R., Black, E., & Preston, M. (2008). Best practice in teaching k-12 online: Lesson learned from Michigan virtual school. *Journal of Interactive Online Learning, 7*(1), 10-35.
- Dobbs, R., Waid, C., & del Carmen, A. (2009). Students' perceptions of online courses: The effect of online course experience. *Quarterly Review of Distance Education, 10*(1), 9-26.
- Downing, K. J. (2007). Creating interaction in online learning: *Research in Learning Technology, 15*(3), 201-215.
- Dufour, R. S. (2009, May). Maximizing the power of formative assessments. *Phi Delta Kappan, 90*(9), 640-644.

- Eccles, J., & Wang, M. T. (2012). So what is student engagement anyway. In S. Christenson, *Handbook of research on student engagement* (pp. 133-145). New York: Springer.
- Eccles, J., & Wigfield, A. (1983). Expectancies, values and academic behaviors. In J. Spence, *Achievement and achievement motives*. San Francisco: W.H. Freeman.
- Eccles, J., & Wigfield, A. (2002). Motivational, beliefs, values, and goals. *Annual Review of Psychology*, 53(1), 109-128.
- Efklides, A., & PetKaki, C. (2005). Effects of mood on students' metacognitive experiences. *Learning and Instruction*, 15(5), 415-431.
- Finn, J. (2006). *The adult lives of at-risk students: The roles of attainment and engagement in high school*. Washington, DC: U.S. Department of Education.
- Finn, J., & Rock, D. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology*, 82(2), 221-234.
- Fortier, M. V. (1995). Academic motivation and school performance: Toward a structural model. *Contemporary Educational Psychology*, 20(3), 257-274.
- Fredricks, J. B. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109.
- Fredricks, J., Blumemfeld, P., & Paris, A. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109.
- Furrier, C., & Skinner, H. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology*, 95(1), 148-163.



- Garrison, D. R. (1997). Self-directed learning: Toward a comprehensive model. *Adult Quarterly Journal*, 48(1), 18-33.
- Garton, A., & Fawcett, L. (2005). The effect of peer collaboration on children's problem solving skills. *British Journal of Educational Psychology*, 2, 157-169.
- Gemin, B., Pape, L., Vashaw, L., & Watson, J. (2007). *Keeping pace with online learning: A review of state level policy and practice*. Evergreen, CO: Evergreen Consulting Associates.
- Gooch, K., & Saine, P. (2001). Integration of the visual arts and web 2.0 technologies in the classroom. *New England Reading Association Journal*, 47(1), 92-100.
- Gradel, K., & Edson, A. (2010). Cooperative learning: Smart pedagogy and tools for online and hybrid courses. *Journal of Educational Technology Systems*, 39(2), 193-212.
- Green, J., Caracelli, V., & Graham, W. (1989). Toward a conceptual framework for mixed method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255-274.
- Guthrie, J., Wigfield, A., & Von Secker, C. (2000). Effects of integrated instruction on motivation and strategy use in reading. *Journal of Educational Psychology*, 92(2), 331-341.
- Halisch, F., & Heckhausen, H. (1977). Search for feedback information and effort regulation during task performance. *Journal of Personality and Social Psychology*, 35(10), 724-733.

- Hartnett, M., St. George, A., & Drone, J. (2011). Examining motivation in online distance learning environments: Complex, multifaceted, and situation-dependent. *The International Review of Research in Open and Distance Learning*, 12(6), 20-37.
- Horn, M. (2013). *Blended learning*. San Francisco: Jossey and Bass.
- Horn, M., & Staker, H. (2012). *Classifying k-12 blended learning*. San Mateo, CA: Innosight Institute.
- Hoskins, S., & Van Hoff, J. (2005). Motivation and ability: Which students use online learning and what influence does it have on their achievement. *British Journal of Educational Technology*, 36(2), 177-192.
- Hu, S., & Kuh, G. (2002). Being (dis)engaged in educationally purposeful activities: The influences of student and institutional characteristics. *Research in Higher Education*, 43(5), 555-575.
- Hughes, J., Zhou, C., & Petscher, Y. (2015). *Comparing success rates for general and credit recovery courses online and face-to-face: Results for Florida high schools*. Washington, DC: Institute of Education Sciences, US Department of Education.
- Jick, T. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly*, 602-611.
- Jones, A., & Issroff, K. (2007). Learning technologies: Affective and social issues in computer-supported collaborative learning. In G. Conole, & M. Olive, *Contemporary perspectives in e-learning research: Themes, methods and impact on practice* (pp. 190-202). London: Routledge.

