

A STUDY OF THE RELATIONSHIP BETWEEN A COLLEGE SUCCESS COURSE AND
STUDENT PERCEPTION OF THE SELF-REGULATORY SKILLS OF
CONCENTRATION, MOTIVATION, AND
TIME MANAGEMENT

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A Proposal Submitted to the Faculty of the University of Tennessee at Chattanooga in Partial
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ABSTRACT

The population of higher education in America consists of nearly 20 million students enrolled in more than 4,000 colleges across the country. College enrollment in America is large and continues to grow rapidly. According to The National Center for Education Statistics (2013), 22.4 million students will be enrolled in degree granting schools by 2019 as compared to 19.1 million in 2008. While college enrollment continues to grow, graduation rates lag. According to the US Department of Education (2009), only 20% of students who start at a two-year institution graduate within three years and about 40% of four-year students graduate in six years. As the ranks of new undergraduates swell, many of these hopeful students enter universities academically unprepared for the rigors of college-level work (Balduf, 2009). As this educational skills gap has become more apparent, colleges have implemented curricula to close the gap.

To compensate for the lack of preparation, many colleges now offer some form of first year experience (FYE) course. A recent study indicated 94% of accredited four-year colleges and universities in the United States offer a first-year seminar to at least some of their students (Padgett, Keup, & Pascarella, 2013). The question that arises from the data is how well do the FYE courses help bridge the educational gap of the nations' underprepared students?

This study investigated if a specific style of FYE course has a relationship with students' perception of critical skills that may help them stay in school and matriculate toward graduation. The study surveyed two groups of students and compared FYE students to students who did not

take an FYE course. The study also examined both groups to investigate changes in student's self-perception of three critical self-regulatory skills—concentration, motivation, and time management. Ultimately, the goal of the study was to examine student's perception of the three self-regulatory skills and provide insight into changes in those perception in both students taking a FYE course and those who do not.

DEDICATION

This work is dedicated to my entire family who sustained my efforts and taught me the only limitations in this world are the ones we place on ourselves.

ACKNOWLEDGMENTS

Dr. Ted Miller has been a mentor and guide on this journey. His perceptive advice, keen analysis, and constant encouragement helped me see this project to conclusion. I would also like to thank Dr. Beth Crawford, Dr. David Rausch for their enthusiastic support of this study, and Dr. Steve Wyre who gave me both the push to start this journey, and valuable guidance along the way.

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LIST OF ABBREVIATIONS

AACC, American Association of Community Colleges

CCCSE, Center for Community College Student Engagement

CNR, Course Not Required

CR, Course Required

COLL 1000, College Success and Survival Skills

COMP 1000, Introduction to Computers

DDA, Descriptive Discriminate Analysis

DOE, US Department of Education

DTCC, Durham Technical Community College

FYE, First Year Experience

GNTC, Georgia Northwestern Technical College

LASSI, Learning and Studies Strategies Inventory

MANOVA, Multivariate Analysis of Variance

NAGB, National Assessment Governing Board

NCES, National Center for Educational Statistics

OECD, Organization for Economic Co-operation and Development

SAT, Scholastic Aptitude Test

SRL, Self-Regulated Learning

TCC, Tulsa Community College

CHAPTER I

INTRODUCTION

Early in his second term, President Barack Obama used a political trip to promote his plan to encourage greater college attendance while simultaneously lowering the cost of a college education (Lewin, 2013). In a speech at the University of Buffalo, the President outlined his plan “aimed at making colleges more accountable and affordable by rating them on . . . tuition, graduation rates, debt and earnings of graduates, and the percentage of lower-income students who attend” (Lewin, 2013, p. 1). The President suggested that in an increasingly technical job market, a college education has become a necessity. The need for an advanced education is manifest in estimates showing as many as four-fifths of high school graduates will require some form of postsecondary education to improve their chances in a competitive job market, find gainful employment, and advance their socioeconomic situation (McCabe, 2000; Pascarella & Terenzini, 2005).

Background to the Problem

The need for a college education to compete in the job market was the focus of a report from the Georgetown University Center on Education (2010) entitled *Help Wanted: Projections of Jobs and Education Requirements Through 2018*. The Georgetown study predicts that by 2018, 63% of all jobs will require some level of postsecondary education, and employers will need approximately 22 million new workers with post-secondary degrees (Carnevale, Smith, &

Strohl, 2010). With the anticipated demand for educated workers, the report also calculated the American job force would lack approximately three million educated employees by 2018 (Carnevale et al., 2010).

While forecasts show a workforce shortfall, the solution is not as simple as increasing college enrollment. Projections indicate approximately 22.4 million students will be enrolled in degree granting schools by 2019 as compared to 19.1 million in 2008 (National Center for Education Statistics, 2013). The enrollment number is directly in line with forecast requirements for educated employees, however, enrollment in a college program is not the same as retention in (or graduation from) a college program. The National Center for Educational Statistics (2013) recently reported student retention among first time, full-time students enrolled at public 4-year institutions ranged from 61% to 79%, and at 2-year public institutions, the retention rate was approximately 58%. Retention numbers are discouraging, but graduation numbers are even lower than the retention statistics. The US Department of Education (DOE) estimates only 20% of students who begin their higher education at two-year institutions graduate within three years, while roughly four out of 10 students at four-year institutions earn a degree within six years (Planty et al., 2009).

Not only do approximately one in five two-year students graduate within 150% of the allotted time (three years for a two-year degree), but also many contemporary students require academic remediation in math, science, reading, or English before starting credit bearing courses in their academic major. In the 2012 academic year, 44% of students under 25 at public two-year colleges and 27% of students under 25 at public four-year schools were enrolled in at least one remedial course (National Center for Education Statistics, 2013). The requirement for

remediation exacerbates the issue of on-time graduation and is part of the reason four out of five two-years students do not graduate within three years of starting college (Planty et al., 2009).

As college enrollment expands, federal and state governments, along with individual institutions, are growing more focused on the readiness and retention of students entering college (Lewin, 2013; Tinto, 1999). Part of the readiness and retention problem lies in the fact that many of these new students are entering universities academically unprepared for the rigors of college-level work and “almost half of college freshmen ... [have] not taken the foundational classes in high school that would help them graduate from college” (Tinnesz, Ahuna, & Kiener, 2006, p. 302). Moreover, since many students leave college after their first semester, the students’ experiences in the critical time from enrollment and orientation through the decisive first semester deserve serious attention (Murtaugh, Burns, & Schuster, 1999; van der Meer, Jansen, & Torenbeek, 2010).

With a documented educational skills gap and the recognized criticality of the first months of school, many colleges have developed orientation programs and first year experience (FYE) courses to help students acclimatize to the college environment and learn skills meant to assist them in their pursuit of a degree (Bailey, Jeong, & Cho, 2010; Mertes & Hoover, 2014; Padgett et al., 2013). To compensate for the lack of student preparation, 94% of colleges offer some form of FYE course along with the requisite remedial courses required by more than 40% of two-year college students (Barefoot, 2003; Padgett et al., 2013; Zeidenberg, Jenkins, & Calcagno, 2007). Despite the recognized educational skills gap of many incoming students, FYE classes are not always a mandatory part of a student’s freshman experience, nor are college success courses consistently used as a part of the first-year curriculum (Center for Community College Student Engagement, 2012; Hayek & Kuh, 2004; Tinto, 1999). “Too many institutions

still use freshman seminar as a separate course, unrelated to the academic life of the institution [and] ... as a type of educational vaccine” (Tinto, 1999, p. 6).

Notwithstanding the proliferation of FYE courses across American colleges and universities, two-year public colleges (using data from the 2014 school year) retained 55% of first time, full time students and graduated only 22% within three years of entry (ACT, 2015). Despite institutional attempts to improve the college experience for incoming students, retention and graduation rates for two-year public colleges have remained virtually stagnate or decreased. While 2014 data illustrate a 55% retention and 22% graduation rate at two-year public colleges, when compared to data from 2000, the benefit of FYE courses becomes doubtful (Martin, Galentino, & Townsend, 2014). In the 2000 school year, retention at two-year public colleges was 48% and the three year graduation rate was 32% (ACT, 2015). The statistics suggest that dedicated FYE classes have done little to improve the classroom experience for incoming students (Tinto, 2011).

Statement of the Problem

As the number of students enrolled in degree granting institutions swells, student retention and graduation rates are not keeping pace. The United States post-secondary education system has grown from approximately nine million students in 1980, to roughly 19 million in 2012 (National Center for Education Statistics, 2013). As college enrollment has increased, the need for non-credit or low-credit remedial courses has grown proportionally (Kena et al., 2014; Maloney, 2003). Remediation typically takes the form of corrective courses in specific disciplines, typically in math, reading, science, and English. This focus is partially due to high school students’ lack of preparedness for college work. In August 2014, ACT reported only 39%

of ACT-tested graduates met at least three of the four College Readiness Benchmarks in English, math, reading and science, while 31% did not meet any of the benchmarks (ACT, 2015).

While the lack of preparation has caused remedial courses to become more widespread, degree completion for remedial students is still too rare. Less than 25% of community college students who are enrolled in remedial coursework complete a degree or certificate, while approximately 40% of community college students who are not required to take any remedial courses complete their degree or certificate (Bailey, 2008). Moreover, one study found remedial courses at two-year schools had no positive effect on passing subsequent college-level English or math courses and no statistically significant effect on completing a certificate, associate degree, or transfer to a public four-year college (Calcagno & Long, 2008). This problem is not only a community college issue. A recent DOE study found that 58% of students who do not require remediation earn a bachelor's degree, compared to only 17% enrolled in remedial reading and 27% in remedial math (Kena et al., 2014).

While enrollment in remedial courses is typically linked to students' lack of academic preparation, even students deemed college-ready by virtue of placement test scores often do not graduate (Bailey et al., 2010). If remedial courses focused on specific subjects are not providing the essential training needed to persist and graduate, perhaps something else is lacking in entry-level student training. What may be lacking, beyond topical knowledge in math or reading, are skills that transcend specific remedial classes. What may be missing are self-regulatory habits that intersect disciplines and entail new academically oriented behaviors that were not developed in high school (Karp & Bork, 2012).

Some of the academic skills that assist new college students are not robust elements of typical remedial training in math or reading. What many students lack are instructions in

independent workflow management, organization of time, reflective note-taking, adherence to deadlines, goal setting, planning, filtration of distraction, focus, and ultimately a demonstration of commitment and motivation (Bailey & Konstan, 2006; Karp & Bork, 2012; Kraushaar & Novak, 2010; Young, 2006). The combination of a nearly 200% increase in enrollment since 1980, an increased need for remediation, poor retention, and low graduation rates continue to illustrate the need for improved initiatives to foster student success, perhaps initiatives that go beyond the specific topics of math and English and focus on skills that transcend specific subject matter. One of the potential ways to increase the success of incoming students is to prepare them for the rigors of college through guidance and training in self-regulatory skills (Ley & Young, 1998; Pintrich & De Groot, 1990; Schunk & Ertmer, 2012; Tinnesz et al., 2006; Zimmerman, 2008). Research on regulatory proficiency has established a set of self-regulatory skills students need (and often lack): educational goal setting, concentration on instruction, effective organization, effective use of resources, monitoring of performance, belief in one's capability to learn, and effective time management (Karp & Bork, 2012; Schunk & Ertmer, 2012; Tinnesz et al., 2006). Students who lack these self-regulatory skills frequently struggle in their first semester of college (Karp & Bork, 2012).

Accumulating evidence suggests that students' overall college achievement is powerfully associated with a solid self-regulatory foundation that includes the ability to manage time, focus on material, and maintain motivation (Balduf, 2009; Karp & Bork, 2012; Moore & Shulack, 2009; Schunk & Ertmer, 2012; Zimmerman, 2008). A recent (2008) study conducted at Queen Mary College examined students who struggled to adapt to the rigors of college and ascribed explicit importance to poor time management and low motivation (Balduf, 2009; Macan, Shahani, Dipboye, & Phillips, 1990). The Queen Mary College study specifically mentioned the

need to focus on motivation and time management to improve student success and expressly suggested “time management strategies should be part of freshman orientations” (Balduf, 2009, p. 289). One way to support self-regulatory skills is through coursework specifically designed for that purpose (Ley & Young, 1998).

Theoretically, college success courses provide incoming students with techniques to develop self-regulation skills that help them plan and adapt their actions to attain personal educational goals (Karp & Bork, 2012; Ley & Young, 1998; O’Gara, Karp, & Hughes, 2009; Zimmerman, 2000). The conclusions of numerous studies reveal students who complete a FYE course also complete other courses at a higher rate, earn more total credits, maintain higher GPAs, and are more likely to persist until graduation (Allen & Lester, 2012; Derby & Smith, 2004; Mertes & Hoover, 2014; O’Gara et al., 2009; Scrivener, Sommo, & Collado, 2009; Tinnesz et al., 2006). Even with the increase of college success courses and the improvements evidenced after completing a college success course, student retention and graduation rates remain at or near rates of 15 years ago. That is, despite increasing access to college, retention and completion rates remain stubbornly low (Tinto, 2011). Perhaps it is not the number of FYE courses taught but rather the quality of the FYE courses taught. Conceptualized as an educational vaccine, current FYE coursework is not consistently a coherent, robust, and sustaining part of the overall college curriculum (Tinto, 1999).

Purpose of the Study

The purpose of this study was to examine the relationship between completion of a college success course and changes to students’ perception of their self-regulation skills, specifically the skills of concentration, motivation, and time management. Moreover, the study

examined the difference in self-regulatory skill perception between students required to take a college success course and those who were not required to take this course based on placement testing. In this instance, placement in FYE coursework was based on student ACT or SAT test scores or, if they had not taken the ACT or SAT, scores on the ACT Compass Test.

Operationally, completion was defined as completing the requisite college success course with a passing grade as defined by the GNTC course catalog as an A, B, or C in the course (Georgia Northwestern Technical College, 2016).

Self-regulation training completed through a college success course promises gains in both broader self-regulatory concepts and the specific skills of time-management, goal setting, and self-reflection (Bandura, 1986; Britton & Tesser, 1991; Ley & Young, 2005; Lichtinger & Kaplan, 2011; Schumm, 1992; Tinnesz et al., 2006; Trueman & Hartley, 1995). Improved self-regulatory skills may be advantageous for all students, but the enhanced skills can be especially important for students deemed at-risk (DeBerard, Spelmans, & Julka, 2004; Ley & Young, 1998). While many studies have examined the specific attributes of at-risk students, the overarching characterization suggests a common definition: students who underperform or underachieve based on their capabilities (Center for Community College Student Engagement, 2012; Dobeles, Gangemi, Kopanidis, & Thomas, 2013; Duckworth, Akerman, MacGregor, Salter, & Vorhaus, 2009; Scrivener et al., 2009). At-risk students are more likely to evidence improvement if they can develop self-regulatory skills since these skills help them spot academic problems and work on solutions before attrition becomes a real possibility (Dobeles et al., 2013).

Part of the reason for underperformance in college coursework is based on the fact that at-risk students are less apt to understand or utilize self-regulatory skills when compared to regular admission students (Ley & Young, 2005). Research demonstrates that underprepared

students who are guided through self-regulatory techniques and taught self-regulatory skills “can increase their involvement in the learning process ... [are] more likely to do better in their coursework ... [and are] more likely to remain at their institution to graduation” (Tinnesz et al., 2006, p. 305). As an example, a 2006 study by the Florida State Department of Education indicated students who completed a college success course had a 14% increase in retention, a 5% increase in transfers to four year colleges, a 7% increase in academic awards, and an 8% increase in graduating with a degree or certificate (Windham, 2006).

While at risk students tend to gain the most from a college success course, research supports the concept that college success coursework can help all students (Bailey, 2008; Center for Community College Student Engagement, 2012). A recent study conducted for the Center for Community College Student Engagement indicates “students who complete [college success] courses are more likely to complete other courses, earn better grades, have higher overall GPAs, and obtain degrees” (Fain, 2012, p. 2). One specific example of improved retention based on mandatory college success curriculum comes from Tulsa Community College (TCC). TCC requires each of the roughly 1,000 incoming students take an Academic Strategies course. In the four years of requiring all incoming students to take this FYE-style course, overall student retention has improved by roughly 20% (Fain, 2012). Similar student success has been observed with the mandatory college success course at Durham Technical College (DTCC). DTCC mandates a college success course for any student with less than 12 transfer credits upon entry and provides instruction and support for study skills, academic planning, and goal completion (Fain, 2012). DTCC data indicate, 89% of the students who took the first-year-experience course stayed in school, compared to 69% who did not participate (Center for Community College Student Engagement, 2012).

Research Questions

The purpose of this study was to examine awareness and potential changes in students' perception of their self-regulatory skills, specifically the skills of concentration, motivation, and time management. The study examined two groups of students. One group was a set of students who were required to enroll in a college success course. Student enrollment in a college success course was based on their standardized testing scores (ACT or SAT) or entrance exam scores. The examination of this group attempted to establish changes in student's self-perception of the self-regulatory skills of concentration, motivation, and time management. Those required to take the college success course were designated as Course Required (CR). The study also examined the perception of the same self-regulatory skills in students who were not required to enroll in a college success course (based on placement testing) and were denoted as Course Not Required (CNR).

Procedurally, the study first compared the perception of specific self-regulatory skills of concentration, motivation, and time management in CR and CNR students at the beginning of a semester (pretest). The pretest examined the initial differences between CR and CNR groups. The study then compared the perception of the same self-regulatory skills between CR and CNR groups at the end of the semester (posttest) in order to scrutinize differences between CR and CNR groups. Finally, the study analyzed all students, both CR and CNR, to identify any differences in perceived changes (gains score upon completion of the course) as these related to the skills of concentration, motivation, and time management (Figure 1).

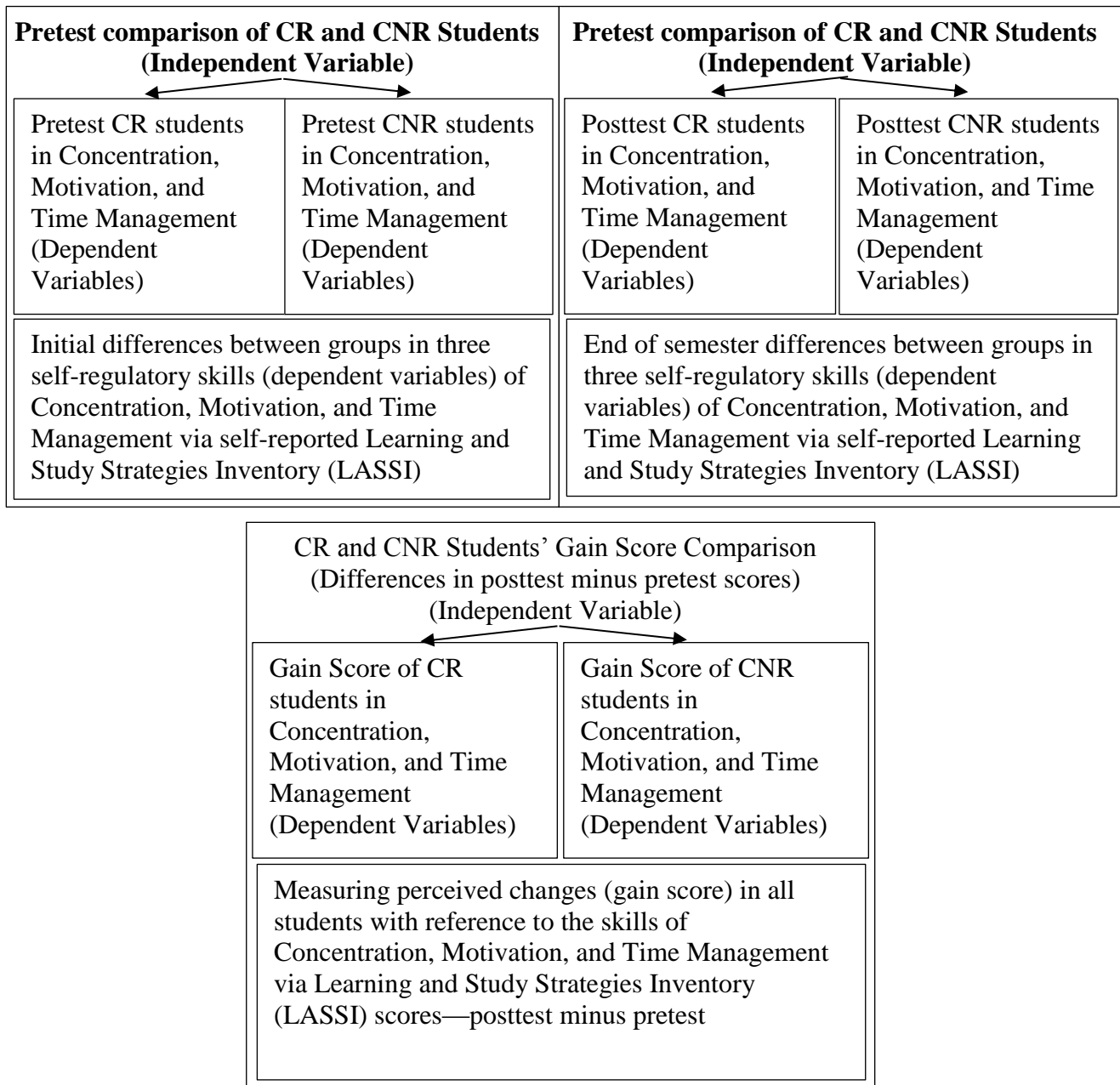


Figure 1 Illustration of Planned Comparison

With these purposes in mind, the following three research questions were investigated in this study:

RQ1: Is there a difference between the perception of self-regulatory skills between CR students and CNR students at the beginning of the semester?

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

RQ2: Is there a difference between the perception of self-regulatory skills between CR students and CNR students at the end of the semester?

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

RQ3: Is there a difference in the perceptions of self-regulatory skills between CR students and CNR students as reflected from gain scores calculated across the semester?

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

Research Hypotheses

The research questions generate the following null hypotheses and alternative hypotheses:

H1₀: CR students, as compared to CNR students, will have no significant difference in their level of self-perception of self-regulatory skills at the start of the semester.

- a. As related to time management skills
- b. As related to concentration skills

- c. As related to motivation skills

H1: CR students, as compared to CNR students, will have a significantly different level of self-perception of self-regulatory skills at the start of the semester.

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

H2_o: CR students, as compared to CNR students, will have no significant difference in their level of self-perception of self-regulatory skills at the end of the semester.

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

H2: CR students, as compared to CNR students, will have a significantly different level of self-perception of self-regulatory skills at the end of the semester.

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

H3_o: CR students, as compared to CNR students, will have no significant difference in gains of their perception of self-regulatory skills at the completion of a semester.

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

H3: CR students, as compared to CNR students, will evidence significantly different gains in their self-perception of self-regulatory skills at the completion of a semester.

- a. As related to time management skills
- b. As related to concentration skills
- c. As related to motivation skills

Rationale for the Study

The rationale for this study assumed a relationship between completion of a college success course and students' awareness, acquisition, and use of self-regulatory skills, specifically concentration, motivation, and time management, and that this relationship can help students succeed in college. Incultation (student's awareness, acquisition, and use) of self-regulatory skills has shown a positive effect on student success. Furthermore, research suggests an increased probability for improvement in both retention and graduation rates if students effectively complete a course intended to help them develop, expand, and internalize their understanding of the benefits of self-regulation on classroom success (Cruce, Wolniak, Seifert, & Pascarella, 2006; National Center for Education Statistics, 2013; Tinto, 2011). This training, specifically a college success course, is assumed to facilitate students' understanding of fundamental skills necessary to succeed in college (Karp & Bork, 2012; O'Gara et al., 2009). This study researched the relationship between successful completion of a college success course and the student's ability to comprehend the critical skills of concentration, motivation, and time management (Karp & Bork, 2012; O'Gara et al., 2009).

The College Success and Survival Skills course (COLL 1000) at Georgia Northwestern Technical College (GNTC) is designed to help students complete college and facilitate the specific skills of "time and money management, study [skills], test taking skills, and ... communication skills" (Georgia Northwestern Technical College, 2016, p. 364). Moreover, the

core competencies of GNTC’s COLL 1000 course are documented as: identifying effective time management strategies, utilizing specific time management strategies, establishing career goals, and improving study and test-taking skills (Georgia Northwestern Technical College, 2016). The core competencies of COLL 1000 aligned with the study’s intent.

Theoretical/Conceptual Framework

Self-regulation is the overarching cognitive process where students develop their academic performance goals, regulate their behavior to reach these goals, monitor progress toward these goals and reflect on their performance (Ley & Young, 1998; Pintrich, 2000; Schunk & Ertmer, 2012; Zimmerman, 2008). Once academic goals are developed, successful self-regulation establishes the flow of self-monitoring and self-reflection (Figure 2). A key part of self-regulation is the feedback loop, which directs what the individual has learned and integrates the lessons learned back into the regulatory loop as either a potential change to ineffective performance or reinforcement of successful behavior (Bandura, 1986; Zimmerman, 1990, 2008).

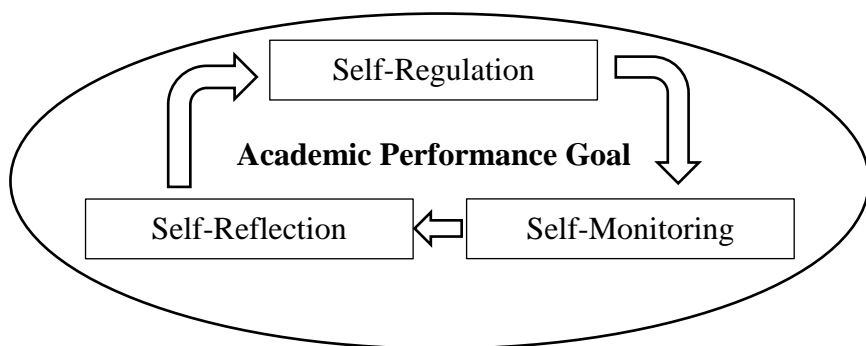


Figure 2 Self-regulation Rubric

Adapted from *Social foundations of thought and action: A social cognitive theory*, Bandura, (1986) and *Self-regulated learning and academic achievement: An overview*, Zimmerman (1990).

The self-regulatory framework was developed from Zimmerman's (1990) elements of self-regulated learning (SRL) and Bandura's (1986) theory of effective self-monitoring. In this framework, individuals first observe and monitor their behavior. Second, they evaluate the behavior, and third, they respond to the analysis to improve future effectiveness (Bandura, 1986; Zimmerman, 1990). Succinctly, SRL involves developing and sustaining behaviors that help attain an explicit goal (Schunk, 2012; Wolters, Pintrich, & Karabenick, 2005).

In this model, self-regulation skills can help students monitor progress, evaluate personal strengths and weaknesses, and gauge overall progress toward an academic goal. By scrutinizing these elements, students may be able to reflect upon personal shortfalls, develop a plan for addressing insufficient skills, and work to improve deficiencies (Bandura, 1986; Duckworth et al., 2009; Flavell, 1979; Zimmerman, 1990). Research also indicates the ability to understand personal shortcomings may encourage improved academic performance, especially when students understand and utilize the feedback loop (Bandura, 1986; Wolf, 2007; Wyre, 2011; Zimmerman, 1990).

By developing a self-regulatory process and a feedback mechanism, students become more capable of monitoring their progress, reflecting on strengths and weaknesses, and thus regulating their behavior to anticipate and solve problems as they occur, or even prior to the occurrence (Duckworth et al., 2009; Zimmerman, 1990, 2008). The self-regulatory framework incorporates the specific skills of concentration, motivation, and time management (Balduf, 2009; Karp & Bork, 2012; Moore & Shulack, 2009; Schunk & Ertmer, 2012; Zimmerman, 2008). Understanding and use of concentration, motivation, and time management skills may enhance the development of a student's self-regulatory loop and thus help them improve their chances of academic success.

Significance of the Study

Research data, academic trends, and classroom experience all demonstrate student self-regulation is often not adequate to meet the demands of the college environment (Ley & Young, 2005; National Center for Education Statistics, 2013; Zimmerman, 2008). Data also suggest the effect of improved self-regulatory skills may lead to improved classroom performance, retention, and graduation (Ley & Young, 1998; Lichtinger & Kaplan, 2011; O'Gara et al., 2009; Schunk, 1996; Windham, 2006; Zeidenberg et al., 2007). The significance of this study lies in examining specific self-regulatory skills related to student success to discern if students who complete a characteristic college success course (COLL 1000) demonstrate improved perceptions of their self-regulatory skill set, specifically time management, motivation, and concentration. As a point of comparison, the study examined students who did not take COLL 1000 and collected changes to their perceptions of self-regulatory skills after completing a representative freshman course, specifically Introduction to Computers (COMP 1000).

DOE retention and graduation statistics specifically associated with two-year colleges exemplify the need to improve student success rates. While community colleges noted enrollment growth of 17% from 2009 to 2010, only 20% of all two-year students graduate within three years (American Association of Community Colleges, 2010; National Center for Education Statistics, 2013). Typifying the national community college data, GNTC has an annual retention rate of 47% for full time students, 41% for part time students, and a three year graduation rate of 28% (National Center for Education Statistics, 2013). These data indicate less than half of the students who start at GNTC return for a second year and only about one in four students successfully graduate from a two-year program within three years.

While low retention and graduation rates are alarming (and portend a large shortfall of roughly three million educated employees by 2018), there are other economic consequences to low retention and graduation rates (Carnevale et al., 2010). In the 2012 school year, the cost of a first time, full time student attending one year of college at a 4-year in state institution (living on campus) averaged \$21,680 at public institutions, \$42,960 at private nonprofit institutions, and \$30,190 at private for-profit institutions (Kena et al., 2014). At 2-year institutions, the average cost (with the same assumptions) was \$13,280 at public institutions, \$27,480 at private nonprofit institutions, and \$28,250 at private for-profit institutions (Kena et al., 2014).

To compensate for the volatile growth in college costs—estimated at 439% between 1982 and 2006—more students require grants and loans to pay for college (National Center for Education Statistics, 2013). In 2012, federal funding per full time student at 4-year public institutions was just over \$6,000 while at 2-year public institutions it was \$3,375—a 79% increase for 2-year institutions in just six years (Kena et al., 2014). Moreover, the Organization for Economic Co-operation and Development (OECD) reviewed college expenditures and concluded that federal, state, and local governments spend over \$9,200 per student enrolled in college (OECD, 2014).

When the growing enrollment numbers are considered with the mounting cost of a college education, the cost of low graduation rates is staggering. For full-time students seeking a bachelor's degree (entered in 2002 but did not graduate by 2008), an estimated \$3.8 billion was lost in potential income; \$566 million was lost in federal income taxes on this income, and \$164 million was lost in state taxes in just one academic year (Schneider & Yin, 2011). In addition, The American Institutes for Research concluded annual spending at the state level (across all states) totaled more than \$1.3 billion on students who drop out during their first year of college

while the federal government spends an additional \$300 million annually (Schneider, 2010). Although some of the cost of dropping out of college is borne by the students (or their families), the combination of lost revenue and capital spent on students who fail to graduate is stunning. Interestingly, OECD also noted a large economic benefit to college graduation. OECD estimated a monetary advantage per graduate of approximately \$231,000, primarily in the form of higher income taxes generated by higher earning and lower unemployment payments (OECD, 2014).

This significant economic impact has garnered the attention of many state leaders across the United States. In the state of Georgia, the site for the current study, the positive effect of completing college and the negative impact of non-completion have earned the attention of state legislators and the governor. Georgia Governor Nathan Deal's office has stated that simply enrolling more students will not improve "student success or get Georgia the additional college graduates it must have to be competitive" (Hodges, 2013, p. 21). Deal also noted that Georgia's focus on college success "promises to significantly increase college completion, saving students precious time and money—and giving taxpayers more of what they expect from their hard-earned investments in higher education: college graduates" (Hodges, 2013, p. 21). Finally, the program, Complete College Georgia, was one of 10 programs awarded a \$1 million dollar grant from Complete College America to boost innovation aimed specifically at increasing college completion rates (Hodges, 2013)

In sum, there are enormous costs, both economic and opportunity costs, associated with the nation's poor academic completion numbers. The loss in human potential and financial costs make the need for improved college success rates a national imperative. At GNTC, the percentage of students who began their studies in Fall 2013 and returned in Fall 2014 was 54% for full time students and 41% for part time students (National Center for Education Statistics,

2015). Moreover, the NCES (2015) noted that the percentage of first time, full time students who graduated (or transferred) within 150% of normal time to complete their program was 21%.

GNTC currently requires only about 5.5% of the student body to take COLL 1000. The requirement is based on those deemed at-risk and placed in remedial courses because of their ACT, SAT, or admission test scores (Georgia Northwestern Technical College, 2016). The policy of requiring remedial students to take COLL 1000 means only a small percentage of the student body enrolls in a course specifically designed to increase their chances of college survival and success. This study investigated students' self-perception of their self-regulation skills in students enrolled in a FYE course and students who are not. While the study found larger gains in all three assessed self-regulatory skills (concentration, motivation, and time management) it was not able to establish a definitive relationship between completion of the FYE course and increased perception of these self-regulatory skills. Nevertheless, the gains demonstrated in the three self-regulatory skills may encourage GNTC (and other colleges) to expand the requirement for students to enroll in COLL 1000.

Definition of Terms

- Active Learning: Describes several models of instruction that hold learners responsible for their own learning (Michel, Cater, & Varela, 2009).
- Behaviorism: "Equates learning with changes in either the form or frequency of observable performance. Learning is accomplished when a proper response is demonstrated following the presentation of a specific environmental stimulus" (Ertmer & Newby, 2013, p. 48).
- Concentration: The ability to focus one's attention in accordance with one's will.

- Concentration involves both the capacity and the ability to pay close attention to a given task (Duckworth et al., 2009).
- **Cognitivism:** Focuses on the activities of the brain and an understanding of the function of the human mind to include mental processes such as thinking, memory, knowing, and problem solving (Schunk, 2012).
 - **Constructivism:** Describes learning as an active process of constructing knowledge, not just acquiring it. Knowledge is constructed based on personal experiences and hypotheses of the environment (Ertmer & Newby, 2013).
 - **Humanism:** According to Schunk (2012), humanism emphasizes people's capabilities to make choices and seek control over their lives.
 - **Inculcation:** Term used to describe how an organization makes an effort to educate, influence, or imbue certain attitudes and behaviors in its members (Kramer, 2011).
 - **Metacognition:** Learning to be aware of and to control thinking processes (Wyre, 2011). It is also described as a “knowledge and cognition about cognitive phenomena” (Flavell, 1979, p. 906).
 - **Motivation:** The “process that initiates, guides and maintains goal-oriented behavior” (Cherry, 2013, p. 1). Schunk (2012) describes motivated learning as the state of motivation “to acquire new knowledge, skills, and strategies, rather than merely to complete activities” (p. 495).
 - **Passive Learning:** When students passively receive information from the professor and internalize it through some form of memorization (Michel et al., 2009).

