YES, I CAN: THE EFFECT OF A COLLEGE VISIT AND ONLINE CAREER INTERVENTION ON EIGHTH-GRADE STUDENTS' COLLEGE AND CAREER SELF-EFFICACY AND COLLEGE INTENT

by

Karin Ingrid Glessner

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University

2016

YES, I CAN: THE EFFECT OF A COLLEGE VISIT AND ONLINE CAREER INTERVENTION ON EIGHTH-GRADE STUDENTS' COLLEGE AND CAREER SELF-EFFICACY AND COLLEGE INTENT

by Karin Ingrid Glessner

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University, Lynchburg, VA

2016

APPROVED BY:

Amanda J. Rockinson-Szapkiw, Ed.D., Committee Chair

Mercedes L. Lopez, Ph.D., Committee Member

Richard J. Silvey, Ed.D., Committee Member

Scott Watson, Ph.D., Associate Dean, Advanced Programs

ABSTRACT

This study examined the effect of a college workshop on the college and career self-efficacy and college intent of eighth grade students in a semi-rural setting. The study aimed to fill the gap in the literature by examining college and career self-efficacy and college intent for middle school students in semi-rural areas in the United States as they move to high school. Two groups of eighth grade students from two middle schools in a school district in West-Central Florida participated in the study. The study used a quasi-experimental, pretest-posttest non-equivalent waitlist control group design. Students in the treatment group participated in a week-long online career exploration workshop followed by a visit on the campus of a large suburban Florida state college. Students in the waitlist control group took the pretest and posttest after data had been collected; however, they did not receive the treatment until after the posttest. The study answered the research questions whether participation in the college workshop affected participants' posttest scores regarding college and career self-efficacy as well as college intent. Pretest and posttest used the College-Going Self-Efficacy Scale for Middle School Students and the Career Self-Efficacy Scale–Short Form, as well as a College Intent Question, which inquired about students' intent to attend college. Data analyses included a chi-square of independence and analyses of covariance. Results showed that students who participated in the college workshop had higher levels of college-going and career-decision self-efficacy than students who did not. However, college intent was not affected by participation in the college workshop.

Keywords: College-going self-efficacy, career self-efficacy, middle school, high school transition, adolescents, career exploration, semi-rural.

Dedication

I dedicate this manuscript to my grandmother, Liselotte Klier, who instilled in me a love for reading and learning from early childhood on. Until her death at age 98, she was curious about the world, and she watched the news and documentaries until her strength was gone. You were always my hero, and I will miss our crossword puzzle sessions, our conversations about days gone by, and our adventures near and far.

Acknowledgments

Even though my name alone is on this dissertation, it would not have been possible without the help and encouragement of others. I would like to express my sincere appreciation and thanks to my chair, Dr. Amanda Rockinson-Szapkiw. You are an amazing scholar and statistics expert. Your patient guidance and your thoughtful comments challenged me and allowed me to complete this dissertation. I would also like to thank my committee members, Dr. Merci Lopez and Dr. Justin Silvey. I truly appreciate your support and your belief in me. The feedback you both provided was insightful and encouraging. Thank you for traveling this path with me.

Thank you to my classmates and friends, Laura Clift and Bob Bade. Laura, our Skype sessions kept my spirits up when the project seemed overwhelming or SPSS was being stubborn. Bob, you found Liberty University, and I will always fondly remember our travels to and from Lynchburg and our many discussions about our topics, our college and students, or the world in general.

Finally, I want to express my love and deepest gratitude to my husband, Jim, and our children and grandchildren for putting up with my crazy schedule and for missing family celebrations. Jim, thank you for cooking delicious dinners and for taking over many tasks so that I could study. I could not have completed the program without your support and encouragement. I am looking forward to taking the boat out on the Gulf and going on all the trips we have talked about these past few years.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

Career Decision Self-Efficacy Scale-Short Form (CDSES-SF)

College-Going Self-Efficacy Scale (CGSES)

CHAPTER ONE: INTRODUCTION

A rapidly changing society and the transformation from manufacturing to an information age require students to make decisions about their future at an earlier time in their lives than ever before (Benner, 2011). Recent research has shown that middle school is the appropriate time to begin career exploration, bolster students' self-efficacy in career and college self-efficacy, and instill college intent (Kalchick & Oertle, 2010; Mittendorff, den Brok, & Beijaard, 2010). During the middle grades, adolescents develop personal and career interests, and their self-efficacy emerges (Bardick, Bernes, Magnussen, & Witko, 2006). Failure to develop positive self-efficacy and interests toward college and career during middle school could result in high school dropout, never entering college, or unemployment (Ascher, 2006; Benner, 2011; Benner & Graham, 2009; Cohen & Smerdon, 2009; Langenkamp, 2010; Neild, 2009; Radcliffe & Bos, 2013) or career (Alliance for Excellent Education, 2011).

The personal and societal cost of high school dropout and consequential lack of college degree attainment or unemployment is high. For example, the Alliance for Excellent Education (2011) reported that individuals without a high school diploma "are far more likely than high school graduates to spend their lives periodically unemployed, on government assistance, or cycling in and out of the prison system" (p. 1). The same report predicted the inability of businesses to fill up to 3 million jobs requiring Associate degrees or higher by 2018 if graduation and dropout rates do not improve significantly (Alliance for Excellent Education, 2011). Moreover, there will be a shortage of more than 4.7 million workers with college-level certificates by 2018 to fill positions in today's technology-oriented economy (Carnevale, Smith, & Strohl, 2010).

Therefore, researchers are beginning to examine ways to increase career and college self-efficacy to significantly improve students' retention and persistence to graduation (Adams, 2012; Burrus et al., 2013; Conley, 2008; Grossman & Cooney, 2009; McCollum & Yoder, 2011; Radcliffe & Stephens, 2008; Ramsey, 2008; Witherspoon & Ennett, 2011). In addition, schools are beginning to implement activities that foster middle school students' intent to go to college and pursue careers. School districts and researchers are also beginning to look at resources within the community, such as community colleges, to facilitate middle school students' intent to go to college and promote the self-efficacy that they can pursue a college education and attain the desired career outcome (McCollough, 2011). However, the research in this area, especially in the United States, is in a neophyte stage, and quantitative data is needed to identify effective programs and interventions. Thus, this study aimed to add to the literature by investigating whether participation in a workshop provided by a state college for middle school students in the United States affected their college and career self-efficacy and college intent. The study used interventions informed by social cognitive theory (Bandura, 1977), self-efficacy theory (Bandura, 1997), and social cognitive career theory (Lent, Hackett, & Brown, 1996).

This chapter will begin with an overview of the theoretical framework underlying the study, namely social cognitive theory (Bandura, 1977), self-efficacy theory (Bandura, 1993, 1997) and social cognitive career theory (Lent et al., 1996). The discussion of theory is then followed by the problem statement, purpose statement, and an explanation of significance of the study. Finally, the research questions, hypotheses, variables, and terms are introduced. In Chapter Two, the review of the literature expands the discussion of theory introduced in Chapter One and then demonstrates the need for the study and the gap in the literature it is filling.

Chapters Three and Four provide detailed explanation of the study and the results, which is followed by a discussion of the results in Chapter Five.

Background

Theoretical Framework

Self-efficacy theory (Bandura, 1983, 1997) and social cognitive career theory (Lent, Brown, & Hackett, 1994) are the theories guiding the study. Both are grounded in Bandura's (1977) social cognitive theory, which is described in Chapter Two.

Bandura's self-efficacy theory. The primary theory guiding the study is Albert Bandura's self-efficacy theory developed in 1983 and expanded in 1997. Bandura (1977) defined self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). To assist individuals in gaining self-efficacy, Bandura developed a model that used four elements that lead to increased self-efficacy: (a) astery experiences, (b) vicarious experiences, (c) verbal persuasion, and (d) physiological and affective states.

The first source, mastery experiences, is considered the most important determinant of self-efficacy. It entails experiences gained while performing a relevant task. If the task is completed successfully, the individual will be more confident that they can do it again in the future (Bandura, 1997). Mastery experiences provide people with feedback about their ability to be successful or to fail to complete a task thus enabling them to judge their efficacy to perform a task (Bandura, 1977). For example, students' success at solving a math problem or completing a project with a good grade leads to increased self-efficacy that they can master the subject. To provide individuals with mastery experiences and thus improve self-efficacy, Bandura (1977) developed the guided mastery treatment as the "principal vehicle for the cultivation of

competencies" (Bandura, 1997, p. 226). Bandura stated that acquiring cognitive skills through modeling is difficult because internal thought processes are not immediately apparent to the observer. With the guided mastery technique called cognitive modeling, models verbalize the thought processes and strategies they use to identify problems and arrive at solutions, thus providing a variety of guided practice opportunities in which students rehearse how to use cognitive strategies to solve problems. The guidance is gradually reduced as students' competencies increase (Bandura, 1997).

The second source of self-efficacy is vicarious experiences. Bandura (1997) found that "efficacy appraisals are partly influenced by vicarious experiences mediated through modeled attainments. Modeling serves as another effective tool for promoting a sense of personal efficacy" (p. 86). People increase their self-efficacy by observing others perform a task that they have never performed themselves (Bandura, 1997). Bandura stipulated that they convince themselves that since others can do it, they also have the abilities to perform the task. An example of this type of experience can be seen in Dubetz and Wilson's (2013) study where middle school girls' interest in the sciences increased from 87% to 100% after they participated in a series of Girls in Science, Engineering, and Math (GEMS) seminars led by an all-female faculty, which served as instructors and mentors.

The third source of self-efficacy, verbal persuasion, is messages conveyed by others that influence an individual's beliefs. Verbal messages can be positive or negative. For example, the message, "You can accomplish a task" conveyed by important persons in individuals' environment, can move an individual toward the belief that they can accomplish the task at hand (Bandura, 1977). Another positive example of verbal persuasion is the coach who provides

continuous feedback to the team about their performance and their capabilities, which will increase their efficacy and mobilize greater effort (Bandura, 1997).