- Junco, M. (2013, November 24). Wiley online library. Retrieved from *British Journal of Educational Technology*: <http://dx.doi.org/10.1111/j.1467-8535.2012.01284.x>
- Keller, J. (2008). An integrative theory of motivation, volition, and performance. *Technology, Instruction, Cognition and Learning*, 6(2), 79-104.
- Keller, J. (2008). First principles of motivation to learn and e-learning. *Distance Education*, 29(2), 175-185.
- Kim, C., & Bennekin, K. (2013). Design and implementation of volitional control support in mathematics. *Educational Technology and Research Development*, 61(5), 793-817.
- Kim, C., & Hodges, C. (2012). Effects of an emotion control treatment on academic emotions, motivation and achievement in an online mathematics course. *Instructional Science*, 40(1), 173-192.
- Kindermann, T., Furrer, C., & Skinner, H. (2008). A motivational perspective on engagement and disaffection. *Educational and Psychological Measurement*, 1-33.
- Klem, A., & Connell, J. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health*, 74(7), 262-273.
- Krapp, A. (2005). Basic needs and the development of interest and intrinsic motivational orientations. *Learning and Instruction*, 15(5), 381-395.
- Maehr, M., & Meyer, H. (1997). Understanding motivation and schooling: Where we've been, where we are, and here we need to go. *Educational Psychology Review*, 94(4), 409-371.

- Martin, A. (2012). Motivaion and engagement; Conceptual, operational and empirical clarity. In S. Christenson, & A. Reschly, *Handbook of student engagement on student engagement* (pp. 303-311). New York: Springer.
- McIsaac, M., & Gunawardena, C. (1996). Distance education. In D. Jonassen, *Handbook of research for educational communications and technology* (pp. 403-437). New York: Simon & Schuster.
- Means, B. T. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online studies*. Washington, DC: U.S. Department of Education.
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, C. (2009). *Evaluation of evidence-based practices in online learning*. Washington, DC: U.S. Department of Education.
- Meece, J., Anderman, E., & Anderman, L. (2006). Classroom goal structures, student motivation, and academic achievement. *Annual Review of Psychology*, 57, 487-503.
- Michael Babour, T. R. (2008). The reality of virtual schools: A review of the literature. *Computers & Education*, 52(2), 402-416.
- Miller, T. (2009). Formative computer based assessments in higher education: The effectiveness of feedback in supporting student learning. *Assessment and Evaluation in Higher Education*, 34(2), 181-192.
- Miron, G. U. (2012). *A study of student characteristics, school finance and school performance*. Boulder, CO: National Education Policy Center.

- Muilenburg, L., & Berge, Z. (2005). Student barriers to online learning: A factor analytic study. *Distance Education, 26*(1), 29-48.
- Multon, K., Brown, S., & Lent, R. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*(1), 30-38.
- Newmann, F., Wehlage, G., & Lamborn, S. (1991). The significance and sources of student engagement. In F. Newmann, *Student engagement and achievement in American secondary schools* (pp. 1-11). New York: Teachers College Press .
- Oliver, K., Patel, R., & Keilman, G. (2009). Issues surrounding the deployment of a new state virtual school. *Quarterly Review of Distance Education, 10*(1), 37-49.
- Pape, L. (2010, April). Blended teaching and learning. *School Administrator, 67*(4), 16-21.
- Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review, 18*(4), 315-341.
- Pekrun, R., Geortz, T., Titz, W., & Perry, R. (2002). Academic emotions in students' self-regulation learning and achievement: A program of quantitative and qualitative research. *Educational Psychologist, 37*(2), 91-106.
- Pekrun, R., Geotz, R., Daniels, L., & Stunpnisky, R. (2010). Boredom in achievement settings: Exploring control–value antecedents and performance outcomes of a neglected emotion. *Journal of Educational Pyschology, 102*(3), 531-549.