- Self-efficacy: A self-evaluation of one's competence to successfully execute a course of action necessary to reach desired outcomes (Bandura, 1986; Zajacova, Lynch, & Espenshade, 2005).
- Self-monitoring: Reflects the degree to which a person observes and controls his/her behavior in relationship to social cues or goals (Gould, 1996). In the context of school, it would be the monitoring of progress toward the goal of graduation.
- Self-reflection: A means of building on existing knowledge of a particular theme, whether by recognizing similar patterns or by expanding the knowledge gained to another facet of life (Duckworth et al., 2009; Zimmerman, 2008).
- Self-regulation: Pintrich (2000) defined self-regulation in academic settings as the “active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment” (p. 453). Self-regulation is a process that “involves choosing among different behaviors and deferring immediate reinforcement in favor of delayed, and usually greater reinforcement [and] sustained behavior ... is oriented toward the attainment of learning goals (Schunk, 2012, pp. 401, 498).
- Self-regulated Action: An overarching concept comprised of metacognition, self-regulation, and self-regulated learning focused on purposeful engagement (Kaplan, 2008).
- Time management: Concerns goal definition and setting, an assessment of available resources, self-control, and scheduling of decisions (Stoilov, 2012). Time management also includes both short term planning and long-term planning and

scheduling (Britton & Tesser, 1991; Trueman & Hartley, 1995).

Methodological Assumptions

There are several assumptions for this study. First, self-regulatory skills (specifically concentration, motivation, and time management) are critical components necessary for successfully earning a college degree (Ley & Young, 2005; Schunk & Ertmer, 1999; Zimmerman, 2008). Second, those self-regulatory skills can be conveyed through GNTC's COLL 1000 curriculum. Third, it is assumed that training in the specific self-regulatory skills of concentration, motivation, and time management will improve students' understanding of the concepts and bolster their perception and utilization of these skills (O'Gara et al., 2009; Wolf, 2007; Zimmerman & Martinez-Pons, 1986). Finally, improved time management, motivation, and concentration will result in greater student success (Britton & Tesser, 1991; O'Gara et al., 2009; Windham, 2006). Ultimately, the assumption is that a relationship exists between student's self-perception of self-regulatory skills, the use of self-regulatory skills, and classroom success.

Delimitations of the Study

Georgia Northwestern Technical College is a two-year technical college in northwestern Georgia with six ground campuses. These campuses draw a student population from a localized region of Southeastern Tennessee, Eastern Alabama, and Northern Georgia. The six GNTC campuses are in Calhoun, Dalton, Ringgold, Rockmart, Rock Springs, and Rome, Georgia. The study will utilize students across all six of the GNTC's campuses.

The study focused on two groups of students attending GNTC. The first group of students were those required to complete COLL 1000—the CR group. The second group of

students consisted of freshman students enrolled in COMP 1000 but not required to take COLL 1000—the CNR group. Furthermore, students enrolled in both COLL 1000 and COMP 1000 were surveyed as part of the COLL 1000 group. In addition, any COMP 1000 students who completed COLL 1000 were not surveyed in COMP 1000.

The study occurred over the course of a semester and sampled both CR and CNR students upon initial entry to the course and upon completion (pretest/posttest). As part of the methodology, only students who passed COLL 1000 and COMP 1000 were included in the study. A grade of C or better was required to pass a prerequisite course, which included COLL 1000 (Georgia Northwestern Technical College, 2016). COMP 1000, while not necessarily a universal prerequisite, remains a course required in most degree and certificate programs. If COMP 1000 was a mandatory course for a degree or certificate, it too must be completed with a C or higher to successfully earn the degree or certification (Georgia Northwestern Technical College, 2016).

The instrument used in the study is the Learning and Studies Strategies Inventory (LASSI)—specifically focused on three of the 10 assessment areas in LASSI; concentration, motivation, and time management (Weinstein, Palmer, & Acee, 2016). All data was self-reported through an online biographical survey and the LASSI instrument. Students had the latitude to complete the biographical survey and LASSI pretest online anytime during the first three weeks of the semester. The LASSI posttest was available online during the final two weeks of the semester.

Participation in the survey was by informed consent and purely voluntary. Any student averse to participating in the research was excused from participation without penalty. Students who failed to complete the informed consent form, biographical information form, or the pretest

and posttest survey within the specified timeframe were excluded, as the web site was taken off line outside the specified timeframe. Finally, the study only sampled GNTC students attending the college's ground campuses; no online students participated.

Students who volunteered acknowledged informed consent to participate as the opening question of the online survey. Students who did not wish to participate (marked no to the informed consent question) were removed from the survey without prejudice. Students who agreed to participate (marked yes to the informed consent question) completed an online biographical survey and then proceeded to the online LASSI pretest. The pretest and posttest LASSI instruments were on a password-protected website provided by the LASSI publisher. Access to LASSI and biographical information was limited to the researcher (principle investigator) and academic advisor.

Limitations of the Study

In this study, the focus was the impact of successfully completing GNTC's COLL 1000 course; consequently, the study has several specific limitations. First, the study was geographically constrained to students from Southeastern Tennessee, Eastern Alabama, and Northern Georgia. With this limitation, the demographics did not fully represent students across the states of Tennessee, Alabama, or Georgia, nor did they represent students in the Southeast United States, or the nation as a whole.

A second limitation of the study was based on the subsample of the school's population. COLL 1000 is a requirement for about 5.5% of the student body (using enrollment data from the Fall 2015 semester). The requirement to enroll in COLL 1000 was based on student test scores. GNTC first examines the student's ACT or SAT scores provided they have taken either in the

last five years. To enter a degree program in the 2016 academic year with no remediation, the student must score at least a 17 in reading, a 16 in English, and a 19 in math on the ACT (Georgia Northwestern Technical College, 2016). For the SAT, the student must score at least a 450 in critical reading and 440 in math to avoid the requirement of enrolling in remedial courses (Georgia Northwestern Technical College, 2016). Students who do not achieve the minimum required SAT or ACT scores, who are outside the five-year window, or who have never taken the ACT or SAT are administered a placement test during college application.

If the results of the various placement tests scores fall below the requirements for Program Ready Status, these students are placed in Learning Support Status or Provisional Status and enrolled in the requisite remedial courses (English 0090, Reading 0090, or Math 0090) based on deficient area(s). Students classified as Learning Support Status or Provisional Status are also required to take College Survival and Success, COLL 1000 (Georgia Northwestern Technical College, 2016). Due to the entry requirements at GNTC, only a small percentage of the student body enrolls in COLL 1000 (Georgia Northwestern Technical College, 2016). Students who score high enough on the ACT/SAT or on the Compass test are classified as Program Ready and are not required to take COLL 1000 (Georgia Northwestern Technical College, 2016).

A third limitation of the study was the ability of the LASSI to identify pertinent information regarding self-regulation and COLL 1000 or COMP 1000 course completion. Although LASSI is a proven instrument, there may have been extraneous variables that negatively affected completion of either course that were beyond the scope of the LASSI instrument. The extraneous variables might have included medical, financial, or other events not measured by LASSI. Because of this limitation, a biographical survey was part of the research and attempted to clarify other reasons students might have done poorly in the course. The online

biographical survey documented students' previous educational experiences and commitments such as employment, family obligations, and extracurricular activities that may have influenced success in COLL 1000 or COMP 1000.

Additionally, the study was limited in that it was purely voluntary, only students who chose to respond were part of the study. Moreover, with voluntary participation, the information the students self-reported may not have objectively measured and independently confirmed changes in student action or attitude. Lastly, the current study did not include a follow-up visit with the students from COLL 1000. Research indicates that completion of a college success course improves student's self-regulatory skills and improves retention and graduation rates, but this study was only designed to measure the change in student's perception of the three specific self-regulatory skills of concentration, motivation, and time management.

CHAPTER II

LITERATURE REVIEW

Introduction

To assess the relationship between instruction on self-regulatory techniques and the acquisition of self-regulatory skills, the literature review examined the following areas: the development of cognitive theory, the connection between cognitive theory and self-regulation, the self-regulatory model, the development of individual self-regulation, the criticality of self-regulation on student success, and the specific subareas of self-regulation—time management, motivation, and concentration. Research in the realm of self-regulation is extensive and strongly links advanced self-regulatory skills to improved student success (Bandura, 1986; Pintrich, 2000; Schunk, 2012; Tinnesz et al., 2006; Zimmerman, 1989, 1990). Self-regulation is acknowledged as “crucial for academic success, particularly in higher education where students are required to take increased responsibility for their learning” (Lichtinger & Kaplan, 2011, p. 9). Multiple studies acknowledge self-regulation as a skill crucial to student success; it is important to note that to facilitate student success through outside treatment, self-regulation must also be a teachable skill (Bednall & Kehoe, 2011; Lichtinger & Kaplan, 2011; Reeves, 2009).

Self-Regulatory Research

Research on the effects of training self-regulatory skills is abundant and demonstrates the capacity for students to improve their self-regulatory skills. What is less directly evident is research specific to the inculcation of explicit self-regulatory skills. Fortunately, what unfolds in

the details of research exploring self-regulation is that studies typically examine specific changes in individual regulatory skills (such as time management) as part of the methodology. Thus, the results of studies focused on overall regulatory training inherently support the ideas that self-regulation is teachable and individual regulatory skills are trainable and improvable.

One example of a broad self-regulation study examined the efficacy of learning self-regulatory skills (Bednall & Kehoe, 2011). Students who learned and utilized self-regulatory strategies “accounted for 93% of the variance ($R=.96$) of their achievement ... and discriminated significantly between students from the upper achievement track and students from the lower achievement tracks” (Zimmerman, 1989, p. 336). In a similar study, researchers focused on providing instructional support on self-regulation and examined the results of the training on the quality of the student’s homework (Bednall & Kehoe, 2011). The participants who were trained on a broad spectrum of self-regulatory strategies “showed superior performance on a subsequent test of application relative to a control group” (Bednall & Kehoe, 2011, p. 205).

In another study, van der Mere (2010) used meta-analysis of time management and its effect on student success to study students’ assimilation of time management skills and how improved time management affected classroom success. The results not only showed an improvement in classroom success (as measured by timely homework submission) but also suggested colleges could be more involved in helping first-year students understand and utilize time management skills (van der Meer et al., 2010). Furthermore, studies that expressly examined teaching self-regulatory skills suggested a strong correlation between student achievements and advanced self-regulatory skills and improvements in critical skills such as concentration, motivation, and time management (Bednall & Kehoe, 2011; Karp & Bork, 2012; Stoilov, 2012; Trueman & Hartley, 1995; van der Meer et al., 2010).

A more specific study examined first semester freshmen (Balduf, 2009) and focused on students who identified themselves as academically underachieving in their first semester of college (defined in the study as a severe discrepancy between expected and actual results of the subjects). The study outcome revealed three significant and recurring factors acknowledged as critical to the student's performance—lack of academic preparation, poor time management, and trouble with discipline and motivation. During the interviews, many of the students independently acknowledged the key to salvaging a passing grade was improving their own self-regulatory skills since the college did not offer such a course (Balduf, 2009). Finally, Trueman and Hartley (1995) focused on time management and found time management skills and long-term planning were better predictors of the students' final GPA than their SAT scores.

One of the central issues facing college students and institutions is the critical role of acclimatizing students to their new environs and helping students develop the skills needed to succeed. One of the major challenges for first-year students is efficient time management and effective study skills (van der Meer et al., 2010). These self-regulatory skills—self-discipline, concentration, and motivation are foundational to both degree-specific learning and overall college success (Krause & Coates, 2008). Exploration of self-regulatory skills, along with research on successful training in self-regulation suggests specific self-regulatory skills exist, that they are teachable, and that learning (or improving) self-regulation enhances a student's chance of academic success.

Learning Theory

The evolution of learning theory supports the concept of self-regulation and its effect on student success. Pintrich (2000) described academic self-regulation as the “active, constructive

process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior” (p. 453). It is perhaps telling that Pintrich used the terms constructive, cognition, and behavior in his definition. Inherent in this definition are the traditional learning theories of behaviorism, cognitivism, and constructivism. Pintrich examined students’ ability to construct learning, retain concepts, and modify behavior in support of academic goals (Pintrich, 1999, 2000; Pintrich & De Groot, 1990). In a crucial sense, the intent of learning theory has historically focused on positively altering behavior.

In altering behavior, behaviorism specifically reflects the model of stimulus and response, where behavior or response is contingent upon external stimuli. Behaviorism assumes individuals respond to environmental stimuli and thus changes the form or frequency of his or her behavior in response (Chun, Golomb, & Turk-Browne, 2011; Schunk, 2012; Skinner, 1945). If the activity generates a positive response, then the behavior may occur more frequently. If the results are negative, then the behavior may be curtailed or discontinued. For example, if improved time management produced timely homework submission and improved grades, the associated behavior might occur more often. The problem with a strictly behavioral approach to self-regulation is it does not delve into the idea of consequence recognition—that the improved result is unrelated to stimulus-response, or that the individual recognized the change.

Constructivism expands on behavioral theory and elaborates on outcome recognition by focusing on the premise that people need engagement to learn, comprehend, and ultimately recognize their actions are a consequence of their thinking (Khalid & Azeem, 2012). For example, to demonstrate the linkage between classroom behavior, action, and consequence, most FYE textbooks include activities such as time management worksheets, critical thinking exercises, goal setting drills, and classroom discussion on diligence and discipline (Bandura,

1977; Ginter & Glauser, 2010; Hopper, 2004; Leonard, 2011; Robbins, Allen, Casillas, Peterson, & Le, 2006). These classroom activities are designed to help students understand the linkage between decisions, actions, and consequences. Furthermore, FYE exercises are not randomly selected. The ability to employ the concepts of time management, focus, discipline, commitment, and determination consistently rank as useful predictors of college retention and success (Robbins et al., 2006). Additionally, many FYE activities include reflective exercises on students' current understanding and use of self-regulatory skills and attempt to improve their comprehension through reinforcement and the introduction of new techniques (Ginter & Glauser, 2010; Hopper, 2004; Robbins et al., 2006). The use of reinforcing activities can help students comprehend their proficiency, understand how self-regulation influences college success, share thoughts, construct richer knowledge of self-regulatory techniques, and help them effectively use these techniques (Gardner & Jewler, 2005; Johnson & Rochkind, 2009).

To construct enhanced self-awareness, a typical FYE activity solicits students to document their reasons for attending college (Ginter & Glauser, 2010; Hopper, 2004). The characteristic answers include the desire to increase experiential learning, improve academic skills, or learn a new trade, however, they also articulate that they come to school as a means of seeking greater control over their lives (Scrivener et al., 2009). A dilemma arises in the realm of self-control—many students fail to make the connection between attending college and the benefit of constructing new knowledge outside the realm of their specific degree program or trade (Flavell, 1979; Karp & Bork, 2012; Robbins et al., 2006; Scrivener et al., 2009). Students grasp the need to learn degree-specific concepts, but they often miss the benefit that learning broad conceptions (such as self-regulation or time management) may have on their academic success (Lichtinger & Kaplan, 2011; Reeves, 2009; Zimmerman, 2008). Ultimately, many

students fail to construct new self-regulatory knowledge from the elements taught in topic-specific classes while schools frequently fail to teach a combination of academic content along with strategies and habits necessary to complete college (Adams, 2013).

Bandura (1977) scrutinized many of the assorted learning theories and noted that behavioral and constructive factors influenced learning, but so did intrinsic reinforcement. This association of external stimuli and internal (intrinsic) motivation expanded the understanding of cognitive development. Individuals become dynamic processors of information, linking behavior and action to consequence—what Bandura (1977) titled social cognitive theory. Bandura (1977) explicitly examined four elements he believed critical to social cognitive theory and social learning: attention, retention, reproduction, and motivation.

Attention influenced learning because concentration on the task produced better retention while distractions were detrimental to the learning process (Bandura, 1977, 1986). While attentiveness aided retention, retention was also supported by reproducing the learned behavior. The eventual reinforcement to successful learning came from the motivation to reproduce the behavior, thus social cognitive theory ties back to behavioral learning concepts (Bandura, 1977). Positive or negative reinforcements (grades for example) help reinforce the desired behavior and deter the negative behavior (Bandura, 1977, 1986). Succinctly, social learning examined the elements of the individual's cognition, the learning environment, and the process of learning new information. In a sense, Bandura was suggesting a new concept of learning, the concept of metacognition. Metacognition consists of an understanding of the interaction of variables (person, task, and strategy) and how these factors interact to affect learning (Flavell, 1979). Actually, metacognition and its relationship to self-regulation has been growing in dominance in educational theory, research, and practice (Kaplan, 2008).

Metacognition

Plainly described, metacognition is thinking about one's own thinking (Conley & French, 2014). While this definition is accurate, it does not sufficiently address the significance of metacognition in the evolution of cognitive theory. According to Wyre (2011), there are two basic types of metacognition. One is the concept of thinking about thinking. The second is a more thorough explanation, that metacognition

concerns the learning of strategies for problem solving, learning when to apply different strategies, how to determine the effectiveness of that strategy, and what to have as plan B if the first approach is less than successful. For metacognition to be effective, students need to have accurate understanding of both their knowledge ... and about their skill levels when addressing some subject. (Wyre, 2011, pp. 1-2)

The substantive definition by Wyre (2011) exemplifies the need for students to have an academic plan, understand their skills as they relate to college coursework, and develop the ability to modify the plan to meet their evolving academic goals.

Early research on metacognition focused on it as a segment of behavior (Lichtinger & Kaplan, 2011). More recently, studies have progressed from identifying specific components of metacognition to considering metacognition as a crucial part of self-regulation (Kaplan, 2008). "The conclusion of current analysis is that metacognition, self-regulation, and self-regulated learning are not distinct concepts [but] are subtypes of ... self-regulated action" (Kaplan, 2008, p. 483). Metacognitive theory helps meld traditional learning theory, social learning, and the actions of the student as part of an overall learning model. It also provides a link between successful learning and self-regulated action in the classroom (Kaplan, 2008; Wyre, 2011). Perhaps more importantly, metacognition and self-regulation are "inseparable from the purpose of engagement in the task" (Kaplan, 2008, p. 483).

Self-Regulation

Examining the relationship between enrollment in a college success course and changes to student's perception of their self-regulation skills necessitates an understanding of self-regulation and the self-regulatory loop of self-regulation, self-monitoring, and self-reflection. Pintrich (2000) defined self-regulation in academic settings as the process where students set learning goals, monitor their progress, and regulate their behavior to reach their goals. Schunk (2012) defines self-regulation as the "process whereby students personally activate and sustain behavior ... oriented toward the attainment of learning goals" (p. 498). Furthermore, self-regulating students are better equipped to monitor their learning, reflect on performance, maintaining concentration, and retain motivation (Perry, Hutchinson, & Thauberger, 2008; Perry & VandeKamp, 2000; Zimmerman, 2008).

Elements of self-regulated action include the foundational step of setting academic goals, but also include the essentials of concentrating on instruction, efficiently organizing available resources, consistently monitoring performance, effectively managing time, and regularly reflecting on performance (Kaplan, 2008; Schunk & Ertmer, 1999). In other words, self-regulated learning relies on determined personal effort and purposeful study (Johnson & Rochkind, 2009; Pintrich, 2000; Schunk, 2012). The concern is what happens if self-regulatory skills are not immediately introduced and consistently reinforced early in a student's career—particularly with students who lack some of the requisite skills supporting college level scholarship.

The result of poor self-regulation is evident in students who do not apply long-term consideration to their college performance. Many students enter college without clear goals and lacking the disciplined behavior needed to succeed in the college environment (Balduf, 2009;

Perry et al., 2008). Both research and personal classroom observation illustrate a general lack of regulatory behavior—to include a lack of time management skills, motivation, and focus (Balduf, 2009; Junco & Cotten, 2012; Karp & Bork, 2012; Pintrich, 2000; Schunk, 1996; Zimmerman, 1989, 1990). To improve an unproductive self-regulatory loop, and thus improve classroom performance, students must monitor the results of their behavior (Bandura, 1986; Zimmerman, 1990). Simply put, if students do not accurately monitor their performance, they may not comprehend why their efforts are not meeting the academic demands of college.

Self-Regulatory Development

The concept of academic self-regulation has been defined as the “active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment” (Pintrich, 2000, p. 453). Self-regulation is thus a process that involves choosing between various actions (and often delaying gratification for the actions) that sustain attainment of academic goals (Schunk, 2012). Exploring the concept of self-regulation reveals the concept of intentional self-regulation—a description of how people set goals, make choices, develop plans to reach these goals, and thus regulate their behavior to act in a manner that helps them reach these goals (Gestsdottir, Bowers, Eye, Napolitano, & Lerner, 2010).

What broadens the understanding of college student’s self-regulatory skills is comprehension of how self-regulation is developed during maturation. Human development is characterized by dramatic changes in brain function and “other than the first three years of life, no period of development is characterized by more dramatic brain changes than adolescence” (Steinberg, 2011, p. 42). During adolescents, development of portions of the brain responsible

for logic and reasoning connect with emotional centers and (potentially) allow young adults to improve control of impulses and enhance self-regulation of their behavior (Steinberg, 2011). Part of this development is the ability to pause (think) before an emotion becomes an action, thus the individual “can take time to think, plan, and usually come up with an appropriate response to the current challenge” (Perry, 2001, p. 21). The connection between thought and action is visible in how older students generally control themselves better than younger students do.

While maturation normally enhances self-regulatory skill development, it does not explain the inconsistencies in the self-regulatory skills demonstrated by new college students. What helps clarify the variances is an examination of the concept of intentional self-regulation. The concept of intentional self-regulation has generally centered on the goal side of self-regulation—the selection, pursuit, and management of actions to regulate behavior in pursuit of a goal (Bandura, 2001; Pintrich, 2000). Subsequent research has expanded the goal-oriented model and focused on a person-centered approach in order to examine explicit positive and negative developments in individual’s self-regulatory skills (Gestsdottir et al., 2010; Zimmerman, Phelps, & Lerner, 2008). Delving deeper into the concept of positive and negative outcomes within the person-centered approach is a recent study about *how* individuals make choices that illustrate their self-regulatory skills.

Selection of a goal, the outcome of the selection, and how the individual reacted to outcome in order to reach the goal was broken down into two categories; either an elective decision or a loss-based selection (Gestsdottir et al., 2010). An elective decision is a choice between several options based on the perception of compensation inherent in the selection (Bandura, 2001; Gestsdottir et al., 2010). Simply stated, the individual’s choice reflected the course of action that presented the largest potential gain.

In the concept of loss-based selection, the selection is based on “how individuals react to a decline of resources ... by reconstructing a particular goal to enhance the likelihood of goal achievement, or selecting a different goal” (Gestsdottir et al., 2010, p. 765). The concept of loss-based goal selection and its relationship to self-regulation “may be especially salient for adaptation when the attempts to attain elective selections have been blocked or have failed” (Gestsdottir et al., 2010, p. 765). Succinctly, loss-based selection changes the process from one where the individual is trying to garner the most reward to a process where they are trying to minimize the damage or change the course of action. The ability to adapt self-regulation when obstacles appear or failure is encountered (perhaps for the first time) is especially significant when discussing new college students (Bandura, 1989).

Studies of late high school and early college students show many of these nascent undergraduates have a limited understanding of what is expected, both behaviorally and academically, in college (Chemers, Hu, & Garcia, 2001; Karp & Bork, 2012; Kuh, 2006; Olani, 2009). Many of these students, when faced with a difficult task or an academic obstacle give up rather than devising a compensatory strategy or alternative pathway to the goal (Gestsdottir et al., 2010). The choice between compensate or quit reflects on the development of self-regulatory skills from earlier in their lives (Zimmerman et al., 2008). If the individual’s self-regulatory development was deficient, the student may not comprehend how to change their behavior to open an alternative pathway and may view quitting as the only alternative. Unfortunately, students are not the only ones who lack requisite self-regulation skills or adequate compensatory behavior.

Colleges and universities, for all the effort in FYE course, are often unclear or unskilled in teaching the necessary self-regulatory skills. “Although a generalized set of expected student

behaviors exists, how these change as one moves from high school to college is not well articulated [and] specific expectations ... vary between institutional types ... colleges of the same type, or even among ... faculty members” (Karp & Bork, 2012, p. 5). The gap between the current and required self-regulatory skill, combined with a lack of institutional clarity and guidance is part of the explanation why so few students persist and graduate (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007). With poorly articulated expectations and students who do not comprehend or utilize the regulatory skills needed to succeed in college, the national retention and graduation rates are not surprising. Ultimately, what is emerging is the conception that students lack the opportunities to develop self-regulatory skills. Students are not regularly presented with the opportunity to develop a goal, create a plan, use the plan to meet the goal, and finally bear the consequences of the plan. Without such training and development, students fail to enhance the self-regulatory skills that can help them succeed in their academic (and non-academic) goals (Steinberg, 2011).

Optimistically, there are methods that can help bridge the self-regulatory divide for incoming students. Studies suggest the ability to regulate behavior can improve with training and practice, particularly in setting goals and regulating actions to attain them (Gestsdottir et al., 2010; Steinberg, 2011). One specific set of activities that reinforce the development of self-regulation are “assignments that require [students] to think ahead, make a plan, and carry it out” in order to encourage a more robust self-regulatory set of skills (Steinberg, 2011, p. 46). It is not that most students are incapable of regulating their behavior; it is that they lack the tools to do it.

Self-Monitoring

Effective self-regulation requires a second step in the regulatory process, self-monitoring.

Bandura (1986) theorized there are two parts to effective self-monitoring as it relates to self-regulation, what he defined as regulatory and proximity. “Regulatory means monitoring behavior on a continual basis instead of intermittently ... [and] proximity means that behavior is monitored close in time to its occurrence rather than long afterwards” (Bandura, 1986, p. 403). To evaluate satisfactory progress toward an academic goal, self-monitoring—both frequent and thoughtful—can help students judge their academic progress.

Self-monitoring becomes an effective step in the regulatory process once students develop goals and begin developing “a sense of control over the learning process ... and the self-monitoring skills that enable them to determine how well they are employing the specific learning skills necessary to achieve their goals”(Conley & French, 2014, pp. 1020-1021) . If students sense they have learned a valuable insight, they are more motivated to set new goals and engage the process, thus persisting in tasks that are not achieved easily or quickly (Conley & French, 2014; Lent, Brown, & Larkin, 1987).

In addition, self-monitoring can be enhanced (and was especially noticeable in struggling students) when regular progress reports are provided by the instructor (Conley & French, 2014; Gubitti, 2009). Progress reports reinforce self-monitoring because students often pay more attention to their work and monitor their progress toward their targeted performance and academic goals (Bandura, 1989; Gubitti, 2009; Schunk & Ertmer, 2012). Without consistently monitoring their progress, students may find it difficult to track their movement toward their academic goals. “To gauge their progress, students must identify their learning and performance strategies, provide feedback to themselves based on well-understood standards and criteria, and determine the next steps ... to enhance their performance” (McMillan & Hearn, 2008, p. 41). To

gauge their progress, students must complete the self-regulatory process and accurately reflect on their performance.

Self-Reflection

The feedback mechanism of self-regulation is self-reflection (McMillan & Hearn, 2008). Self-reflection is the process of going back through past events to examine what successes and failures occurred—and why they occurred (Bandura, 1977, 1986; McMillan & Hearn, 2008; Schunk, 1996; Zimmerman, 1990). By looking at the positive outcomes and reflecting on why the constructive events transpired, students can try to emulate that process in the future. Likewise, by reflecting on what did not work (or did not work as well as hoped) students can reflect on the reasons why they were not successful and try to determine the causes. With the causes in mind, they can attempt to avoid similar pitfalls in the future. Without the time or ability to reflect, the potential knowledge gained from scrutiny can be missed or forgotten (Bandura, 1986; Gardner & Jewler, 2005; McMillan & Hearn, 2008; Zimmerman, 1990).

Success in college takes concerted effort and self-control—it requires systematic, thorough, and regular self-evaluation through reflection (Zimmerman, 1989). Student success can be undermined by the characteristic behavior of irregular, infrequent, or non-existent reflection (Robbins et al., 2006; Zimmerman, 1989). Zimmerman (1989) articulated the relationship between regulatory skills and utilization, specifically the theory that self-regulation can be inconsequential if individuals are not motivated to regulate their behavior. In other words, if students cannot regulate their behavior or actively monitor their performance, reflection may be futile.

Summary of the Self-Regulatory Process

The pursuit of an academic goal requires an effective self-regulatory process—regulation implemented through self-monitoring and self-reflection (Zajacova et al., 2005; Zimmerman, 1990). The importance of examining self-regulatory literature reveals, even if self-regulatory behavior is not native in many college students, the skills of self-regulation, self-monitoring, and self-reflection can be taught (Zimmerman, 1989, 2008). To improve the chances for student success, it is vital to introduce self-regulatory concepts, demonstrate their use, allow students the opportunity to practice self-regulatory skills, and permit ample time to reflect on the efficacy of their personal self-regulatory skill set. Success in college comes from the ability to manage time, concentrate on academic tasks, and stay motivated to see the tasks to a successful conclusion (Bassett, 2005; Gubitti, 2009; Karp & Bork, 2012). Beyond the theoretical underpinnings of self-regulation, the concept of determining how well (if) students understand and inculcate the self-regulatory skills of concentration, motivation, and time management is the focus of this research.

Three Self-Regulatory Processes Critical to Academic Success

Research indicates numerous key attributes that help students succeed in college. While traits such as literacy, basic proficiency in critical thinking, numeracy, and technological dexterity are important to student success, the ability to regulate behavior in pursuit of an academic goal is equally important to success (Bassett, 2005; Pintrich, 2000). Essentials of self-regulation include the foundational step of setting academic goals, but also include the essentials of concentrating on instruction, maintaining motivation, effectively managing time, consistently monitoring academic performance, and repeatedly reflecting on performance (Kaplan, 2008;

Schunk & Ertmer, 1999). Three of the aforementioned skills, specifically concentration, motivation, and time management are consistently cited as important self-regulatory skills requiring resolute personal effort and skills essential to college success (Johnson & Rochkind, 2009; Pintrich, 2000; Schunk, 2012).

Concentration

Concentration is the ability to focus attention on a specific task (Duckworth et al., 2009). Undoubtedly, concentration or focus is a necessary trait for many activities; but it is a particularly important trait for the new college student. A focused and engaged mind will retain information better than one that lacks self-regulation and wanders from the task (Glass & Garrett, 1995; van Merriënboer & Sweller, 2005).

Concentration and focus help students engage in the classroom. When a student is engaged in a subject, they are more apt to ask a question, which, in turn, helps construct deeper understanding of the material and richer knowledge (National Assessment Governing Board, 2012). The concept of classroom concentration vis-à-vis personal engagement is a core idea supporting the research on self-regulated action: that self-regulated learners are students who actively concentrate in the classroom and consistently focus on their own learning processes (Duckworth et al., 2009). Ultimately, the focused and disciplined mind builds a better understanding, promotes better recall, and supports richer understanding (Conley, 2003).

Successful students are students who work “in a sustained, focused fashion without external supervision [and] ... discipline themselves to remain focused for extended periods of time” (Conley, 2003, p. 73). The ability to remain focused for extended periods reflects both the student’s concentration *and* their motivation. Research has shown that the ability to concentrate

on an academic task demonstrated significant correlation to student grades and overall academic success (Nonis & Hudson, 2010). In one specific survey of community college students, the degree of attention directed toward academic tasks (as the study defined focus) positively affected academic performance and related positively to goal development, dedication to academic goals, and the motivation to attain them (Wood & Palmer, 2014).

Motivation

Students enroll in college for a wide variety of reasons. At the community college level, students tend to enroll in order to update specific job skills, to take classes prior to transferring to a four-year institution, or for personal enrichment (Martin et al., 2014). While these motives may not differ from many traditional four-year college students, community college students do differ in that they vary greatly in their academic preparedness and tend to require more remedial coursework (Townsend & Twombly, 2007). To overcome the obstacles inherent in lower academic preparedness, one study of community college students noted several key components that helped students persist and graduate. The 2014 study interviewed successful community college graduates and developed several key themes regarding successful community college students—that the successful students had clear goals and a high level of motivation (Martin et al., 2014). In fact, the “The most evident theme demonstrated by every one of the graduates interviewed [was] their intense motivation to succeed” (Martin et al., 2014, p. 231).

Students manifest motivation in a variety of ways. Some students demonstrate motivation through overt actions such as classroom participation while others demonstrate it with the quality and timeliness of their work. In this study, the concept of motivation is not about the overt demonstration of enthusiasm, it is focused on the impact motivation has on self-regulation

and classroom success. Students report that making progress toward “a certificate or degree, even if by small steps, validated their standing as ‘real’ college students and further motivated them to continue their studies” (Engstrom & Tinto, 2008, p. 50). Furthermore, motivation reinforces student beliefs in their ability to perform academic tasks. Students who believe they are capable of succeeding tend to manifest stronger motivational attitudes and these motivated, empowered students can overcome obstacles such as under preparedness and succeed in college (Martin et al., 2014; Pintrich & De Groot, 1990).

Motivation can also arise when students become skilled at an academic undertaking. Research has shown that students demonstrate greater commitment and motivation when they work to master difficult concepts (Engstrom & Tinto, 2008). When they start to sense their own competence, they also sense control over their own lives and circumstances, which in turn adds to their motivation to learn more (Scrivener et al., 2009). Furthermore, students clearly taught strategies to maintain positive motivation are more apt to take control of their academic path and their overall learning process, leading to even greater college success (Tinnesz et al., 2006).

Reinforcing the connection between motivation and success is the result of a 2014 study of community college students. The study examined recent graduates to determine the key skills or traits that helped them succeed in school. As part of the study, the recent graduates were surveyed and “the most evident theme demonstrated by every one of the graduates interviewed [was] their intense motivation to succeed” (Martin et al., 2014, p. 231). Moreover, students who reported high motivation tended to find creative solutions to overcome academic and institutional obstacles (Martin et al., 2014). While the findings of this study indicated much of motivation came from within the student (intrinsic motivation), some successful students found other ways to sustain academic motivation. In several studies, students used the motivation of family

support or family expectations while others used their goals and potential opportunities the higher education afforded them (Martin et al., 2014; Wood & Palmer, 2014). Ultimately, it was not as significant *where* the motivation came from, either intrinsic or extrinsic, what was critical to college success was that there was a high level of motivation. The drive to succeed allowed students to meet the academic challenges of school, overcome obstacles, and reach their goal.

Time Management

Time management is commonly defined as the management of available time to accomplish the most possible work. A more thorough description of time management in a collegiate setting includes defining and setting goals, assessing available resources, forecasting deliverables, making timely decisions, and monitoring progress (Stoilov, 2012). Moreover, time management for the college student is not just about immediate decision making for today, it should include longer term planning and scheduling (Trueman & Hartley, 1995). Incoming students not only find themselves in a new paradigm that includes the demands of attendance and coursework that are in progress, but also an environment that requires long-term planning and management to reach degree fulfillment and graduation goals.