The final source of self-efficacy is physiological and affective states. People often rely on somatic information, such as labored breathing, sweating, or a racing heart, to judge their capabilities, especially in stressful situations, thus impacting self-efficacy. Many people interpret these physiological changes, which they often encounter in stressful situations, as signs of vulnerability or even dysfunction (Bandura, 1997). By reducing misinterpretations of somatic information, self-efficacy may be altered (Bandura, 1991). One study, where students learned anxiety-reducing techniques, demonstrated a positive relationship between self-efficacy and academic performance of adolescents who practiced anxiety-reducing techniques (Alam, 2013). Figure 1, created by the researcher, illustrates the concept of self-efficacy and the four sources from which people derive it.

Bandura's theory has been validated through extensive research with various constituencies, including the population of focus for this study, middle school students (Brady-Amoon & Fuertes, 2011; Chin & Kameoka, 2002; Erlich & Russ-Eft, 2011; Gibbons & Borders, 2010; Margolis & McCabe, 2006). Britner and Pajares (2006) found that mastery experience increased science self-efficacy of students in grades 5 through 8. Chin and Kameoka (2002) studied inner-city Hispanic students in grades 5 and 6 and found that social persuasions increased their educational self-efficacy. In fact, Pajares (2006) described empirical evidence to support Bandura's contention that self-efficacy "touches virtually every aspect of people's lives – whether they think productively, self-debilitatingly, pessimistically or optimistically; how much effort they expend on an activity; how well they regulate their thinking and behavior; and their vulnerability to stress and depression" (p. 341).

Figure 1. Sources of self-efficacy.

Social cognitive career theory. Lent et al. (1994) expanded Bandura's self-efficacy theory into the realm of career orientation and career choice development and developed the term social cognitive career theory. Social cognitive career theory is grounded in Bandura's (1986) social cognitive theory and explains how career and academic interests mature, how career choices develop, and how these choices are turned into action. Career self-efficacy is "the career-related behaviors, educational and occupational choice, and performance and persistence in the implementation of those choices" (Betz & Hackett, 1997, p. 383). Lent et al. (1994) listed three elements that play an important role in the development of career self-efficacy: (a) self-efficacy beliefs and outcome expectations generate development of vocational interests; (b) goal attainment may be obstructed by perceived obstacles; and (c) negative perceptions can be ameliorated through success experiences thus increasing self-efficacy. The authors found that middle school students with high career self-efficacy explore different career fields in line with aptitudes and attitudes, choose a career, and follow the academic or vocational path to receive

the certification to work in the chosen career. In other words, middle school students with high career self-efficacy will transition to high school with the intent to graduate so that they may continue with their education, whether at a college or a vocational school (Lent et al., 1994).

Three main building blocks of theory explain this process: (a) self-efficacy, (b) outcome expectations, and (c) goals (Lent et al., 1994). Self-efficacy refers to the beliefs people have about the ability to successfully complete the steps required for a given task. Individuals develop a sense of self-efficacy from personal performance, learning by example, social interaction, and how they feel in a situation (Gibbons & Shoffner, 2004). Outcome expectations are the beliefs related to the consequences of performing a specific behavior. Typically, outcome expectations are formed through past experiences, either direct or vicarious, and the perceived results of these experiences (Bandura, 1986). In addition, goals are seen as playing a primary role in behavior. A goal is defined as the decision to begin a particular activity or future plan. Behavior is organized or sustained based on these previously set goals (Lent et al., 1994). In social cognitive career theory, career interests are regulated by self-efficacy and an outcome expectation, which means people will form lasting interests in activities when they experience personal competency and positive outcomes. A belief of low personal competency will lead people to avoid activities (Lent et al., 1994).

Perceived barriers, such as those related to gender, ethnicity, age, socioeconomic status, or family constraints may create negative outcome expectations, even when people have had previous success in the given area (Bandura, 1986). In the presence of contextual factors perceived as barriers, self-efficacy may be reduced, and social realities may restrict academic or career options (Hackett & Betz, 1981; Lent et al., 1994). Consequently, interventions that include community involvement and support may lower these barriers by providing middle

school students with relevant experiences regarding career and college exploration , as well as access to diverse role models. This increases the group's career and college self-efficacy and strengthens the intent to go to college. Career self-efficacy theory has been researched extensively and has been found valid by a variety of studies with a number of populations (Albert & Luzzo, 1999; Brown & Lent, 1996; Gibbons & Shoffner, 2004; Lent, Brown, & Hackett, 2008; Olson, 2013; Rogers & Creed, 2011; Swanson, Daniel, & Tokar, 1996).

In sum, self-efficacy theory and social cognitive career theory inform the study. Self-efficacy theory informs how four elements are essential to instill the belief in one's ability to achieve a certain outcome. These elements include mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states (Bandura, 1977). Moreover, changes in self-efficacy and, ultimately, behavior, can be achieved from interventions aimed at these four elements (Bandura, 1997). Social cognitive career theory posits that the development of basic academic and career interests, subsequent choices and activities, and the attainment of academic and career success influence career choice goals (Lent et al., 1994). Thus, the study used the tenets of self-efficacy and social cognitive career theory to create an intervention that provided students with mastery and vicarious experiences through the career exploration modules and the campus activities. The goal was to help students develop career and academic interests and together, the treatment may result in improved self-efficacy and career self-efficacy. In addition, it may increase students' persistence and retention, high school graduation, and intent to go to college.

Problem Statement

More recently, researchers have been looking at the middle school grades to begin career exploration and foster a college-going attitude, which can serve as a retention tool once students

enter high school and place them on a successful career trajectory (Adams, 2012; Burrus et al., 2013; McCollum & Yoder, 2011). The impetus is the realization that middle school is the appropriate time to begin career exploration, bolster students' career and college self-efficacy, and instill the intent to graduate high school and pursue a college and career education (Kalchik & Oertle, 2010; Mittendorff et al., 2010). Findings by Fishbein and Ajzen (1975, 1980) support the belief that people's volitional behavior is predicted by their attitude toward the behavior and subjective norms, such as the opinions of influential persons in the social environment, as well as self-efficacy (Bandura, 1986) and social cognitive career theory (Lent et al., 1994).

However, research in this area with middle school populations in the United States is new. Little research exists that examines the effects of career exploration on the college intent, self-efficacy, and career self-efficacy of middle school students (Conley, 2008; Radcliffe & Bos, 2013). While research abounds in the United States on various college and career intervention programs, they are geared towards high school students (Adams, 2012; Caprara, Vecchione, Alessandri, Gerbino, & Barbaranelli, 2011; Horwitz & Snipes, 2008; Kemple, Connell, Legters, & Eccles, 2006; Vuong, Brown-Welty, & Tracz, 2010). Few researchers are looking at the effect of such activities on the college and career intent of middle school students (Adams, 2012; American College Testing [ACT], 2008, 2009, 2013). Moreover, the intervention programs for middle school students that are discussed in the literature are geared toward special populations, such as gifted students (Benson, 2009), urban youth (Benner & Graham, 2009), or students with medical issues (Fleischman et al., 2011).

Purpose Statement

Thus, the purpose of the quasi-experimental, pretest-posttest non-equivalent waitlist control group study was to examine the effect of participation in a community-based college

workshop that aggregates the tenets of social cognitive career theory and self-efficacy theory (Bandura, 1977; Lent et al., 1994) on the career and college self-efficacy and college intent of a middle school population. The intervention intends to stimulate middle school students' interest in career exploration, providing information on career and college completion, positive modeling of community peers, and instilling in students the intent to complete high school and pursue a college education. The workshop consisted of three days of online career exploration at the middle school using the Florida CHOICES program (Florida Department of Education, 2013) followed by a college campus visit. The college visit included a series of presentations on academic programming and federal and state financial aid programs. In addition, a panel of college freshmen spoke to students about their own experiences as they transitioned from the middle school to high school and, finally, college environment.

Building on current research that using community resources can affect a positive change in the college intent and career and self-efficacy of middle school students (Alam, 2013), the college workshop activities were developed to apply self-efficacy theory and social cognitive career theory elements. Performance accomplishment (students create a career and academic plan), vicarious learning (they meet first-generation college students who are alumni of their middle school), verbal persuasion (student panel discussion about high school transition), affective status (exposure to the campus environment and lowering students' anxiety and reluctance to come on campus), and development of career choices (Florida CHOICES program) aimed to increase students' college and career self-efficacy. Interventions, such as a college workshop, are needed to raise students' awareness of college and careers, illustrate programs of study delineating the pathways to those careers, and connect activities in middle school to high school and beyond.

A convenience sample of middle school students in a semi-rural school district in west-central Florida served as the study sample. Students' pretest and posttest scores on the College-Going Self-Efficacy Scale for Middle School Students (CGSES) measurement, the Career Decision Self-Efficacy Scale-Short Form (CDSES-SF), and the College Intent Question served to measure the covariates and dependent variables for the study. Table 1, at the end of the chapter, depicts how the variables are connected to the theoretical framework and the measurement instruments. Further explanation of the variables is also found toward the end of Chapter One and in Chapter Three.

The study also looked at potentially confounding variables because literature demonstrates that variables exist in studies focusing on career and college self-efficacy, such as parents' socio-economic status and educational level, gender, and ethnicity (Batool, Naureen, & Kanwal, 2010). Research demonstrated that students from low income groups or families where the parents did not go to college were frequently in the low-achieving group with no assistance in the college-going process (Batool et al., 2010; Karaarslan & Sungur, 2011; Metheny & McWhirter, 2013). In addition, differences were found among different ethnicities, with Whites and Asians showing significantly higher college enrollment rates than other ethnicities (National Center for Education Statistics, 2010). Consequently, data was collected on these demographics from participants, and chi-square tests of independence were used to determine whether homogeneity between groups based on these variables existed in the study (Rovai, Baker, & Ponton, 2014). The study analyzed group differences in parents' socio-economic status and education level, and student gender and ethnicity. When control and treatment groups were found to be different, the pretest was used as a covariate in the statistical analysis to control for pre-existing differences.