- Picciano, A., & Seaman, J. (2007). *K-12 online learning: A survey of school district administrators*. Needham, MA: The Sloan Consortium.
- Pintrich, P. (1999). The Role of motivation in promoting and sustaining self-regulated. *International Journal of Educational Research*, 31(6), 459-470.
- Pintrich, P., Smith, D., Garcia, T., & McKeachie, W. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MLSQ). *Educational and Psychological Measurement*, 53(3), 801-813.
- Powell, A., Rabbitt, B., & Kennedy, K. (2014). *iNACOL Blended learning: Teacher competency framework*. Vienna, VA: iNACOL.
- Queen, B., & Lewis, L. (2011). *Distance education courses for public elementary and secondary schools 2009-2010*. Washington, DC: Institute of Educational Sciences.
- Renninger, K. A., & Wozniak, R. H. (1985). Effect of interest on attention, shift, recognition and recall in young child. *Developmental Psychology*, 21(4), 624-632.
- Ricketts, C., & Wilks, S. (2002). Improving student performance through computer-based assessment; Insights from recent research. *Assessment & Evaluation in Higher Education*, 27(5), 475-478.
- Robert Balfanz, J. M. (2013). *Building a grad nation: Progress and challenge in ending the high school dropout epidemic*. Washington, DC: Everyone Graduates; Civic Enterprises.

- Roblyer, M. D., Davis, L., Mills, S., Marshall, J., & Pape, L. (2008). Toward practical procedures for predicting and promoting success in virtual school students. *American Journal of Distance Education, 22*(2), 90-109.
- Rovai, A. P. (2007). A comparative analysis of student motivation in traditional classroom and e-learning courses. *International Journal on E-Learning, 6*(3), 413-432.
- Rumble, G. (2004). Organizational models for open and distance learning. In H. & Perraton, *Policy for open and distance learning* (pp. 117-140). London: Routledge Falmer.
- Russell, J., Elton, L., & Swinglehurst, D. G. (2006). Using the online environment in assessment for learning: A case-study of a web-based course in primary care. *Assessment and Evaluation in Higher Education, 31*(4), 465-478.
- Russell, V. J., Ainley, M., & Frydenberg, E. (2005). *Schooling issue digest: Student motivation and engagement*. Canberra, Australia: Australian Government, Department of Education, Science and Training.
- Rust, C. (2002, July). The impact of assessment on student learning: How can the research literature practically help to inform the development of departmental assessment strategies and learner-centred assessment practices? *Active Learning in Higher Education, 3*(2), 145-158.
- Ryan, R., & Deci, E. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary, 25*(1), 54-67.

- Sansone, C., & Thoman, D. B. (2005). Interest as the missing motivator in self-regulation. *European Psychologist, 10*(3), 175-186.
- Schunk, D. (1991). Self-efficacy and academic motivation. *Educational Psychologist, 26*(3-4), 207-231.
- Schunk, D. (1995). Self-efficacy, motivation, and performance. *Journal of Applied Sport Psychology, 7*(2), 112-137.
- Schunk, D., & Mullen, C. (2012). Self-efficacy as an engaged learner. In S. Christenson, A. Reschly, & C. Wylie, *Handbook of research on student engagement* (pp. 219-235). New York: Springer.
- Schunk, D., & Zimmerman, B. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading and Writing Quarterly, 23*(1), 7-25.
- Schunk, D., Pintrich, P., & Meece, J. (2008). *Motivation in education: Theory, research, and applications*. Columbus, OH: Merrill.
- Setzer, C., & Lewis, L. (2005). *Distance education courses for public elementary and secondary school students*. Washington DC: U.S. Department of Education.
- Shea, P. B. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning. *Computers & Education, 55*(4), 1721-1731.
- Shirey, L., & Reynolds, R. (1988). The effect of interest on attention and learning. *Journal of Educational Psychology, 80*(2), 159-166.