Most students start school with the intent to plan out their academic work and spend significant time studying (Nonis & Hudson, 2006). Many of these well-intentioned students find it difficult to regulate themselves, control their study habits, and keep up with the work due to poor time management and inadequate organizational skills (van der Meer et al., 2010). The demanding workload can overwhelm students unprepared for the demand of college, especially students with jobs or extracurricular activities (Kitsantas, Winsler, & Huie, 2008). In this new environment, time management has enormous implications on college success (Kitsantas et al.,

2008; Nonis & Hudson, 2006; Schumm, 1992).

One of the biggest challenges facing incoming students is effective time management in their new, demanding, and autonomous university environment (van der Meer et al., 2010). To assist first-year students with this critical skill, “college administrators and educators should instruct students how to manage their time most effectively” (Kitsantas et al., 2008, p. 64). Considering the difficulties students experience in managing their time, and the significance of the transition from high school to college, teachers and other staff “should play an active role in helping students to make sense of the expectations related to time management” (van der Meer et al., 2010).

The intent is to instill this skill early in the student’s career to assist them throughout their college career. Helping students develop and utilize effective time management skills is not just a minor detail; it has shown positive results on overall student success and the ability to self-regulate and effectively manage time is a learned skill (Zimmerman, 2008). In one study, students who utilized time management skills did demonstrably better than those who struggled with time management and effective time management proved to be a better predictor “of cumulative GPA after four years of college than Scholastic Aptitude Test (SAT) scores” (Schumm, 1992, p. 629). Not only has research shown that students who are able to manage their time often perform better, but there is also a correlation between time management and the ability to concentrate on the material (Nonis & Hudson, 2010).

Literature Review Summary

According to the literature, many students enter universities unprepared for the rigors of college-level work and many are overwhelmed by the demands of their new environment. Part

of their inability comes from a failure to develop effective self-regulatory skills in high school combined with a lack of understanding college expectations (Gestsdottir et al., 2010; Karp & Bork, 2012). Some students have a vague understanding of what will be expected of them but the colleges themselves fail to adequately communicate or teach the required proficiency (Karp & Bork, 2012). The lack of skill development and clarity means many students lack the capacity to develop goals, reflect on their progress, and develop alternative strategies when obstacles are met (Gestsdottir et al., 2010). This lack of self-regulatory dexterity has enormous social and economic impacts on both the students and society (OECD, 2014; Schneider & Yin, 2011).

Students who require training in self-regulation often do not understand the consequences of the failure to regulating their behavior. Those who lack robust self-regulatory development or those who lack some of the critical self-regulatory skills are particularly at risk. While there are many skills listed under the self-regulation construct, three of the most important skills that emerge through a review of literature are concentration, motivation, and time management. Although retention and graduation rates are low, training in self-regulatory skills suggests self-regulatory skills exist, that they are teachable, and that improvement in self-regulation enhances a student's chance of academic success.

The impact of this lack of self-regulatory behavior has not only generated academic research, it also has gained state and national level political attention. There is a growing movement away from enrollment numbers as a measure of academic accomplishment. The state and national spotlight is now focusing on graduation rates as the proper measure of college mission success (Hodges, 2013). One reason for the change in focus is the personal and financial costs of students who fail to graduate. Students who fail to graduate incur personal expenses and pay thousands in tuition but, perhaps as important, fail in one of their most significant personal

goals they have set for themselves (Schneider & Yin, 2011). Not only do the students fail to reach a major goal, “taxpayers pay billions of dollars in grants and state appropriations to support these students as they pursue degrees they will never earn” (Schneider & Yin, 2011, p. 8).

Not only does college completion increase state and national revenue, it also affects unemployment figures and workforce salary. Workers between 25 and 64 who have completed some college (short of a bachelor’s degree) had an unemployment rate was 6% in 2013 and for those with a bachelor’s degree or higher, the unemployment figure was 4% (Kena et al., 2014). In the realm of salary, those with some college earned 16% more than high school graduates and 36% more than non-high school graduates did, and those with a bachelor’s degree earned 48% more than high school graduates and 57% more than those who failed to graduate high school (Kena et al., 2014). While the national numbers are startling, some individual states pointedly illustrate the impact of poor retention and graduation rates.

According to Schneider and Yin (2011), Georgia ranks in the top 10 nationally in lost income, lost state tax revenue, and lost lifetime earnings due to college dropouts. The price of low graduation rates costs Georgia approximately \$7 million in annual state taxes and costs students \$117 million in lost income annually (Schneider & Yin, 2011). More striking is the lost revenue when calculated across the lifetime of non-graduates. If cumulative losses over the working lifetime of a single cohort is examined, the loss to state revenue is a stunning \$4.8 billion (Schneider & Yin, 2011) Increasing costs, lost earning potential, and lost revenue, when combined with low college retention and graduation rates demand an enhanced approach that the current college model fails to deliver.

CHAPTER III

METHODOLOGY

Introduction

This study focused on the impact of successfully completing an institutionally specific college success course. The specific course, College Survival and Success, was designated COLL 1000 at Georgia Northwestern Technical College (GNTC). COLL 1000 was not a universal requirement for students enrolled at GNTC during this study. Using the Fall 2016 semester as an illustration, only about 5.5% of the student body enrolled in COLL 1000 (Georgia Northwestern Technical College, 2016).

At the time of the study, the requirement to enroll in COLL 1000 was based on student test scores. Students who did not achieve the minimum required SAT or ACT scores (or did not take the ACT or SAT) were administered a placement test during college application. If students scored below a predetermined level on the ACT, SAT, or placement exam, they were designated as Learning Support Status or Provisional Status. Learning Support Status or Provisional Status students were required to enroll in remedial courses in the areas of low performance (English, reading, math), and, at the time of the study, were required to take COLL 1000 (Georgia Northwestern Technical College, 2016).

Due to these stipulations, only a small percentage of the student body was required to take COLL 1000. Students who were required to take COLL 1000 were designated Course Required (CR) in this study. Students who scored adequately on the ACT, SAT, or the GNTC

placement test were deemed Program Ready and were not required to take COLL 1000. To be designated Program Ready in the 2016 academic year, incoming students were required to score at least a 17 in reading, a 16 in English, and a 19 in math on the ACT or at least a 450 in critical reading and 440 in math on the SAT (Georgia Northwestern Technical College, 2016). In this study, students not required to enroll in the COLL 1000 course were designated as Course Not Required (CNR).

Approval to conduct the research via pretest posttest (using the LASSI instrument and biographical survey) was approved by the GNTC President Pete McDonald (Appendix A). Furthermore, Institutional Review Board (IRB) approval at both the University of Tennessee Chattanooga and GNTC was secured prior to commencement of research (Appendix B). Finally, voluntary participants completed an online informed consent form (Appendix C) prior to administration of the online biographical survey (Appendix D) or the LASSI instrument (Appendix E).

Population and Sample

The study took place across the six campuses of GNTC located in northwest Georgia. GNTC is a two-year technical college currently serving nine counties in the region—Catoosa, Chattooga, Dade, Floyd, Gordon, Murray, Polk, Walker, and Whitfield. The school's six campuses are in Catoosa, Floyd, Gordon, Polk, Walker, and Whitfield counties. GNTC offers over 200 programs of study in degrees, diplomas, and certificates, and had a Fall 2016 total enrollment of 5,967 students (Georgia Northwestern Technical College, 2016). This study solicited volunteers from all six campuses.

This study used two groups of students—those required to take COLL 1000 (CR) and a control group of students who were not required to take COLL 1000 (CNR). For this study, the control group consisted of students enrolled in Introduction to Computers, delineated COMP 1000. During the course of this study, COMP 1000 was a typical first semester course for incoming freshman, did not have any prerequisites, and did not exclude Learning Support or Provisional Status students from enrolling. Moreover, COMP 1000 was a prerequisite for 18 different first year classes in the GNTC catalog, thus it tended to be a first semester class for many entering freshmen (Georgia Northwestern Technical College, 2016). For this study, only students enrolled in classroom modality were utilized—no online classes were solicited.

Since the study examined students in both COLL 1000 and COMP 1000, there was the potential to have students enrolled in both courses. In this study, students enrolled in both COLL 1000 and COMP 1000 were observed in their COLL 1000 course and categorized as CR. In addition, any COMP 1000 student who had previously completed COLL 1000 was not surveyed in COMP 1000. Because COMP 1000 tended to enroll a higher number of students than COLL 1000, this methodology generated an acceptable balance of participants from each group—the CR and CNR groups.

The sample consisted of a subset of COLL 1000 and COMP 1000 students—those who voluntarily elected to complete the online biographical survey, both the pretest and posttest LASSI instrument, and successfully completed their COLL 1000 or COMP 1000 course. Successful completion of COLL 1000 or COMP 1000 was defined as students who earned an A, B, or C in the course. Students who earned a D or F in either course were not included in the study. This division of this nominal measure in the variables analysis was not arbitrary. It mirrors GNTC's policy that a grade of C or higher is required in any prerequisite course (such as

COLL 1000) or in most degree/certification programs (such as COMP 1000) before a student can progress to the next level of instruction or graduate from the degree or certification program (Georgia Northwestern Technical College, 2016). All eligible CR and CNR students over 18 were invited to voluntarily participate, but participation in the study had no bearing on the student's grade in either course.

The collection of data was accomplished across the 2016 calendar year; specifically, the Spring, Summer, and Fall 2106 semesters. In all, 124 students completed the biographical survey and pretest LASSI. Of that group, 66 students (26 CNR and 40 CR) successfully completed the COLL 1000 or COMP 1000 course and accomplished the sequence of biographical survey, LASSI pretest, and LASSI posttest.

Variables Analysis

The Variables Analysis for this study is outlined in Appendix F. Specific to this study, there are three dependent variables and one independent variable. The three dependent variables are students' perception of the specific self-regulatory skills; (1) concentration, (2) motivation, and (3) time management. The independent variable is the COLL 1000 enrollment requirement as delineated by Course Required (CR) or Course Not Required (CNR). Extraneous variables were also collected as part of the study to better understand the sample subject's characteristics and aid in establishing external validity of the results. These variables included age, college experience, transfer credits, gender, ethnicity, employment, marital status, number of offspring, and extracurricular activities (Appendix D).

Research Questions 1 and 2 hypothesized that CR students had a different level of self-perception of self-regulatory skills of concentration, motivation, and time management, as

compared to CNR students at both the beginning and end of the semester. Research Question 3 hypothesized CR student would evidence significantly different gains in their self-perception of self-regulatory skills after completing COLL 1000 in comparison to a control group who did not take COLL 1000 (in this study, COMP 1000 students). Consequently, the null hypotheses for RQ1 and RQ2 presumed CR students would demonstrate no significant differences in their level of self-perception of the three self-regulatory skills of concentration, motivation, and time management at either the start or the end of the semester as compared to CNR students. Furthermore, the null hypothesis for RQ3 presumed CR and CNR students would evidence no significant difference in gains of their perception of self-regulatory skills at the completion of a semester.

Instrumentation

Instrumentation for the study utilized the *Learning and Study Strategies Inventory* (LASSI), developed by Weinstein and Palmer in 2002 and revised for 2016 as a third edition (Appendix E). LASSI has been used by over 3,000 institution since its introduction (Weinstein et al., 2016). Not only is the LASSI test widely used, it is specifically designed to evaluate ten different self-regulatory skills, including concentration, motivation, and time management (Weinstein et al., 2016). Furthermore, LASSI is specifically designed to examine “pre-post achievement measure for students participating in programs or courses focusing on learning strategies and study skills” (Weinstein et al., 2016, p. 7). The results from the LASSI instrument were both diagnostic and prescriptive and provide standardized scores (percentile score equivalents) and national norms for the different scales (Weinstein et al., 2016). Finally, LASSI scores have been shown to be predictive of overall academic performance and strongly correlate

to grade point averages (Yip & Chung, 2005).

Of the 10 LASSI scales, three were used in this study. The concentration scale assessed students' ability to focus and sustain their attention on academic tasks, the motivation scale assessed students' diligence, self-discipline, and willingness to exert the effort necessary to successfully complete academic requirements, and the time management scale assessed students' use of time management principles to accomplish academic tasks, organize their time and effort, and anticipate scheduling issues to stay up to date on class work (Weinstein et al., 2016). These three scales "measure how students ... self-regulate or control the entire learning process [including] using their time effectively, focusing attention, and maintaining concentration ... to determine if learning demands ... have been met" (Weinstein et al., 2016, p. 9).

LASSI has been evaluated for reliability by means of the test-retest method and demonstrates a correlation of .88 for the entire instrument (Weinstein et al., 2016). In addition, the specific areas of concentration, motivation, and time management demonstrated Coefficient Alphas of .85, .77, and .80, respectively (Weinstein et al., 2016). Although independent studies have not yet emerged for the newly released 3rd Edition of LASSI, a study using the 2nd Edition noted that "with the exception of study aids ($\alpha = .66$), all internal consistency reliabilities were greater than .70 and consistent with the normative data" (Prevatt, Petscher, Proctor, Hurst, & Adams, 2006, p. 451).

Research Design

The genesis of the research design came from Department of Education statistics on retention and graduation, combined with personal classroom experience indicative of a lack of self-regulatory skills (National Center for Education Statistics, 2013). To test whether

completion of the COLL 1000 course improved student self-regulatory skills, this study utilized a pretest and posttest survey of two groups of students—those taking COLL 1000 and those who do not. Analysis of pretest and posttest data was accomplished by means of a Multivariate Analysis of Variance (MANOVA). MANOVA was chosen since it has been specifically expanded to encompass situations where there are two or more dependent variables (Field, 2011; Stevens, 2012). Specific to this study, there were three dependent variables and one independent variable. The three dependent variables were students' perception of three specific self-regulatory skills—concentration, motivation, and time management. The independent variable was the COLL 1000 enrollment requirement delineated as Course Required (CR) or Course Not Required (CNR).

In addition to the MANOVA, and specific to Research Question 3, a paired samples *t*-test was accomplished for follow-up analysis. The paired samples *t*-test was another parametric test that was used to compare the means of the two groups on two separate occasions (Pallant, 2016). The paired samples *t*-test demonstrated “whether there [was] a statistically significant difference in the mean scores from Time 1 to Time 2 [and] pretest/posttest designs are an example of the type of situation where this technique is appropriate” (Pallant, 2016, p. 249).

The results of the paired samples *t*-test required a determination whether it was appropriate to apply the Bonferroni correction to the results. The Bonferroni correction is typically used under several conditions; common situations are when the analyses involve a series of Analysis of Variances (ANOVAs) and Bonferroni is used to reduce the risk of Type I errors (Armstrong, 2014; Field, 2011; Pallant, 2016). A second condition is when there are a large number of differences that will be explored in a study (Pallant, 2016). Armstrong (2014) posits that no Bonferroni correction should be applied when the “the study is restricted to a small

number of planned comparisons, [or] if a simple test such as *t* or *r* is envisaged” (p. 505). Since this study contained a small number of comparisons and, rather than multiple analyses, utilized a distinct paired samples *t*-test on each dependent variable, then “the exact *p* values for each individual test should be quoted and discussed” (Armstrong, 2014, p. 505).

Procedures

The primary researcher (or the designated representative) facilitated online administration of the informed consent form, the biographical survey, and the LASSI instrument to two student populations—COLL 1000 students and non-COLL 1000 students enrolled in Introduction to Computers (COMP 1000). For this study, the entire 60-question LASSI instrument was completed but only three of the 10 sections, concentration, motivation, and time management, were analyzed therefore 18 LASSI responses were analyzed (six questions per the three sections).

Students enrolled in COLL 1000 or COMP 1000 were briefed on the purpose of the study, informed consent, directions for completing the online material (informed consent, biographical survey, and LASSI instrument) the protection of personal information, and the voluntary nature of the survey. The student briefings were almost all accomplished by the primary researcher. In the Spring 2016 semester, the primary researcher briefed 23 of the 27 classes; in the Summer 2016 semester, the primary researcher briefed 14 of the 15 participating classes; and in the Fall 2016, the primary researcher briefed 23 of the 24 classes. For the classes that the primary researcher was unable to visit, the course instructors were provided identical slides and instructions sheets and were briefed on purpose of the study. All students were

provided contact information for the primary researcher as part of the instruction sheet in the event questions arose during the survey process.

The students who volunteered to participate in the study received an instruction sheet (Appendix G) during the briefing and the instructions directed them to the Qualtrics website where they acknowledged informed consent and completed a short biographical survey. If a student did not wish to participate, they could opt out of the study at any time without prejudice. If a student indicated they were under 18 on the biographical survey, or if a COMP 1000 student indicated they had completed COLL 1000 with a grade of C or better, they were automatically removed from the survey via Qualtrics logic. Only after the informed consent form was signed electronically, the biographical survey completed, and the above conditions met did the final page of the survey provide a hyperlink to the online LASSI instrument via LASSI's password protected website.

The LASSI instrument required students to enter a unique 5-digit school number associated with this study. The 5-digit number was a number provided by the LASSI publisher and was used to ensure all the surveys associated with the study were compiled in a single location on their web service. Next, the students entered their name, student ID number, and email address. Once the volunteers completed the LASSI pretest, they received an individualized copy of the LASSI report and a unique key code to access the posttest at the end of the semester. Students also had the ability to have a copy of the LASSI results emailed to them at no cost. An example LASSI report that each volunteer received at the completion of the instrument (and by email if they desired a copy) is included in Appendix H.

The primary researcher and faculty advisor had access to the administrative portion of LASSI, which allowed a search of the instrument via student name, key code, ID number, and

administration date. The capability to search the administration section of LASSI allowed the primary researcher to locate student key codes from the pretest. At the end of each semester, the participants received an individual email reminder from the primary researcher, which included a copy of the posttest instruction sheet and their individual key code from the LASSI pretest (Appendix I). Only students who had a key code on file in the LASSI website (indicating completion of the LASSI pretest) received the posttest email reminder with instructions and individual key code. Finally, the administrative portion of LASSI allowed the examination and download of student's pretest and posttests results and supplied a detailed report of individual responses from each student.

The LASSI pretest was available online for the first three weeks of the semester. Access to both the biographical survey and LASSI were controlled via a start and end date programmed into Qualtrics and LASSI. The rationale supporting the three-week limit for the pretest was to allow ample time to take the survey while precluding the introduction of training in self-regulatory techniques. Typically, the first weeks of freshman classes are used to introduce the class, cover the syllabus, cover GNTC's student portal, set up of student email accounts, and bring in guest lecturers on the various support services offered at the college.

By having students complete the online LASSI instrument within the first three weeks of the semester, the possibility of instructors introducing the concepts of self-regulation were greatly reduced. Students who do not complete the pretest and associated materials within the prescribed time limits were not able continue in the study. The Qualtrics and LASSI sites were taken down automatically, and students who did not complete the entire LASSI pretest did not receive a key code from the LASSI website that allowed completion of the LASSI posttest.

The posttest instrument was made available roughly two weeks prior to final exams and

remained active through the week following final exams. Access to the posttest was controlled via start and end dates programmed into LASSI along with the key code students received after completing the LASSI pretest. Once the LASSI posttests were completed, the number of respondents was analyzed to inspect sample size and check on the balance between CR and CNR results. Specific measurements in the statistical analysis consisted of the 5-point Likert scale answers supplied by the students through the LASSI instrument.

Methodological Controls

The first methodological control was based on the purely voluntary nature of research participation. Prior to administration, COLL1000 and COMP 1000 instructors at the six GNTC campuses were briefed on the purpose of the study, the voluntary nature of the study, and the procedures necessary to login and complete the informed consent form, the biographical survey, and LASSI. Instructors were asked to reinforce the primary researcher's initial briefing—that participation was voluntary, the instrument was research-oriented, and the activity had no bearing on grades in the respective courses. Furthermore, instructors were briefed that completion of the LASSI survey provided immediate feedback to their students on their self-regulatory skills. The instructor brief explained the nature of the research, answered any questions, and allowed the instructors to brief their individual classes if the primary researcher was unable to do so.

Second, the construction of the LASSI instrument provided a level of control as the instrument was specifically

designed to simplify administration and scoring as much as possible without losing power or diagnostic information. To help achieve this goal, it uses a self-report format and does not require any special administration procedures, such as specially trained personnel. The LASSI, 3rd Edition, is not a timed measure but

most students complete it in approximately 9-11 minutes. The scoring is completed online and the scoring reports are computer-generated and available immediately. (Weinstein et al., 2016, p. 11)

In order to attempt to maximize participation, the reference period for completing the biographical survey and pretest instrument was set at the three weeks. This timeframe allowed students the opportunity to access the online survey and LASSI at their leisure but restricted the completion time so LASSI was not accomplished in the middle of the semester. A pretest survey instrument completed after the initial three-week period was undesirable since coursework on concentration, motivation, or time management may have already been taught, thus potentially affecting validity of the pretest self-assessment. To safeguard this methodological control, the allowable timeframe to complete the pretest (and posttest) was programmed into the Qualtrics and LASSI websites. Participants could not enter at any other times during the semester.

A third methodological control was that only results from students who completed the biographical survey and both the pretest and posttest instruments were analyzed. Any student who did not complete the biographical survey or both LASSI inventories, either voluntarily or from dropping the COMP or COLL class, was excluded from the data. Missing responses were not an issue since LASSI required all questions to be answered before the inventory could be submitted. If a student accidentally missed a question, LASSI flagged it and directed the student to complete any missed questions prior to allowing submission. There were no instances of completed LASSI inventories missing responses.

Statistical Analysis

The researcher utilized a MANOVA due to the capacity to analyze two or more dependent variables simultaneously (Field, 2011; Stevens, 2012). Since the study had three

dependent variables (the skills of concentration, motivation, and time management) and one independent variable (COLL 1000 enrollment), MANOVA was the preferred method of statistical analysis (Field, 2011). The alternative to using MANOVA was to conduct multiple ANOVAs for each dependent variable, however, this approach was disadvantageous because multiple ANOVAs increases the probability of committing a Type I error (Thompson, 1994; Warne, 2014).

Not only did MANOVA encompass multiple dependent variables, MANOVA was deemed potentially more useable than ANOVA for this study since most social research contains latent concepts not directly observable, such as beliefs, perceptions, and attitudes (Stevens, 2012). Moreover, multiple ANOVAs “cannot determine whether independent variable(s) are related to combinations of dependent variables, which is often more useful information for behavioral scientists who study correlated dependent variables” (Warne, 2014, p. 3). In addition,

with ANOVA, it is assumed that these constructs are measured without error and with a single observed variable—an unrealistic assumption for many constructs in the behavioral sciences. Therefore, MANOVA is a statistical procedure that is more in accordance than ANOVA with behavioral scientists’ beliefs about the topics they study. (Warne, 2014, p. 4)

As part of the statistical analysis, the pretest results were examined to determine differences in initial perceptions of the three self-regulatory skills between the CR and CNR groups. Second, the posttest LASSI results were analyzed to determine the final perceptions of the three self-regulatory skills between the CR and CNR groups. Finally, with the hypothesis that CR students would evidence greater gains in their perception of self-regulatory skills at the completion of a semester than CNR students, a gain score was calculated for all students. The gain score model depicted the change in student performance between two points in time—in this case the beginning and the end of the semester (Becker, 2000; Castellano & Ho, 2013).

Not only could individual gains be measured, the study analyzed average gains in the two

groups. Average gain scores illustrated whether each group improved on average, had a near zero average gain score (indicating all had near zero gains or that there was a balance between positive and negative results), or generally declined in performance (Castellano & Ho, 2013). In addition to the MANOVA and specific to Research Question 3, a paired samples *t*-test was accomplished for follow-up analysis. The paired samples *t*-test was used to compare the means of the two groups on the two separate occasions of pretesting and post testing (Pallant, 2016).

Figure 3 illustrates the statistical analysis.

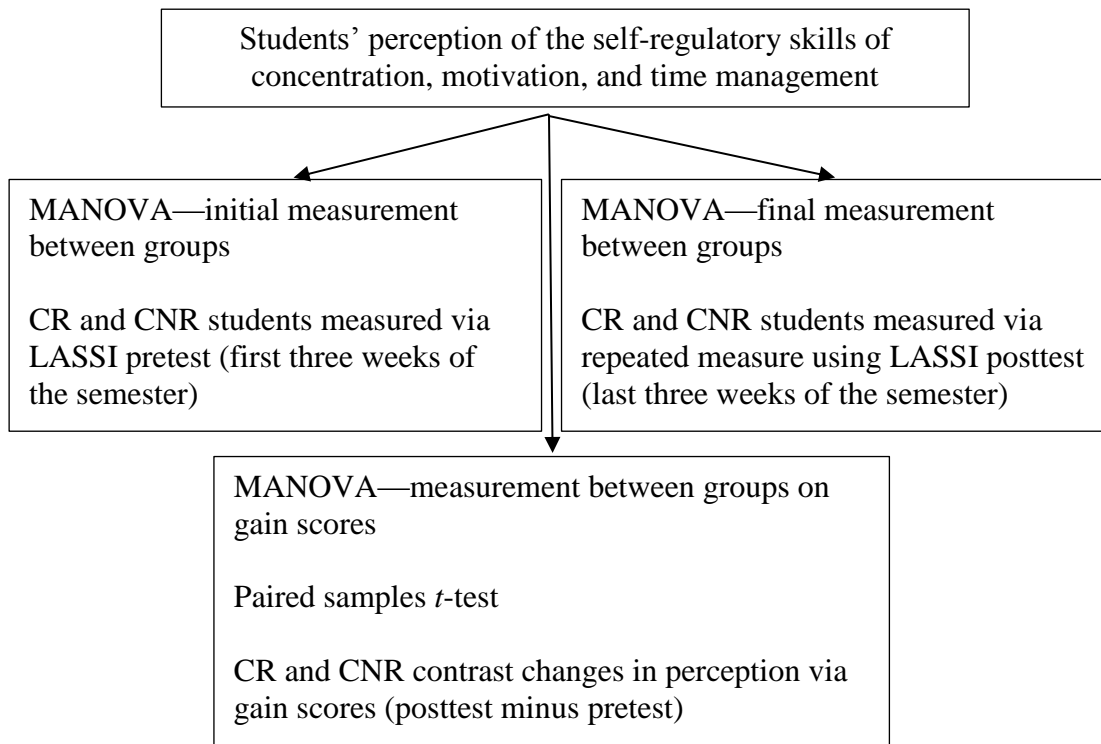


Figure 3 Statistical Analysis Illustration

Summary

This study focused on the relationship that successfully completing College Survival and Success (COLL 1000) at GNTC had with students' perceptions of three critical self-regulatory

skills—concentration, motivation, and time management. Since the CR students were required to take COLL 1000, the study was designed to examine whether there was any relationship between the completion of COLL 1000 and student perceptions of key self-regulatory skills. As a point of comparison, the same surveys were administered to COMP 1000 students who were not required to take COLL 1000. The study utilized the LASSI results to examine three specific hypotheses. First, using the pretest data, a comparison between the CR and CNR groups initial self-perception of the three regulatory skills was examined. Second, using the posttest data, a comparison between the CR and CNR groups concluding self-perception of the three regulatory skills was examined. Third, using gain scores, a comparison of perceived changes of individual students and between the CR and CNR groups was examined.

CHAPTER IV

RESULTS AND ANALYSIS

Introduction

This study examined the relationship between completion of a college success course and changes to students' perception of their self-regulation skills, specifically the skills of concentration, motivation, and time management. Since the study was designed to have a single independent variable (completion of the college success course) and three dependent variables associated with the three regulatory skills (concentration, motivation, and time management) the analysis was accomplished using a multivariate analysis of variance. In addition, the study examined gains in perception of the three dependent variables between students required to take a college success course and those who were not required to take this course. The analysis of gain scores was accomplished using a paired samples *t*-test.

Multivariate analysis of variance (MANOVA) allowed the comparison of several groups across several variables and Field (2011) describes MANOVA as an extension of a simple analysis of variables (ANOVA) that is necessary when a study includes multiple dependent variables. Moreover, MANOVA is useful when the independent variable(s) are controlled and demonstrates several advantages over ANOVA. "By measuring several dependent variables in a single experiment, there is a better chance of discovering which factor is truly important [and] it can protect against Type I errors that might occur if multiple ANOVA's were conducted independently" (French, Macedo, Poulsen, Waterson, & Yu, 2008, p. 2).

The paired samples *t*-test is another parametric test that can be used to compare the means of people on two separate occasions (Pallant, 2016). The paired samples *t*-test “will tell you whether there is a statistically significant difference in the mean scores from Time 1 to Time 2 [and] pretest/posttest designs are an example of the type of situation where this technique is appropriate” (Pallant, 2016, p. 249). While MANOVA and paired samples *t*-tests were the chosen methods of analyses in this study, it was first necessary to screen the data and ensure the assumptions for the MANOVA and the paired samples *t*-tests were met (Field, 2011).

Data Screening

The collection of data, both biographical information and LASSI inventories, followed the original methodology described in Chapter III. A total of 124 students completed the biographical survey and LASSI pretest. Of that group, 66 students completed the biographical survey, the LASSI pretest, and the LASSI posttest (40 CR and 26 CNR students). All LASSI surveys were complete and usable as all survey questions were answered, showed a variety of answers (no student simply answered with all 1s or 5s) and in all cases the LASSI files accurately matched individual student pretest to posttest. The loss of students from pretest to posttest was likely a result of students voluntarily electing to not complete the posttest survey, dropping the requisite COLL 1000 or COMP 1000 classes, or withdrawing from the college.

Sample Characteristics

Participants from the GNTC student body generated a sample size of 66 individuals who completed the biographical survey, the LASSI pretest, and LASSI posttest. Of the 66 participants, 40 were designated CR and 26 CNR per the methodology. Demographics collected

via biographical survey included age, college experience, transfer credits, gender, ethnicity, employment, marital status, children, and extracurricular activities.

Table 1 and Figure 4 indicate a large portion of the students who took the survey (43.9%) were 18 to 20 years old. Twenty-two students were 21-29 years old, and 15 of the 66 participants were 30 years of age or older.

Table 1 Participant Age

Age	Frequency	Percent	Cumulative Percent
18-20	29	43.9	43.9
21-29	22	33.3	77.2
30-39	10	15.2	92.4
40-49	4	6.1	98.5
50+	1	1.5	100
Total	66	100	

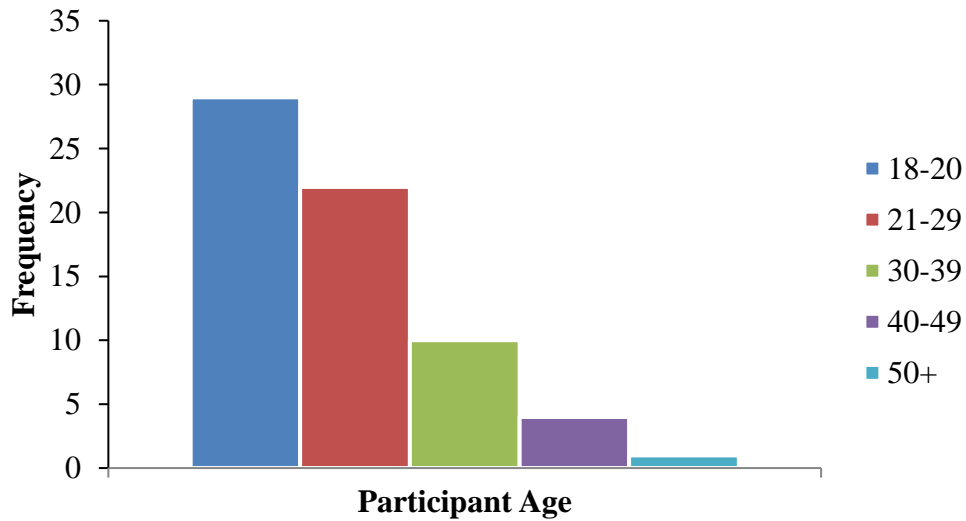


Figure 4 Participant Age Bar Graph

Table 2 and Figure 5 indicated approximately 71% of the students had zero to six months of college experience. The remaining students had seven to 12 months of experience. Per the methodology, students with more than one year of college experience were excluded from the research.

Table 2 Participant Months of College Experience

	Frequency	Percent	Cumulative Percent
0-6 Months	47	71.2	71.2
7-12 Months	19	28.8	100
Total	66	100	

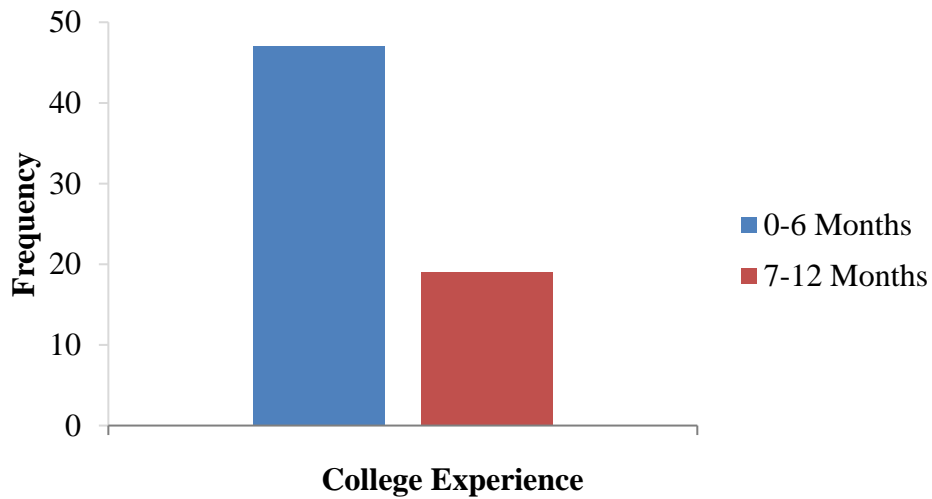


Figure 5 Participant Months of College Experience Bar Graph

Table 3 and Figure 6 indicate a large portion of the students who took the survey (63.6%) had zero transfer credits. Twenty-three students had one to 15 transfer credits, while one had 16

to 30 transfer credits. Again, the methodology excluded students with more than 30 transfer credits as this was indicative of at least one year of college coursework.

Table 3 Participant College Transfer Credits

	Frequency	Percent	Cumulative Percent
0 Credits	42	63.7	63.6
1-15 Credits	23	34.8	98.5
16-30 Credits	1	1.5	100
Total	66	100	

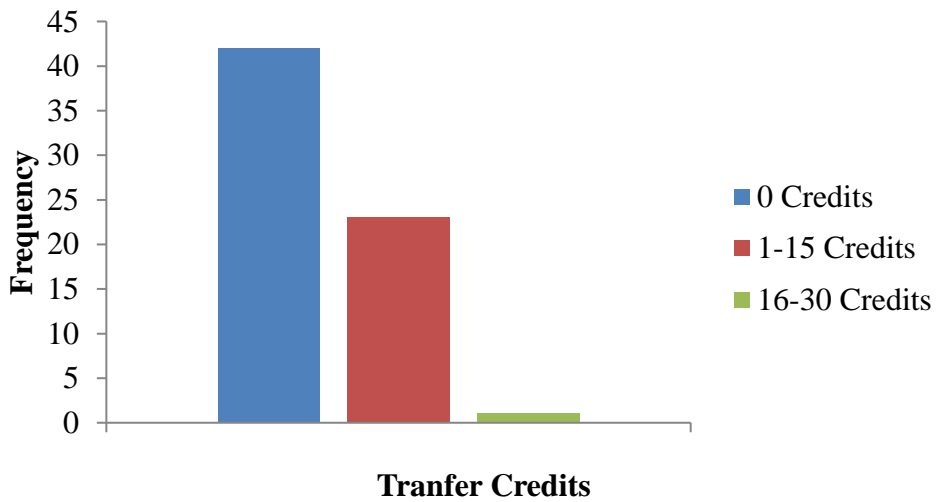


Figure 6 Participant College Transfer Credits Bar Graph

Table 4 and Figure 7 indicate a large portion of the students completing the survey (75.8%) were female. The participant percentage is slightly higher than the National Center for Education Statistics (2016) College Navigator showing 63% female at GNTC.