Significance of the Study

The study contributed to the body of current knowledge by examining the effect of participation in the college workshop on the college intent and college and career self-efficacy of middle school students, which have been related to persistence in high school, higher graduation rates, and higher college enrollment and degree attainment (ACT, 2013; Adams, 2012). By examining a middle school population, the study extended research on self-efficacy and career self-efficacy to the lower grades because previous research had only focused on high school populations (Horwitz & Snipes, 2008; Kemple et al., 2006; What Works Clearinghouse, 2009) or on specific student populations (Benson, 2009; Radcliffe & Bos, 2011; Rinke, Arsenie, & Bell, 2012). Furthermore, by using a sample population from a semi-rural school district, the study added to the literature with empirical research on middle school students in a semi-rural school district thus extending the research into the lower grades and a different living environment.

The study further extended the theories of self-efficacy and career self-efficacy by incorporating the theories' elements of performance accomplishments, vicarious learning, verbal persuasion, affective status, formation of career interests, selection of academic career choices, and persistence and extending them to a new population (Bandura, 1997; Lent et al., 1994). Results provided evidence for the intervention's effectiveness.

The study was also relevant for the State of Florida since the Florida CHOICES program is an online program created by the state for educational institutions in Florida. Only three studies assessing the program's effectiveness could be found in the literature: (1) a technical report investigated Florida CHOICES' effectiveness with high school students (Sampson & Norris, 1997); (2) an unpublished dissertation that looked at adults in career training programs (King, 1982); and (3) an unpublished dissertation on college students in vocational programs

(Kimberly, 1989). Even though it is a state mandate to include career exploration in middle school curriculum to sharpen students' focus on career and college before they enter high school, no study was found to document the program's effectiveness with this population and in a semi-rural environment. Filling the gap of knowledge in terms of the college workshop's effect on college intent and the college and career self-efficacy of middle school students in a semi-rural setting provided the State with a quantitative analysis that may lead to increased funding for such programs. In short, the study extended career self-efficacy theory (Lent et al., 1994) into the lower grades and added to Bandura's (1997) assertion that self-efficacy theory is applicable to adolescents. The study provided school administrators with the quantitative data needed to direct resources at activities that increase college and career self-efficacy and college intent in eighth-grade students at the threshold of high school transition. The State of Florida could use the study to validate the effectiveness of the Florida CHOICES online career exploration program with middle school students.

Research Questions

The research questions that guided this study were:

RQ1: Does participation in a college workshop significantly affect the college self-efficacy of eighth grade students while controlling for the pretest?

RQ2: Does participation in a college workshop significantly affect the career self-efficacy of eighth grade students while controlling for the pretest?

RQ3: Does participation in a college workshop significantly affect the college intent of eighth grade students while controlling for the pretest?

Hypotheses

The corresponding research hypotheses were:

H1: There is a statistically significant difference in the college self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the College-Going Self-Efficacy Scale for Middle School Students (CGSES) measurement (Gibbons & Borders, 2010) while controlling for the pretest data.

H2: There is a statistically significant difference in students' career self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the Career Decision Self-Efficacy Scale-Short Form (CDSES-SF) (Betz & Luzzo, 1996) while controlling for the pretest data.

H3: There is a statistically significant difference in students' College or Career Intent posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the answer on the demographic survey instrument while controlling for the pretest data.

Alternatively, the following were the null hypotheses:

$H_0$1: There is no statistically significant difference in the college self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the College-Going Self-Efficacy Scale for Middle School Students (CSGSES) measurement (Gibbons & Borders, 2010) while controlling for the pretest data.

$H_0$2: There is no statistically significant difference in the career self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the Career Decision Self-Efficacy Scale-Short Form (CDSES-SF) (Betz & Luzzo, 1996) while controlling for the pretest data.

$H_0$3: There is no statistically significant difference in the College Intent posttest scores of eighth grade students who participated in the college workshop and those who did not as

measured by the answer on the demographic survey instrument while controlling for the pretest data.

Identification of Variables

The independent variable in the study was participation in the college workshop, which, as explained above, consisted of three elements: (a) three sessions on career exploration and attitude and aptitude self-assessments at the middle school covering an exploration of students' interests; (b) activities on the Florida CHOICES website; and (c) a college campus visit, which included a series of presentations on academic programming and federal and state financial aid programs, as well as a panel of college freshmen who spoke to students about their own experiences in high school and college and their transition from the middle school to high school and college environments. Conley (2010) described college knowledge as one key element in building college readiness. Furthermore, the length of time for the intervention was deemed acceptable since a study evaluating the effects of a one-hour workshop on the career maturity of middle school students, which was administered over a two-week period, showed a significant benefit even after only a brief period of time (Luzzo & Pierce, 1996).

The first dependent variable was defined as the score on the College-Going Self-Efficacy Scale (CGSES). The survey instrument was designed by Gibbons and Borders (2010) to measure the college-going self-efficacy of students in middle school. The items on the instrument seek to capture contributing factors that affect college attendance and persistence while keeping in mind that this age group cannot speak to specific college issues, such as selecting a major or living with a roommate. Items are formulated to apply to any type of college education, and the vocabulary is commensurate with the level expected of a middle school student. Of the 30 questions, 14 pertain to college attendance and 16 to college

persistence. The questions ask about financial issues, ability to take classes, decision-making skills, family-related issues, and the question whether students think that they can go to college after high school. Reliability and validity information as well as examples of survey questions can be found in Chapter Three.

The second dependent variable was defined as the score on the Career Decision-Making Self-Efficacy Scale-Short Form (SDSES-SF). The instrument was created by Betz and Taylor (1983) to assess the degree to which a person believed that he or she could accomplish the tasks needed to make career decisions. The survey investigates five domains that impact career decision making: performing a self-appraisal, researching information about occupations, setting goals, devising plans for the future, and the ability to solve problems. The original version contains 50 items; whereas, the shorter version dropped five items on each of the ten items of the five subscales and uses only 25 items. Reliability and validity information as well as examples of survey questions can be found in Chapter Three.

The third dependent variable was defined as the intent of the study participants to attend a college after they have graduated from high school. Grossman and Cooney (2009) found results from prior studies that showed that planning ahead was one of the important factors for a successful transition from middle school to high school (Akos & Galassi, 2004; Desmond, Brown, & LaFauci, 2006; Holcomb-McCoy, 2007). The Breakthrough Collaborative (2010) reported that students either move their attention towards college education while they are in middle school or often get derailed on the path to a diploma. Therefore, it is imperative that administrators and teachers become aware of those students who indicate that they might not be interested in a college education, whether at a college or a trade school. The answer on the College Intent question, "I intend to continue my education/training after high school at a

college," on the demographic survey instrument, with a nominal scale of 1 = YES and 2 = NO, will measure this variable. Table 1 illustrates how the variables are connected to the theoretical framework and the instruments.

Definitions

1. *Self-Efficacy* - The belief a person has that s/he has the ability to achieve a certain goal (Bandura, 1977).
2. *Career Self-Efficacy* - The belief a person has that s/he has the ability to accomplish the tasks needed to make important career decisions (Lent & Brown, 1994).
3. *College-Going Attitude* - The belief system students have regarding college attendance and college persistence (Gibbons & Borders, 2010).
4. *High School Transition* - The time period when middle school or junior high school students move to the high school. This can be either after eighth grade or after ninth grade (Gentle-Genitty, 2009).
5. *College Intent* - The intention the students express regarding their plans for a college education (Gibbons & Borders, 2010).
6. *Financial Status* - The ability of families to meet their financial obligations and save for other items, such as children's college (Barrett, 2013).

Table 1

Variables' Connection to Theoretical Framework and Measurement

Theoretical Framework and Research	Variable	Measurement/Unit of Analysis
Self-Efficacy Theory (Bandura, 1977)	Covariate and Dependent Variable 1	Pre- and Post-Test Scores on CGSES (Gibbons & Borders, 2010)
Self-Efficacy Theory (Bandura, 1977) Career Self-Efficacy Theory (Brown & Lent, 1994)	Covariate and Dependent Variable 2	Pre- and Post-Test Scores on CDSES-short form (Betz & Luzzo, 1996).
Self-Efficacy Theory (Bandura, 1977; Breakthrough Collaborative, 2010)	Covariate and Dependent Variable 3	Score on "College or Career Intent Question"
Self-Efficacy Theory (Bandura, 1977; Benner & Graham, 2009; Langenkamp, 2009; Rinke, Arsenie & Bell, 2012) Career Self-Efficacy Theory (Brown & Lent, 1994)	Independent Variable	Participation in college workshop

Chapter Summary

Recent research points to the importance of including career exploration and self-efficacy of middle school students as the critical time to intervene (Alam, 2013). Little empirical research has been conducted with middle school students (Adams, 2012; Burrus et al., 2013, Witherspoon & Ennett, 2011). The quantitative quasi-experimental, pretest-posttest non-equivalent waitlist control group design study aimed to fill this gap in the literature with quantitative data regarding interventions that can raise students' college intent and career and college self-efficacy within the theoretical framework of self-efficacy theory (Bandura, 1986, 1997) and social cognitive career self-efficacy theory (Lent et al., 1996). Following this introductory chapter, as noted in the introduction, a literature review of existing research is provided in Chapter Two with the methodology following in Chapter Three. Research results are described in Chapter Four, and Discussion and Recommendations are provided in Chapter Five.

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

Career exploration and self-efficacy have been examined extensively for college-age and high school students (Adams, 2012; Caprara, Vecchione, Alessandri, Gerbino, & Barbaranelli, 2010; Vuong et al., 2010). In recent years, however, the focus of this research has shifted toward the lower grades, specifically middle school, because middle school is now considered a crucial point for students' continued educational success, including vocational training (Halvorsen, Hertzog, & Childers, 2013; Regional Educational Laboratory, 2009). This is supported by the fact that most seventh and eighth graders are taking high school courses (Chih-Ming & Sheng-Hui, 2014). The study's goal was to determine the effect of an intervention on the college and career self-efficacy and college intent on a group of eighth grade middle school students in a semi-rural setting. Consequently, the examination of existing literature intended to reveal the gap in the literature that exists for the aforementioned age group and student population regarding their college intent, college self-efficacy, and career self-efficacy. The chapter provides the theoretical framework underlying the study, as well as a review of current literature regarding college-going attitude, career exploration for adolescents in the United States and abroad. It also provides a review of current intervention programs. A summary of the literature review will conclude Chapter Two.