- Shroff, R., & Vogel, D. (2009). Assessing the factors deemed to support individual student intrinsic motivation in technology supported online and face-to-face discussions. *Journal of Information Technology Education*, 59-85.
- Shroff, R., Vogel, D., & Coombes, J. (2008). Assessing individual-level factors supporting student intrinsic motivation in online discussions: A qualitative study. *Journal of Information Systems Education*, 19(1), 111-125.
- Shroff, R., Vogel, D., Coombes, J., & Lee, F. (2007). Student e-learning intrinsic motivation: A qualitative analysis. *Communications of the Association for Information Systems*, 19(1), 241-260.
- Skinner, E., Zimmer-Gembeck, M., & Connell, J. (1998). Individual differences and the development of perceived control. *Monographs of the Society for Research in Child Development*, 1-234.
- Skinner, H., & Belmont, M. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology*, 85(4), 571-581.
- Snyder, T., Dillow, S., & Hoffman, C. (2008). *Digest of educational statistics*. Washington, DC: U.S. Department of Education.
- Speck, B. (2002). Learning-teaching-assessment paradigms and the online classroom. *New Directions for Teaching and Learning*, 2002(91), 5-15.
- Staker, H. (2011). *The rise of k-12 blending learning: Profiles of emerging models*. San Mateo, CA: InnoSight.

- Hidi, S., & Renninger, K. A. (2006). The four model phase of interest development. *Educational Psychologist, 41*(2), 111-127.
- Tashakkori, A. &. (1998). *Mixed methodology: Combining qualitative and quantitative*. Thousand Oaks, CA: Sage.
- Thelwall, M. (2000). Computer-based assessment: A versatile educational tool. *Computers and Education, 34*(1), 37-49.
- Thomas Synder, S. D. (2008). *Digest of educational statistics*. Washington, DC: U.S. Department of Education.
- Tucker, B. (2007). *Laboratories of reform: Virtual high schools and innovation in public education*. Washington, DC: Education Sector.
- Turner, J., & Patrick, H. (2008). How does motivation develop and why does it change? reframing motivation research. *Educational Psychologist, 43*(3), 119-131.
- Vignare, D. C. (2008). Access to education with online learning and open resources: Can they close the Gap. *Journal of Asynchronous Learning Networks, 12*(1), 105.
- Vonderwell, S. (2004). Assessing online learning and teaching: Adapting the minute paper. *TechTrend, 48*(4), 29-31.
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Watson, J. (2008). *Blending learning: The convergence of online and face-to-face Learning*. Vienna, VA: iNACOL.
- Watson, J., & Gemin, B. (2008). *Using online learning for at-risk and credit recovery*. Vienna, VA: iNacol.

- Watson, J., Murin, A., Vashaw, L., & Rapp, C. (2012). *Keeping pace with k12 online and blended*. Durango, CO: Evergreen Education Group.
- Wigfield, A., Eccles, J., & Rodriguez, D. (1998). The development of children's motivation in school contexts. *Review of Research in Education*, 23(1), 73-118.
- Wighting, M. J., Liu, J., & Rovai, A. (2008). Distinguishing sense of community and motivation characteristics between online and traditional college students. *Quarterly Review of Distance Education*, 9(3), 285-295.
- Wolters, C. (1999). The relation between high school students' motivational regulation and their use of learning strategies, efforts, and classroom performance. *Learning & Individual Differences*, 11(3), 281-299.
- Zandberg, I., & Lewis, L. (2008). *Technology-based distance education courses for elementary and secondary students*. Washington DC: U.S. Department of Education.
- Zimmerman, B. (1986). Development of self-regulated learning: Which are the key subprocesses. *Contemporary Educational Psychology*, 16(3), 303-317.
- Zimmerman, B. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology*, 25(1), 82-91.
- Zimmerman, B. (2011). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal*, 45(1), 166-183.
- Zimmerman, B., & Bandura, A. (1996). Impact of self-regulatory influences on writing. *American Educational Research Journal*, 31(4), 845-862.

Zimmerman, B., & Martinez-Pons, M. (1988). Construct validation of a strategy model of student self-regulated learning. *Journal of Educational Psychology*, 80(3), 284-290.