Table 4 Participant Gender

	Frequency	Percent	Cumulative Percent
Female	50	75.8	75.8
Male	16	24.2	100
Total	66	100	

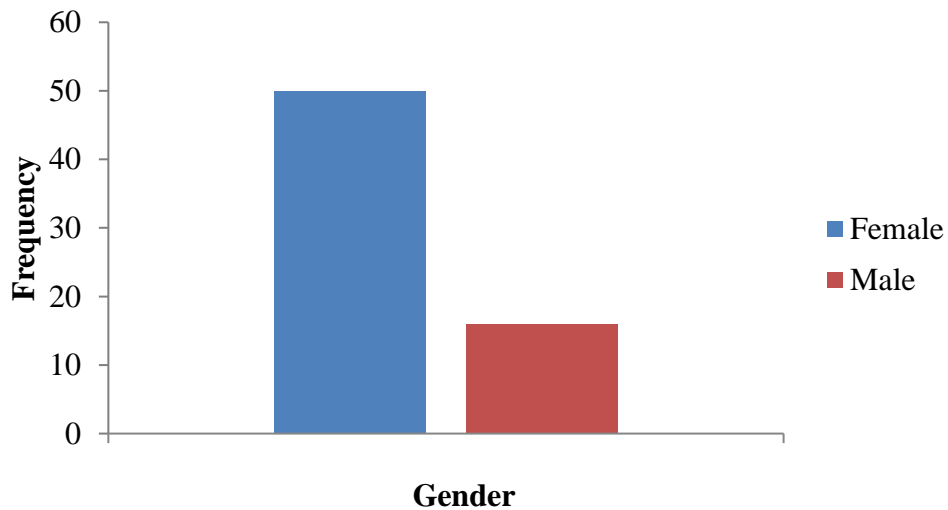


Figure 7 Participant Gender Bar Graph

Table 5 and Figure 8 indicate a large portion of the students who took the survey (63.6%) where White/Caucasian. The remainder of participants indicated African American/Black (10.6%), Hispanic (18.2%), or Asian ethnicity. One participant used the optional text box to indicate Native American ethnicity. The study sample was more diverse than the overall GNTC student body described by the National Center for Education Statistics (2016) College Navigator. This document lists the school demographic as 78% white, 11% Hispanic, and 8% African American.

Table 5 Participant Ethnicity

	Frequency	Percent	Cumulative Percent
Asian	1	1.5	1.5
Black	7	10.6	12.1
Hispanic	12	18.2	30.3
Native Am	1	1.5	31.8
White	45	68.2	100
Total	66	100	

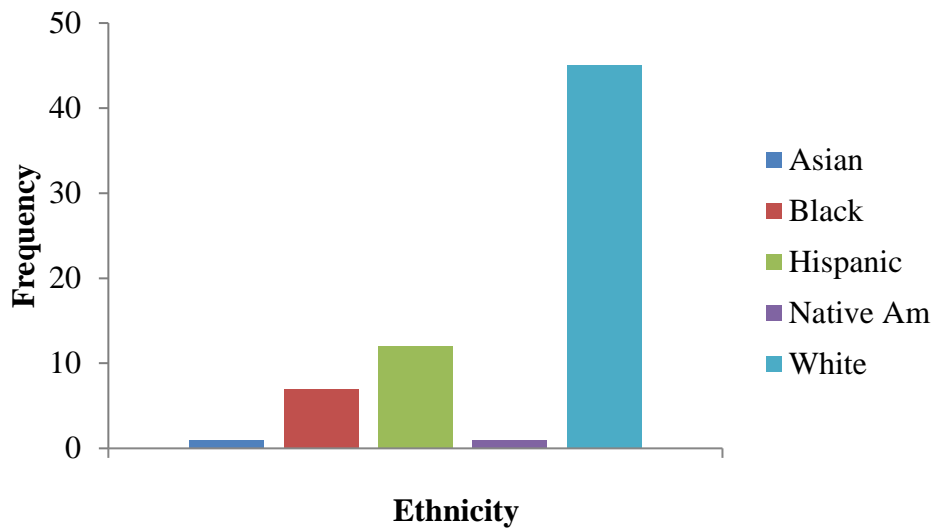


Figure 8 Participant Ethnicity Bar Graph

Table 6 and Figure 9 indicate a large portion of the student participants are working part-time (50%) or fulltime (9%). In addition, many students indicated they were not currently employed but were actively looking for work. Other possible responses were not employed and not looking for work or disabled and unable to work.

Table 6 Participant Employment Status

	Frequency	Percent	Cumulative Percent
Full time (40+ hrs)	6	9.1	9.1
Part time (1-39 hrs)	33	50.0	59.1
Not employed/not looking	12	18.2	77.3
Not employed/actively looking	14	21.2	98.5
Disabled	1	1.5	100
Total	66	100	

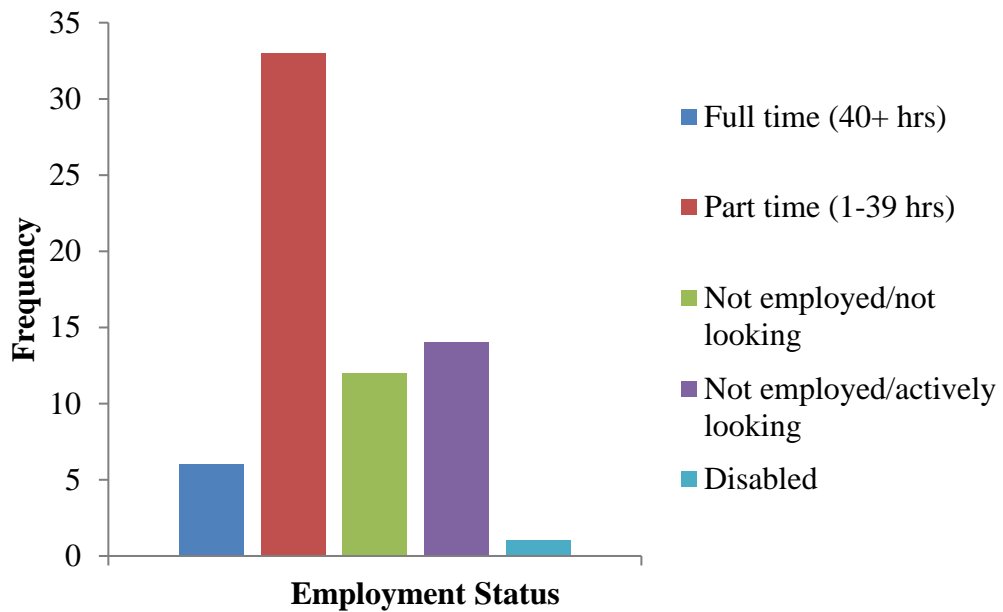


Figure 9 Participant Employment Status Bar Graph

Table 7 and Figure 10 indicate a large portion of the student participants have never been married (74.3%). Married and divorced students were equally represented at 12.1%, and one student indicated she was widowed.

Table 7 Participant Marital Status

	Frequency	Percent	Cumulative Percent
Never married	49	74.3	74.3
Married	8	12.1	86.4
Divorced	8	12.1	98.5
Widowed	1	1.5	100
Total	66	100	

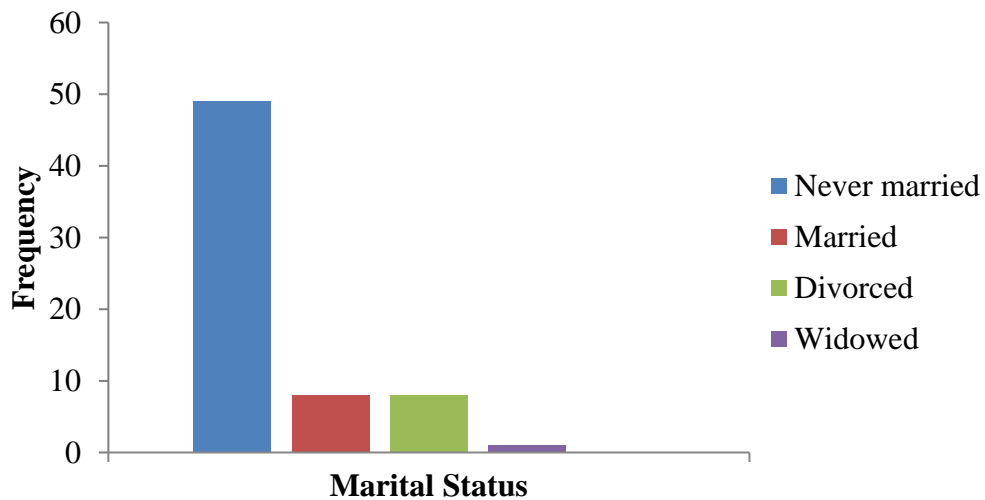


Figure 10 Participant Marital Status Bar Graph

Table 8 and Figure 11 indicate a large portion of the student body had zero children living at home with them (65.2%). Ten participants (15.2%) indicated they had one full-time

child living at home. Ten participants indicated more than two children living at home full-time, while one had a part time child in residence, and 2 had children not living at home.

Table 8 Participant Number of Children

	Frequency	Percent	Cumulative Percent
None	43	65.2	65.2
1 Full Time	10	15.2	80.4
2 Full Time	7	10.6	91.0
3 Full Time	3	4.5	95.5
1 Part Time	1	1.5	97.0
Children not living at home	2	3.0	100
Total	66	100	

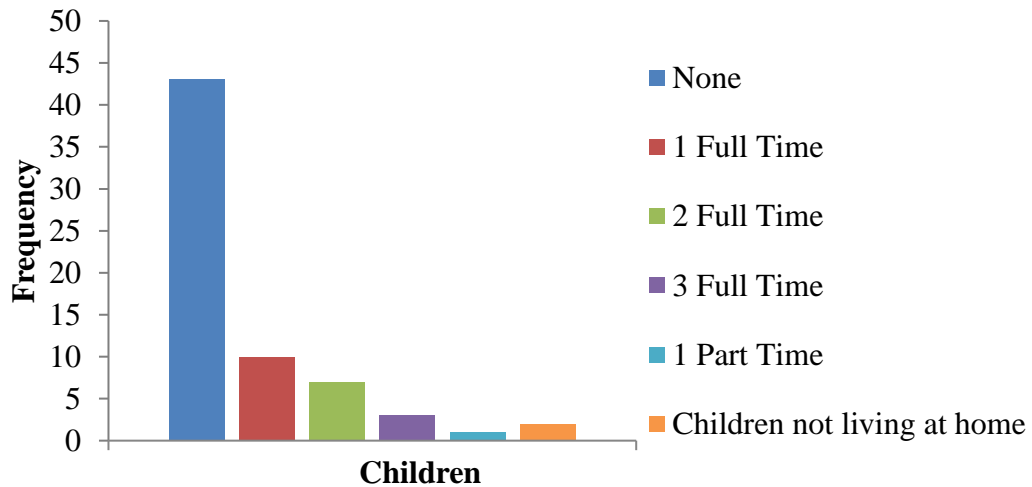


Figure 11 Participant Number of Children Bar Graph

Table 9 and Figure 12 indicate a large portion of the student participants had no extracurricular activities (87.9%). Seven participants indicated one extracurricular activity, while only one indicated more than one extracurricular activity. Extracurricular activities were defined as membership in Skills USA, work/study, Student Leadership Council, Phi Beta Lambda, or NJCAA athletics (not intramurals).

Table 9 Participant Extracurricular Activities

	Frequency	Percent	Cumulative Percent
0	58	87.9	87.9
1	7	10.6	98.5
More than 1	1	1.5	100
Total	66	100	

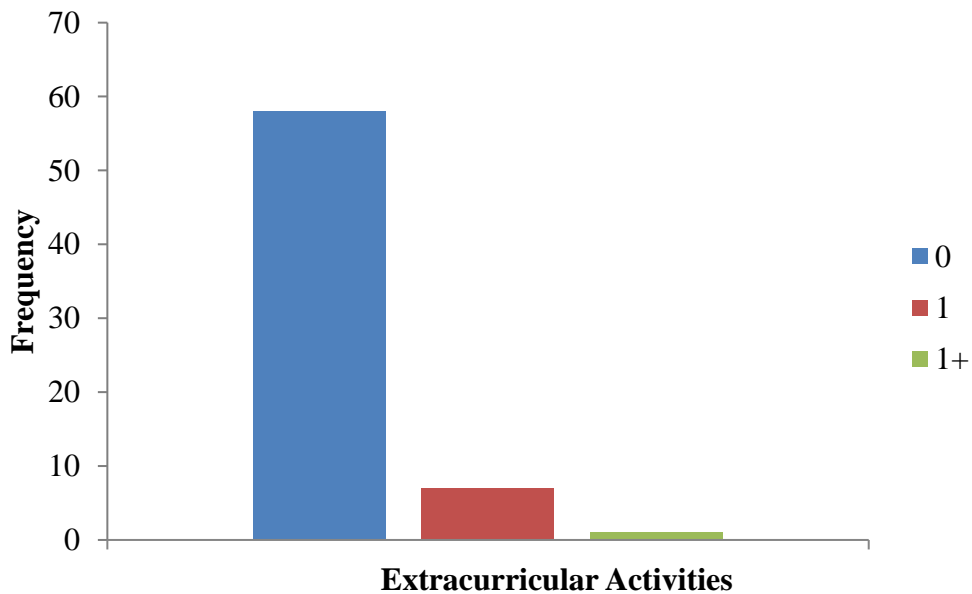


Figure 12 Participant Extracurricular Activities Bar Graph

Summary of Sample Characteristics

Based on demographic survey results, the majority of students participating in the study were single, were white females, and the majority had few college experiences. The majority of participants were employed part-time, most had no children living with them, and most did not have any extracurricular activities. The results of the participant demographic survey are largely in line with the National Center for Education Statistics (2016) College Navigator showing 63% female, 64% below age 24, and a total student body 78% white, 11% Hispanic, and 8% African American. The surveyed sample had a higher percentage of females than the general student body and had slightly higher representation of African American and Hispanic students than the general college population.

MANOVA Assumption Testing

In order to use the MANOVA statistic, data must meet several specific assumptions. Assumption testing for MANOVA is comparable to assumption testing in other parametric tests, however due to the complexity of the test, accurate assessment of multiple assumptions was critical (Field, 2011; French et al., 2008; Grande, 2015; Pallant, 2016; Warne, 2014). While authors vary on the tests necessary to meet the assumptions for MANOVA, a comprehensive list of assumptions was developed by assembling and examining an inclusive set of assumptions across several authors. The comprehensive set of assumptions consist of; (a) statistical independence, (b) random sampling, (c) two or more dependent variables, (d) independent variable consisting of two or more groups, (e) adequate sample size, (f) homogeneity of covariance (sometimes referred to as homogeneity of variance-covariance matrices), (g) no univariate or multivariate outliers, (h) no multicollinearity, and (i), multivariate normality (Field,

2011; French et al., 2008; Grande, 2015; Kanji, 1999; Laerd Statistics, 2013; Pallant, 2016; Shukla, 2016; Warne, 2014).

Statistical Independence and Random Sampling

The first assumptions tested for the MANOVA were statistical independence and random sampling. Field (2011) defines independence as “the assumption that one data point does not influence another. When data comes from people, it basically means that the behavior of one person does not influence the behavior of another” (p. 787). In the case of this study, the LASSI surveys were accomplished individually on a computerized system. Statistical independence is further defined as “no relationship between the observations in each group or between the groups themselves ... there must be different participants in each group with no participant being in more than one group” (Laerd Statistics, 2013, p. 7). As part of the study design, individual students were either categorized as Course Required (CR) or Course Not Required (CNR). The data delineated CR and CNR students and there were no students listed in both groups thus helping to ensure statistical independence.

MANOVA data should be randomly sampled from the population of interest and measured at interval level (Warne, 2014). For clarity, Field (2011) describes random sampling as the selection of a subset of individuals from within a population to estimate characteristics of the population, and that each observation measures one or more properties of independent individuals. The two groups, CR required to take COLL 1000, and CNR not required to take COLL 1000, were purposefully chosen but the sample of individuals within the two populations was random. The sample was generated by soliciting volunteers from each group.

Interval scale data are inherent in LASSI as it uses a scale analogous to the Likert 1-5 scale.

In fact, to minimize any potential confusion (if 1 is the high or low end of the scale), LASSI explains what each interval means in the instructions and describes each interval on every question. In the 60-question survey, LASSI shows the five possible answers as follows; not at all typical of me, not very typical of me, somewhat typical of me, fairly typical of me, and very much typical of me (Weinstein et al., 2016). As participants took the LASSI, they answered each question with the above scale, not merely a 1-5 choice. This helped minimize confusion and kept the described interval consistent throughout.

Two or More Dependent Variables and Independent Variable with Two or More Groups

The variables analysis in this research contained three dependent variables—the specific self-regulatory skills of concentration, motivation, and time management—and they were measured by a 5-point interval level test in LASSI. The independent variable in this study was the two groups—the course required (CR) group and the course not required (CNR) group.

Adequate Sample Size

While the *One-way MANOVA in SPSS Statistics* (2013) mentions adequate sample size as an assumption that requires testing, it merely suggests that the study contain more cases in each group than dependent variables. In his MANOVA tutorial, Grande (2015) was more precise and noted two ways to determine adequacy of sample size. First, Grande (2015) suggested a number of 20 respondents per group (group being the two levels of independent variable). Second, and only if there are less than 20 respondents, the researcher can multiply the dependent variables by the levels of the independent variable—three dependent variables times two independent variables of CR or CNR = six (Grande, 2015; Pallant, 2016). With 40 CR and 26 CNR

responses (completed surveys with no missing data and demographics for all respondents), the number of surveys was adequate under both of these conditions.

While not specific to sample size adequacy, the group sizes were slightly different.

Fortunately, there are methods to correct for variations in sample size if necessary. As Field (2011) noted, there are four different MANOVA tests (Roy’s statistic, Hotelling’s trace, Wilk’s lambda, and Pillai’s trace) versus sample size/homogeneity and

as a rule, with unequal group sizes, check the assumption of homogeneity of covariance matrices using Box’s test; if this test is non-significant and if the assumptions of multivariate normality is tenable (which allows us to assume that Box’s test is accurate), then assume that Pillai’s trace is accurate. (p. 605)

Moreover, it is possible to use “a chi-square analysis to determine whether this difference in group sizes is statistically significant—if it is ... use the adjustment in SPSS for unequal sample sizes, such as Pillai’s trace ... rather than Wilk’s lambda” (Tweedy & Lunardelli, 2012, p. 6). To be statistically significant, “the Sig. [significance] value needs to be .05 or smaller ... if it is larger than the value .05, we can conclude that [the] result is not significant” (Pallant, 2016, p. 221). Tables 10, 11, and 12 demonstrate the Pearson Chi-Square Asymptotic Significance values for the dependent variables are all above .05. As a result, the differences in sample sizes was not a considered significant for this analysis.

Table 10 Chi-Square Test of Concentration Dependent Variable

	Value	<i>df</i>	Asymptotic Significance (2-sided)
Pearson Chi-Square	23.757	21	.305
Likelihood Ratio	27.474	21	.156
<i>N</i> of Valid Cases	132		

Table 11 Chi-Square Test of Motivation Dependent Variable

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.867	15	.762
Likelihood Ratio	12.615	15	.632
N of Valid Cases	132		

Table 12 Chi-Square Test of Time Management Dependent Variable

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.530	20	.897
Likelihood Ratio	14.312	20	.814
N of Valid Cases	132		

Homogeneity of Covariance

Homogeneity of covariance (sometimes referred to as homogeneity of variance-covariance matrices) assumes the dependent variables exhibit equal levels of variance across the range of predictor variables (Field, 2011; French et al., 2008).

In MANOVA we must assume that homogeneity [variance in each group are roughly equal] is true for each independent variable, but also that the correlation between any two dependent variables is the same in all groups. This assumption is examined by testing whether the population variance-covariance matrices of the different groups in the analysis are equal. [The] assumption of equality of covariance matrices is ... easily checked ... using Box's test. (Field, 2011, pp. 603-604)

Using Box's Test, the results of the test should be examined and "if the Sig. value is *larger* than .001, then you have *not* violated the assumption" (Pallant, 2016, p. 299). Box's M result is shown in Table 13 with a significance value of .373, thus the homogeneity of covariance assumption was met for this analysis.

Table 13 Box's Test of Equality of Covariance Matrices

Box's M	6.640
<i>F</i>	1.077
<i>df1</i>	6.000
<i>df2</i>	79599.834
Sig.	.373

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

No Univariate or Multivariate Outliers

Grande (2015) and Pallant (2016) describe testing for univariate or multivariate outliers using the Mahalanobis distance. The *One-way MANOVA in SPSS Statistics* (2013) not only described testing for outliers, but also emphasized the criticality of this test since

there can be no (univariate) outliers in each group of the independent variable for any of the dependent variables. This is a similar assumption to the one-way ANOVA, but for each dependent variable that you have in your MANOVA analysis. Univariate outliers are often just called outliers and are the same type of outliers you will have come across if you have conducted *t*-tests or ANOVAs. We refer to them as univariate ...to distinguish them from multivariate outliers. Multivariate outliers are cases which have an unusual combination of scores on the dependent variables. [To] detect outliers [use] ... a measure called Mahalanobis distance. (p. 3)

The SPSS-generated Mahalanobis Maximum distance is then compared to a Critical Value based on number of dependent variables (Grande, 2015). In this case, three dependent variables generate a Critical Value of 16.270 (Grande, 2015; Pallant, 2016). “If your value is larger than the Critical Value, you have multivariate outliers in your data [but] if the maximum value for Mahalanobis Distance was less than the critical value ... [you] can assume that there were no substantial multivariate outliers” (Pallant, 2016, pp. 292-293). Table 14 shows the maximum

Mahalanobis distance for these data is 12.262, below the critical value of 16.270, meeting the assumption of no univariate or multivariate outliers.

Table 14 Mahalanobis Distance

	Minimum	Maximum	Mean	Std. Deviation	<i>N</i>
Mahal. Distance	.064	12.262	2.977	2.285	132
Cook's Distance	.000	.227	.006	.034	132
Centered Leverage Value	.001	.082	.024	.017	132

No Multicollinearity

Ideally, dependent variables should be moderately correlated with each other; if the correlations are low, separate one-way ANOVAs would be more appropriate whereas if the correlations are high (greater than .9), you could have multicollinearity (Laerd Statistics, 2013). Moreover, “multicollinearity makes it difficult to assess the individual importance of predictors...quite simply we can’t tell which variable is important” (Field, 2011, p. 224). Field also recommends testing for multicollinearity with results above .9 suggesting multicollinearity (Field, 2011). As shown in Table 15, the results of the test demonstrate moderate multicollinearity at .682, .668, and .661 respectively. All values are below the .9 critical value, and thus it can be concluded that the assumption of no multicollinearity is met.

Table 15 Correlations Test for Multicollinearity

		Concentration	Motivation	Time Management
Concentration	Pearson Correlation	1	.682**	.668**
	Sig. (2-tailed)		.000	.000
	<i>N</i>		132	132
Motivation	Pearson Correlation		1	.641**
	Sig. (2-tailed)			.000
	<i>N</i>			132
Time Management	Pearson Correlation			1
	Sig. (2-tailed)			
	<i>N</i>			

** Correlation is significant at the 0.01 level (2-tailed).

Multivariate Normality

Field (2011) described multivariate normality as an extension of normal distribution to multiple variables and “in the case of MANOVA, we assume that the dependent variables (collectively) have multivariate normality within groups” (p. 603). Grande (2015) and Pallant (2016) specifically describe using Mahalanobis Distance as a check for multivariate normality. To test the assumption of multivariate normality, Grande (2015) and Pallant (2016) again suggest comparing the Mahalanobis Maximum distance to the Critical Value based on number of dependent variables—three dependent variables generates a Critical Value of 16.270 (Grande, 2015; Pallant, 2016). If the Mahalanobis Maximum distance is less than the Critical Value, then the assumption of multivariate normality is met (Grande, 2015; Pallant, 2016). Table 14

previously demonstrated the Mahalanobis Distance in the research data is 12.262, below the Critical Value of 16.270.

Field (2011) recommends an additional test for normality—a test accomplished by analyzing the skew and kurtosis of the data with the following equations: $z_{\text{skewness}} = \text{Skew} - 0 / \text{Standard Error Skew}$, and $z_{\text{kurtosis}} = \text{Kurtosis} - 0 / \text{Standard Error Kurtosis}$. Field (2011) notes that if the calculated values of the z scores for skew and kurtosis are above 1.96 for a p of $<.05$, then the result is significant. Below 1.96, then the result is not significant and does not violate the assumption of normality. The results of the test of skew and kurtosis are shown in Table 16 and all values are below the 1.96 critical value thus the assumption of multivariate normality is met (Field, 2011).

Table 16 z score Test Results for Multivariate Normality

Statistic	Skew or Kurt	Statistic	Calculation
Concentration z score Course Required	Skewness	.101	z score for skew = .375 z score for kurtosis = 1.820
	St Error Skew	.269	
	Kurtosis	-.968	
	St Error Kurt	.532	
Motivation z score Course Required	Skewness	-.507	z score for skew = 1.885 z score for kurtosis = 1.122
	St Error Skew	.269	
	Kurtosis	-.597	
	St Error Kurt	.532	
Time Management z score Course Required	Skewness	-.151	z score for skew = .561 z score for kurtosis = 1.098
	St Error Skew	.269	
	Kurtosis	-.584	
	St Error Kurt	.532	
Concentration z score Course Not Required	Skewness	.079	z score for skew = .239 z score for kurtosis = .642
	St Error Skew	.330	
	Kurtosis	-.417	
	St Error Kurt	.650	
Motivation z score Course Not Required	Skewness	-.455	z score for skew = 1.379 z score for kurtosis = .762
	St Error Skew	.330	
	Kurtosis	-.495	
	St Error Kurt	.650	
Time Management z score Course Not Required	Skewness	.290	z score for skew = .879 z score for kurtosis = 1.718
	St Error Skew	.330	
	Kurtosis	-1.117	
	St Error Kurt	.650	

MANOVA Assumption Testing Summary

Assumption testing for MANOVA is comparable to assumption testing for other parametric tests, however, due to the complexity of the test, accurate assessment of assumptions was critical (Field, 2011; French et al., 2008; Grande, 2015; Pallant, 2016; Warne, 2014). In fact, assumption testing was critical because “it is only appropriate to use a one-way MANOVA if the data passes nine assumptions that are required ... to give you a valid result” (Laerd Statistics, 2013, p. 8). With the complexity of the MANOVA, accurate assessment of all assumptions was critical to accurate data analysis in this study.

While authors vary on the exact tests necessary to meet the assumptions for MANOVA, a comprehensive list of assumptions was developed by assembling and examining an inclusive set of assumptions across several authors. The comprehensive set of assumptions consists of; (a) statistical independence, (b) random sampling, (c) two or more dependent variables, (d) independent variable consisting of two or more groups, (e) adequate sample size, (f) homogeneity of covariance (sometimes referred to as homogeneity of variance-covariance matrices), (g) no univariate or multivariate outliers, (h) no multicollinearity, and (i), multivariate normality (Field, 2011; French et al., 2008; Grande, 2015; Kanji, 1999; Laerd Statistics, 2013; Pallant, 2016; Shukla, 2016; Warne, 2014). Since all nine MANOVA assumptions were met, it was concluded that a MANOVA would be appropriate (Laerd Statistics, 2013).

Paired Samples *t*-test Assumption Testing

To use a paired samples *t*-test, several assumptions must be met. The first two assumptions are: the dependent variable should be measured on a continuous (interval or ratio level) scale, and the independent variable “should consist of two related group or matched pairs because each subject [must be] measured on two occasions on the same dependent variable(s)” (Laerd Statistics, 2013, p. 6). Third, no significant outliers and fourth, there must be normality in the dependent variable(s) between the two related groups (Laerd Statistics, 2013; Pallant, 2016).

For the first assumption, that the dependent variable should be measured on a continuous (interval or ratio level) scale, was inherent in the Learning and Study Strategies Inventory (LASSI) since it uses a Likert 1-5 scale. Second, the independent variable was measured on two separate occasions against the same three dependent variables. The nature of the pretest/posttest design focused on the independent variable of CR versus CNR students, and the examination of

the dependent variables of concentration, motivation, and time management met this assumption (Pallant, 2016). The last two assumptions were validated in the assumption testing for the MANOVA—no significant outliers and normality between the two groups.

Data Analysis

MANOVA results were compared to the data from the LASSI surveys to ensure the *N* values in the descriptive statistics matched the number of students surveyed. Since there were 40 CR students and 26 CNR students, this should have generated a total of 80 and 52 surveys respectively, and a total of 132 samples since each student took a pretest and posttest. As shown in Table 17, the *N* count indicates all surveys were completed and categorized as CR and CNR.

Table 17 MANOVA Descriptive Statistics.

		Mean	Std. Deviation	<i>N</i>
Concentration	CR	20.210	5.350	80
	CNR	20.020	5.120	52
	Total	20.140	5.242	132
Motivation	CR	25.325	3.740	80
	CNR	24.442	4.439	52
	Total	24.977	4.037	132
Time Management	0	20.150	4.739	80
	1	19.290	5.675	52
	Total	19.810	5.125	132

As shown in Table 18, the MANOVA generated Levene’s Test data was evaluated for significance values less than .05, which would indicate a violation of equality of variance (Field, 2011; Pallant, 2016). In this test, all significance values were above the .05 threshold and support no violation of equality of variance.

Table 18 Levene's Test of Equality of Error Variances

	<i>F</i>	<i>df1</i>	<i>df2</i>	Sig.
Concentration	.754	1	130	.387
Motivation	2.296	1	130	.132
Time Management	3.119	1	130	.080

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + CR_CNR

MANOVA Analysis Hypotheses One and Two

Multivariate analysis was accomplished to determine whether there were statistically significant differences between the two groups—CR and CNR. Specific to Hypothesis 1, CR students, as compared to CNR students, were proposed to have significantly different levels of self-perception of three specific self-regulatory skills (concentration, motivation, and time management) at the beginning of the semester. Wilk’s Lambda tested whether there were “statistically significant differences among the groups on a linear combination of the dependent variables. If the significance level is less than .05, then you can conclude that there is a difference among [the] groups” (Pallant, 2016, p. 299). In the data, the pretest significance between groups shown in Table 19 was .974 thus there were not statistically significant differences between the two groups in the pretest.

Table 19 Pretest Multivariate Test

	Effect	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.974	769.831 ^b	3.000	62.000	.000	.974
	Wilks' Lambda	.026	769.831 ^b	3.000	62.000	.000	.974
	Hotelling's Trace	37.250	769.831 ^b	3.000	62.000	.000	.974
	Roy's Largest Root	37.250	769.831 ^b	3.000	62.000	.000	.974
CR_CNR	Pillai's Trace	.004	.074 ^b	3.000	62.000	.974	.004
	Wilks' Lambda	.996	.074 ^b	3.000	62.000	.974	.004
	Hotelling's Trace	.004	.074 ^b	3.000	62.000	.974	.004
	Roy's Largest Root	.004	.074 ^b	3.000	62.000	.974	.004

a. Design: Intercept + CR_CNR

b. Exact statistic

Specific to Hypothesis 2, CR students, as compared to CNR students, were proposed to have significantly different levels of self-perception of three specific self-regulatory skills (concentration, motivation, and time management) at the end of the semester. In the data, the posttest significance between groups shown in Table 20 was .339 thus there were no statistically significant differences between the two groups in the posttest.

Table 20 Posttest Multivariate Test

	Effect	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.976	844.960 ^b	3.000	62.000	.000	.976
	Wilks' Lambda	.024	844.960 ^b	3.000	62.000	.000	.976
	Hotelling's Trace	40.885	844.960 ^b	3.000	62.000	.000	.976
	Roy's Largest Root	40.885	844.960 ^b	3.000	62.000	.000	.976
CR_CNR	Pillai's Trace	.052	1.143 ^b	3.000	62.000	.339	.052
	Wilks' Lambda	.948	1.143 ^b	3.000	62.000	.339	.052
	Hotelling's Trace	.055	1.143 ^b	3.000	62.000	.339	.052
	Roy's Largest Root	.055	1.143 ^b	3.000	62.000	.339	.052

a. Design: Intercept + CR_CNR

b. Exact statistic

Analyzing the impact of the independent variable (CR/CNR), the Partial Eta Squared score “represents the proportion of the variance in the dependent variable that can be explained by the independent variable” (Pallant, 2016, p. 300). In the pretest shown in Table 21, concentration demonstrated 0% of the variance was explained by the independent variable, motivation demonstrated 0.3% of the variance, and time management demonstrated 0.1% of the variance.

Table 21 Tests of Between-Subjects Effects Pretest

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	CON	.441 ^a	1	.441	.014	.905	.000
	MOT	2.846 ^b	1	2.846	.169	.682	.003
	TMT	.911 ^c	1	.911	.034	.854	.001
Intercept	CON	23700.926	1	23700.926	770.952	.000	.923
	MOT	38493.089	1	38493.089	2291.095	.000	.973
	TMT	22765.456	1	22765.456	849.542	.000	.930
CR_CNR	CON	.441	1	.441	.014	.905	.000
	MOT	2.846	1	2.846	.169	.682	.003
	TMT	.911	1	.911	.034	.854	.001
Error	CON	1967.513	64	30.742			
	MOT	1075.275	64	16.801			
	TMT	1715.029	64	26.797			
Total	CON	26831.000	66				
	MOT	41532.000	66				
	TMT	25618.000	66				
Corrected Total	CON	1967.955	65				
	MOT	1078.121	65				
	TMT	1715.939	65				

a. $R^2 = .000$ (Adjusted $R^2 = -.015$)

b. $R^2 = .030$ (Adjusted $R^2 = .015$)

c. $R^2 = .021$ (Adjusted $R^2 = .006$)

In the posttest shown in Table 22, the dependent variable of concentration demonstrated 0% of the variance explained by the independent variable, motivation demonstrated 3% of the variance based on the independent variable, and time management demonstrated 2.1% of the variance based on the independent variable. All of the results indicate a very small size effect in both the pretest and posttest samples.