Theoretical Framework

The study's theoretical foundation consists of self-efficacy theory (Bandura, 1977) and social cognitive career theory (Lent et al., 1994), which are both grounded in social cognitive theory (Bandura, 1977, 1986). In addition, elements of psychosocial development theories

(Erikson, 1950; Piaget, 1952) and recent findings of adolescents' brain development (Steinberg, 2011) provide the impetus for the study's population focus.

Social Cognitive Theory

Social cognitive theory evolved as a model of behavior from the work of psychologist Albert Bandura (1977, 1986). He ascribed human beings with several capabilities, such as use of symbols, forethought, vicariousness, self-regulation, and self-reflectiveness. With the help of symbols, people process and transform transitory experiences into internal modules, which guide their actions in the future (Bandura, 1986). The purposive behavior requires forethought, which develops from the wish for an outcome. Contrary to traditional assumptions that one can learn only by experience, Bandura (1986) thought that "virtually all learning phenomena, resulting from direct experience, can occur vicariously by observing other people's behavior and its consequences for them" (p. 19). He postulated that most learning takes place through observation within the context of social interaction. Additionally, people have the ability to self-reflect and analyze experiences and judgment of their own capabilities. Bandura (1982) wrote:

> It is partly on the basis of self-percepts of efficacy that they choose what to do, how much effort to invest in activities, how long to persevere in the face of disappointing results, and whether tasks are approached anxiously or self-assuredly. (p. 20)

The interaction between behavioral, cognitive, and environmental influences on peoples' behavior, which Bandura coined triadic reciprocality, plays a large part in social cognitive theory. Triadic reciprocality, "in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other" (Bandura, 1986, p. 19), divaricates the three sets of factors according to activities and situations. Thoughts, beliefs, and feelings guide people's behavior. This is also the basic premise of prior research on

cognitive behavioral theory of Watson (1913, 1924), who stipulated that observable phenomena should be the focus of behaviorism. Simultaneously, consequences of this behavior influence people's thoughts and feelings (Bandura, 1982). Several core concepts are central to this theory: a) observational learning, b) outcome expectations, c) perceived self-efficacy, d) goal setting, and e) self-regulation. All influence behavior by using successful role models and outcome incentives to engender proximal and distal goal setting and stimulate self-motivators to achieve the desired outcome.

Observational learning. According to Bandura (1986), observational learning, or modeling, "has always been acknowledged to be one of the most powerful means of transmitting values, attitudes, and patterns of thought and behavior" (p. 47). People can learn cognitive skills and behavior patterns through the observation of others, restrain or accentuate behavior based on how it is rewarded or punished, and infer that similar outcomes will result if they behave similarly (Bandura, 1969). In fact, Bandura (1986) found that much of adolescents' behavior comes from an imitation of parents, other adults, and peers. As such, they will model those behaviors that produce the most rewarded outcomes and ignore those that will not. Visual memory and imagery play a prominent role in observational learning, such as the image of high school or college graduates in their regalia as a symbol of success and achievement, which parents describe in positive terms (Bandura, 1986). When students go through graduation ceremonies in elementary school, middle school, and high school, they cognitively rehearse the desired outcome and memories of the positive experience are reinforced.

Outcome expectations. The second concept of social cognitive theory is outcome expectations, which Bandura (1986) described as "actions that bring rewards and are repeated whereas those that bring unrewarding or punishing outcomes tend to be discarded" (p. 228).

Bandura (1986) listed different types of incentives that will entice people to act. Examples of incentives are (a) sensory incentives, such as playing instruments that create a pleasing sound; (b) social incentives, when others express approval or disapproval of an action, such as graduation ceremonies; (c) monetary incentives, where performance is tied to financial gain; (d) activity incentives, where people will complete a less preferred activity to be able to engage in a more preferred one; and (e) power or status incentives, where promotion or demotion rest on the performance of the individual.

Goal setting. The third concept of social cognitive theory is goal setting. Bandura (1986) wrote that the intention to perform certain activities self-regulates one's behavior. Additionally, it increases the likelihood that the goal will be achieved. In fact, Bandura and Cervone (1983) found that "if people set their own goal intentions or change them, then their altered self-set intentions serve as the better predictors of what they are most likely to do" (p. 468). Social cognitive theory views goals as motivational enhancers in which people use self-evaluation to judge their own behavior (Bandura & Cervone, 1983). Goal setting also plays a prominent role in the development of self-efficacy (Bandura, 1986). According to Bandura (1986), goals must be specific, clear, and attainable. He posited that attainable proximal subgoals, goals that are achievable in the near future (reading one chapter tonight), lead to the most successful outcomes of attainment of distal goals, which are more long term (reading a book by the end of next month). For example, if middle school students have as a proximal goal the exploration of possible careers and academic pathways, a second goal may become the successful transition to high school, towards the distal goal of high school graduation and a college education.

Self-regulation. The final element of social cognitive theory is self-regulation, which Bandura (1986) defined as "self-directive capabilities that enable people to exercise some control

over their thoughts, feelings, and actions by the consequences they produce for themselves" (p. 335). He stipulated that self-regulation is governed through a set of sub-functions, which allow people to produce proximal guides and self-motivators for themselves that will lead to distal accomplishments. As described before, self-observation allows for the setting of realistic standards and the self-evaluation of behavior (Bandura, 1986). When self-monitoring takes place in temporal proximity to the behavior in question, with clear evidence of progress, and a desire to change the behavior, it can be very effective in altering behavior by rewarding improvement (Bandura, 1986). In order to properly self-regulate, people must develop standards against which to judge behavior. These standards are transmitted through models, such as parents or peers (Bandura, 1986). In addition, people use self-incentives to motivate themselves and affect behavioral change (Bandura, 1977). For example, middle school students interact with a panel of first-semester college students who describe their own experiences in middle and high school. Based on what they learn, middle school students can later self-evaluate and self-regulate their own behavior accordingly.

Self-Efficacy Theory

Self-efficacy theory evolved out of social cognitive theory. It provides a more detailed description of how the belief in oneself shapes and influences one's decisions, goals, and success. Bandura (2001) called efficacy beliefs the "foundation of human agency" (p. 10). People must believe that actions can result in desired outcomes, or they have little motivation to persevere when obstacles arise or to act at all. Self-efficacy has been well-documented in earlier research in the 1990s (Bandura 1995, 1999; Bouffard-Bouchard, Parent, & Larivee, 1991; Collins, 1982). As noted in Chapter One, Bandura (1977) described the four sources of self-efficacy as mastery experiences, vicarious experiences, verbal persuasion, and physiological and

affective states. These factors, which are explained in more detail below, interact to support efficacious analytic thinking, to regulate motivation, and to shape one's aspirations and outcome expectations as a result of one's efforts (Bandura, 1997).

Mastery experience. The first source, mastery experiences, provides people with feedback of success or failure allowing them to best judge efficacy to perform a task (Bandura, 1977). Success reinforces the belief that one can master a task. In education, students' success at researching a future career or completing a project with a good grade, leads to increased self-efficacy that they can master the subject; other results can be found in psychology. Biran and Wilson (1981) conducted a study with 22 adults who suffered from various phobias. The treatment group was treated with a guided exposure technique where participants first performed a task with the therapist, then again by themselves after they could master the task successfully. The control group used cognitive therapy where participants were taught to remodel their thinking about the perceived threat. Results showed that guided exposure, which provided participants with mastery experiences, showed significantly greater increase in participants' ability to perform the task compared to the cognitive therapy group.

Vicarious experiences. The second source of self-efficacy is vicarious experiences. People judge capabilities by comparing achievements to that of others (Bandura, 1997). Winning a competitive race is an example of how students can gain self-efficacy by measuring success against peer models within a social environment. If they perceive their performance to be superior, efficacy is increased (Bandura, 1997). Vicarious experiences are powerful in shaping efficacy and although "they are generally weaker than direct ones, under some conditions, vicarious influences can override the impact of direct experiences" (Bandura, 1997, p. 88). Modeling is also an important element of how people can obtain vicarious experiences.

It provides an important social standard by which people measure efficacy. They tend to seek proficient models in the abilities to which they aspire. Models can be actual people with whom they associate or symbolic models observed through various modes of media, such as television (Bandura, 1997). A study by Schwartz and Suyemoto (2013) found that community collaboration and involvement in a youth organization program, which provided positive role models, increased the self-efficacy of urban youth in middle and high schools.

Verbal persuasion. The third source of self-efficacy, verbal persuasion, consists of expressions of confidence by important persons in individuals' environment that they can accomplish a task (Bandura, 1997). Interactions with first-generation college students or high school students who commend participants' accomplishments during the college workshop are examples of how "people who are persuaded verbally that they possess the capabilities to master given tasks are likely to mobilize greater effort and sustain it" (Bandura, 1997, p. 101). In addition, Bandura (1997) posited that self-motivational and self-management abilities are important factors in allowing people to be more confident and not be dominated by others' opinions. In fact, he stated that

> efficacy beliefs are best instilled by presenting the pursuit as relying on acquirable skills, raising performers' beliefs in their abilities to acquire the skills, modeling the requisite skills, structuring activities in masterable steps that ensure a high level of initial success, and provided explicit feedback of continued progress. (p. 103)

Physiological and affective states. The final source of self-efficacy is physiological and affective states. Bandura (1997) stated that people often interpret physiological symptoms, such as aches and pains or difficulty breathing as signs of inefficacy, which can cause fear of ineptitude and produce the very impairments they fear. It is the difference in interpretation of the

symptoms as signs of physical decline rather than an effect of a sedentary lifestyle that enables people to correctly judge their efficacy (Bandura, 1997). A study by Alam (2013) discovered a positive relationship between self-efficacy and academic performance of adolescent students who showed low test anxiety. By practicing anxiety-reducing techniques, teachers can increase students' self-efficacy. In addition to the described elements of self-efficacy, Bandura (1989) also regarded human agency as an important element to control one's thought processes, motivation, and action.