Table 22 Tests of Between-Subjects Effects Posttest

Source	Dependent Variable	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.	Partial Eta Squared
Corrected Model	CON	.757 ^a	1	.757	.031	.861	.000
	MOT	30.462 ^b	1	30.462	1.983	.164	.030
	TMT	34.641 ^c	1	34.641	1.378	.245	.021
Intercept	CON	27375.424	1	27375.424	1122.364	.000	.946
	MOT	39645.856	1	39645.856	2580.877	.000	.976
	TMT	26317.308	1	26317.308	1046.600	.000	.942
CR_CNR	CON	.757	1	.757	.031	.861	.000
	MOT	30.462	1	30.462	1.983	.164	.030
	TMT	34.641	1	34.641	1.378	.245	.021
Error	CON	1561.015	64	24.391			
	MOT	983.129	64	15.361			
	TMT	1609.313	64	25.146			
Total	CON	30291.000	66				
	MOT	43017.000	66				
	TMT	29627.000	66				
Corrected Total	CON	1561.773	65				
	MOT	1013.591	65				
	TMT	1643.955	65				

a. $R^2 = .000$ (Adjusted $R^2 = -.015$)

b. $R^2 = .030$ (Adjusted $R^2 = .015$)

c. $R^2 = .021$ (Adjusted $R^2 = .006$)

MANOVA Summary of Hypotheses One and Two

A one-way between-group multivariate analysis of variance (MANOVA) was performed to investigate differences in students who took a college success class and those who did not.

The three dependent variables were used, and analysis demonstrated there were no statistically significant differences between the CR and CNR groups in either pretests or posttests.

Although neither of these measures demonstrated a significance of $p < .05$, the Wilk's Lambda number decreased noticeably from the beginning to the end of the semester. Despite not reaching the .05 threshold, the change in the posttest value of Wilks' Lambda indicates a slightly greater discriminatory function between the two groups at the end of the semester (SPSS

Statistics, 2012). The “smaller values of Wilks' Lambda indicate greater discriminatory ability of the function” (SPSS Statistics, 2012, p. 1). Despite the decrease in Wilk’s Lambda, the null hypothesis for Research Questions 1 and 2, that CR students, as compared to CNR students, revealed no significant differences in their level of self-perception of the three self-regulatory skills at either the beginning or the end of the semester cannot be rejected.

MANOVA Analysis Hypotheses Three—Gain Scores

Specific to Hypothesis 3, the premise was CR students, as compared to CNR students, would evidence significantly different gains in their self-perception of the self-regulatory skills of concentration, motivation, and time management at the completion of a semester. To examine Hypothesis 3, a MANOVA was run and the gain scores for the individual CR and CNR students were analyzed. MANOVA results were compared to the data from the LASSI surveys to ensure the *N* values in the descriptive statistics matched the number of students surveyed. As shown in Table 23, there were 40 CR students and 26 CNR students, and the *N* count indicates all surveys were completed and categorized as CR and CNR per the methodology.

Table 23 Gain Scores Descriptive Statistics

	CR_CNR	Mean	Std. Deviation	<i>N</i>
CON Gain	CNR	1.423	4.110	26
	CR	1.475	4.157	40
	Total	1.455	4.107	66
MOT Gain	CNR	-.115	2.930	26
	CR	.850	2.597	40
	Total	.470	2.752	66
TMT Gain	CNR	.808	4.400	26
	CR	2.050	4.032	40
	Total	1.561	4.192	66

As shown in Table 24, the MANOVA generated Levene's Test and the gain score data were evaluated for significance values less than .05, which would indicate a violation of equality of variance (Field, 2011; Pallant, 2016). In this test, all significance values were above the .05 threshold and support no violation of equality of variance.

Table 24 Levene's Test of Equality of Error Variances

	<i>F</i>	<i>df1</i>	<i>df2</i>	Sig.
CON Gain	.443	1	64	.508
MOT Gain	.417	1	64	.521
TMT Gain	.009	1	64	.923

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

a. Design: Intercept + CR_CNR

Multivariate analysis was accomplished to determine whether there were statistically significant differences between the two groups—CR and CNR. Specific to Hypothesis 3, CR students, as compared to CNR students, were proposed to have different gain scores in three specific self-regulatory skills (concentration, motivation, and time management). To calculate gain scores, the students' pretest score was subtracted from their posttest score. Gain scores were calculated for each student across each of the three dependent variables—concentration, motivation, and time management. Wilk's Lambda tested for statistical significance between the groups using $p < .05$ to determine significance between the groups (Field, 2011; Pallant, 2016). As shown in Table 25, the significance between groups is .405 thus there was not a statistically significant difference between the two groups.

Table 25 Gain Scores Multivariate Test

	Effect	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.145	3.501 ^b	3.000	62.000	.021	.145
	Wilks' Lambda	.855	3.501 ^b	3.000	62.000	.021	.145
	Hotelling's Trace	.169	3.501 ^b	3.000	62.000	.021	.145
	Roy's Largest Root	.169	3.501 ^b	3.000	62.000	.021	.145
CR_CNR	Pillai's Trace	.046	.988 ^b	3.000	62.000	.405	.046
	Wilks' Lambda	.954	.988 ^b	3.000	62.000	.405	.046
	Hotelling's Trace	.048	.988 ^b	3.000	62.000	.405	.046
	Roy's Largest Root	.048	.988 ^b	3.000	62.000	.405	.046

a. Design: Intercept + CR_CNR

b. Exact statistic

To analyze the impact of the independent variable (CR/CNR), the Partial Eta Squared score “represents the proportion of the variance in the dependent variable that can be explained by the independent variable” (Pallant, 2016, p. 300). In the pretests shown in Table 26, the dependent variable of concentration demonstrated 0% of the variance was explained by the independent variable, motivation demonstrated 3% of the variance, and time management demonstrated 2.1% of the variance explained by the independent variable.

Table 26 Tests of Between-Subjects Effects Gain Scores

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	CON Gain	.042 ^a	1	.042	.002	.960	.000
	MOT Gain	14.686 ^b	1	14.686	1.967	.166	.030
	TMT Gain	24.319 ^c	1	24.319	1.392	.242	.021
Intercept	CON Gain	132.346	1	132.346	7.726	.007	.108
	MOT Gain	8.504	1	8.504	1.139	.290	.017
	TMT Gain	128.683	1	128.683	7.367	.009	.103
CR_CNR	CON Gain	.042	1	.042	.002	.960	.000
	MOT Gain	14.686	1	14.686	1.967	.166	.030
	TMT Gain	24.319	1	24.319	1.392	.242	.021
Error	CON Gain	1096.321	64	17.130			
	MOT Gain	477.754	64	7.465			
	TMT Gain	1117.938	64	17.468			
Total	CON Gain	1236.000	66				
	MOT Gain	507.000	66				
	TMT Gain	1303.000	66				
Corrected Total	CON Gain	1096.364	65				
	MOT Gain	492.439	65				
	TMT Gain	1142.258	65				

a. $R^2 = .000$ (Adjusted $R^2 = -.016$)

b. $R^2 = .030$ (Adjusted $R^2 = .015$)

c. $R^2 = .021$ (Adjusted $R^2 = .006$)

Comparing Group Means

Table 27 compared the mean gain scores in CR and CNR students. While the MANOVA did not show significance between the CR and CNR groups, a mean gain score can illustrate whether groups have improved on average, have a near zero average gain score (indicating all had near zero gains or that there was a balance between positive and negative results), or generally declined in performance (Castellano & Ho, 2013).

Table 27 Estimated Marginal Means

Dependent Variable	CR_CNR	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
CON Gain	CNR	1.423	.812	-.198	3.045
	CR	1.475	.654	.168	2.782
MOT Gain	CNR	-.115	.536	-1.186	.955
	CR	.850	.432	-.013	1.713
TMT Gain	CNR	.808	.820	-.830	2.445
	CR	2.050	.661	.730	3.370

Comparisons of the means of the three dependent variables illustrated both gains and losses in the areas of concentration, motivation, and time management. In the area of concentration, both CR and CNR students demonstrated positive gains from the beginning to the end of the semester with CR students evidencing slightly higher gains. In the area of motivation, CR students demonstrated a positive gain score while CNR students demonstrated a negative score. In time management, both groups demonstrated positive gains, however, the CR group demonstrated a larger increase in gains across the semester.

Comparison of percentage changes across the three dependent variables also demonstrated both gains and losses. Table 28 shows CR students' mean posttest score of 20.950 in concentration, minus pretest mean of 19.475, generated a gain of 1.475 or 7.57% in mean concentration. CR students' mean posttest score of 25.775 in motivation, minus pretest mean of 24.925, generated a gain of .850 or 3.3% in mean motivation score. CR students' mean posttest score of 21.175 in time management, minus pretest mean of 19.125, generated a gain of 2.050 or 10.72% in mean time management score.

Table 28 Course Required Descriptive Statistics Gain Scores

CR	<i>N</i>	Minimum	Maximum	Sum	Mean
CONrawpre	40	10.000	30.000	779.000	19.475
CONrawpost	40	11.000	30.000	838.000	20.950
MOTrawpre	40	17.000	30.000	997.000	24.925
MOTrawpost	40	17.000	30.000	1031.000	25.775
TMrawpre	40	9.000	28.000	765.000	19.125
TMrawpost	40	10.000	29.000	847.000	21.175
Valid <i>N</i> (listwise)	40				

In Table 29, CNR students' mean posttest score of 20.731, minus pretest mean of 19.308 in concentration generated a gain of 1.423 or 7.37% in mean concentration score. CNR students' mean posttest score of 24.385 in motivation, minus pretest mean of 24.500, generated a negative result of -.115 or -.47% in mean motivation score. CNR students' mean posttest score of 19.692 in time management, minus pretest mean of 18.885, generated a gain of .808 or 4.27% in mean time management score.

Table 29 Course Not Required Descriptive Statistics Gain Scores

CNR	<i>N</i>	Minimum	Maximum	Sum	Mean
CONrawpre	26	8.000	30.000	502.000	19.308
CONrawpost	26	12.000	30.000	539.000	20.731
MOTrawpre	26	13.000	30.000	637.000	24.500
MOTrawpost	26	15.000	30.000	634.000	24.385
TMTrawpre	26	10.000	29.000	491.000	18.885
TMTrawpost	26	11.000	29.000	512.000	19.692
Valid <i>N</i> (listwise)	26				

Tables 27, 28, and 29, illustrate that students who were required to take a college success course (CR) demonstrated a greater increase in their self-perception of the three self-regulatory skills—concentration, motivation, and time management between the two groups. Figure 13 is a graphic depiction of the mean gain scores from pretest to posttest for each of the three dependent variables.

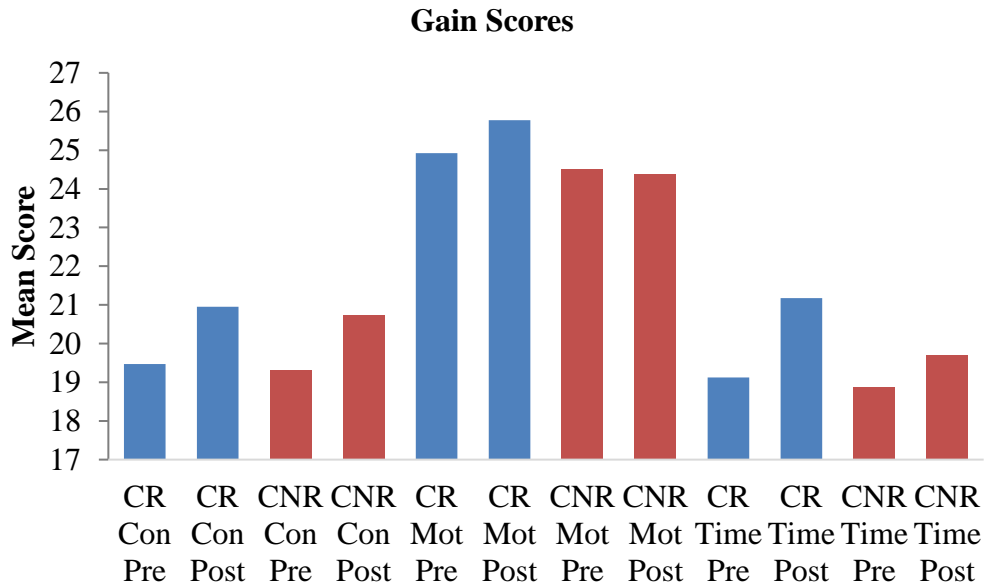


Figure 13 Gain Scores Bar Graph

Paired Samples *t*-test

While the MANOVA did not show significant differences in the CR and CNR groups of $p < .05$, the paired samples *t*-test revealed statistically significant gains in the perception of all three skills in the CR students. Again, the paired samples *t*-test is a parametric test that can be used to compare the means of people on two separate occasions (Pallant, 2016). The paired samples *t*-test “will tell you whether there is a statistically significant difference in the mean scores from Time 1 to Time 2 [and] pretest/posttest designs are an example of the type of situation where this technique is appropriate” (Pallant, 2016, p. 249).

A paired samples *t*-test was conducted to evaluate the impact of taking COLL 1000 on student scores of concentration, motivation, and time management. Table 30 illustrates the paired samples *t*-test results and shows the significance of the gains in each of the three dependent variables in CR students—gains in concentration (.031), motivation (.045) and time management (.003). All of the measures illustrate statistical significance of $p < .05$.

Table 30 Course Required Paired Samples *t*-test

		Paired Differences					<i>t</i>	<i>df</i>	Sig. (2-tailed)
		Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	CONrawpost - CONrawpre	1.475	4.157	.657	.146	2.805	2.244	39	.031
Pair 2	MOTrawpost - MOTrawpret	.850	2.597	.411	.019	1.681	2.070	39	.045
Pair 3	TMTrawpost - TMTrawpret	2.050	4.032	.637	.761	3.339	3.216	39	.003

Moreover, the CR Paired Samples Statistics (Table 31) illustrate an increase in concentration from Time 1 ($M = 19.475$) to Time 2 ($M = 20.950$), for an increase of 1.475. In addition, motivation increased from Time 1 ($M = 24.925$) to Time 2 ($M = 25.775$), for an increase of .850 and time management an increased from Time 1 ($M = 19.125$) to Time 2 ($M = 21.175$) for an increase of 2.050.

Table 31 Course Required Paired Samples Statistics

		Mean	<i>N</i>	Std. Deviation	Std. Error Mean
Pair 1	CONrawpre	19.475	40	5.697	.901
	CONrawpost	20.950	40	4.940	.781
Pair 2	MOTrawpre	24.925	40	3.832	.606
	MOTrawpost	25.775	40	3.512	.555
Pair 3	TMTrawpre	19.125	40	4.444	.703
	TMTrawpost	21.175	40	4.856	.768

A second paired samples *t*-test was conducted to evaluate the CNR student scores in the dependent variables of concentration, motivation, and time management. Table 32 illustrates the paired samples *t*-test results and shows no statistically significant gains in any of the three dependent variables—gains in concentration (.090), motivation (.842) and time management (.358). Furthermore, the CNR Paired Samples Statistics (Table 33) illustrate an increase in concentration from Time 1 ($M = 19.308$) to Time 2 ($M = 20.731$), for an increase of 1.423. Table 33 also denotes a time management improved from Time 1 ($M = 18.885$) to Time 2 ($M = 19.692$) for an increase of .807. Interestingly, the CNR Paired Samples Statistics show a decline in motivation from Time 1 ($M = 24.500$) to Time 2 ($M = 24.385$), for a decrease of .115.

Table 32 Course Not Required Paired Samples *t*-test

		Paired Differences					<i>t</i>	<i>df</i>	Sig. (2-tailed)
		Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	CONrawpost - CONrawpre	1.423	4.110	.806	.237	3.083	1.765	25	.090
Pair 2	MOTrawpost - MOTrawpre	-.115	2.930	.575	1.299	1.068	-.201	25	.842
Pair 3	TMTrawpost - TMTrawpret	.808	4.400	.863	.970	2.585	.936	25	.358

Table 33 Course Not Required Paired Samples Statistics

		Mean	<i>N</i>	Std. Deviation	Std. Error Mean
Pair 1	CONrawpre	19.308	26	5.297	1.039
	CONrawpost	20.731	26	4.936	.968
Pair 2	MOTrawpre	24.500	26	4.483	.879
	MOTrawpost	24.385	26	4.482	.879
Pair 3	TMTrawpre	18.885	26	6.147	1.206
	TMTrawpost	19.692	26	5.252	1.030

Comparing the CR and CNR sample statistics, the CR students' mean concentration score rose 1.475 at the end of the semester, while the CNR students' mean concentration score rose a little less at 1.420. The CR students' mean motivation score rose by .850 by the end of the semester while the CNR students' mean motivation score decreased by .120. Finally, the CR

students' mean time management score rose by 2.050 at the end of the semester as compared to the CNR students' mean time management score which rose by only .810.

The change in mean scores for both CR and CNR students is shown in Figure 14. Figure 15 uses the same data but pairs the means of the CR and CNR pretest and posttest by dependent variable to clearly illustrate the groups starting and ending mean score. The pretest means for the dependent variables demonstrates a slightly higher average score in all three CR dependent variables. The posttest means for each dependent variable demonstrated a higher mean in all three CR dependent variables (greater average gains in CR as compared to CNR students).

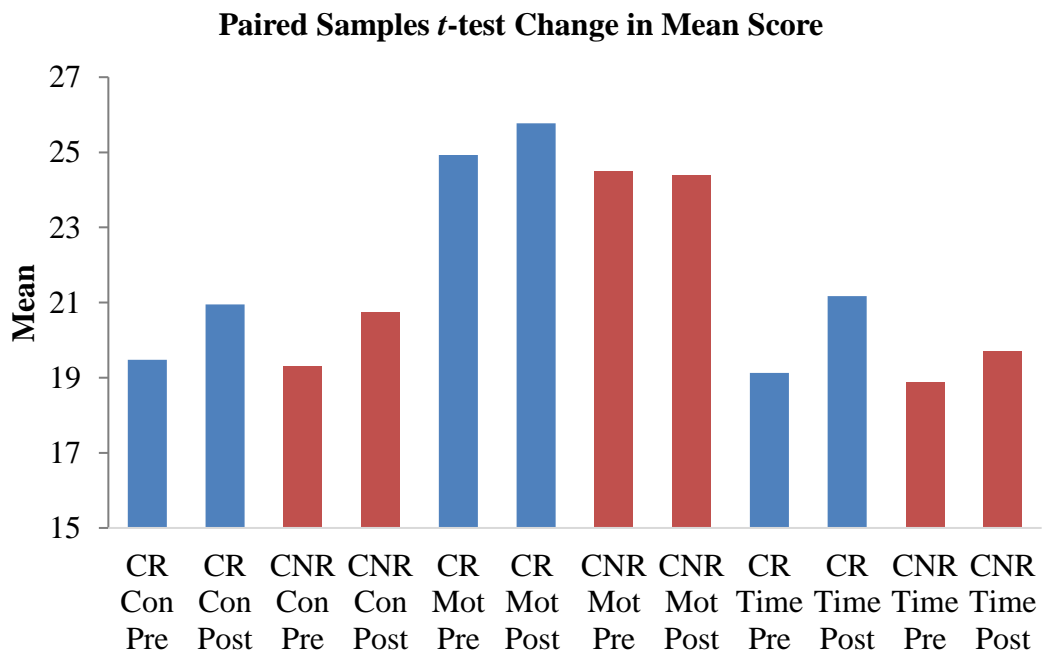


Figure 14 Pair Samples *t*-test Bar Graph

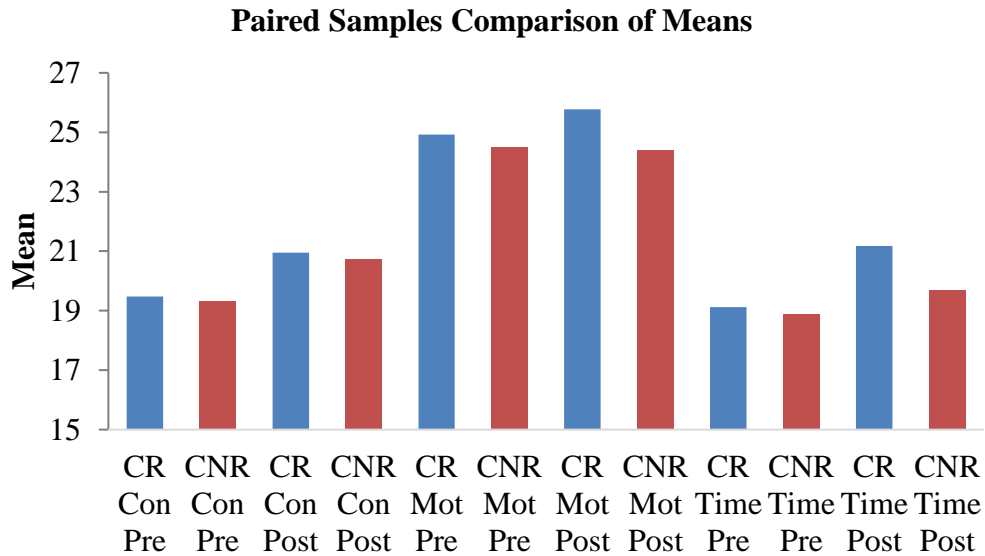


Figure 15 Pair Samples Comparison of Means Bar Graph

Summary

The results presented in this chapter indicated that the majority of students participating in the study were single, were white females, and the majority had few college experiences. The majority of participants were employed part-time, most had no children living with them, and most did not have any extracurricular activities. The self-perception data collected via LASSI allowed the nine assumptions associated with a MANOVA and four assumptions of the paired samples *t*-test to be tested and confirmed. With the assumptions met, the research questions were analyzed.

The MANOVA associated with Research Questions 1 and 2 demonstrated no statistically significant differences between the CR and CNR groups across the three dependent variables in either initial differences at the beginning of the semester or concluding differences at the end of the semester. While the Wilk's Lambda between CR and CNR groups decreased from the

beginning to the end of semester, suggesting greater differentiation between groups, it did not reach $p < .05$ level of significance.

For Research Question 3, the use of gain scores indicated participating students generally demonstrated an increase in the self-perception scores after one semester of college coursework. One notable exception was the CNR group showed a decline in the dependent variable of motivation after one semester of college. While the statistics for the gain scores generated from the MANOVA on the three dependent variables (concentration, motivation, and time management) did not meet the criteria for statistical significance of $p < .05$, there were larger gains for Course Required students as compared to the Course Not Required group. Notably, there was not a post hoc analysis of the MANOVA because “when there are only two groups, the results of post hoc tests simply repeat those of the omnibus test, and thus convey no new information” (SPSS Statistics, 2012, p. 2).

Again, focusing on Research Question 3, the paired samples t -test demonstrated significant gains in all three dependent variables for CR students. The paired samples t -test results demonstrated significant gains in each of the three dependent variables in CR student’s concentration $p = .031$, motivation $p = .045$, and time management $p = .003$. All of the measures illustrate statistical significance of $p < .05$. For CNR students, the paired samples t -test results demonstrated non-significant gains in each of the three dependent variables—concentration $p = .090$, motivation $p = .842$, and time management $p = .358$.

While both analyses met all assumption criteria, the specificity of the paired samples t -test in measuring students at two separate times, and across the same dependent variables, suggests the CR students gained greater self-perception of the three self-regulatory skills as

compared to the CNR students. A more detailed discussion of the results, along with potential areas for future research, will be discussed in Chapter V.

CHAPTER V

DISCUSSION AND CONCLUSION

The purpose of this study was to examine the relationship between completion of a college success course and changes to students' perception of their self-regulation skills, specifically the skills of concentration, motivation, and time management. This chapter will review the statement of the problem, the methodology used in gathering and analyzing the data, a summary of the results and, finally, a discussion of the findings with recommendations for future study.

Re-Statement of the Problem

This research sought to examine if a specific college success course was related to improved students' self-perception of three critical self-regulatory skills—concentration, motivation, and time management. Theoretically, college success courses are meant to provide incoming students with techniques to develop self-regulation skills that help them plan and adapt their actions to attain personal educational goals (Karp & Bork, 2012; Ley & Young, 1998; O'Gara et al., 2009; Zimmerman, 2000). The premise of the study was if a college success course (specifically COLL 1000 at Georgia Northwestern Technical College) may be related to students' self-perception of the three skills and, potentially, improve their chances for success in attaining their educational goals.

While the conclusions of numerous studies demonstrate students who complete a college

success course then complete other courses at a higher rate, earn more total credits, and are more likely to persist until graduation; student retention and graduation rates remain at or near rates of 15 years ago (Cavote & Kopera-Frye, 2004; Derby & Smith, 2004; Mertes & Hoover, 2014; O'Gara et al., 2009; Scrivener et al., 2009; Tinnesz et al., 2006). If college success courses, along with necessary remedial courses focused on students' specific weak areas are not providing the essential training needed for persistence and graduation, perhaps something else is lacking in entry-level student training. What may be lacking are skills that transcend specific remedial classes; perhaps self-regulatory habits that intersect disciplines and entail new academically oriented behaviors that were not developed in high school (Karp & Bork, 2012). What many incoming students lack is proficiency in time management, goal setting, focus, and, ultimately, a demonstration of commitment and motivation (Karp & Bork, 2012). Theoretically, one of the possible ways to increase the success of incoming students is to prepare them for the rigors of college through guidance and training in self-regulatory skills (Ley & Young, 1998; Pintrich & De Groot, 1990; Schunk & Ertmer, 2012; Tinnesz et al., 2006; Zimmerman, 2008).

Review of the Methodology

In this study, survey data were solicited from two groups of GNTC students—those required to take COLL 1000 (CR) and a control group of students who were not required to take COLL 1000 (CNR). For this study, the control group consisted of students enrolled in Introduction to Computers, delineated COMP 1000. COMP 1000 was a typical first semester course for incoming freshman, did not have any prerequisites, and did not exclude Learning Support or Provisional Status students from enrolling. Moreover, COMP 1000 was a prerequisite for 18 different first year courses (1000 level) in the GNTC catalog, thus it tended to

be a first semester course for many entering freshmen (Georgia Northwestern Technical College, 2016). For this study, only students enrolled in the traditional classroom modality were utilized—no online classes were utilized.

Since the study involved students in both COLL 1000 and COMP 1000, there was the potential to have students enrolled in both courses. In this study, students enrolled in both COLL 1000 and COMP 1000 were observed in their COLL 1000 course and categorized as CR. In addition, any COMP 1000 student who had previously completed COLL 1000 was not surveyed in COMP 1000.

The research sample consisted of a subset of COLL 1000 and COMP 1000 students who voluntarily elected to complete the online biographical survey and both the pretest and posttest LASSI instrument. The collection of data was accomplished across the 2016 calendar year; specifically, the Spring, Summer, and Fall 2016 semesters. In all, 124 students completed the biographical survey and pretest LASSI. Of that group, 66 students (26 CNR and 40 CR) completed the entire sequence of biographical survey, LASSI pretest, and LASSI posttest. Once a sufficient sample size was collected, the data were analyzed to address the three research questions.

- Research Question 1: Is there a difference between the perception of self-regulatory skills between CR students and CNR students at the beginning of the semester as related to concentration, motivation, and time management skills?
- Research Question 2: Is there a difference between the perception of self-regulatory skills between CR students and CNR students at the end of the semester as related to concentration, motivation, and time management skills?

- Research Question 3: Is there a difference in the perceptions of self-regulatory skills between CR students and CNR students as reflected in gain scores calculated across the semester as related to concentration, motivation, and time management skills?

In this study, there was one independent variable and three dependent variables. The independent variable was the school-specific college success course. The three dependent variables were the self-regulatory skills of concentration, motivation, and time management. Moreover, age, college experience, transfer credits, and other extraneous variables were captured in the demographic data collected as part of the biographical survey.

After gathering the demographic data and LASSI results, the first step was to assess each research question using the methodology described in Chapter III. For Research Question 1, a one-way MANOVA examined the differences between CR and CNR students in the three dependent variables of concentration, motivation, and time management at the beginning of the semester. For Research Question 2, the end of semester differences between CR and CNR students in the same dependent variables were examined using a one-way MANOVA. For Research Question 3, a gain score for each student was generated by subtracting the pretest from the posttest score in each of the three self-regulatory areas of concentration, motivation, and time management. Again, the dependent variables were analyzed using a one-way MANOVA but also included follow-up analysis with a paired samples *t*-test of the gain scores of the two groups.

Demographics

Based on demographic survey results, the majority of students participating in the study were single white females with few college experiences. The majority of participants were employed part-time, had no children living with them, and did not have any extracurricular

activities. The results of the participant demographic survey are largely in line with the National Center for Education Statistics (2016) College Navigator showing 63% female, 64% below age 24, and a total student body 78% white, 11% Hispanic, and 8% African American. The surveyed sample had a higher percentage of females than the general student body and had slightly higher representation of African American and Hispanic students than the general college population.

Summary of Findings

Results of Research Questions Analysis

The analysis of Research Question 1 focused on determining if there was a difference between the perception of self-regulatory skills between CR students and CNR students at the beginning of the semester as related to concentration, motivation, and time management skills. The Wilk's Lambda test showed a pretest significance between groups was .974; thus, there were no statistically significant differences between the two groups in the pretest.

The analysis of Research Question 2 focused on determining if there was a difference between the perception of self-regulatory skills between CR students and CNR students at the end of the semester as related to concentration, motivation, and time management skills. The Wilk's Lambda test showed a posttest significance between groups was .339; thus, there were no statistically significant differences between the two groups in the posttest. Despite not reaching the .05 threshold, the change in the posttest value of Wilks' Lambda indicates a slightly greater discriminatory function between the two groups at the end of the semester—decreasing from .974 at the start of the semester to .339 at the conclusion of the semester (SPSS Statistics, 2012).

The analysis of Research Question 3 focused on determining if there was a difference between the perception of self-regulatory skills between CR students and CNR students as

reflected in gain scores calculated across the semester. Multivariate analysis was accomplished to determine whether there were statistically significant differences between the two groups (CR and CNR). To calculate gain scores, the students' pretest score was subtracted from their posttest score, which generated a gain score. Gain scores were calculated for each student for each of the three dependent variables—concentration, motivation, and time management.

MANOVA comparisons of the marginal means of the three dependent variables illustrated both gains and losses in the areas of concentration, motivation, and time management, but did not demonstrate statistically significant results for either CR or CNR students. In the area of concentration, both CR and CNR students demonstrated similar positive gains from the beginning to the end of the semester. In the area of motivation, CR students demonstrated a positive gain score, while CNR students demonstrated a negative score. In time management, both groups demonstrated positive gains, however, the CR group demonstrated a larger increase in gains across the semester. While the MANOVA did not demonstrate statically significance results, the paired samples *t*-test used to follow up the MANOVA revealed statistically significant gains in the perception of all three skills in the CR students and no significant gains in the three skills in CNR students.

Unanticipated Findings

There were two unanticipated findings from this study. The first unanticipated finding was the loss of motivation in the CNR students across the semester. While some individual CNR students demonstrated no change or a slightly positive gain in motivation, as a group the CNR students demonstrated a loss of perceived motivation from the start to the conclusion of the semester. Specifically, the data demonstrated eight of the 26 CNR students had percentile gains

in motivation, while six CNR students had no change in motivation percentile and 12 students had a decrease in motivation. The percentage of CNR students who demonstrated a gain in motivation was 31% while 23% had no change and 46% percent demonstrated a decrease in motivation. The data demonstrated a percentile decrease for CNR students that ranged from -10 to -45. As a point of comparison, 20 of the 40 CR students showed an increase in motivation percentile while eight had no change and 12 had a decrease in motivation. The percentage of CR students who demonstrated a gain in motivation was 50% while 20% had no change and 30% demonstrated a decrease in motivation.

The second unanticipated finding was a lack of differentiation between male and female students, regardless of group. The expectation was males would score lower on the three dependent variables since research indicated males generally have greater academic difficulties and lower college enrollment and graduation rates when compared with females (Swanson, Vaughan, & Wilkinson, 2015). Moreover, the voluntary nature of the sample population was skewed toward single, white, female students. Despite the sample skew, males and females demonstrated no statistically significant difference in the gain scores of the three dependent variables. Examining the mean gain scores, males showed a slightly higher gain in concentration, while females showed slightly higher gains in motivation and time management.

Discussion of the Findings

The data generated from the analysis of Research Question 1 did not indicate any statistical significance between the two groups of students at the start of the semester. Although the groups were differentiated by the requirement to enroll in the college success course, the delineation between the groups was based on SAT, ACT, or entrance exam scores. While the

students who scored lower on these entrance tests were required to enroll in COLL 1000, the CR and CNR students demonstrated no significant differences in their perceptions of concentration, motivation, or time management skills at the start of the semester.

With young college students, it is perhaps not surprising that the CR and CNR groups did not demonstrate a significant difference in their perception of the three self-regulatory skills at the beginning of the semester. By design, the students who participated in the study were typically entry level students with few transfer credits and limited college experience. Since the demarcation of CR and CNR students was derived from ACT, SAT, or entrance exams scores focused on math, reading, or English skills, the lack of differentiation between the two groups of new college students at the start of the semester is not surprising.

Research Question 2 focused on the same two groups of students, and again, there were no statistically significant differences between the perception of the three self-regulatory skills between CR students and CNR students at the end of the semester. While neither Research Question 1 nor 2 demonstrated statistical significance in the differences between the two groups at either the start or conclusion of the semester, there was a change in the Wilk's Lambda result from Research Question 1 (pretest) to Research Question 2 (posttest). The Wilk's Lambda pretest significance between groups was .974 while the posttest significance between groups was .339. Although neither the pretest or posttest measures demonstrated a significance of $p < .05$, the Wilk's Lambda number changed tellingly from the beginning to the end of the semester. Despite not reaching the .05 threshold, the lower posttest p -value of Wilks' Lambda indicated a slightly greater difference between the two groups at the end of the semester (SPSS Statistics, 2012). Moreover, "smaller values of Wilks' Lambda indicate greater discriminatory ability of the function" (SPSS Statistics, 2012, p. 1). While it is not possible to infer the change in

significance was due to completing a college success course, it is possible the COLL 1000 course had a positive effect on the concentration, motivation, and time management of CR students, thus generating a smaller Wilks Lambda and a measurable difference between the two groups at the end of the semester.

The analysis of Research Question 3 focused on determining if there was a difference between the perception of self-regulatory skills between CR students and CNR students as reflected in gain scores calculated across the semester. The MANOVA comparison of the marginal means of the three independent variables illustrated differences between the CR and CNR groups in the areas of concentration, motivation, and time management, but the differences did not demonstrate statistical significance.

While the MANOVA did not show a significant difference in the gains of the CR and CNR groups, the paired samples *t*-test revealed statistically significant gains in the perception of all three skills in the CR students. The paired samples *t*-test was used to follow up the MANOVA test and to “establish whether the two means collected from the same group differ significantly” (Field, 2011, p. 784). The paired samples *t*-test for the CR students demonstrated the significance of the gains as related to each of the three dependent variables—concentration .031, motivation .045, and time management .003. The CNR student results did not demonstrate the same significance of gains as related to each of the three dependent variables—concentration .090, motivation .842 and time management .358.