Personal agency. While not a direct source of self-efficacy, Bandura (1997) also wrote about human agency, the ability to control one's life, as an instrumental part of social cognitive and self-efficacy theory. Personal agency describes peoples' power to use the cognitive, motivational, and affective processes described above to instill the "beliefs about their capabilities to exercise control over events that affect their lives" (Bandura, 1989, p. 1975). Bandura (2001) distinguished between direct personal agency, when people direct their experience and not just simply live through them; proxy agency, when people use others to act on their behalf to reach a desired outcome; and collective agency, when people believe in the power they hold collectively to produce results they desire. Bandura (1986) stated that self-efficacy, the strongest predictor of future success, is the way people see themselves, and how strongly they believe in their ability to achieve goals as the agent of their actions. The focus of this study lay in direct personal agency, which has several elements:

- Intentionality - People are motivated by their intentions to act in certain ways to produce desired results in the future. The outcome is not always clear; it might involve unintended consequences, failures, or benefits (Bandura, 2001).

- Forethought - People set goals for themselves, plan a course of action, and are motivated by the desired outcomes (Bandura, 2001).
- Self-reactiveness - People use their personal standards and morals to incentivize their actions towards the desired goal, thus serving as a self-regulator.
- Self-reflectiveness - People evaluate their actions, motivation, and values (Bandura, 2001).

The development of personal agency begins in infancy when infants recognize that there is a cause and effect to individuals' recognition that they are the agents of the action. The early sources of self-efficacy lie in the family; however, "as children's social world rapidly expands, peers assume an increasingly important role in their development of self-knowledge of their capabilities" (Bandura, 1997, p. 169). As children's social environment expands, they encounter different efficacy experiences with peers who are experienced and competent role models of efficacious thinking and behavior schemata (Bandura, 1986). Since children often choose peers with similar interests and values, this "selective peer association will promote self-efficacy in directions of mutual interest, leaving other potentialities underdeveloped" (Bandura & Walters, 1959). While family nurtures children's early sense of efficacy, school is "the primary setting for the cultivation and social validation of cognitive capabilities" (Bandura, 1997, p. 174).

School and self-efficacy. A source of self-efficacy during middle school years comes from school where children learn cognitive competencies, problem-solving skills, and the knowledge to participate in society (Bandura, 1986). Bandura and Schunk (1981) found that "a high level of efficacy fosters a high level of motivation, academic accomplishments, and development of intrinsic interest in academic subject matter" (p. 596). Bandura (1993) stipulated that students with strong motivation and cognitive abilities learn well under prevailing

educational practices. However, he claimed that many youth are not properly prepared for the future, which undermined a sense of personal efficacy. Bandura (2001) claimed that continued positive self-development is necessary to achieve efficacy, and schools have a role to play. It is this research that gave impetus to the focus on the middle school population, which will be further described in the literature review. Adolescence and self-efficacy will be further explained in a separate section below.

Self-efficacy theory is the theory that informed the development of the independent variable, participation in the college workshop. Bandura (1986) stipulated that students' efficacious beliefs can be improved through observational learning, outcome expectations, goal setting, and self-regulation. This learning can be accomplished through mastery or vicarious experiences, verbal persuasion, or control of physiological and affective states. Participants found vicarious and mastery experiences in the activities of the online career exploration module and the campus visit. In addition, the student panel activity and college staff presentations used verbal persuasion and affective factors. Both were expected to increase participants' familiarity with the imminent transition to high school and a college environment and, ultimately, increase students' college-going self-efficacy. As the workshop was developed based on self-efficacy, it was hypothesized that participants would experience increased self-efficacy regarding college attendance and college intent.

Social Cognitive Career Theory

In 1981, Hackett and Betz expanded Bandura's theory into the field of career theory. As the focus of the study was college and career self-efficacy and college intent, this theory also served as a guiding foundation for the study. Hacket and Betz developed a model of women's career development based on Bandura's self-efficacy theory with a precept that women's failure

to appreciate and utilize talents, abilities, and interests in career pursuits affected career and educational choices. Hackett and Betz (1981) used Bandura's four sources of self-efficacy to explore the relevance in the career domain and effects on career-related self-efficacy. The authors posited that "the applicability of self-efficacy expectations to the individual's perceived range of career options, to effective decision making, and to effective and persistent pursuit of career plans could be investigated in a variety of ways" (Hackett & Betz, 1981, p. 335). Out of this research grew a unifying social cognitive theory of career exploration, which was developed by Lent et al. (1994), to apply to males and females.

Lent et al. (1994) used a constructivist view that emphasized an active role in how one anticipates, plans, and actively constructs meaning, as explained in Chapter One. The theory rests on three basic principles: (a) vocational interests develop from one's self-efficacy and outcome expectations; (b) seemingly overwhelming obstacles may prevent one from fulfilling these goals; and (c) through successful experiences one can mediate negative perceptions and increase self-efficacy, thus one is able to pursue one's career interests more fully (Lent, Brown, & Hackett, 1996). Figure 2, researcher-created, illustrates the interconnectedness between these three variables.

Interest development. Lent et al. (1994) described the link between self-efficacy, outcome expectations, and vocational interests as well as values and aptitudes as the elements of vocational interest development.

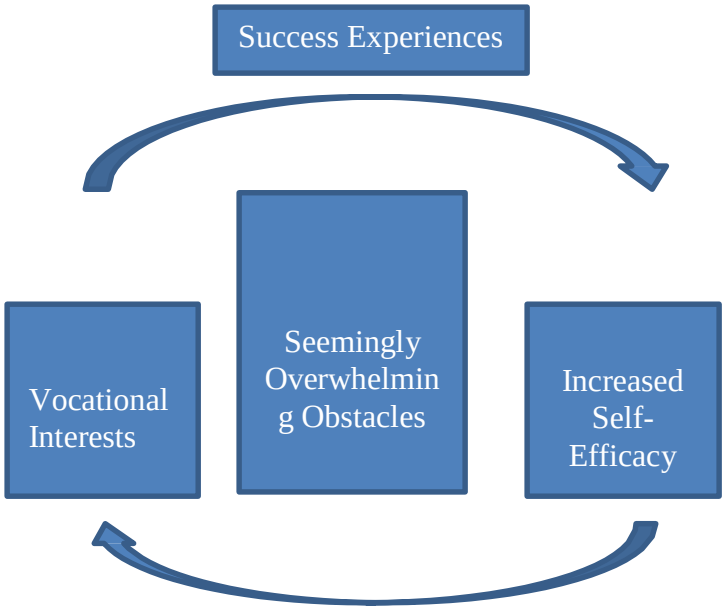


Figure 2. Variables of career self-efficacy.

Vocational interest. The authors defined vocational interests as "patterns of likes, dislikes, and indifferences regarding career-related activities and occupations" (Lent et al., 1994, p. 88). Children and adolescents are exposed to a wide variety of potential careers and occupational tasks through direct or vicarious observations and repeated engagement, modeling, and feedback from influential people in their lives. This allows adolescents to develop performance standards, a sense of efficacy, and outcome expectations for their performances (Lent et al., 1994). Moreover, students become interested in and form lasting interests in activities in which they seem to be efficacious (Bandura, 1986). Lent et al. (1994) postulated that newly acquired interests promote goal setting toward further activity and subsequent task selection. The resulting practice leads to performance attainments and subsequent increase in self-efficacy and outcome expectations. This process is portended to repeat itself throughout a person's lifetime.

Values and aptitudes. In addition, values and aptitudes are elements of career self-efficacy theory as variables that involve nurture as well as nature, where some aptitudes are

thought to be inherited capacities while others involve learned material (Lent et al., 1994). These values are learned by children and adolescents through vicarious learning and self-evaluative experiences in interactions with role models, through cultural and religious institutions and through varied media sources (Brown & Inoye, 1978; Lent et al., 1994). Lent et al. (1994) incorporated the concept of values into the outcome expectations an individual might have from particular academic or career-oriented activities.

Career choice. Lent et al. (1994) stipulated that "the choice process often entails compromise between what one would do and what is actually attempted" (p. 93). In other words, the final career attainment is not just determined by one's interest but also by educational and vocational requirements. For example, students who wish to pursue a nursing degree may be persuaded to switch their major because of an inability to pass a required anatomy course. Moreover, self-agency plays a major role in determining one's career goals through a reciprocal relationship between self-efficacy, outcome beliefs, and interests (Lent et al., 1994). Self-efficacy and outcome beliefs inform interests, which influence career choice goals. The higher valued the perceived outcomes, the more likely it is that people will choose a particular career goal and action course (Lent et al., 1994).

Performance. In the model, Lent et al. (1994) included levels of accomplishment and indices of behavioral persistence in the description of performance. Self-efficacy directly affects performance as well as goals and actions. The authors stated that the quality of performance may be directly influenced by performance goals. For example, students who are pursuing a medical degree may have performance goals of "As in all classes" thus regulating course behavior, such as time spent studying.

As described in Chapter One, the authors used three social cognitive processes they deemed most relevant to career development: (a) self-efficacy, (b) outcome expectations, and (c) goal representations, as drawing directly from Bandura's social cognitive theory (1989). Lent et al. (1994) posited that "the effects of learning experiences on future career behavior are largely mediated cognitively" (p. 87).

Social cognitive career theory also stipulates that career development is affected by objective and perceived environmental factors, such as ethnicity or gender, when certain cultures selectively encourage specific occupational activities or when ethnicity might influence educational access (Lent et al., 1994; Lent, Hackett, & Brown, 2000). However, Lent et al. (1994) posited that "the effects of gender and ethnicity on career interests, choices, and performances will be partly mediated by the differential learning experiences and consequences that give rise to self-efficacy and outcome expectations" (p. 105). Another variable, community-based learning, such as apprenticeships, was also found to enhance contextual learning (Brown, 1999).