The significance demonstrated in the paired samples *t*-test compares favorably to the changes in the mean concentration scores of both groups. The CR students’ mean score rose by 1.475 while the CNR students’ mean concentration score rose a little less at 1.420. The CR students’ mean motivation score rose by .850 while the CNR students’ mean motivation score

decreased by .120. Finally, the CR students' mean time management score rose by 2.050 as compared to the CNR students' mean time management score, which rose by .810.

Part of the difference between the two test results may be attributed to the way the assessments measure the data. MANOVA generated an overall test of the equality of mean vectors for several groups—it “creates a new summary dependent variable, which is a linear combination of each of the original dependent variables [and] performs an analysis of variance using the combined dependent variable” (Pallant, 2016, p. 289). Thus, MANOVA attempts to illustrate if there is a significant difference between the two groups, but it does so on the composite dependent variable rather than each dependent variable discretely (Pallant, 2016). In addition, MANOVA itself cannot show which variables are responsible for the differences in mean vectors (Field, 2011; Pallant, 2016).

Additionally, in a MANOVA, the probability of accomplishing a robust analysis is fundamentally linked to the sample size (Field, 2011; French et al., 2008; Pallant, 2016; Warne, 2014). While the sample size of 40 CR and 26 CNR students met the assumption criteria for the MANOVA, a larger sample may have improved the implication of the observations. Finally, post hoc analysis of the MANOVA was not accomplished due to the limitations of the study having only two groups and such analyses would merely repeat the results of the initial test (SPSS Statistics, 2012).

Due to the limitations associated with MANOVA, follow-up analysis was accomplished and Field (2011) notes that, while it is frequently done, running follow-up ANOVAs may not be the preferred method of finding the relationships in the dependent variables and may generate Type I errors in the same way initial analysis using multiple ANOVAs may. Rather than using follow-up ANOVAs, a paired samples *t*-test was accomplished on the three dependent variables.

The paired samples *t*-test was used since it measures subjects at two distinct times across the same dependent variables, and the analysis generates a comparison of means and significance levels across the three dependent variables (Pallant, 2016). Since this study was designed to measure CR and CNR students via pretest/posttest, with the intervening treatment of a college success class for the CR group, the paired samples *t*-test was a beneficial follow up to the MANOVA. The paired samples *t*-tests illustrated significant gains in all three dependent variables for the CR group, while the CNR group did not demonstrate significant gains in the three dependent variables.

Beyond the differences between the CR and CNR groups that may be attributed to the statistical analyses, there were other potential explanations why the two groups differed in gain scores. These differences were scrutinized with an examination of the delivery and environment of the two courses (COLL 1000 and COMP 100), along with the involvement of the college faculty and staff concerning the two courses.

First, with reference to the delivery of the two courses, COLL 1000 was a generalized course with multiple student exercises and activities. The COLL 1000 text included numerous self-assessments and exercises meant to help students identify learning styles, academic strengths and weaknesses, and critical thinking skills (to name a few). COMP 1000 is a topical class focused on the basics of computer operation and the use of the various aspects of Microsoft Office. In discussions with COMP 1000 students prior to starting the research briefing, there were two informal groups of students in the COMP class. First, based upon informal observations and discussions with students, was a group of COMP 1000 students who regularly worked with computers, either in their jobs or in their leisure activities (or both). This group was at ease with technology and noted they knew much of the course material at the outset of the

curriculum. The other informal group of COMP 1000 students related a level of intimidation regarding technology since they had never (or seldom) worked with computers. This differentiation between the CR and CNR students might have influenced the results of the study regarding the three dependent variables. Specifically, COMP students who already knew much of the material may have demonstrated a loss in concentration and motivation as the course progressed. If these students felt like COMP 1000 was merely a repeat of knowledge they had already acquired, then it is reasonable that concentration and motivation could wane. In the COLL 1000 course, there may also have been areas where students believed they already knew the material, but the variety of topics and the open discussions of these success-focused subjects might have helped retain the students' focus and motivation. In addition, COLL 1000 coursework, replete with personal exercises and self-reflective material, might have also sustained concentration and motivation.

Second, in the realm of course differentiation, COLL 1000 curriculum inherently focused on the three dependent variables. In Covey's (2014) *Seven Habits of Highly Effective College Students*, there are several sections focused on time management, which include time management exercises. Additionally, concentration and motivation are themes that run through the text. COMP 1000 utilized *Microsoft Office 2013 In Practice* (2013), and as described in the GNTC Course Catalogue, the COMP 1000 course introduces "fundamental concepts, terminology, and operations necessary to use computers. Emphasis is placed on basic functions ... terminology, the Windows environment, Internet and email, word processing software, spreadsheet software, database software, and presentation software" (Georgia Northwestern Technical College, 2016, p. 364). The focus of the two textbooks is appropriate for the two

courses, yet the perceived relevance of the specific course material suggests a possible effect on the results seen in the dependent variables between the two groups.

Next, another notable difference between the two courses was the level of engagement demonstrated by the students in the COLL classes versus the COMP classes. The primary researcher visited 60 of the 66 classes solicited to participate in the study. The COLL 1000 instructors (including the primary researcher) were in the classroom at least 15 minutes prior to start time. During this time, the instructors engaged the students on how their college experience was progressing, discussed current events, and demonstrated an overall interest in the students. The COLL 1000 instructors also reinforced the supportive nature of the personal LASSI results after the research briefing. The COLL 1000 classes were much more participative and the students asked numerous questions about the study and importance of self-regulation. In the COMP classes, some of the instructors arrived just before class start time, or in the case of one, consistently arrived just after the scheduled start time. After completion of the research briefing, few questions were asked, and there was noticeably less interaction between the primary researcher, the class, and the instructor following the briefing.

In general, on site observations demonstrated a higher level of personal engagement and positive modelling of the three dependent variables by the COLL 1000 instructors as opposed to the COMP 1000 instructors. COLL 1000 instructors were more often early to class, more engaged with the students, and presented a friendlier, open environment during the limited observation of the classes. The instructors' expectations (communicated through discussion and positive classroom manner) and instructors' involvement with the class may explain some of the differences between the groups (Hayek & Kuh, 2004; Kuh, 2006; Tinto, 2011). As noted by

Tinto (2011) “Simply put, the more students are academically and socially engaged with faculty, staff, and peers ... the more likely they are to succeed in the classroom” (p. 3).

Beyond the engagement of the individual course instructors, all COLL 1000 classes were visited by GNTC's Director of Retention/Student Navigator early in the semester. The Student Navigator position was specifically created to help students overcome obstacles they may encounter early in their academic career. The Student Navigator also solicited immediate questions from the class, provided her GNTC email, and demonstrated the online Help function where students could input any questions they might encounter. The online Help function is facilitated directly by the Student Navigator, and she immediately passes each question to the relevant agency in the college for action. COMP 1000 courses are not visited by the Student Navigator so the COMP 1000 students (those not also taking COLL 1000) are not exposed to the various avenues of help available to them. The direct involvement of the Director of Retention/Student Navigator reinforces the idea that the college is concerned with students' individual success. The students, as directly expressed after the Student Navigator briefings, felt like someone in the administration cared about them and was there to help them understand all the new college verbiage. In fact, a portion of COLL 1000 coursework focuses on an explanation of new terms and administrative positions within the college—an attempt to demystify the unfamiliar terms commonly encountered by new students.

These nurturing, explanatory discussions in COLL 1000 may have alleviated some confusion in new students. Several studies have indicated one of the chief frustrations students have when starting college is a difficulty in learning the new academic environment (DeBerard et al., 2004; Ryan, 2009; Skinner, 2004). In fact, one student described the frustration succinctly—he was “Stuck in the world of college ... bouncing from one location to the next, trying to know

what to do; it [was] frustrating” (Skinner, 2004, p. 34). The personalized attention given the COLL 1000 students may have helped them more rapidly find answers to college experience questions and avoid or overcome the typical frustrations encountered by new college students. This variance may explain some of the between-group differences, especially related to maintaining motivation throughout the semester.

Another difference between COLL 1000 and COMP 1000 courses that may have contributed to the variation between the CR and CNR students was the classroom itself. COMP 1000 classes were held in the school’s computer labs, thus each student had a desktop computer with Internet access. COLL 1000 is conducted in a regular classroom, and students visited the computer lab only on specific occasions—typically to get student email set up and to step through the school's online resources. This differentiation is logical as the COMP classes required access to the computer to complete various training exercises. However, what the computer lab also presented was the potential for students to distract themselves by surfing the Internet. It is worth noting that the instructor’s console in the computer lab had a program to monitor and restrict the students’ use of the Internet, yet, based on personal experiences utilizing the computer lab, students tended to drift off the prescribed online material and visit various, non-academic websites.

Multiple studies have confirmed the effect the connected classroom has on student concentration and focus (Bailey & Konstan, 2006; Junco & Cotten, 2012; Kraushaar & Novak, 2010; van Merriënboer & Sweller, 2005; Young, 2006). In fact, the study by Kraushaar and Novak (2010) examined computer usage and categorized activities into productive (course related) versus distractive (non-course related) tasks. In the study, the duration and extent that students engaged in distractive versus productive tasks demonstrated non-course related

activities were open and active about 42% of the time (Kraushaar & Novak, 2010). There was also a “statistically significant inverse relationship between the ratio of distractive versus productive behavior ... and academic performance” (Kraushaar & Novak, 2010, p. 241). Moreover, “the average student engage[d] in frequent multitasking during class, generating more than 65 new active windows per lecture” (Kraushaar & Novak, 2010, p. 249). Adding to the potential distraction was the time required for students to refocus on the classroom after leaving the non-course related web page (Bailey & Konstan, 2006).

The willful distraction available in an unrestricted computer lab may have influenced the between group results in gain scores. Students, sidetracked by unrelated Internet searches, may have negatively impacted their concentration and perhaps their time management. Reflecting on Kraushaar and Novak’s 2010 study, even if every sixth window opened was a website unrelated to class, the non-course related site was viewed for two minutes, and it took about two minutes to refocus on the classroom discussion, then 40 minutes of a typical 55-minute class was theoretically spent distracted from the classroom material. While this level of interference in concentration may be extreme, it suggests the potential for technology to undermine classroom concentration, which may have impacted the gain scores of the two groups (Bailey & Konstan, 2006).

One more potential reason for the differences between CR and CNR results is the connected nature of college success instructors. The COLL 1000 program developed a College Success Working Group in September 2015 and produces a quarterly newsletter that promotes lessons learned, best practices, and classroom expectations among COLL 1000 instructors. In addition, COLL 1000 has an online forum where classroom activities, presentations, and the aforementioned best practices and lessons learned are catalogued and available to all COLL 1000

instructors. A frequent topic in the working group's quarterly newsletters (and considerable online material) focuses on best practices to help inculcate self-regulatory skills such as attention, drive, and time management. During the course of this study (2016 calendar year) COMP 1000 had no such forum. Perhaps the networking of COLL 1000 instructors not only helps with the promulgation of best practices, but also promotes a consistent level of standards in the course. The connectivity of the College Success Working Group may have contributed to the variation in gains between the CR and CNR groups due to the interaction and communication of best practices, lessons learned, and expectations of the COLL 1000 curriculum. In a real sense, student performance is driven by faculty expectations—by the clarity and consistency of those expectations (Kuh, 2006; Tinto, 2011).

Ultimately, each of the aforementioned areas may have impacted the results of the study but despite the differences in curriculum and course delivery of the CR and CNR groups, the fact that the results did not demonstrate a larger difference is thought-provoking. Interestingly, the results of the MANOVA showed no statistically significant differences between the two groups with respect to the three research questions. Only the follow-up analysis using the paired samples *t*-test demonstrated statistically significant results for the CR group. It is possible the statistically significant changes demonstrated in the paired samples *t*-test of the CR group were partially due to successful completion of COLL 1000. It is also possible that completion of COLL 1000 combined with the positive differences in classroom engagement and environment previously mentioned may have merged to produce the significant change noted in the COLL 1000 students. While not all of the gains can be ascribed to the COLL 1000 course, this study suggests college success may have made a noteworthy difference in CR students' perception of their self-regulatory skills regarding concentration, motivation, and time management. Also

noteworthy was the fact that the differentiation between the groups was not as prominent as might have been expected, especially given the differences in classroom engagement and environment.

Relationship of the Study to Prior Research

Prior research and the results of this study are consistent—that college success courses demonstrate a positive, albeit limited, improvement in student success. While the paired samples *t*-test of the CR students demonstrated statistically significant gains in the dependent variables, the MANOVA analyses demonstrated no significant gains. The results of this study support the work cited in the literature review regarding the modest impact college success curriculum has on new college students. While prior research reveals some positive effects of college success curriculum, it is not universally successful. Comparing the increased delivery of college success courses to stagnant retention and graduation rates demonstrates college success courses are not universally helping students endure and graduate from college (Padgett et al., 2013; Zeidenberg et al., 2007). Nonetheless, the results of previous research has demonstrated students who complete college success courses also complete other courses at a higher rate, earn more total credits, and are more likely to persist until graduation (Derby & Smith, 2004; Mertes & Hoover, 2014; O’Gara et al., 2009; Scrivener et al., 2009; Tinnesz et al., 2006). Despite the recognized positive effects of college success courses, research has also documented a significant skills gap in incoming college students (Balduf, 2009; Mertes & Hoover, 2014; Planty et al., 2009; Tinto, 2011)

To try to reduce the educational skills gap, many colleges have developed orientation programs and college success courses to help students acclimatize to the college environment

and learn skills meant to assist them in their pursuit of a degree (Mertes & Hoover, 2014). In fact, so pervasive is the belief in college success curriculum, 94% of all colleges offer some form of FYE course (Barefoot, 2003; Center for Community College Student Engagement, 2012; Padgett et al., 2013; Zeidenberg et al., 2007). Despite the growth in college success courses, these classes are not always a mandatory part of a student's freshman experience, nor are college success courses consistently used as a part of the first-year curriculum (Cavote & Kopera-Frye, 2004; Center for Community College Student Engagement, 2012; Tinto, 1999). Research demonstrates not only that college success courses have positive effects on students, but also incoming students often lack the necessary skills to survive and succeed in college. It is not that these two issues are in question, it is the tepid results the almost universal college success programs have delivered when measured against stagnant retention and graduation rates.

Despite the institutional attempts to improve the college experience for incoming students, retention and graduation rates have remained virtually stagnant or decreased. While 2014 data illustrate a 55% retention and 22% graduation rate at two-year public colleges, when compared to the 2000 school year, retention at two-year public colleges was 48% and the graduation rate was 32% (ACT, 2015). With longitudinal examinations of retention and graduation rates as the benchmark, the benefit of FYE courses becomes uncertain (Martin et al., 2014). Unfortunately, the retention and graduation statistics suggest that dedicated FYE classes have done little to improve the classroom experience for incoming students (Tinto, 2011).

Perhaps it is not the regularity or pervasiveness of FYE courses, but rather the quality and content of the FYE courses. As described by Tinto (1999), FYE coursework is not consistently a coherent, robust, and sustaining part of the overall college curriculum and is often used as an educational vaccine. This disconnect between the proliferation of college success classes and

academic success measured by retention and graduation may be where this study offers another viewpoint. The literature suggests it is not a lack of college success courses, it is that the college success curriculum has not delivered an increase in academic success. Conceivably, the benefits of a college success course could be augmented with greater focus on self-regulatory training—specifically the role specific self-regulatory skills have on college success.

Due to the limitations of the study, the research could not show a direct relationship between increased self-regulatory skills and an increase in retention or graduation rates of GNTC students. In addition, the MANOVA did not demonstrate statistically significant results to the three research questions. While the MANOVA did not demonstrate statistically significant results, the follow-up analysis of the LASSI survey using the paired samples *t*-test suggested COLL 1000 had a positive influence on CR students' perceptions of concentration, motivation, and time management.

Theoretical Implication of the Study

While the MANOVA did not demonstrate any statistical significance in completing a college success course, follow-up analysis suggests the curriculum in COLL 1000 may have strengthened students' perception of several important self-regulatory skills. Though the results of this study do not link an increase in self-regulatory skills to increased retention or improved graduation rates, it suggests students who completed COLL 1000 at GNTC in 2016 gained an increased perception of the vital self-regulatory skills of concentration, motivation, and time management. What can also be suggested is this study demonstrated the positive, but limited aspects of college success courses. While numerous studies have shown the benefit of higher self-regulatory skills when it comes to academic performance, retention, and graduation, the

completion of a college success course is not the comprehensive remedy for relatively low student retention and stagnant graduation rates (Cavote & Kopera-Frye, 2004; Derby & Smith, 2004; Mertes & Hoover, 2014; O'Gara et al., 2009; Padgett et al., 2013; Scrivener et al., 2009; Tinnesz et al., 2006; Zeidenberg et al., 2007).

Some of the differences between the two groups might be, as stated in the limitations, a result of LASSI inaccurately measuring changes in the perception of concentration, motivation, or time management. Moreover, with voluntary participation, the information the students self-reported may not have objectively measured changes in student action or attitude. Since COLL 1000 is only a requirement for about 5% of the student body, and since only 40 CR student participated in the study, the CR group was a very small sample of the overall student body. Similarly, the sample of CNR students was a very small cross-section of the GNTC student body not required to take the college success course. With a small sample of both groups, the results of the study cannot be generalized across all students enrolled at GNTC.

Opportunities for Future Research

The initial data collected and the results of this study present a potential opportunity to continue the research longitudinally. The significance demonstrated in the paired samples *t*-test demonstrated CR student's perception of the three self-regulatory skills increased more than those of the CNR students. A continuation of the research could track student progress beyond their early semesters, from enrollment to graduation (or disenrollment), and add clarity to the possible role COLL 1000 played in the student's progress. The longitudinal study could develop a more robust data set and potentially bolster the relationships revealed in this study. A follow-up visit with the participants might help demonstrate whether or not the between group

differences endure in the participant's second year of college. Moreover, data collected over several years might support either additional class time for COLL 1000 or an improved curriculum focused on key academic skills. If COLL 1000 is shown to have a consistent positive influence and demonstrates a significant constructive impact on GNTC retention and graduation rates, this finding may suggest increasing the course requirement to all incoming students.

Another opportunity associated with a long-term study could be the opportunity to examine all 10 the self-regulatory skills in LASSI and suggest if any of the 10 are more vital when it comes to college success. In effect, a comparison of the LASSI measures could be associated with students who stayed in school and successfully earned their degree, certificate, or diploma. The relative strength of each self-regulatory skill could be evaluated and a hierarchy might develop that demonstrates which of the 10 skills are most critical to overall college success. In a similar vein, students who do not stay in college could be surveyed to research which specific skills were lacking. Again, a hierarchy might develop to support which of the self-regulatory skills were lacking in students who fail.

The development of a prioritized skill list could also help the college provide a more focused approach to COLL 1000. If, for example, motivation and time management are shown to be the top skills needed to succeed, then greater emphasis could be placed on these topics in the COLL 1000 curriculum. Moreover, this potential finding might promote the infusion of these top skills in many other courses across the college. Not only could this future research provide guidance for a more targeted approach to curriculum development, it could also be used in the enrollment process to provide incoming students specific, targeted training in key regulatory areas such as motivation and time management.

Continued research might allow the college to develop potential correlations between the type of remediation the student requires, or develop a relationship between the demographics and skill deficits. If remedial reading students also tend to score lower in certain self-regulatory skills, the college could augment the remedial curriculum to include training on specific self-regulatory skills. If students under 21 are typically most lacking in time management and concentration skills, the college could augment the admission process to focus certain skill development on certain student populations. This level of analysis was not conducted in the current study because of the small sample size, but with more robust data, the potential for generalizable attributes (skills typically missing in various slices of the student population) could improve instructional design to focus on the missing skill sets. This might lead to a self-regulatory remediation program for entering freshman akin to remedial math, but focused on their self-regulatory skill(s) deficit.

Taking the idea of remedial self-regulatory training to the individual student level, it is possible for GNTC (or any college for that matter) to use the LASSI survey in the enrollment process and potentially develop a focused regiment for the incoming students as part of the enrollment procedure. Colleges ubiquitously use entrance exams to determine shortfalls in topical skills like math and reading—the same approach may be productive in the realm of self-regulatory skills. While administration of the LASSI to incoming students would have a small monetary cost, the potential benefit in retention and graduation could offset the price of the survey. With tight financial constraints, additional research might help GNTC focus its limited budget on areas that generate the best return on investment. Continued research in the relationship between college success curriculum, the inculcation of self-regulatory skills, and the

relationship to overall college success may promote a greater understanding of the connection between the three elements and truly promote college success for more of the student body.

Summary

The results of the MANOVA did not find significant differences between the CR and CNR students in their level of self-perception vis-à-vis concentration, motivation, or time management at the start of the semester or conclusion of the semester. Likewise, the MANOVA did not find significant differences between the CR and CNR students in their gain scores across the semester. While the MANOVA did not demonstrate statistical significance reference the three research questions, a statistically significant difference in the gain scores in the CR students was identified via the paired samples *t*-test used in follow-up analysis. CR students perceived statistically significant changes in the three self-regulatory areas as compared to CNR students. Since the CR group received the treatment of a mandatory college success class, this finding suggests the course may have been at least partially responsible for the increase in the self-perception of concentration, motivation, and time management among CR students.

REFERENCES

- ACT. (2015). 2015 Retention/Completion Summary Tables. *Research and policy issues*. Retrieved from <http://www.act.org/research/policymakers/reports/graduation.html>
- Adams, C. J. (2013). 'Soft Skills' Seen as Key Element for Higher Ed. *Education Digest*, 78(6), 18-22.
- Allen, I. H., & Lester, S. M., Jr. (2012). The Impact of a College Survival Skills Course and a Success Coach on Retention and Academic Performance. *Journal of Career and Technical Education*, 27(1), 8-14.
- American Association of Community Colleges. (2010). *American Association of Community Colleges 2010 Fact Sheet*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED513942&site=ehost-live>
- Armstrong, R. A. (2014). When to use the Bonferroni correction. *Ophthalmic and Physiological Optics*, 34(5), 502-508. doi:10.1111/opo.12131
- Bailey, B. P., & Konstan, J. A. (2006). On the need for attention-aware systems: Measuring effects of interruption on task performance, error rate, and affective state. *Computers in Human Behavior*, 22(4), 685-708. doi:10.1016/j.chb.2005.12.009
- Bailey, T. (2008). *Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College*. CCRC Working Paper No.14. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED504242&site=ehost-live>
- Bailey, T., Jeong, D. W., & Cho, S.-W. (2010). Referral, Enrollment, and Completion in Developmental Education Sequences in Community Colleges. *Economics of Education Review*, 29(2), 255-270.
- Balduf, M. (2009). Underachievement among College Students. *Journal of Advanced Academics*, 20(2), 274-294.
- Bandura, A. (1977). Self-Efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review*, 84(2), 24.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, N.J.: Prentice-Hall.

- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 1175-1184. doi:<http://dx.doi.org/10.1037/0003-066X.44.9.1175>
- Bandura, A. (2001). The changing face of psychology at the dawning of a globalization era. *Canadian Psychology/Psychologie canadienne*, 42(1), 12-24. doi:10.1037/h0086876
- Barefoot, B. (2003). Findings from the second national survey of first-year academic practices. *Policy Center on the First Year of College*. Retrieved from <http://www.brevard.edu/fyc/survey/2002/findings.html>
- Bassett, P. F. (2005). Reengineering Schools For the 21st Century. *Phi Delta Kappan*, 87(1), 76-83.
- Becker, L. (2000). Analysis of Pretest and Posttest Scores with Gain Scores and Repeated Measures. *Effect size calculators*. Retrieved from <https://www.uccs.edu/lbecker/gainscore.html>
- Bednall, T. C., & Kehoe, E. J. (2011). Effects of self-regulatory instructional aids on self-directed study. *Instructional Science*, 39(2), 205-226. doi:10.1007/s11251-009-9125-6
- Britton, B. K., & Tesser, A. (1991). Effects of Time-Management Practices on College Grades. *Journal of Educational Psychology*, 83(3), 405-410.
- Calcagno, J. C., & Long, B. T. (2008). *The Impact of Postsecondary Remediation Using a Regression Discontinuity Approach: Addressing Endogenous Sorting and Noncompliance. An NCPWR Working Paper*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED501553&site=ehost-live>
- Carnevale, A., Smith, N., & Strohl, J. (2010). *Help Wanted: Projections of Jobs and Education Requirements through 2018*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED524310&site=ehost-live>
- Castellano, K. E., & Ho, A. D. (2013). *A Practitioner's Guide to Growth Models*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED551292&site=ehost-live>
- Cavote, S. E., & Kopera-Frye, K. (2004). Subject-Based First-Year Experience Courses: Questions about Program Effectiveness. *Journal of the First-Year Experience & Students in Transition*, 16(2), 85-102.
- Center for Community College Student Engagement. (2012). *A Matter of Degrees: Promising Practices for Community College Student Success--A First Look*. Retrieved from <http://www.ccsse.org/center/resources/publications.cfm>

- Chemers, M. M., Hu, L. T., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55-64. doi:10.1037/0022-0663.93.1.55
- Cherry, K. (2013). What is motivation. *About Education*. Retrieved from <http://psychology.about.com/od/mindex/g/motivation-definition.htm>
- Chun, M. M., Golomb, J. D., & Turk-Browne, N. B. (2011). A taxonomy of external and internal attention. *Annual Review of Psychology*, 62, 73-101.
- Conley, D. T. (2003). *Understanding University Success. A Report from Standards for Success*. : Center for Educational Policy Research.
- Conley, D. T., & French, E. M. (2014). Student Ownership of Learning as a Key Component of College Readiness. *American Behavioral Scientist*, 58(8), 1018-1034. doi:10.1177/0002764213515232
- Cruce, T. M., Wolniak, G. C., Seifert, T. A., & Pascarella, E. T. (2006). Impacts of Good Practices on Cognitive Development, Learning Orientations, and Graduate Degree Plans During the First Year of College. *Journal of College Student Development*, 47(4), 365-383. doi:10.1353/csd.2006.0042
- DeBerard, M. S., Spelmans, G. I., & Julka, D. L. (2004). Predictors of Academic Achievement and Retention Among College Freshmen: A Longitudinal Study. *College Student Journal*, 38(1), 66-80.
- Derby, D., & Smith, T. (2004). An Orientation Course and Community College Retention. *Community College Journal of Research and Practice*, 28(9), 763-773.
- Dobele, A. R., Gangemi, M., Kopanidis, F., & Thomas, S. (2013). At Risk Policy and Early Intervention Programmes for Underperforming Students: Ensuring Success? *Education & Training*, 55(1), 69-82.
- Duckworth, K., Akerman, R., MacGregor, A., Salter, E., & Vorhaus, J. (2009). *Self-regulated learning: A literature review*. Retrieved from <http://eprints.ioe.ac.uk/3179/1/Duckworth2009Selfregulatedpdf.pdf>
- Engstrom, C., & Tinto, V. (2008). Access without Support Is Not Opportunity. *Change: The Magazine of Higher Learning*, 40(1), 46-50.
- Ertmer, P. A., & Newby, T. J. (2013). Behaviorism, Cognitivism, Constructivism: Comparing Critical Features From an Instructional Design Perspective. *Performance Improvement Quarterly*, 26(2), 43-71. doi:10.1002/piq.21143
- Fain, P. (2012). Success begets success. *Inside Higher Education*, 12(1), 2-3.
- Field, A. (2011). *Discovering Statistics using SPSS* (2nd ed.). London: SAGE Publications.

- Flavell, J. H. (1979). Metacognition and Cognitive Monitoring: A New Area of Cognitive-Developmental Inquiry. *American Psychologist*, 34(10), 906-911.
- French, A., Macedo, M., Poulsen, J., Waterson, T., & Yu, A. (2008). Multivariate Analysis of Variance (MANOVA).
- Gardner, J. N., & Jewler, A. J. (2005). *Your college experience: Strategies for success, 6th ed.* United States of America: Wadsworth\Thomson Learning.
- Georgia Northwestern Technical College. (2016). Semester Catalog: 2016.
- Gestsdottir, S., Bowers, E., Eye, A., Napolitano, C., & Lerner, R. (2010). Intentional Self Regulation in Middle Adolescence: The Emerging Role of Loss-based Selection in Positive Youth Development. *Journal of Youth & Adolescence*, 39(7), 764-782. doi:10.1007/s10964-010-9537-2
- Ginter, E. J., & Glauser, A. S. (2010). *Life-Skills for the university & beyond* (4th ed.). Dubuque, Iowa: Kendall Hunt.
- Glass, J. C., Jr., & Garrett, M. S. (1995). Student Participation in a College Orientation Course, Retention, and Grade Point Average. *Community College Journal of Research and Practice*, 19(2), 117-132.
- Gould, S. (1996). Assessing Self-Concept Discrepancy in Consumer Behavior: the Joint Effect of Private Self-Consciousness and Self-Monitoring. *Advances in Consumer Research*, 20(1), 419-424.
- Grande, T. (2015). Conducting MANOVA in SPSS with Assumption Testing: YouTube.
- Gubitti, R. L. (2009). *A phenomenological study linking a college success course with a college preparatory mathematics course.* The Florida State University, Ann Arbor. ProQuest Dissertations & Theses A&I database.
- Hayek, J., & Kuh, G. (2004). Principles for Assessing Student Engagement in the First Year of College. *Assessment Update*, 16(2), 11-13.
- Hodges, D. Z. (2013). Georgia's Higher Education Initiatives Focus on Graduation. *Planning for Higher Education*, 41(4), 18-24.
- Hopper, C. H. (2004). *Practicing college learning strategies 3rd ed.* United States of America: Houghton Mifflin Co.
- IBM Knowledge Center. (2012). Retrieved from https://www.ibm.com/support/knowledgecenter/SSLVMB_21.0.0/com.ibm.spss.statistics.cs/discrim_bankloan_wilks.htm
- Johnson, J., & Rochkind, J. (2009). *With Their Whole Lives Ahead of Them: Myths and Realities about Why So Many Students Fail to Finish College.* Retrieved from

<https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED507432&site=ehost-live>

- Junco, R., & Cotten, S. R. (2012). No A 4 U: The Relationship between Multitasking and Academic Performance. *Computers & Education*, 59(2), 505-514.
- Kanji, G. K. (1999). *100 statistical tests*. London: Sage Publications.
- Kaplan, A. (2008). Clarifying Metacognition, Self-Regulation, and Self-Regulated Learning: What's the Purpose? *Part of a special issue entitled Metacognition, self-regulation, and self-regulated learning*, 20(4), 477-484. doi:10.1007/s10648-008-9087-2
- Karp, M. M., & Bork, R. H. (2012). *"They Never Told Me What to Expect, so I Didn't Know What to Do": Defining and Clarifying the Role of a Community College Student*. CCRC Working Paper No. 47. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED535078&site=ehost-live>
- Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Wilkinson, S., & Kristapovich, P. (2014). *The Condition of Education 2014*. NCES 2014-083. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED545122&site=ehost-live>
- Khalid, A., & Azeem, M. (2012). Constructivist Vs Traditional: Effective Instructional Approach in Teacher Education. *International Journal of Humanities and Social Science*, 2(5), 170-177.
- Kitsantas, A., Winsler, A., & Huie, F. (2008). Self-Regulation and Ability Predictors of Academic Success during College: A Predictive Validity Study. *Journal of Advanced Academics*, 20(1), 42-68.
- Kramer, M. W. (2011). Toward a Communication Model for the Socialization of Voluntary Members. *Communication Monographs*, 78(2), 233-255. doi:10.1080/03637751.2011.564640
- Krause, K.-L., & Coates, H. (2008). Students' Engagement in First-Year University. *Assessment & Evaluation in Higher Education*, 33(5), 493-505.
- Kraushaar, J. M., & Novak, D. C. (2010). Examining the Affects of Student Multitasking with Laptops during the Lecture. *Journal of Information Systems Education*, 21(2), 241-251.
- Kuh, G. D. (2006). *Student Success in College: Puzzle, Pipeline, or Pathway? Twenty-Ninth Annual Earl V. Pullias Lecture Series in Higher Education*. Fall 2006. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED536898&site=ehost-live>
- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2007). *Piecing Together the Student Success Puzzle: Research, Propositions, and Recommendations*. ASHE

Higher Education Report, Volume 32, Number 5 (1551-6970). Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ791634&site=ehost-live>

- Laerd Statistics. (2013). One-way MANOVA in SPSS Statistics. *Laerd Statistics*. Retrieved from <https://statistics.laerd.com/spss-tutorials/one-way-manova-using-spss-statistics.php>
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1987). Comparison of three theoretically derived variables in predicting career and academic behavior: self-efficacy, interest congruence, and consequence thinking. *Journal of Counseling Psychology, 34*, 293-298. doi:10.1037/0022-0167.34.3.293
- Leonard, E. (2011). *College success simplified*. New York: Longman.
- Lewin, T. (2013, August 22, 2013). Obama's Plan Aims to Lower Cost of College. *The New York Times*.
- Ley, K., & Young, D. (1998). Self-regulation behaviors in underprepared (developmental) and regular admission college students. *Contemporary Educational Psychology, 23*(1), 42-64. doi:10.1006/ceps.1997.0956
- Ley, K., & Young, D. (2005). Developmental College Student Self-Regulation: Results from Two Measures. *Journal of College Reading and Learning, 36*(1), 60-80.
- Lichtinger, E., & Kaplan, A. (2011). Purpose of Engagement in Academic Self-Regulation. *New Directions for Teaching and Learning*(126), 9-19.
- Macan, T. H., Shahani, C., Dipboye, R., & Phillips, A. (1990). College Students' Time Management: Correlations with Academic Performance and Stress. *Journal of Educational Psychology, 82*(4), 760-768.
- Maloney, W. H. (2003). Connecting the texts of their lives to academic literacy: Creating success for at-risk first-year college students. *Journal of Adolescent & Adult Literacy, 46*(8), 664-673.
- Martin, K., Galentino, R., & Townsend, L. (2014). Community College Student Success: The Role of Motivation and Self-Empowerment. *Community College Review, 42*(3), 221-241. doi:10.1177/0091552114528972
- McCabe, R. H. (2000). *No One To Waste: A Report to Public Decision-Makers and Community College Leaders*. Washington D.C.: American Association of Community Colleges.
- McMillan, J. H., & Hearn, J. (2008). Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement. *Educational Horizons, 87*(1), 40-49.
- Mertes, S. J., & Hoover, R. E. (2014). Predictors of First-Year Retention in a Community College. *Community College Journal of Research & Practice, 38*(7), 651-660. doi:10.1080/10668926.2012.711143

- Michel, N., Cater, J. J., III, & Varela, O. (2009). Active versus Passive Teaching Styles: An Empirical Study of Student Learning Outcomes. *Human Resource Development Quarterly*, 20(4), 397-418.
- Moore, C., & Shulack, N. (2009). *Student progress toward degree completion: Lesson from the research literature*. Sacramento, CA: University of California at Sacramento Retrieved from http://www.csus.edu/edinsights/PDFs/R_Student_Progress_Toward_Degree_Completion.pdf.
- Murtaugh, P. A., Burns, L. D., & Schuster, J. (1999). Predicting the Retention of University Students. *Research in Higher Education*, 40(3), 355-371.
- National Assessment Governing Board. (2012). *Reading Framework for the 2013 National Assessment of Educational Progress*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED542063&site=ehost-live>
- National Center for Education Statistics. (2013). *The Nation's Report Card: Trends in Academic Progress 2012. NCES 2013-456*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED543744&site=ehost-live>
- National Center for Education Statistics. (2015). *College navigator*. Retrieved from <http://nces.ed.gov/collegenavigator/?q=northwestern&s=GA&id=139384>
- Nonis, S. A., & Hudson, G. I. (2006). Academic Performance of College Students: Influence of Time Spent Studying and Working. *Journal of Education for Business*, 81(3), 151-159.
- Nonis, S. A., & Hudson, G. I. (2010). Performance of College Students: Impact of Study Time and Study Habits. *Journal of Education for Business*, 85(4), 229-238. doi:10.1080/08832320903449550
- O'Gara, L., Karp, M. M., & Hughes, K. L. (2009). Student Success Courses in the Community College: An Exploratory Study of Student Perspectives. *Community College Review*, 36(3), 195-218. doi:10.1177/0091552108327186
- OECD. (2014). *Education at a Glance 2014: OECD Indicators*: OECD Publishing.
- Olani, A. (2009). Predicting First Year University Students' Academic Success. *Electronic Journal of Research in Educational Psychology*, 7(3), 1053-1072.
- Padgett, R. D., Keup, J. R., & Pascarella, E. T. (2013). The Impact of First-Year Seminars on College Students' Life-Long Learning Orientations. *Journal of Student Affairs Research and Practice*, 50(2), 133-151.
- Pallant, J. (2016). *SPSS Survival Guide* (6 ed.). New York: McGraw-Hill.