The independent variable, participation in the college workshop, incorporated the elements of social cognitive career theory in the online career exploration module and the campus activities. It provided the basis for the hypothesis that the workshop would influence career interest and intent, which would, hopefully, influence students' behavior and self-efficacy beliefs. Students took self-assessments to discover career interests and possible career choices as well as values and aptitudes. The newly discovered knowledge was further explored in the activities on campus, which allowed for community-based learning, with an examination of academic pathways to potential careers and the interaction with first time students from their neighborhoods. In addition to the overarching scaffolding of social cognitive career theory and

self-efficacy theory, it is also important to look at other factors that may influence adolescents' career and academic decision-making, such as psycho-social development and physiological changes that occur in adolescence.

Adolescence

Some psychosocial development theorists have partitioned the development from infant to adult into segments, often called stages. Jean Piaget (1952), a Swiss psychologist, developed a cognitive development theory of how children acquire knowledge based on stage theory. In each of the four stages, children built upon prior knowledge and abilities to add further cognitive functions. Piaget posited that each organism attempts to achieve equilibrium with the environment and within itself by developing organized structures that assist with the interaction with the world (Piaget, 1952). At the end of each stage, this equilibrium is disturbed, and the child uses either physical maturation, experience with the physical environment, or the influence of the social environment to go through the process of equilibration and to achieve equilibrium once again. This process is repeated through each of the four stages (Piaget, 1952).

Piaget (1952) defined a stage as "a period of time during which the child's thinking and behavior in a variety of situations tends to reflect a particular type of underlying mental structure" (p. 121). During the first stage, sensorimotor intelligence, infants experience the world through sensorimotor patterns. They have no understanding of themselves as independent individuals, and they lay the basis for grasping the concepts of time, space, and objects. Their knowledge is based on objects and has no reflective value. At this level, "the child constructs the schema of the permanent object" (p. 122). The second stage, preoperational intelligence, allows children to engage in symbolic play and the acquisition of language, but there is no conservation of an object, so children can only reason based on what they see. During the next stage of

development, concrete operational intelligence, children develop some logic structures and they can carry out mental operations, such as putting like items together (Piaget, 1952).

Finally, in the last stage, which is what is relevant to this study, formal operational period, adolescents can think hypothetically, test these hypotheses, and reach the correct conclusion (Piaget, 1952). Piaget viewed the increase of knowledge as a process that used a deliberate and active interaction between the individual and the environment to construct knowledge. His theory correlates with cognitive development theory because he also wrote about the importance of social interaction as a factor in development. He argued that reasoning is the result of the social process known as argumentation and that teachers must provide lessons that promote children's ability to develop understanding (Piaget, 1952). Piaget's findings underscore the ability of middle school students to engage in career and academic pathways exploration models, such as the college workshop with its online lessons to develop understanding of the career choice process and its social interactions during the campus visit.

In his work on social cognitive theory, Bandura (1977, 1986) referenced the work of Jean Piaget, and he stipulated that there are commonalities between social cognitive and Piaget's theory in their emphasis on the development of conceptual structures. Both underscore the importance of sensory-motor and conceptual-motor learning; that is, "young children must develop the cognitive competencies that enable them to comprehend and symbolize observed activities and to convert thought into organized action" (Bandura, 1986, p. 89). However, Bandura disagreed with Piaget that only discrepancies between the schemata lead children to learning and progressing to the next stage. In his opinion, important models in children's lives serve as irreplaceable sources of knowledge that influence children's thought processes instead of causing merely "cognitive perturbances" (Bandura, 1986, p. 486). In addition, social factors

play an important role in cognitive development suggesting that acquisition of cognitive skills is shaped by the accumulated knowledge rather than by internal disequilibrium (Bandura, 1986).

On this, another developmental stage theorist, Erik Erikson, agreed. He posited that during adolescence, the period between childhood and beginning adulthood, children have to develop a sense of self, establish their identity, and understand where they fit into the social world (Erikson, 1950). They develop confidence and prepare for the future, and the promise of a career, and the planning of an occupational identity is pleasant (Erikson, 1950).

Recent advances in brain research on changes in the adolescent brain and the effect on decision-making also seem to support the findings of Bandura (1977, 1986, 2001), Erikson (1950), and Piaget (1952). Magnetic Resonance Imaging (MRI) studies have shown substantial developments occurring in adolescents' brains, especially in the frontal and parietal regions, as well as an increase in prefrontal cortex and parietal cortex white matter (Giedd, Snell, & Lange, 1996). This increase, caused by increased myelin, leads to more efficient neural connections, which, in the prefrontal cortex, are responsible for higher-order cognitive functions, such as planning, risk assessment, and decision-making (Steinberg, 2012).

Based on the findings, one assumption is that changes lead to a refined neural circuitry in the cortical regions thereby increasing the competence of the cognitive systems they serve (Choudhury, Blakemore, & Charman, 2006). In addition, the amplified activation of the amygdala, a region of the brain responsible for processing emotions, leads to an increased awareness and interest in other people. There is also evidence that synaptic pruning during adolescence leads to brain reconstruction and loss of unused connections where teens "use or lose" interests, beliefs, abilities, and skills based on their activities (Roaten & Roaten, 2012; Steinberg, 2012).

Theory and research support beginning career exploration in the middle school years and providing guidance to adolescents with appropriate activities to promote a positive environment thus enabling them to make essential career decisions (Roaten & Roaten, 2012). Middle school is a time when young adolescents undergo identity formation. They are struggling for independence and individuality at the same time when they feel self-conscious and vulnerable (Erikson, 1950), an idea Bandura did not emphasize in his seminal work but wrote about in his later work. It is here that self-efficacy is instrumental in helping students become more confident in their own goals and academic achievements (Bandura, 2001; Eccles, Lord, & Midgley, 1991; Lent et al., 1994).

Adolescence and Efficacy Beliefs

Bandura's (1977) seminal work on social cognitive theory and self-efficacy referred mostly to adults. In later publications, as alluded to above, he began to investigate cognitive development and self-efficacy in younger age groups and, specifically, in adolescents (Bandura, 2001, 2005, 2011). Bandura (2005) listed three elements that play a crucial role in the cognitive development of students: (a) students' own belief in their ability to understand the academic subjects and to control their own learning; (b) teachers' belief that they can motivate students to learn the material; and (c) an overall sense by faculty that the school as a whole can produce substantial academic progress.

Bandura (2006) stipulated that confident students will expect no less than a successful outcome of endeavors because self-efficacious students "work harder, persist longer, persevere in the face of adversity, have greater optimism and lower anxiety, and achieve more" (p. 343). Bandura (2006) also stressed that adolescents must experience authentic mastery experiences, which reinforces Erikson's (1950) claim that consistent recognition of real accomplishments

leads to ego identity gains. In addition, adolescents benefit from effective modeling practices, appropriate peer models, instruction tailored to abilities, and praise for effort and persistence (Bandura, 2006). Furthermore, Bandura (1997) stated that "by influencing preparatory development and occupational choices, efficacy beliefs partly shape the courses that lives take (p. 239). These beliefs can affect the types of activities students undertake and the environments in which they choose to participate (Bandura, 2001). Self-efficacy focuses on students' beliefs in the ability to generate a desired outcome (Bandura, 2006).

In the educational setting, self-efficacy is evident in the choices students make to control their own learning. In the past, schools controlled the curriculum and what students learned. Currently, they have the vast network of Internet resources to determine what they will learn (Bandura, 2001). In addition, with a rapidly changing society and the change from manufacturing to an information age, students are required to make decisions about the future at an earlier time than ever before. The transition from middle to high school is a difficult one in a physical sense with the developmental changes. Additionally, students have to adapt to a different school environment where they move from room to room with ever-changing groups of classmates. Once in high school, students have to form new social networks and establish their own status and role within the new groups (Bandura, 2005). Strong self-efficacy is the basis for a successful transition, which will put students on a path to graduation and, ultimately, a college education. In a longitudinal study of middle school students through high school, researchers found that "the influence of self-efficacy to regulate one's learning activities over a long period is verified in longitudinal research spanning the transition from middle school to high school" (Bandura, 2011, p. 27). A reasonable assumption would be that the scaffolding of increasingly

diverse self-efficacy allows students to master high school and to see transition to college or post-secondary education as a normal progression and desirable goal.

The findings by Bandura (1977, 1993) of the effect of self-efficacy on goal setting and persistence and the expansion into the realm of career exploration by Lent et al. (1994) and Hackett and Betz (1981) supports the study's focus on the adolescent population. By providing participants with mastery and vicarious experiences, by using verbal persuasion, and by providing a stimulating environment, the study hypothesized that students' college and career self-efficacy and college-going beliefs would improve.

Review of the Literature

The literature review lays the foundation for the research study and demonstrates the gap in the literature it intended to fill. It provides context, explains the research scope, and presents the knowledge base upon which the study was constructed (Joyner, Rouse, & Glatthorn, 2013). The purpose of the study was to examine the effect of a four-day college workshop (a three-day online career exploration followed by a college campus visit) on the career and college self-efficacy and college intent of a group of eighth-grade students to evaluate whether the intervention might have a positive effect on the treatment group's college and career self-efficacy and college intent when compared to a control group.

To provide a foundation for this study, the researcher examined and synthesized primary theoretical sources, scholarly journals, doctoral dissertations, books, and web-based resources. Source reference lists indicated additional sources to examine for relevance to the topic. Additional searches included major search engines, such as EBSCO and Google Scholar. The review of the literature is organized in four sections: (1) college and academic self-efficacy, (2) career education in other countries, (3) career education in the United States, and (4) summary.

College and Academic Self-Efficacy

Middle school lays the foundation for high school and thereafter. Students' decisions regarding academic course selection, study habits, participation in extracurricular activities and social groups can have a significant impact on the chances of high school degree completion as well as entrance into a college (Neild, 2009; Cohen & Smerdon, 2009; Benner & Graham, 2009). There are many examples of college preparatory programs for high school students (American Institutes for Research, 2009; Baker, Gratama, Stroh, & Scott, 2007; Neild, 2009; Royster, Gross, & Hochbein, 2015; St. John & Hu, 2006; Vile, Arcaira, & Reisner, 2009) and some examples of programs to prepare middle school populations or students in ninth grade for high school and beyond (Benner, 2011; Langenkamp, 2010; Lys, 2009; Smith, 1997).