- Pascarella, E. T., & Terenzini, P. T. (2005). *How College Affects Students: A Third Decade of Research. Volume 2*: Jossey-Bass, An Imprint of Wiley.
- Perry, B. (2001). Self-regulation: the second core strength. *Early Childhood Today*, 16(3), 20-21.
- Perry, N., Hutchinson, L., & Thauberger, C. (2008). Talking about teaching self-regulated learning: Scaffolding student teachers' development and use of practices that promote self-regulated learning. *International Journal of Educational Research*, 47(2), 97-108. doi:<http://dx.doi.org/10.1016/j.ijer.2007.11.010>
- Perry, N., & VandeKamp, K. (2000). Creating classroom contexts that support young children's development of self-regulated learning. *International Journal of Educational Research*, 33(7-8), 821-843. doi:[http://dx.doi.org/10.1016/S0883-0355\(00\)00052-5](http://dx.doi.org/10.1016/S0883-0355(00)00052-5)
- Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, 31(6), 459-470. doi:[http://dx.doi.org/10.1016/S0883-0355\(99\)00015-4](http://dx.doi.org/10.1016/S0883-0355(99)00015-4)
- Pintrich, P. R. (2000). Multiple Goals, Multiple Pathways: The Role of Goal Orientation in Learning and Achievement. *Journal of Educational Psychology*, 92(3), 544-555.
- Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-40. doi:10.1037/0022-0663.82.1.33
- Planty, M., Hussar, W., Snyder, T., Kena, G., Kewal-Ramani, A., Kemp, J., & Dinkes, R. (2009). *The Condition of Education 2009. NCES 2009-081*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED505415&site=ehost-live>
- Prevatt, F., Petscher, Y., Proctor, B. E., Hurst, A., & Adams, K. (2006). The Revised Learning and Study Strategies Inventory: An Evaluation of Competing Models. *Educational and Psychological Measurement*, 66(3), 448-458.
- Reeves, T. D. (2009). *Toward a Treatment Effect of an Intervention to Foster Self-Regulated Learning (SRL): An Application of the Rasch Model*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED506648&site=ehost-live>
- Robbins, S. B., Allen, J., Casillas, A., Peterson, C. H., & Le, H. (2006). Unraveling the Differential Effects of Motivational and Skills, Social, and Self-Management Measures from Traditional Predictors of College Outcomes. *Journal of Educational Psychology*, 98(3), 598-616.
- Ryan, T. E. (2009). Minor Hassles in Community College Student Life. *Community College Journal of Research and Practice*, 33(6), 502-509.

- Schneider, M. (2010). *Finishing the First Lap: The Cost of First Year Student Attrition in America's Four Year Colleges and Universities*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED512253&site=ehost-live>
- Schneider, M., & Yin, L. (2011). *The High Cost of Low Graduation Rates: How Much Does Dropping Out of College Really Cost?* Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED523102&site=ehost-live>
- Schumm, J. S. (1992). Time management: A critical study skill. *Summary of research by B. K. Britton and A. Tesser*, 35, 629-629.
- Schunk, D. H. (1996). *Self-Efficacy for Learning and Performance*. Paper presented at the Annual Conference of the American Educational Research Association (New York, NY). <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED394663&site=ehost-live>
- Schunk, D. H. (2012). *Learning theories: An educational perspective* (6th ed.). Boston, MA: Pearson.
- Schunk, D. H., & Ertmer, P. (1999). Self-Regulation and Academic Learning: Self-Efficacy Enhancing Interventions. *Journal of Educational Psychology*, 91(2), 251-260.
- Schunk, D. H., & Ertmer, P. A. (2012). Self-Regulation and Academic Learning: Self-Efficacy Enhancing Interventions. In B. Zeidner, Pintrich (Ed.), *Handbook of Self-Regulation* (pp. 631-649). San Diego: Academic Press.
- Scrivener, S., Sommo, C., & Collado, H. (2009). *Getting Back on Track: Effects of a Community College Program for Probationary Students*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED507795&site=ehost-live>
- Shukla, S. (2016). *Normality tests*. Paper presented at the New Trend in Educational Research, Gujarat University. https://www.researchgate.net/publication/299597986_Normality_Test
- Skinner, B. F. (1945). The operational analysis of psychological terms. *Psychological Review*, 52(5), 270-277. doi:10.1037/h0062535
- Skinner, N. T. (2004). *A case study of freshmen swimmers' college transition experiences*. (Ph.D.), Virginia Polytechnic Institute and State University, Ann Arbor. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.proquest.com/docview/305106275?accountid=14767> database.
- Steinberg, L. (2011). Demystifying the Adolescent Brain. *Educational Leadership*, 68(7), 42-46.
- Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences*: Routledge.

- Stoilov, T. (2012). *Time Management*: InTech. 41 Madison Avenue 31st Floor, New York, NY 10010.
- Swanson, N. M., Vaughan, A. L., & Wilkinson, B. D. (2015). First-Year Seminars. *Journal of College Student Retention: Research, Theory & Practice*, 18(4), 386-400. doi:10.1177/1521025115604811
- Thompson, B. (1994). *Why Multivariate Methods Are Usually Vital in Research: Some Basic Concepts*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED367687&site=ehost-live>
- Tinnesz, C. G., Ahuna, K. H., & Kiener, M. (2006). Toward College Success: Internalizing Active and Dynamic Strategies. *College Teaching*, 54(4), 302-306. doi:10.3200/CTCH.54.4.302-306
- Tinto, V. (1999). Taking Retention Seriously: Rethinking the First Year of College. *NACADA Journal*, 19(2), 5-9.
- Tinto, V. (2011). Taking student success seriously in the college classroom. *Ocassional Papers*, (February, 2011), 1-9. Retrieved from <http://www.league.org/publication/whitepapers/index.html> website:
- Townsend, B. K., & Twombly, S. B. (2007). Community College Faculty: Overlooked and Undervalued. *ASHE Higher Education Report*, 32(6), 1-161.
- Trueman, M., & Hartley, J. (1995). *Measuring Time-Management Skills: Cross-Cultural Observations on Britton and Tesser's Time Management Scale*. Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED417667&site=ehost-live>
- Tweedy, K., & Lunardelli, A. (2012). Multiple Analysis of Variance (MANOVA). *The Bookee*. Retrieved from <http://thebookee.net/manova-pdf-dl2647144>
- van der Meer, J., Jansen, E., & Torenbeek, M. (2010). "It's Almost a Mindset that Teachers Need to Change": First-Year Students' Need to Be Inducted into Time Management. *Studies in Higher Education*, 35(7), 777-791.
- van Merriënboer, J. J. G., & Sweller, J. (2005). Cognitive Load Theory and Complex Learning: Recent Developments and Future Directions. *Educational Psychology Review*, 17(2), 147-177.
- Warne. (2014). A Primer on Multivariate Analysis of Variance (MANOVA) for Behavioral Scientists. *Practical Assessment, Research & Evaluation*, 19(13-18), 1-10.
- Weinstein, C., Palmer, D., & Acee, C. (2016). Learning and study strategies inventory users manual. In University of Texas Austin (Ed.), (3 ed.): H&H Publishing Company

- Windham, P. (2006). Taking student life skills course increases academic success. *Florida Department of Education, 1*(31), 1-15.
- Wolf, P. J. (2007). Academic Improvement through Regular Assessment. *Peabody Journal of Education, 82*(4), 690-702.
- Wolters, C., Pintrich, P., & Karabenick, S. (2005). Assessing Academic Self-Regulated Learning. In K. A. Moore & L. H. Lippman (Eds.), *What Do Children Need to Flourish?* (Vol. 3, pp. 251-270): Springer US.
- Wood, J., & Palmer, R. T. (2014). Academic Achievement and the Community College: Perspectives of Black Male Students on the Importance of "Focus". *College Student Affairs Journal, 32*(1), 141-153.
- Wyre, S. (2011). Efficacious Metacognition. *Education Ezine, Vol. 1*, pp. 12-16.
- Yip, M. C. W., & Chung, O. L. L. (2005). Relationship of Study Strategies and Academic Performance in Different Learning Phases of Higher Education in Hong Kong. *Educational Research and Evaluation, 11*(1), 61-70.
- Young, J. (2006). The Fight for Classroom Attention: Professor vs. Laptop. *Chronicle of Higher Education, A27-A29*.
- Zajacova, A., Lynch, S., & Espenshade, T. (2005). Self-Efficacy, Stress, and Academic Success in College. *Research in Higher Education, 46*(6), 677-706. doi:10.1007/s11162-004-4139-z
- Zeidenberg, M., Jenkins, D., & Calcagno, J. C. (2007). *Do Student Success Courses Actually Help Community College Students Succeed? CCRC Brief. Number 36* (1526-2049). Retrieved from <https://proxy.lib.utc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED499357&site=ehost-live>
- Zimmerman, B. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology, 81*, 329-339. doi:10.1037/0022-0663.81.3.329
- Zimmerman, B. (1990). Self-regulated learning and academic achievement: an overview. *Educational Psychologist, 25*, 3-17. doi:10.1207/s15326985ep2501_2
- Zimmerman, B. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-40).
- Zimmerman, B. (2008). Investigating Self-Regulation and Motivation: Historical Background, Methodological Developments, and Future Prospects. *American Educational Research Journal, 45*(1), 166-183.

Zimmerman, B., & Martinez-Pons, M. (1986). Development of a Structured Interview for Assessing Student Use of Self-Regulated Learning Strategies. *American Educational Research Journal*, 23(4), 614-628.

Zimmerman, S., Phelps, E., & Lerner, R. M. (2008). Positive and Negative Developmental Trajectories in U.S. Adolescents: Where the Positive Youth Development Perspective Meets the Deficit Model. *Research in Human Development*, 5(3), 153-165.
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APPENDIX A
GNTC RESEARCH APPROVAL LETTER

October 15, 2015

Mr. Pete McDonald
President
Office A123 Floyd County Campus
One Maurice Culberson Drive
Rome, Georgia 30161

Dear Mr. McDonald:

The purpose of this letter is gain preliminary approval to conduct research for my doctoral dissertation using a sample population of Georgia Northwestern Technical College (GNTC) students. The requirement to document preliminary approval will allow me to present my proposal to the University of Tennessee Chattanooga (UTC) Institutional Review Board (IRB). To this end, I will briefly cover the rationale and methodology of the proposed study. This preliminary approval does not obviate the need to present the entire proposal to the GNTC IRB after approval from UTC and prior to commencing any research.

The proposed study is designed to compare students enrolled in College Survival and Success (COLL 1000) and students who do not take COLL 1000 but are enrolled in a characteristic freshman general education class. This study plans to use students enrolled in Introduction to Computers (COMP 1000) as the control group. The study will examine both groups via pretest and posttest surveys in an attempt to establish the relationship between successful completion of a college success course and the student's ability to comprehend and employ the critical skills of time management, concentration, and motivation. A more fully detailed description of the procedures of the study is provided in the attachment.

The research sample will consist of students who voluntarily elect to complete the pretest and posttest instrument and accompanying biographical survey. All eligible students over 18 will be invited to take part but participation in the study will be purely voluntary and participation will have no bearing on the student's grade in the course. Students can decline the survey or drop out of the survey at any time without penalty. Steps are in place to assure anonymity and students will be provided an informed consent form prior to participation. Moreover, instructors administering the survey will indicate that absolutely no stress or harm will come to the students regardless of participation, that all information will be held in the strictest confidence, and that the research material will only be used in support of this study.

The instrument to be used in the study is the Learning and Study Strategies Inventory (LASSI) specifically targeting three of the 10 assessment areas in LASSI—the time management, concentration, and motivation components. The Learning and Study Strategies Inventory is a widely accepted research instrument with high reliability and validity and has been used by more

Executive Summary

Request for preliminary approval to conduct research using a sample population of Georgia Northwestern Technical College (GNTC) students

Purpose/Objectives of Research: The proposed study will survey two groups of students--those required to take a college success course and students who do not take this course. The study will examine the differences between the two groups and changes within the two groups in an attempt to establish changes in student's self-perception of three critical self-regulatory skills—time management, concentration, and motivation. Ultimately, the goal of the study is to provide better insight into how colleges can more effectively teach students the self-regulatory skills needed to survive and thrive in college.

Relevant Background and Rationale for the Research: As the number of students enrolled in degree granting institutions swells, student retention and graduation rates are not keeping pace. The United States post-secondary education system has grown from approximately nine million students in 1980, to over 20 million in 2011. As college enrollment has increased, the need for non-credit or low-credit remedial courses has grown proportionally. The combination of explosive growth in enrollment, increased need for remediation, poor retention, and low graduation rates underscores the need for improved initiatives to foster success.

One of the potential ways to increase the success of incoming students is to prepare them for the rigors of college through guidance and training in self-regulatory skills. In fact, research on regulatory proficiency has established a set of self-regulatory skills students need (and often lack): educational goal setting, concentration on instruction, effective organization, effective use of resources, monitoring of performance, belief in ones capability to learn, and effective time management. Students who lack these self-regulatory skills frequently find themselves struggling in their first semester of college.

Furthermore, students' overall achievement is powerfully associated with a solid self-regulatory foundation that includes the ability to manage time, focus on material, and maintain motivation. A study conducted at Queen Mary College in 2008 examined students who struggled to adapt to the rigors of college and ascribed explicit importance to poor time management, a lack of focus, and low motivation. The Queen Mary College study specifically mentioned the need to focus on motivation and time management to improve student success and expressly suggested that time management strategies should be part of freshman orientation course.

Methods/Procedures: This study will focus on the impact of successfully completing an College Survival and Success (COLL 1000) at Georgia Northwestern Technical College (GNTC). The research will use a pretest posttest method using the Learning and Study Strategies Inventory (LASSI), developed by Weinstein and Palmer in 2002. LASSI is a widely used instrument used by more than 2200 colleges and universities in the United

States. Not only is the LASSI test widely used, it also has the unique ability to focus on the self-regulatory skills of time management, concentration, and motivation. Specific to this study, the time management scale of LASSI assesses students' use of time management principles to accomplish academic tasks, organize their time and effort, and anticipate scheduling issues and stay up to date on class work. The motivation scale assesses students' diligence, self-discipline, and willingness to exert the effort necessary to complete academic requirements. The concentration scale assesses students' ability to focus and sustain their attention on academic tasks.

Subject Population: The study will utilize classroom students (no online students) enrolled at GNTC. The study will survey COLL 1000 students and a control group of freshman students who are not required to take COLL 1000. For this study, the control group will consist of students enrolled in Introduction to Computers (COMP 1000).

Since the study will examine students in both COLL1000 and COMP 1000, there is the potential to have students enrolled in both courses. In this eventuality, students enrolled in both COLL 1000 and COMP 1000 will only be observed in their COLL 1000 course. Because COMP 1000 tends to enroll a higher number of students than COLL 1000, the assumption is this methodology will balance the number of participants from each group.

The sample will consist of a subset of COLL 1000 and COMP 1000 students—those enrolled in classroom modality (no purely online courses will be sampled) and who volunteer to complete the pretest and posttest LASSI instrument and accompanying biographical survey. All students over 18 will be invited to volunteer in the study and non-participation will have no bearing on the student's grade in either course.

Using Slovin's formula the target sample size for this study is roughly 150 respondents from COLL 1000 and 150 from COMP 1000. If enrollment or participation rates are insufficient to obtain the number of surveys in one semester, a second semester will be utilized to generate the requisite number of responses.

Informed Consent: All participants will be provided an informed consent form and briefed on the details of consenting to participate in the research. The research is purely voluntary and there are no ramifications to the sample population should they elect not to participate.

Risks/Benefits to Participants and Precautions to Be Taken: The risks to the participants are inconvenience and loss of anonymity. The ability to complete the surveys outside the classroom mitigates the inconvenience of having to accomplish the survey during a regular class period. To mitigate a loss of anonymity, the biographical survey and pretest/posttest instruments will be identified by the last six digits of the student's unique student number. The only reason for identifying the surveys is to ensure proper pretest/posttest matching and thus research validity and reliability.

The benefits of the research may help both future COLL 1000 students and instructors because it may indicate the criticality of specific self-regulatory skills and demonstrate a

hierarchy to the specific skills. This information may suggest areas of instructional focus for future COLL 1000 classes and the overall benefit of the course as it relates to student success.

Privacy/Confidentiality: Records will be identified by the last six digits of the student's unique student number in order to ensure proper pretest/posttest matching and thus research validity and reliability. Using a portion of the student number will not make the surveys anonymous, but will maintain confidentiality. Access to records will be limited to the primary researcher Michael Breakey, the UTC Academic advisor, Dr Ted Miller, and the GNTC representatives of Dr. Vangrov and McCannon. All records (to include Informed Consent forms) will be maintained by the primary researcher in a locked container for two years after completion of the study.

Mike Breakey

Mike Breakey
College Success and History instructor
Georgia Northwestern Technical College

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APPENDIX B
INSTITUTIONAL REVIEW BOARD FORM A

FOR IRB USE ONLY
IRB #: _____
Date Submitted: _____
Date Approved: _____

FORM A:

APPLICATION FOR REVIEW OF RESEARCH INVOLVING HUMAN SUBJECTS

This form should not be used if your research involves protected health information. Please refer to the HIPAA section of the website (www.utc.edu/irb) for the appropriate forms.

Investigator’s Assurance: By submitting this protocol, I attest that I am aware of the applicable principles, policies, regulations, and laws governing the protection of human subjects in research and that I will be guided by them in the conduct of this research.

Title of Research:	The relationship between a college success course and student perception of the self-regulatory skills of concentration, motivation, and time management
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		g	Mail Code	Email
Principal Investigator	Michael Breakey	LEAD		ksw739@mocs.utc.edu
Other Investigator	UTC LEAD	LEAD		utclead@utc.edu
Other Investigator				
Faculty Advisor (for student apps)	Dr Ted Miller	LEAD	2242	Ted-Miller@utc.edu

Please check that all of the following items are attached (where applicable) before submitting the application:

- Any research instruments (any tests, surveys, questionnaires, protocols, or anything else used to collect data).
- All informed consent documents (see www.utc.edu/irb for sample informed consent documents).
- Permission from applicable authorities (principals of schools, teachers of classrooms, etc.) to conduct your research at their facilities.
- Appropriate permission and signatures from your faculty advisor (if applicable).
- Please be sure the entire application is filled out completely.

****All student applications must be either signed by the faculty advisor then scanned and submitted electronically, OR submitted directly by the faculty advisor.**

All applications should be submitted by email to instrb@utc.edu.

Anticipated dates of research project: 01/11/2016 through 12/31/2016.

Please allow 2 weeks for IRB processing from date of submission.

Please be aware that you cannot begin your research until it has been officially approved by the IRB.

Type of Research:

Dissertation/Thesis

Class Project

Faculty Research (Please see information at the bottom of this form if this research pertains to a grant opportunity)

Other (please explain):

Purpose/Objectives of Research: (Briefly state, in non-technical language, the purpose of the research and the problem to be investigated. When possible, state specific hypotheses to be tested or specific research questions to be answered. For pilot or exploratory studies, discuss the way in which the information obtained will be used in future studies so that the long-term benefits can be assessed.)

Ultimately, the goal of the study is to provide better insight into how colleges can more effectively educate students on self-regulatory skills needed to survive and thrive in college. The proposed study will survey two groups of students--those required by their institution to take a college success course and students who do not take this course. The study will examine the differences between the two groups and changes within the two groups in an attempt to establish changes in student's self-perception of three critical self-regulatory skills—concentration, motivation, and time management. Self-regulatory skills have been shown to be teachable and essential to various measures of student success (Bednall & Kehoe, 2011; Karp & Bork, 2012; Stoilov, 2012; van der Meer et al., 2010).

Research Question 1 asks: Is there a difference between the perception of self-regulatory skills as related to time management skills, concentration skills, and motivation skills between CR students and CNR students at the beginning of the semester?

Research Question 2 asks: Is there a difference between the perception of self-regulatory skills as related to time management skills, concentration skills, and motivation skills between CR students and CNR students at the end of the semester?

Research Question 3 asks: Is there a difference in the perceptions of self-regulatory skills as related to time management skills, concentration skills, and motivation skills between CR students and CNR students as reflected from gain scores calculated across the semester?

Relevant Background and Rationale for the Research: (This section should present the context of the work by explaining the relation of the proposed research to previous investigations in the field. Include citations for relevant research. Please include at least twice as many peer reviewed articles as “lay” publications.)

As the number of students enrolled in degree granting institutions swells, student retention and graduation rates are not keeping pace. The United States post-secondary education system has grown from approximately nine million students in 1980, to over 20 million in 2011 (Tinto, 2011). As college enrollment has increased, the need for non-credit or low-credit remedial courses has grown proportionally (Maloney, 2003). The combination of explosive growth in enrollment, increased need for remediation, poor retention, and low graduation rates underscores the need for improved initiatives to foster success.

One of the potential ways to increase the success of incoming students is to prepare them for the rigors of college through guidance and training in self-regulatory skills (Ley & Young, 2005; Pintrich & De Groot, 1990; Schunk & Ertmer, 2000; Tinnesz, Ahuna, & Kiener, 2006; Zimmerman, 2008). In fact, research on regulatory proficiency has established a set of self-regulatory skills students need (and often lack): educational goal setting, concentration on instruction, effective organization, effective use of resources, monitoring of performance, belief in one's capability to learn, and effective time management (Karp & Bork, 2012; Schunk & Ertmer, 2000; Tinnesz et al., 2006). Students who lack these self-regulatory skills frequently find themselves struggling in their first semester of college (Karp & Bork, 2012).

Furthermore, students' overall college achievement is powerfully associated with a solid self-regulatory foundation that includes the ability to manage time, focus on material, and maintain motivation (Balduf, 2009; Karp & Bork, 2012; Moore & Shulack, 2009; Schunk & Ertmer, 2000; Zimmerman, 2008). A recent (2008) study conducted at Queen Mary College examined students who struggled to adapt to the rigors of college and ascribed explicit importance to poor time management, a lack of focus, and low motivation (Balduf, 2009). The Queen Mary College study specifically mentioned the need to focus on motivation and time management to improve student success and expressly suggested, "time management strategies should be part of freshman orientations" (Balduf, 2009, p. 289). One potential way to reinforce critical self-regulatory skills is through coursework and instruction explicitly designed for that purpose (Ley & Young, 1998).

Theoretically, college success courses are designed to provide incoming students with techniques to develop self-regulation skills that help them plan and adapt their actions to attain personal educational goals (Karp & Bork, 2012; Ley & Young, 1998; O'Gara et al., 2009; Zimmerman, 2000). Research combined with multiple studies reveal students who complete a college success course complete other courses at a higher rate, earn more total credits, maintain higher GPAs, and are more likely to persist until graduation (Cavote & Kopera-Frye, 2004; Derby & Smith, 2004; Mertes & Hoover, 2014; O'Gara et al., 2009; Scrivener, Sommo, & Collado, 2009; Tinnesz et al., 2006). The problem universities face is the expansion of college success courses across nearly all institutions has not coincided with increased student retention and graduation rates. This may be attributable to a lack of specific training in self-regulatory strategies presented within these college success courses.

Methods/Procedures: (Briefly discuss, in non-technical language, the research methods which directly involve use of human subjects. Discuss how the methods employed will allow the investigator to address his/her hypotheses and/or research question(s).)

This study will focus on the impact of successfully completing an institutionally specific college success course. The specific course, College Survival and Success, is designated COLL 1000 at Georgia Northwestern Technical College (GNTC). COLL 1000 is not a universal requirement for students enrolled at GNTC. The requirement to enroll in COLL 1000 is based on student test scores. Students who do not achieve the minimum required SAT or ACT scores are administered a placement test during college application. Those who score below a set level on the placement test are required to take between one and three remedial courses (depending on scores) in reading, English, and/or math. If they are required to take a remedial course, they must also take COLL 1000.

The research will use a pretest posttest method using the Learning and Study Strategies Inventory (LASSI), developed by Weinstein and Palmer in 2002 and revised for 2016 with the third edition. The “Learning and Study Strategies Inventory is a widely used instrument ... estimated to be in use by more than 1,300 universities and colleges in the United States” (Olaussen & Braten, 1998, p. 3). The LASSI website now lists 2274 institutional users. Not only is the LASSI test widely used, it also has the unique ability to focus on the self-regulatory skills of concentration, motivation, and time management (Weinstein et al., 2016).

Furthermore, LASSI is specifically designed to examine “pre-post achievement measure for students participating in programs or courses focusing on learning strategies and study skills” (Weinstein et al., 2016, p. 7). Finally, LASSI scores have been shown to predict academic performance and strongly correlate to student grade point averages (Yip & Chung, 2005).

Specific to this study, the Time Management scale of LASSI assesses students’ use of time management principles to accomplish academic tasks, organize their time and effort, and anticipate scheduling issues and stay up to date on class work (Weinstein et al., 2016). The Motivation scale assesses students’ diligence, self-discipline, and willingness to exert the effort necessary to successfully complete academic requirements (Weinstein et al., 2016). The Concentration scale assesses students’ ability to focus and sustain their attention on academic tasks (Weinstein et al., 2016). These scales “measure how students...self-regulate or control the entire learning process [including] using their time effectively, focusing attention and maintaining ...to determine if learning demands...have been met” (Weinstein et al., 2016, p. 5).

Procedurally, the researcher or designated representative will facilitate online administration of the informed consent, biographical survey, and the LASSI instrument to the two student populations—COLL 1000 students and non-COLL 1000 students enrolled in Introduction to Computers (COMP 1000). COMP 1000 is a representative freshman course typically taken by first semester students and is not a remedial course that has COLL 1000 as a prerequisite. Students who are enrolled in both COLL 1000 and COMP 1000 will be surveyed only in COLL 1000. In addition, any COMP 1000 students who have completed COLL 1000 will not be surveyed in COMP 1000.

Student volunteers enrolled in COLL 1000 or COMP 1000 will be briefed on the purpose of the study, directions for completing the online material—the informed consent form, biographical survey, and LASSI instrument—protection of personal information, and the purely voluntary nature of the survey. Next, student volunteers will receive an instruction sheet directing them to the Qualtrics site where they may acknowledge informed consent and complete a short biographical survey. If any student does not wish to participate, they may opt out of the study at any time without prejudice. If a student indicates they are under 18 on the biographical survey, they will automatically be removed from the survey via Qualtrics logic. Finally, any COMP 1000 student who indicates they have completed COLL 1000 with a grade of C or better will be removed from the survey via Qualtrics logic. Only after the informed consent form and biographical survey are complete will Qualtrics link the student to the online LASSI pretest instrument via LASSI's password protected website.

The LASSI instrument requires students to enter the unique number associated with this specific study. Next, the students enter their name, student ID number, and email address. Once the volunteers have completed the LASSI pretest, they will receive a copy of the report and a unique key code to access the posttest at the end of the semester. Students will also have the ability to have a copy of the LASSI results emailed to them at no cost.

The primary researcher and faculty advisor will have access to the administrative portion of LASSI, which allows a search of LASSI via student name, key code, ID number, and administration date. The capability to search the administration section of LASSI allows the primary researcher or academic advisor to locate student key codes from the pretest. If a student forgets their key code from the LASSI pretest, it will be furnished by the primary researcher (or designated representative) by means of a classroom visit and a student-specific email near the end-of-semester. The email reminder will both remind students to complete the posttest and help them log in to the posttest should they forget their key code. Only students who have a key code on file in the LASSI website (indicating completion of the LASSI pretest) will receive the email and classroom key code reminder.

The LASSI pretest will be available online through the third week of the semester. Access to both the biographical survey and LASSI will be controlled via a start and end date programmed into Qualtrics and LASSI. The rationale behind the three-week limit for the pretest is to preclude the introduction of training in self-regulatory techniques. Students who do not complete the pretest and associated materials within the prescribed time limits will not continue in the study. The Qualtrics and LASSI sites will be taken down automatically and students who do not complete the entire LASSI pretest will not receive a key code from the LASSI website that allows completion of the LASSI posttest.

The posttest instrument will be made available roughly two weeks prior to end of semester final exams and will be active through finals. Access to the posttest will be controlled via start and end dates programmed into LASSI, along with the key code students receive only after completing the entire LASSI pretest. Once the LASSI posttests are completed at the end of the semester, the number of respondents will be analyzed to ensure a balanced quantity of CR and CNR results are available. Again, the target number is approximately 150 from each of the two courses.

Subject Population: (List the size of population to be used, and check if any of the populations listed apply to the study. Discuss criteria of selection or exclusion, population from which they will be selected, and duration of involvement. *NOTE: Federal guidelines require selection of subjects to be equitable within the exclusions, and subjects meeting the criteria cannot be discriminated against for gender, race, social or financial status, or any other reason.*)

The study will utilize adult classroom students (no online students) and take place across the six campuses of GNTC, a two-year technical college with campuses in Catoosa, Polk, Floyd, Walker, Whitfield, and Gordon counties. GNTC offers a college success course (COLL 1000) at all six campuses. The Fall 2015 course schedule offered 18 COLL 1000 courses of which 13 were classroom-based. COLL 1000 had approximately 220 students taking the course in a classroom setting in Fall 2015.

This study will also use a control group of freshman students who are not required to take COLL 1000. For this study, the control group will consist of students enrolled in Introduction to Computers, delineated COMP 1000. COMP 1000 is a typical first semester course for incoming freshman, does not have any prerequisites, and does not restrict Learning Support or Provisional Status from enrolling. Moreover, COMP 1000 is a prerequisite for 18 different first year classes in the GNTC catalog thus it tends to be a first semester class for a large percentage of entering freshmen.

Since the study will examine students in both COLL 1000 and COMP 1000, there is the potential to have students enrolled in both courses. In this eventuality, students enrolled in both COLL 1000 and COMP 1000 will only be observed in their COLL 1000 course. Because COMP 1000 tends to enroll a higher number of students than COLL 1000, the assumption is this methodology will balance the number of participants from each group.

The sample will consist of a subset of COLL 1000 and COMP 1000 students—those enrolled in classroom modality (no purely online courses will be sampled) and who volunteer to complete the online pretest and posttest LASSI instrument and accompanying biographical survey. All students will be invited to take part voluntarily, but participation in the study will have no bearing on the student's grade in either course.

Using Slovin's formula and an error tolerance of .05 generates a required sample size of 161 COMP 1000 surveys and 141 COLL 1000 surveys. This sample size closely matches a National Education Association formula where the desired sample size for COLL 1000 and COMP 1000 would equate to and 140 and 159 respondents respectively.

Merely totaling the surveys of both COLL 1000 and COMP 1000 is insufficient because the total number of respondents, while appearing adequate, could be weighted toward one group or the other due to one course completing surveys at a much greater rate than the other. To avoid this, the study will utilize a target sample from each group—the CR and CNR groups.

Based on the aforementioned information, the target sample size for this study is roughly 150 respondents from COLL 1000 and 150 from COMP 1000 thus a total of about 300 freshman

adult students will participate in this study. If enrollment or participation rates are insufficient to obtain the number of surveys in one semester, a second semester will be utilized to generate the requisite number of responses.

There is no selection or exclusion criteria—all students enrolled in the specified classroom courses are eligible to participate. Students are free to elect non-participation without explanation or consequence.

Approximate Number of Subjects: 300

Subjects Include (check if applicable):

- Minors (under 18)
- Involuntarily institutionalized
- Mentally handicapped
- Health Care Data/Information

IF YOU HAVE CHECKED THE BOX PERTAINING TO HEALTH CARE DATA, BE SURE YOU HAVE COMPLETED ANY NECESSARY HIPAA FORMS AS WELL.

Informed Consent: Describe the consent process and attach all consent documents. See www.utc.edu/irb for sample informed consent forms and complete information regarding informed consent.

All research must be conducted with the informed consent (signed or unsigned, as required) **of all participants:**

The following consent form will be given to all participants. No one will participate without first agreeing and signing. The researcher or his designee will be present to answer any questions.

Subject: The relationship between a college success course and student perception of the self-regulatory skills of concentration, motivation, and time management.

I would appreciate your assistance with this research project on the effects of a college success course and student perception of the self-regulatory skills of concentration, motivation, and time management. The project is being conducted by Michael Breakey, a graduate student attending the University of Tennessee, Chattanooga and will be used in a doctoral dissertation. The research will help further the understanding of college student's inculcation of skills critical to college success. The hypothesis is students will recognize a higher level of self-regulation, specifically in concentration, motivation, and time management if they successfully complete a college success course.

To help with the research, I ask you to complete the online informed consent form, the online biographical survey, and the Learning and Study Strategies Inventory (LASSI) questionnaire. The biographical survey and LASSI inventory should take approximately 15 minutes. Your participation is voluntary, so if you do not wish to participate, simply selecting **no, thank you** on the informed consent page will exit you from the survey. Clicking **take the survey** will be considered your consent to participate. Completion or non-completion of the surveys has no

bearing on your grade in this class and you may stop participation at any time during the study without penalty.

Your participation and responses will be confidential and though the results of the research may be published, your name and institution will not be known. The biographical survey and LASSI inventory are password protected and only you, the researcher, and the academic advisor will have access. Once you complete the first LASSI inventory, you will immediately receive your results and a key code to allow taking the second survey at the end of the semester. If you forget the key code, I will provide it prior to taking the second LASSI inventory.

Thank you in advance as I truly appreciate your participation. If you have any questions regarding the research, contact either the researcher, Michael Breakey, 423-305-0567 or Dr. Ted Miller (academic advisor), at 423-425-4540. If you have any questions regarding your rights as a research subject, please contact the University of Tennessee, Chattanooga Institutional Review Board at 423-425-4289. Additional contact information is available at www.utc.edu/irb.