However, there is little quantitative research about college and career interventions to improve the self-efficacy beliefs of middle school students in a semi-rural environment that they can achieve the goal of going to college and pursuing a career, which Bandura's research has shown to be important contributing factors. The Breakthrough Initiative (2010) found that "a student's expectation that they will attend and graduate from college is indeed correlated with success in high school and college" (p. 2).

While the middle school years have been deemed as an important time for career and college exploration, evidence-based interventions have been limited because the majority of research involving the middle grades describes strategies schools can employ to improve academic achievement among this group (ACT, 2008, 2009, 2013; Adams, 2012; Alam, 2013; Alleman & Holly, 2013; Andrews & Bishop, 2012; Grossman & Cooney, 2009; Conley, 2008; Deschenes, Little, Grossman, & Arbreton, 2010; Hooker & Brand, 2010; Langenkamp, 2010; Legters & Balfanz, 2010; McCallumore & Sparapani, 2010; McCollough, 2011; McCollum &

Yoder, 2011; Rinke et al., 2012). Chung, Cartwright, and Cole (2014) reported the effect of participation in the Robofest robotics competitions in 2013 on the Science, Technology, Engineering, and Mathematics (STEM) scores of students, as measured by the Michigan Grade level Content Expectations survey instrument, compared to students who did not participate. The researchers found that the treatment group showed a larger increase in STEM scores than the control group.

In addition to academic preparation, knowledge about high school, college, and careers is also important to support self-efficacy and college intent (Conley, 2010; Gibbons, 2004). Huerta, Watt, and Butcher (2013) examined college readiness of students who participated in the Advancement Via Individual Determination (AVID) program in middle and high school (n = 3,986) compared to students who took the program in high school only (n = 11,641). Results showed that students who were enrolled in AVID in middle and high school showed a significantly higher academic GPA (M = 3.14, SD = 0.48) than students who enrolled in high school only (M = 3.03, SD = 0.53), t(1,468) = -5.464, p=0.000.

Nevertheless, programs to increase middle school students' college self-efficacy and data of their effectiveness are urgently needed. In fact, Ramsey (2008) criticized the lack of data and wrote that "little can be definitively stated about the direct effects of these additional support programs" (p. 9). A history of educational programs has shown to improve self-efficacy in middle school students, and a number of college readiness programs have targeted middle school students recently (Fleming, 2011), but many are aimed at special populations based on factors, such as ethnicity, family income, location, or medical conditions (Beer, LeBlanc, & Miller, 2008; Benner & Graham, 2009; Fleischman et al., 2011; Gentle-Genitty, 2009; Perna, 2002). Britner and Pajares (2006) found that mastery experiences increased science self-efficacy of

students in grades 5 through 8. Chin and Kameoka (2002) studied inner-city Hispanic students in grades 5 and 6 and found that social persuasions increased their educational self-efficacy. One author wrote that empirical evidence supports Bandura's contention that self-efficacy "touch virtually every aspect of people's lives – whether they think productively, self-debilitatingly, pessimistically or optimistically; how much effort they expend on an activity; how well they regulate their thinking and behavior; and their vulnerability to stress and depression" (Pajares, 2005, p. 341).

Niehaus, Rusasill, and Adelson (2011) researched the effect of an after-school program on self-efficacy of Latino middle school students in an urban school district. The results showed that student math achievement, school attendance, and GPA increased. It did not, however, lead to higher levels of motivation and self-efficacy. Niehaus et al. (2011) recommended further researcher into other interventions that might improve motivation and self-efficacy. Prabhu, Terenzini, Lee, and Franklin (2006) examined the effect of the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) comprehensive college readiness program for low-income middle school students on their academic college readiness, as measured by their reading and mathematical test scores. The researchers analyzed scores on the Stanford-9 tests and the California Academic Performance Index of all sixth graders enrolled in California public schools during the fall of 1999. Students' scores were compiled for the years 1999-2001 and compared to a control group of students who did not participate in the GEAR UP program. Results showed a statistically non-significant effect of the intervention on students' reading and mathematical scores compared to the control group.

Not much support is offered to "regular" students, especially in rural and semi-rural environments to support the preparation for college. Consequently, students often do not choose

courses in high school that will put them on a course to compete for college admission, scholarships, grants, and other financial assistance and allow them to attend college (Hooker & Brand, 2010). To point, Witherspoon and Ennett (2011) stressed the fact that little has been published regarding the transition of rural youths. The authors cited an increase in educational aspirations among rural youth, which puts them on par with their urban counterparts, whereas earlier studies had shown a lower level of educational aspirations (MacBrayne, 1987). While the research focus in college self-efficacy has been on the middle grades in urban and suburban environments, experts increasingly point to career self-efficacy as another important element to improve middle school students' college self-efficacy, as studies conducted outside of the United States have shown.

Career Exploration in Other Countries

Contrary to the United States, where the focus is just now turning to the middle school grades, the firm belief that schools should prepare middle and high school students for future employment is common in European countries (Berger et al., 2012; van de Werfhorst, 2014). It is seen as the vehicle to produce a capable workforce that can enhance innovation and competitiveness, and, as such, is considered an important factor for the economic well-being of each nation (Makkonen & Lin, 2012). In fact, continuing vocational training was found to be crucial for innovation (Brockmann, Clarke, & Winch, 2008; Gomezelj, Fister, & Trunk, 2008; Makkonen & Lin, 2012). In addition, it should "sort students into tracks according to their talents and interests in order to optimize the production of knowledge and skills" (van de Werfhorst, 2014, p. 125), provide children with equal opportunities regardless of background, and it should "socialize citizens into active civic engagement" (p. 126).

Moreover, career exploration courses are seen as a way to ensure social equity and to keep at-risk students interested in school and on the path to graduation (Sultana, 2010). In the new European model for vocational education, the focus is less on the citizen than on future employees. The goal is "to prepare employable individuals capable of steering their own learning and work careers during economic, demographic, and technological transformations. Powell, Bernhard, and Graf (2012) stipulated that "the responsibility for achievement and attainment and transitioning to labor markets lies squarely with individuals, who should be flexible and mobile" (p. 254).

While there is a dearth of quantitative research data available with American students, a plethora of research with adolescents regarding career self-efficacy exists from other countries. The data may point to possible programs or interventions that will raise career and college self-efficacy and college intent in American middle school students. The following summary demonstrates the effectiveness of career exploration interventions in European, Eurasian, and Asian countries.

In Scotland, pre-vocational education rests with local authorities or the school. All courses pertaining to pre-vocational education must be approved and accredited by the Scottish Qualifications Authority (SQA, 2005). Typically, courses have a modular-based curriculum and are created based on input from business groups, trade unions, and other stakeholders. Courses are offered at all lower secondary schools (similar to American middle school) and are taught as stand-alone classes but include elements of general skills (Berger et al., 2012; Canning, 2007; Scottish Consultative Committee Curriculum, 1989). This model has led to improved retention rates with students in the lower grades displaying career self-efficacy while deciding on a career

and following the career and academic path to work in the chosen occupation (Berger et al., 2012).

The German model illustrates the focus on career education in early grades. In Germany, the individual states have authority over education, but they cooperate with each other and follow a common framework (Berger et al., 2012; Kultusministerkonferenz, 2015). There are no separate national education standards regarding pre-vocational education, rather it is embedded within the curriculum of lower secondary education, which is comprised of two different school types: Hauptschule (secondary general school) and Realschule (intermediate school). Both schools end with final examinations and prepare students for entry into apprenticeship programs or for continuation of their education in upper general or vocational schools where they can get further certification. Pre-vocational education is part of subject clusters and mandatory in the state of Baden-Württemberg but not in others (Ministerium für Kultus, Jugend und Sport, n.d.).

Germany's pre-vocational system was examined by Powell, Graf, Bernhard, Coutrot and Kieffer (2012), which showed that almost 500,000 young people enter pre-vocational programs to receive credits toward official certification. The study found that the training, which takes place at the schools and offers no practical experience, failed to increase students' vocational preparation and work aptitudes because employers still expected some work experience. However, students did show increased career self-efficacy. Additional findings showed that because of the impetus to prepare students for the transition to the labor market within the school system, companies reduced the number of apprenticeships, one of the mainstays for the vocational training for students who did not take the academic education path in Germany (Powell et al., 2012). Elements of the German system have been emulated throughout the world because it has shown its effectiveness to increase career self-efficacy in students in the lower

grades and provide for a seamless transition from school to career. China was the biggest nation to pattern its prevocational training according to the German system. China's emerging businesses have firmly embraced the dual system of combining work and study. As such, this system has now permeated the middle school stage and is working its way through the Chinese education system (Wang & Jiang, 2013).

Additional studies have demonstrated that career/college interventions increase college and career self-efficacy in middle school students. A study by Bozgeyikli and Dogan (2010) used the tenets of social cognitive career theory (Lent et al., 1994) to explore the effect of a computer assisted career guidance program on the career self-efficacy of 60 eighth-grade students in Turkey. Results showed that the intervention increased participants' self-efficacy in assessing personal and occupational features and ability to collect career information, and career self-efficacy. In Finland, Koivisto, Vinokur, and Vuori (2011) examined the effects of *Towards Working Life* intervention on career self-efficacy of 922 students, ages 14 to 15, who were at the transition to secondary education. The intervention, an intensive 15-hour workshop conducted over the course of one week, combined online career exploration, interviews with students from upper secondary school, and instructors' personal accounts of their own career paths. Results revealed an increase in self-efficacy towards career choice preparedness and career planning.

A study of 225,559 ninth-grade students in Denmark (which is still considered low secondary level), of a state-wide student career guidance program showed a positive significant effect of students' admission to upper secondary school; in other words, students transitioned more successfully to secondary school after participation in the program (Hoest, Jensen, & Nielsen, 2013). Finally, Choi, Kim, and Kim (2014) found that Korean middle school students

showed higher scores in career development skills and school success after participating in career education programs in school once or twice of a two-year period.