Thank you again for your help.

Michael Breakey

Michael Breakey

PhD. Candidate—College of Health, Education & Professional Studies

University of Tennessee at Chattanooga

Chattanooga, Tennessee

Incentives: What incentives will be offered, if any? (Indicate whether or not subjects are to be paid, how and when they will be paid, amount, and the rationale for payment. The proposed payment should be commensurate with the time required for participation, travel expenses, and/or inconvenience assumed by the subject, but should not be so great as to constitute undue influence on an individual to assume risks of study participation that would not otherwise be undertaken.)

None

Risks/Benefits to Participants and Precautions to Be Taken: (This section should discuss all possible risks and discomforts from participation in the study, indicating both severity and likelihood of occurrence for each. Risks may range from the physical to the psychological. Inconvenience, travel, or boredom may also be considered risks of participation in the study. The methods that will be used to minimize these risks should also be discussed. Many studies hold the potential for loss of privacy and confidentiality. These concerns should be noted in this section. If subjects are vulnerable populations, or if risks are more than minimal, please describe what additional safeguards will be taken.

Potential risks to the participants are inconvenience and loss of anonymity. The ability to complete the biographical survey and LASSI inventory online mitigates the inconvenience of having to accomplish the survey during a regular class period. Note that the allowance for

completion of the survey is limited. Pretest surveys will only be used if completed by the third week of the semester. Posttests will be given approximately two weeks prior to final exams.

To promote confidentiality, the informed consent form and biographical survey will be accomplished online via password-protected websites. LASSI requires students to enter the unique number associated with this specific study, their name, student ID number, and email address. Once the volunteers have completed the LASSI pretest, they will receive a copy of the report and a unique key code to access the posttest at the end of the semester. Students will also have the ability to have a copy of the LASSI results emailed to them at no cost.

Only the primary researcher and faculty advisor will have access to the administrative portion of LASSI, which allows a search of LASSI via student name, key code, ID number, and administration date.

The benefits of the research may help both future COLL 1000 students and instructors because it may indicate the criticality of specific self-regulatory skills and demonstrate a hierarchy to the specific skills. This information may suggest areas of instructional focus for future COLL 1000 classes and the overall benefit of the course as it relates to student success.

In your opinion, do benefits outweigh risks? Yes No

Privacy/Confidentiality: (Please describe whether the research would involve observation in situations where subjects have a reasonable expectation of privacy. If identifiable existing records are to be examined, has appropriate permission been sought, i.e. from institutions, subjects, and physicians? What provision has been made to protect the confidentiality of sensitive information about individuals? Are research records anonymous? If not, there should be discussion of how records will be coded, and where and how they will be stored. It should also note where and how signed consent forms will be maintained. If video or audio tapes will be made as part of the study, disposition of these tapes should be addressed. In general, the IRB recommends that research tapes be destroyed as soon as the needed data are transcribed, and that only restricted study personnel be allowed access to the tapes. List the names of individuals who will have access to names and/or data. If other procedures are proposed [for example, retaining tapes for future use, allowing individuals other than study investigators access to the tapes] justification should be presented and separate.)

Approval to conduct the research at GNTC has been vetted through the Dean of General Education, Dr. Jodie Vangrov, and the Vice President of Academic Affairs, Dr. Mindy McCannon. The research has been approved by GNTC President Bill McDonald.

To promote confidentiality, the informed consent form and biographical survey will be accomplished online via password-protected websites. LASSI requires students to enter the unique number associated with this specific study, their name, student ID number, and email address. Once the volunteers have completed the LASSI pretest, they will receive a copy of the report and a unique key code to access the posttest at the end of the semester.

Access to records will be limited to the primary researcher, Michael Breakey and UTC academic advisor, Dr. Ted Miller. All records will be maintained by the primary researcher in a secure database for two years after completion of the study.

Signatures: ** If submitted by a faculty member, electronic (typed) signatures are acceptable. If submitted by a student, please print out completed form, obtain the faculty advisor’s signature, scan completed form, and submit it via email. Only Word documents or PDF files are acceptable submissions.

Michael G Breakey

12/14/2015

Principal Investigator or Student

Date

Ted L. Miller

12/14/15

Faculty Advisor (for student applications)

Date

If this research pertains to a grant opportunity:

Grant submission deadline:

Funding Agency and ID Number:

APPENDIX C
INFORMED CONSENT FORM

INFORMED CONSENT FORM

Subject: The relationship between a college success course and student perception of the self-regulatory skills of concentration, motivation, and time management.

I would appreciate your assistance with this research project on the effects of a college success course and student perception of the self-regulatory skills of concentration, motivation, and time management. The project is being conducted by Michael Breakey, a graduate student attending the University of Tennessee, Chattanooga and will be used in a doctoral dissertation. The research will help further the understanding of college student's inculcation of skills critical to college success. The hypothesis is students will recognize a higher level of self-regulation, specifically in concentration, motivation, and time management if they successfully complete a college success course.

To help with the research, I ask you to complete the online biographical survey and the Learning and Study Strategies Inventory (LASSI) questionnaire. The biographical survey and LASSI inventory should take approximately 15 minutes. Your participation is voluntary, so if you do not wish to participate, simply selecting **no, thank you** on the informed consent page will exit you from the survey. Clicking **take the survey** will be considered your consent to participate. Completion or non-completion of the surveys has no bearing on your grade in this class and you may stop participation at any time during the study without penalty.

Your participation and responses will be confidential and though the results of the research may be published, your name and institution will not be known. The biographical survey and LASSI inventory are password protected and only you, the researcher, and the academic advisor will have access. Once you complete the first LASSI inventory, you will immediately receive your results and a key code to allow taking the second survey at the end of the semester. If you forget the key code, I will provide it prior to taking the second LASSI inventory.

Thank you in advance as I truly appreciate your participation. If you have any questions regarding the research, contact either the researcher, Michael Breakey, 423-305-0567 or Dr. Ted Miller (academic advisor), at 423-425-4540. If you have any questions regarding your rights as a research subject, please contact the University of Tennessee, Chattanooga Institutional Review Board at 423-425-4289. Additional contact information is available at www.utc.edu/irb.

Thank you again for your help.

Michael Breakey

Michael Breakey

PhD. Candidate—College of Health, Education & Professional Studies

University of Tennessee at Chattanooga

Chattanooga, Tennessee

APPENDIX D
BIOGRAPHICAL SURVEY

Biographical Survey

Demographic information for use solely in support of a doctoral research conducted by Michael Breakey, a GNTC instructor and graduate student attending the University of Tennessee, Chattanooga. The study is examining the relationship between a college success course and student perception of the self-regulatory skills of concentration, motivation, and time management.

<p>1. Which category below includes your age?</p> <ul style="list-style-type: none"> a. Under 18 b. 18-20 c. 21-29 d. 30-39 e. 40-49 f. 50 or older 	<p>6. Which of the following categories best describes your employment status?</p> <ul style="list-style-type: none"> a. Employed, working 1-39 hours per week b. Employed, working 40 or more hours per week c. Not employed, currently looking for work d. Not employed, NOT currently looking for work e. Retired f. Disabled, not able to work
<p>2. Have you successfully completed College Survival and Success (COLL 1000) at GNTC with a grade of C or higher</p> <ul style="list-style-type: none"> a. Yes b. No 	<p>7. Are you now married, widowed, divorced, separated, or never married?</p> <ul style="list-style-type: none"> a. Married b. Widowed c. Divorced d. Separated e. Never married
<p>3. What is your gender?</p> <ul style="list-style-type: none"> a. Female b. Male 	<p>8. Did you have any transfer credits hours when first attending Georgia Northwestern Technical College?</p> <ul style="list-style-type: none"> a. No transfer credit hours b. 1-15 c. 16-30 d. 31-45 e. More than 45 credit hours
<p>4. Which race/ethnicity best describes you? (Please choose only one.)</p> <ul style="list-style-type: none"> a. American Indian or Alaskan Native b. Asian / Pacific Islander c. Black or African American d. Hispanic American e. White / Caucasian f. Multiple ethnicity / Other (please specify) 	<p>9. Do you have children living with you?</p> <ul style="list-style-type: none"> a. No children b. One child living with you full time c. Two children living with you full time d. Three or more children living with you full time e. One child living with you part time f. Two children living with you part time g. Three or more children living with you part time h. Children not living with you
<p>5. Describe your previous college experience</p> <ul style="list-style-type: none"> a. 0-6 months of college b. 7-12 months of college c. 13-18 months of college d. More than 18 months of college 	<p>10. Are you involved in school-based extracurricular activities such as Skills USA, work/study, Student Leadership Council, Phi Beta Lambda, or NJCAA athletics (not intramurals)?</p> <ul style="list-style-type: none"> a. No extracurricular school activities b. One extracurricular school activity b. More than one extracurricular school activity

APPENDIX E
LEARNING AND STUDY STRATEGIES INVENTORY (LASSI)

Learning and Study Strategies Inventory Self-Regulation Scale (LASSI)

Background

Extensive research, development, and testing led to the creation of this statistically valid and reliable tool for the diagnosis of study skills. The Learning and Study Strategies Inventory (LASSI) is a 10-scale, 60-item assessment of students' awareness about and use of learning and study strategies related to skill, will and self-regulation components of strategic learning. The focus is on covert and overt thoughts, behaviors, attitudes, motivations and beliefs that relate to successful learning in postsecondary educational and training settings. Furthermore, these thoughts, behaviors, attitudes, motivations and beliefs can be altered through educational interventions. Research has repeatedly demonstrated that these factors contribute significantly to success in college and that they can be learned or enhanced through educational interventions such as learning strategies and self-regulated study courses and programs.

The LASSI is both diagnostic and prescriptive. The LASSI provides standardized scores (percentile score equivalents) and national norms for ten different scales (there is no total score reported because this is a diagnostic instrument). It provides students with a diagnosis of their strengths and weaknesses, compared to other college students, in the areas covered by the ten scales; it is prescriptive in that it provides feedback about areas where students may be weak and need to improve their knowledge, skills, attitudes, motivations and beliefs.

Confidentiality

All data will be kept in the strictest confidence and have no bearing on the final grade in this course. The researchers and the LASSI publisher have taken precautions to ensure individual confidentiality. The results of the survey are for use in academic research and will not be used by outside agencies.

Instructions

Read each item carefully and answer in a way that best reflects your perception of your personal behavior. Carefully follow the provided scale:

- 1—Very Much typical of me**
- 2—Fairly typical of me**
- 3—Somewhat typical of me**
- 4—Not very typical of me**
- 5—Not at all typical of me.**

(Extracted from LASSI by Weinstein et al., 2016).

Sample LASSI (Time Management)

Last six digits of your GNTC Student Number: _____

Using the following scale, please answer the following questions to the best of your ability.

- a - Not at all typical of me
- b - Not very typical of me
- c - Somewhat typical of me
- d - Fairly typical of me
- e - Very much typical of me

1. I find it hard to stick to a study schedule.
2. When I decide to study, I set aside a specific length of time and stick to it.
3. When it comes to studying, procrastination is a problem for me.
4. I put off studying more than I should
5. I set aside more time to study the subjects that are difficult for me.
6. I end up “cramming” for every test.

(Extracted from LASSI by Weinstein et al., 2016).

Sample LASSI (Concentration)

Last six digits of your GNTC Student Number: _____

Using the following scale, please answer the following questions to the best of your ability.

- a - Not at all typical of me
- b - Not very typical of me
- c - Somewhat typical of me
- d - Fairly typical of me
- e - Very much typical of me

1. I concentrate fully when studying
2. I find it difficult to maintain my concentration while doing my course work
3. My mind wanders a lot when I study
4. I find it hard to pay attention during lectures
5. I am very easily distracted from my studies.
6. If I get distracted during class, I am able to refocus my attention.

(Extracted from LASSI by Weinstein et al., 2016).

Sample LASSI (Motivation)

Last six digits of your GNTC Student Number: _____

Using the following scale, please answer the following questions to the best of your ability.

- a - Not at all typical of me
- b - Not very typical of me
- c - Somewhat typical of me
- d - Fairly typical of me
- e - Very much typical of me

1. When work is difficult, I either give up or study only the easy parts.
2. Even if I am having difficulty in a course, I can motivate myself to complete the work.
3. Even if I do not like an assignment, I am able to get myself to work on it.
4. I set goals for the grades I want to get in my classes
5. I do not put a lot of effort into doing well in my courses.
6. Even when study materials are dull and uninteresting, I manage to keep working until I finish.

(Extracted from LASSI by Weinstein et al., 2016).

APPENDIX F
VARIABLES ANALYSIS

Variables Analysis

	Variable Label	Levels of the Variable	Scale
Dependent Variable(s)	Self-regulation Skills	Time Management Concentration Motivation	Interval
Independent Variable	College Success course	1 = Enrolled (CR) 2 = Not Enrolled (CNR)	Nominal
Extraneous Variables	Gender	1 = Female 2 = Male	Nominal
	COLL 1000 complete (C min)	1 = Yes 2 = No	Nominal
	Age	1 = Under 18 2 = 18-20 3 = 21-29 4 = 30-39 5 = 40-49 6 = Over 50	Ordinal
	College Experience	1 = 0-6 months 2 = 7-12 months 3 = 13-18 months 4 = 18+ months	Ordinal
	Employment	1 = Employed (1-39 hours/week) 2 = Employed (40+ hours/week) 3 = Not employed but looking for work 4 = Not employed, not looking for work 5 = Retired 6 = Disabled, not able to work	Nominal
	Marital Status	1 = Married 2 = Widowed 3 = Divorced 4 = Separated 5 = Never married	Nominal
	Children	1 = No children 2 = One child, living at home full time 3 = Two children, living at home full time 4 = Three or more, living at home full time 5 = One child, living at home part time 6 = Two children, living at home part time 7 = Three or more, living at home part time 8 = Children, not living with you	Nominal
	Transfer Credits	1 = 0 2 = 1-15 3 = 16-30 4 = 31-45 5 = More than 45 credit hours transferred	Ordinal
	Extracurricular School Activities	1 = No extracurricular school activities 2 = One extracurricular school activity 3 = More than one extracurricular activity	Nominal

APPENDIX G
STUDENT SURVEY PRETEST INSTRUCTIONS

College Success Research Pretest Instruction Sheet

Research conducted by GNTC instructor and doctoral student Michael Breakey: The relationship between a college success course and skills of concentration, motivation, and time management.

Note: If taking both COLL 1000 and COMP 1000 this semester, just take the survey one time.

Step 1. Go to www.tinyurl.com/gntclassi

If you agree to take the survey, click YES under Informed Consent at the bottom of the first page. Next you will be asked several demographic questions for use in the research only.

Step 2. On the last page of the Biographical Survey, click the **LASSI** link. If the link does not work or you choose to do the LASSI survey later, the address is: www.collegelassi.com

Step 3. For LASSI—use the *First Administration* section (on the left) and enter the information below, then click the "Submit" button.



School Number: 80045

User Name: prba

Password: gym3

Note these numbers are unique to the GNTC study—this is not your GNTC Student number or user name—use these!

Step 4. Page 2 of LASSI, this is where you enter your **first and last name**, your **GNTC student number**, and your **GNTC email**. If you do not have your GNTC student number handy, you can skip it. If you do not remember your GNTC student email, you can use a personal email. The ID and email will help with completion of the survey at the end of the semester and allow you to receive your individual LASSI results via email.

Step 5. Complete the LASSI Survey. You will be asked ~ 60 questions—takes about 10 minutes.

The responses are broken down thus:

Not at all typical of me—does not mean that would never describe you, but that it would be rarely true.

Not very typical of me—the statement generally would not be true of you.

Somewhat typical of me—the statement would be true of you about half of the time.

Fairly typical of me—the statement would generally be true of you.

Very much typical of me—does not mean that would always describe you, but it would be true most of the time.

Step 6. After completing all the items and successfully submitting the results, a two-page report will be displayed listing your scores for each scale, together with your name, institution, date of administration, and an explanation of your results. You may print a copy of the results for your records and you may elect to have a copy of the results mailed to you at no charge. These results may be useful, as they will illustrate areas of strength and areas of improvement in your learning and study habits.

7. If you have any question, feel free to contact me at mbreakey@gntc.edu or mikebreakey@excite.com and I will gladly help with navigating the survey or answering any questions you might have.

IMPORTANT TIP—on the LASSI Results page there is a Student Key unique to your survey. Please make note of this number in the below space. If you forget the code or lose the sheet, you will receive an email reminder with the code near the end of the semester.

LASSI Student Key: _____

Top right side of results page. It will look something like: Br24MN8M

APPENDIX H
SAMPLE LASSI REPORT

Learning and Study Strategies Inventory (LASSI)

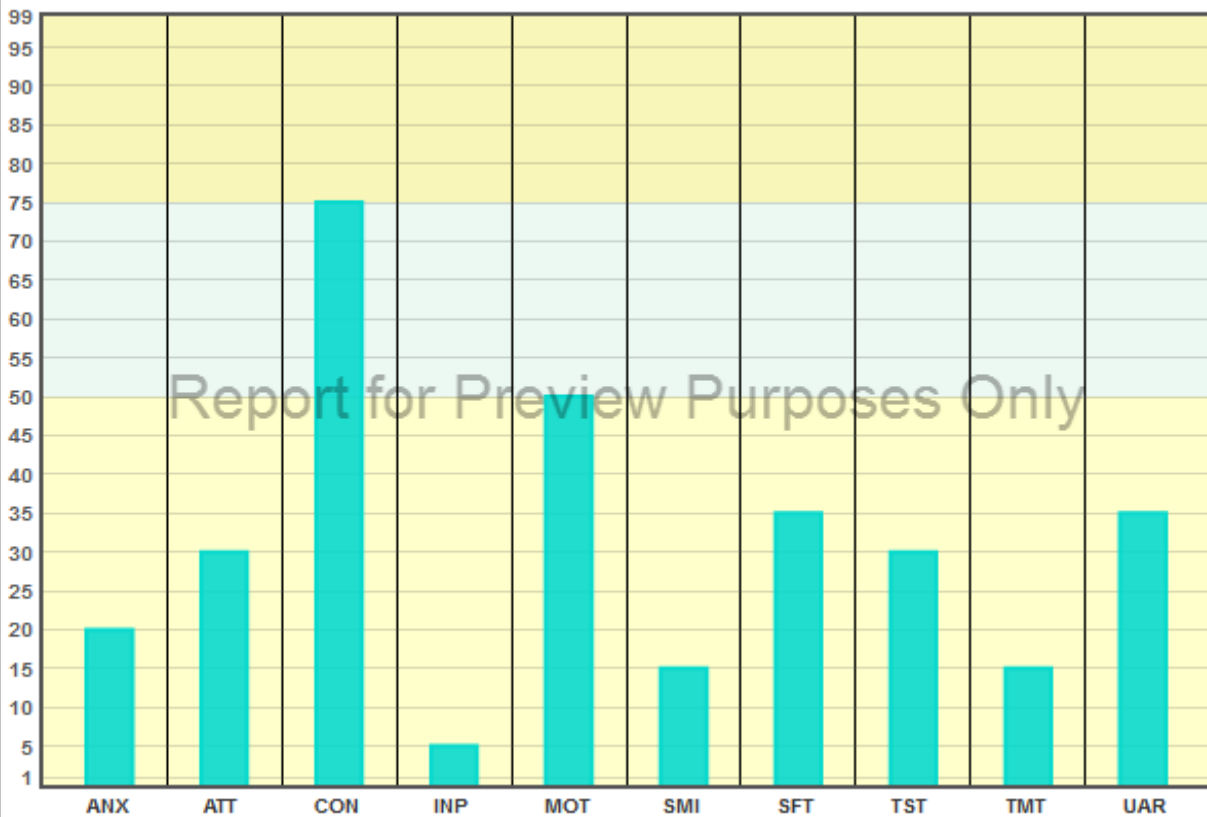
Student Report

Mike Breakey	School #: 80005
11/20/2015	Student Key: xxxxxxxxx
University of Tennessee Chattanooga	mikebreakey@excite.com

The graph below interprets your responses to the LASSI. The numbers on the left-hand side of the chart show percentile ranks. You can use these percentile ranks to compare your scores to other individuals' scores. For example, if you scored in the 80th percentile in Attitude (ATT), you scored higher than 80 percent of other individuals answering the same questions.

As you work to improve your scores, your advisor/instructor may want you to take this assessment again. If you do take it a second time, you will need your student key. Your student key is xxxxxxxxx.

LASSI Scores



75 - 100	If you scored above the 75th percentile on any of the ten LASSI scales, you probably do not have to give a high priority to improving your strategies in those areas.
50 - 75	If you scored between the 75th and the 50th percentiles on any of the ten scales, you should consider improving your strategies for those scales.
0 - 50	If you scored below the 50th percentile on any of the ten scales, you need to improve your skills to avoid serious problems succeeding in college.

Interpreting Your LASSI Scores	
<p>Anxiety (ANX) Percentile Score: 20 Sample Item: When I am studying, worrying about doing poorly in a course interferes with my concentration.</p>	<p>Your ANX score indicates that anxiety is likely to interfere with your academic success. In other words, you seem to worry about school performance to a degree that directs your attention away from academic tasks. You can overcome this difficulty by learning techniques for coping with anxiety and, with practice, developing skills for lowering it.</p>
<p>Attitude (ATT) Percentile Score: 30 Sample Item: I have a positive attitude about attending my classes.</p>	<p>Your ATT score indicates that you have real doubts about the value of a college education. These doubts put you at a disadvantage when competing with other students. You may not have a strong desire to get your work done and succeed in college. There are activities and discussions that will help you develop a better understanding of how college relates to your life. Seek these opportunities and find an agreeable path to your future.</p>
<p>Concentration (CON) Percentile Score: 75 Sample Item: My mind wanders a lot when I study.</p>	<p>Your CON score indicates few difficulties in maintaining your attention to academic tasks. Momentary pauses in your concentration are normal and do not seriously interrupt your learning. It is likely that you are aware when your concentration is broken and you are able to quickly return to your tasks.</p>
<p>Information Processing (INP) Percentile Score: 5 Sample Item: I try to find relationships between what I am learning and what I already know.</p>	<p>Your INP score indicates some weakness in applying what you already know to what you are trying to learn. You are likely to have difficulty acquiring new information and/or remembering it. To strengthen this weakness, you are urged to seek help in skills such as imagery that will build bridges between your past and the present. You will find it easier to retain new material when you incorporate it with what you already know.</p>

<p>Motivation (MOT) Percentile Score: 50 Sample Item: When work is difficult, I either give up or study only the easy parts.</p>	<p>Your MOT score indicates that you are sometimes not highly energized when engaged with academic tasks. As a consequence, you may not always put forth your best efforts to excel. Look closely at the circumstances when you are motivated as compared to those when you are rather complacent. Perhaps there are particular subjects, people, or activities that negatively affect you. Your overall academic success is threatened by spotty motivation.</p>
<p>Selecting Main Ideas (SMI) Percentile Score: 15 Sample Item: When studying, I seem to get lost in the details and miss the important information.</p>	<p>Your SMI score indicates that you have difficulties identifying important information when you are reading or listening. If you can learn to separate key points from supporting details, learning the material will be much easier. There are many people you can approach for help and you are urged to seek such assistance.</p>
<p>Self Testing (SFT) Percentile Score: 35 Sample Item: I stop periodically while reading and mentally go over or review what was said.</p>	<p>Your SFT score indicates that you may be unaware of the value of this technique for improving your understanding of information to be learned. You would benefit from consistently reviewing material by the use of questions that will monitor your grasp of what has been learned or not learned. When the process discovers gaps in your knowledge, you must address those deficiencies by re-studying or seeking help.</p>
<p>Test Strategies (TST) Percentile Score: 30 Sample Item: In taking tests, writing papers, etc., I find I have misunderstood what is wanted and lose points because of it.</p>	<p>Your TST score indicates a weakness in the process you use to prepare for a test. You may not be adequately learning the material, but you also may not be planning for the type of test that will be given. In either situation, it is likely that your test results will not effectively demonstrate your knowledge of the subject matter. You are urged to seek assistance from someone that can analyze your test preparation and suggest ways to improve it.</p>
<p>Time Management (TMT) Percentile Score: 15 Sample Item: I set aside more time to study the subjects that are difficult for me.</p>	<p>Your TMT score indicates that an unacceptable portion of your time is devoted to tasks that are academically unproductive. Perhaps you have other responsibilities. Maybe you procrastinate. In either case, you need a schedule each week that details all academic responsibilities and assigns times to reasonably complete them. Then you must rigorously follow that schedule. It will help to post your schedule above your desk and refer to it often. You may also need to enlist help from others to abide by your schedule.</p>

<p>Using Academic Resources (UAR) Percentile Score: 35 Sample Item: I am not comfortable asking for help from instructors in my courses.</p>	<p>Your UAR score indicates that you may not be taking advantage of people and programs that are available to assist in your academic success. Perhaps you are unaware of their existence. Maybe you are reluctant to seek help. Hopefully, some past experience has not led you to reject those services. Whatever the reason, you are urged to increase your use of such services and make contacts that may prove to be of great value when you encounter academic difficulties.</p>
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APPENDIX I
STUDENT SURVEY POSTTEST INSTRUCTIONS

College Success Posttest Survey Reminder

STUDENT NAME—first, thank you for completing the first portion of the research survey earlier this semester!

You may recall that to complete the research, I need what is termed a posttest survey. This allows a comparison of your answers at the start of the semester (the pretest) to the end of the semester (the posttest).

The good news is the posttest is much quicker than the two-part survey you did earlier this semester. All you need to do now is log in to the LASSI website and complete the survey questions—should take about 10 minutes. Again, this has no impact on grades and is purely voluntary.

To complete the survey:

1. Go to www.collegelassi.com
2. Scroll down and sign in to the *Second Administration* box
3. Enter the school code. **School Code is 80045**
3. Enter your Student Key. **Your Student Key is: INSERT STUDENT KEY**
4. Take the survey
5. If you would like the results emailed to you, check the box at the end that says, “Check the box if you would also like your results emailed to you.” No charge for this so I recommend you go ahead and check the box.

NOTE: If you accidentally skip a question, LASSI will pop-up a window asking you to answer all questions. Scroll up and look for any red questions and complete them, then hit submit.

Do not hesitate to email me if you have any issues with the survey-- mbreakey@gntc.edu or mikebreakey@excite.com.

I hope your semester went well and wish you future success in your academic career and beyond!

V/R,

Mike

Mike Breakey
Doctoral Candidate

APPENDIX J
RESEARCH PROJECT STUDENT BRIEFING



College Success Research Project

Mike Breakey

GNTC History and College Success Instructor
Doctoral Candidate at the University of Tennessee
Chattanooga

1

What

- Researching the results of students taking College Success (COLL 1000) on three critical skills
 - Concentration
 - Motivation
 - Time management
- Two groups—COLL 1000 and COMP 1000
 - Test group and control group
 - **IF** you are taking both classes this semester (COLL 1000 and COMP 1000) just take the survey as COLL 1000 student
 - One survey per student max
- Pretest and post test to look for changes
 - Don't panic—it is not a test! A survey!

2

Why

- College retention and graduation rates are poor—very poor
- Students often struggle in college—not because of aptitude, but because they lack some of the skills needed to succeed
- Does COLL 1000 help?
- Can it be improved?
- Can GNTC improve student success?

3

How

- Survey students at the start of the semester
- Survey again at end of semester
- Look for changes
- Specifics
 - Biographical survey (variables) (January only)
 - Learning and Study Strategy Inventory (LASSI)
 - Pretest (January) and post test (End of April)
- You will receive reminder emails both times
- All online so you can do it in the computer lab, at home, the library—at your convenience.
- NOTE: Pretest must be complete by early February

4

Specifics

- Voluntary!
- Informed Consent
- One page instruction sheet
 - Front of sheet has login information
 - My email if you have a problem or question
 - A place to jot down your Key Code
 - Back side has a couple illustrations of what you will see
- Incentives
 - Make the school better
 - Personalized Learning and Study Skills report

5

LOGIN Information

- Biographical Survey: www.tinyurl.com/gntclassi
 - Name and student number
 - Needed so I can make sure the proper variable data is matched to the pretest and posttest
 - Comparing Hector's variables and pretest to Joe's posttest tells me nothing
- Name and student number used for research accuracy only!
- Bio should take less than 5 minutes
- Click the [LASSI](#) link when finished
- Note: there are a few disqualifying questions (under 18 for example). Nothing you have done wrong, just part of the dissertation methodology.

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Bio Survey—Page One

THE UNIVERSITY of TENNESSEE 
CHATTANOOGA

PARTICIPANT INFORMED CONSENT FORM

Dear student:

My name is Mike Breakey and I am attending the University of Tennessee at Chattanooga (UTC) where I am conducting a research study. As a freshman student enrolled in COLL1000 and/or COMP 1000 your participation in the study is sought. In order to participate, you will be asked to complete a short survey and two questionnaires. Approximately 300 GNTC students will participate in the study.

Please note: if you are under the age of 18, you are not eligible to participate in the study.

Thank you in advance,
Michael Breakey Ed.D. Candidate
College of Health, Education & Professional Studies
University of Tennessee at Chattanooga, Chattanooga, Tennessee

- Yes, take the survey
 No, thank you



NEXT

7

End of biographical survey.

Thank you for completing the first step of the survey process. You can now proceed to the Learning and Study Strategies Inventory (LASSI) web site. Refer to your instruction sheet for LASSI login information once you click the LASSI link below.

The LASSI section should take about 10 minutes to complete. If you accidentally skip a question, the survey will highlight the missed question. Once all questions are answered, you will submit the survey. LASSI will immediately generate a personalized inventory of your study skills. This may be helpful as it will show your strengths and areas that could use improvement. You will also have the opportunity to have LASSI send you the results via email.

Please note the Student Key Code in the upper right portion of the results. Jot this down as you will need it when taking the post test LASSI at the end of the semester. Note: if you forget or misplace the Student Key Code, I will remind you prior to the LASSI post test at the end of the semester.

Click the blue LASSI link to start your personal Study Skills Inventory >>>>> [LASSI](#)



THE UNIVERSITY of TENNESSEE 
CHATTANOOGA

If you answer a disqualifier

Thanks, and have a great semester!

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LASSI

- Page 1 of login info
 - Use First Administration (left) side
- **School Number: 80045**
- **User Name: prba**
- **Password: gvm3**
- www.collegelassi.com
- First page is because over 2200 colleges and universities use LASSI so this makes sure the info for GNTC is captured properly

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LASSI

- Page 2 of login info
 - Name
 - GNTC Student number
 - GNTC Email
- Two reasons for email
- One it allows LASSI to send you your personalized report on skills
 - Normally costs \$4, but since doing it for my research—free
- Second, it will let me send you your Key Code for the posttest if you forget it.
- LASSI should take about 10 minutes
- End of semester will only do the LASSI, no biographical survey needed in April

10

by
 Claire E. Weinstein, Ph.D.,
 Professor Emeritus, The University of Texas at Austin
 David R. Palmer, Ph.D.
 Principal, David Palmer Consulting
 Taylor W. Acee, Ph.D.
 Associate Professor, Texas State University

LASSI Login Page One

To help you decide which responses to select, we would like to explain what is meant by each term.

- By **Not at all typical of me**, we do not necessarily mean that the statement would never describe you, but that it would be true of you only in rare instances.
- By **Not very typical of me**, we mean that the statement generally would not be true of you.
- By **Somewhat typical of me**, we mean that the statement would be true of you about half the time.
- By **Fairly typical of me**, we mean that the statement would generally be true of you.
- By **Very much typical of me**, we do not necessarily mean that the statement would always describe you, but that it would be true of you almost all the time.

Before you begin it is important to know whether you have taken the LASSI previously. Choose the correct box below.

The image shows two forms side-by-side. The left form, titled "First Administration", contains the following fields: "Enter Your School Number:" with the value "80045", "Enter Your User Name:" with the value "prba", and "Enter Your Password:" with the value "gvm3". Below these fields is a "Submit" button. The right form, titled "Take Post-Test", is partially visible and has a large blue "X" drawn over it. It contains fields for "Enter Your School Number:" and "* Enter Your Student ID Number:". Below these fields is a "Take Post-Test" button. A blue arrow points to the "First Administration" form.

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LASSI Login Page Two

Enter your first name, last name, ID number, and e-mail address into the spaces below, and then click the Continue button.

First Name:

Last Name:

ID Number: (optional)

E-mail Address: (optional)

Check the box to have your LASSI results emailed to you. You will be able to view and print your results regardless of whether you check the box.

- Name is to ensure proper pretest/posttest matching, no other purpose.
- ID number is GNTC student number
- Email address and checking the box below it will allow the LASSI program to send you a personal copy of your Learning and Study Strategies Inventory at no cost.
- Prefer GNTC email but you can use personal email.

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Sample question

1. My mind wanders a lot when I am studying

- Not at all typical of me
- Not very typical of me
- Somewhat typical of me
- Fairly typical of me
- Very much typical of me

Student Key:
Br24MN8M

University of Tennessee LASSI Records

Score sheet

The records shown below display the results of administering the LASSI at your institution. Additional reports are available for each student. To view a Student's Profile or Item Responses, click on the blue "view" link. If a student has taken a pre- and post-test, click on the "Advisor/Counselor Report".

Displaying records 1 - 1 from 1 students.

Breakley, Mike		mikebreakley@excite.com		ID#: 900111222		Student Key: Br24MN8M						
	ANK	ATT	CON	INP	MOT	SMI	SFT	TST	TMT	UAR		
12/10/15	80	90	80	80	85	45	90	75	75	75	View	View

* Note: This number reflects the total number of students in your group not the total of both pre- and post-tests.

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Questions



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VITA

Michael George Breakey was born in Cleveland, Ohio, to Dave and Jane Breakey. He attended Browning Elementary, Willoughby Junior High, and Wilmington High School in Wilmington, Ohio. After graduation he attended Embry-Riddle Aeronautical University in Daytona Beach, Florida, graduating in 1986 with a Bachelor of Aeronautical Science degree. Following graduation, Mike entered the United States Air Force. Highlights of 22 years of service include; Distinguished Graduate from Pilot Instructor School, the 1990 50th Flying Training Squadron Instructor Pilot of the Year, and deployments in support of Operations Desert Storm, Provide Comfort, Northern Watch, Joint Guard, Enduring Freedom, and Iraqi Freedom. He is a decorated combat veteran with over 5,000 flight hours in the T-38, F-15, AC-130 and MC-130. His military awards including the Bronze Star Medal, Defense Meritorious Service Medal, Kuwaiti Liberation Medal, and Humanitarian Service Medal. Mike commanded the 9th Special Operations Squadron at Eglin AFB, FL and was the deployed commander of both the 9th and 67th Special Operations Squadrons in Iraq and Afghanistan. He retired in 2007 as a Lieutenant Colonel. Mike earned a Master of Arts in History from American Military University in 2001 and is continuing his education in learning and leadership by pursuing a Ph.D. degree at the University of Tennessee at Chattanooga. He currently teaches US History and College Success courses at Georgia Northwestern Technical College.