In all, research conducted outside of the United States provides support for the impetus to promote career education in the lower grades and to investigate effective programs and interventions that will increase career self-efficacy in adolescents.

Career Education in the United States

In the United States, lawyer and engineer, Frank Parsons, was considered "the dominant visionary and architect of vocational guidance and vocational education" (Herr, 2013, p. 278). In his seminal work, which provided the scaffolding for a plethora of research on the topic, Parsons (1909) suggested a three-step approach:

> (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and their causes; (2) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning of the relations of these two groups of facts. (p. 5)

In 1908, Parsons created the first formal career counseling center in the United States with the Vocation Bureau in Boston, and established the foundation for contemporary career development and counseling (Hartung & Bluestein, 2002). Parson's stipulation that labor market information was of critical importance to career counselors ultimately led to the creation of the Career Information Delivery Systems (CIDS) in the early 1970s. The database included occupational and educational information and was the foundation of career exploration programs, much like the Florida CHOICES program used in the study (Ollis & Dietrich, 1994).

In 1917, the Smith-Hughes Act was the first federal program that established support for agricultural trade occupations instruction and home economics in U.S. colleges and universities. The program grew and expanded over time, and with the Vocational Education Act of 1963, Congress established a federally funded program to ensure that career education programs were established by the states in all schools. For the first time, money was included to conduct research and development in vocational and technical education (Lewis & Stone, 2013). It led to an increase in research in the field, not just for the adult population, but also with high school and middle school students. Montesano and Geist (1964) studied 30 ninth and 30 twelfth graders on their reasons for choosing certain occupations. They found that the two groups were similar in using interest as the explanation for career choice. However, neither age group listed assessment of abilities as a factor. Hollender (1971) asked students in grades six through twelve what occupation they planned to enter. Results indicated that vocational decision-making did not seem to occur in the lower grades. Only toward the end of ninth grade did students express interest in specific occupations. These findings run counter the later research of Bandura (1977, 1986) and Lent et al. (1994) regarding career self-efficacy of young adolescents.

Unlike in European, Eurasian, or Asian countries, vocational education does not have a common format in the United States, and individual states are just now attempting to implement career exploration curriculum into the lower grades. Evans and Burck (1992) examined career education programs throughout the United States and postulated that the emphasis in junior high school or middle school should not rest on selecting a career but rather, an exploration of themselves and of society should be the appropriate curriculum for the age group. Nevertheless, Evans and Burck (1992) found that schools had limited the curriculum to research of careers

without prior evaluation of students' aptitudes and attitudes to allow for meaningful career exploration.

Despite a focus on vocational education, a report issued by the Committee on Vocational Education Research and Development (1976) came to the conclusion "that the $250 million spent on research and development since 1963 had not had documented widespread impact" (p. 11). Consequently, the Education Amendments of 1976 created a national center to steer research into vocational education throughout the states. Out of these efforts, the Perkins grant program evolved, which today supports funding for vocational and technical education in college and at the community college level (Lewis & Stone, 2013). Most recent legislation, such as the implementation of Race to the Top, a national program with the goal to implement common academic standards, expand support for teachers and teacher training, create state-wide data systems, assist low-performing schools, and promote partnerships between business leaders, educators and other stakeholders, has increased pressure on schools to implement initiatives to increase students' college and career readiness (The White House, 2009).

For decades, researchers have recognized that career and college preparation begins in K-12, namely high school and as early as middle school. Predicting vastly different workforce requirements in the 21st century, Johnston and Packer (1987) strongly advocated for schools to prepare their students for an automated and decentralized workplace and to incorporate the necessary skills into the curriculum. Jones (2010) found that career counseling for early adolescents ameliorated the barriers of race, ethnicity, and socioeconomics; it raised students' awareness of the possible training and educational opportunities after high school; and it helped students develop their decision-making and other skills needed for college education. According to research conducted by ACT (2013), using early career exploration programs where students

learn about possible career interests allows them to become focused on college and career goals. This can greatly impact students' retention in high school because it promotes school engagement and helps students who have already disengaged from school in middle school (Orthner et al., 2010).

Some researchers have insisted that students in early adolescence are not able to successfully participate in career exploration programs, whether it is due to a lack of confidence or a lack of interest (Akos, Konold & Niles, 2004). In addition, Perlstein (2003) wrote that because of the impact of the rapid physical and emotional development during those formative years, career development would not bring the desired outcomes. However, the findings by Erikson (1950), Piaget (1952), and Bandura (2001) have shown that the age group is perfectly capable of engaging in exploratory career research (Gibbons, 2004; Hartung, Profeli, & Vondracek, 2008; Moore, 2002). Research continues to confirm this and places the focus on the importance of career and college interventions in middle school.

Johnson (2000) interviewed 389 sixth- and ninth-grade students on their career development awareness querying them on items, such as skills, attitudes, and knowledge needed for success in a future career. Only 52% were able to identify at least one item, but almost 88% could not identify a skill or knowledge they had learned in school that related to future employment. Ninth graders especially displayed a more negative attitude than sixth graders. This highlights the importance to encourage students' interaction with and focus on career exploration in the middle school grades to keep positive momentum going into high school. Only few other studies were found in the early literature, but they all pointed to the importance of integrating career awareness and exploration in the middle grades (Dahir, 2001; Schaefer, Rivera, & Ophals, 2010).

To that effect, states are now placing emphasis on incorporating career education into middle school curriculum. A search of the Department of Education websites of all fifty states revealed that all states promote career education in the lower grades, and free online career exploration programs are available to local school districts. Most programs are geared toward middle and high school; one state, South Carolina, offered it for K-12 (America's Career Resources Network, n.d.). However, statistical research is needed to provide evidence of career programs' effectiveness in raising career self-efficacy in middle school students. The researcher found only one study that provided quantitative data of the effectiveness of a state program. McComb-Beverage (2012) explored the effectiveness of the Virginia Career View program on the career self-efficacy on seventh-grade students in a suburban school district. Results showed statistically significant results in terms of increased career self-efficacy and career pathway identification.

In general, few quantitative studies regarding the effectiveness of interventions on career exploration have been conducted in the middle grades, and researchers have recommended different programs and interventions to allow young adolescents to explore career interest based on their skills and interests (Dahir, 2001). Legum and Hoare (2004) studied the effect of a 9-week career intervention on the career maturity levels, self-esteem, and academic achievement on at-risk sixth- and seventh-grade middle school students in a suburban school district in Baltimore County. The intervention, Career Targets, provides a career exploration inventory, information about career clusters, and the educational path for the careers. Students met with researchers once a week for nine weeks during normal school hours. Data was collected using the Crites Career Maturity Inventory and the Coopersmith Self-Esteem Inventory. Results

showed no statistically significant differences between control and treatment group in terms of career maturity-attitude.

A case study of eight low-income Hispanic and Black urban middle school students in sixth and seventh grade explored how four success-learning experiences were associated with students' career interest and ability beliefs. Students read three booklets: (a) *Exploring Your Future with the Self-Directed Search,* (b) *Careers Booklet,* and (c) *Occupational Outlook Handbook.* Data was collected using the Self-Directed Search-Career Explorer, which students completed at the end of the six-week treatment, as well as interviews with the researchers. Results showed participants' increased vocational interests and evolving occupational preferences as a result of the program (Jackson et al., 2011).

A study by Radcliffe and Bos (2011, 2013) followed a group of 100 low-income sixth graders of majority Hispanic ethnicity (60%) for seven years to assess the effectiveness of an intervention to build college and career readiness through the high school years. The treatment group received an intervention that included writing activities, college visits, and academic tutoring while the control group did not receive the treatment. Data was collected using the Goal-setting Worksheet, the Pattern of Academic Learning survey, student self-report surveys, and student scores on the Texas Assessment of Knowledge and Skills (TASK) test. Compared to the control group, treatment group participants showed stronger improvement on the TASK and stronger perseverance in high school. Results also pointed to increased beliefs regarding academics, goal orientation, personal achievement, and a more positive attitude toward college.

Additionally, interventions and programs have been created to benefit special populations: The Career Institute in Queens, NY serves struggling, special needs, or first-generation college-going students or English language learners (Schaefer et al., 2010). Ting et

al. (2012) reported on a career exploration program called GIMS (Geosciences in Middle Schools), which helped students aged 12 to 14 explore careers in the geosciences through a 3-year program that included self-assessment, career exploration, and field trips. A similar emphasis on the exploration of careers in the STEM fields was found in an intervention with middle school students, who performed hands-on authentic research. Results showed an increase in STEM knowledge, particularly by female students, which used project-based learning, can decrease the gap between academics and the real world of a profession (Knezek, Christensen, Tyler-Wood, & Periothiruvadi, 2013). Another project targeted Native American adolescents (Turner et al., 2006). A review of several databases revealed no quantitative studies in the U.S. exploring the impact of collaborative interventions between school districts and community resources, such as community colleges, on the college and career self-efficacy and college intent of regular students in rural or semi-rural environments.

The study's intervention combined elements that have proven successful in raising college and career self-efficacy and college intent by other researchers, such as online career exploration (Bozgeyikli & Dogan, 2010; Koivisto et al., 2011; Legum & Hoare, 2004; McComb-Beverage, 2012), interaction with upper classmen or college students (Koivisto et al., 2011), and college visits (Radcliff & Bos, 2011, 2013; Ting et al., 2012). While much research has been conducted at the secondary level, more quantitative studies are needed to determine which interventions and programs are most effective in increasing college intent, self-efficacy, and career self-efficacy in the lower grades so that students make informed decisions as they transition to high school and beyond.

Research Summary

Rapidly changing economic conditions are forcing students to make college and career decisions at an earlier age than ever before (Benner, 2011). Recent research, congruent with theory, has shown that middle school is the appropriate time to begin career exploration, prepare students for college, and instill the intent to go to college (Kalchick & Oertle, 2010; Mittendorff et al., 2010), and strong college and career self-efficacy are paramount to student success in high school, college, and their career (Benner, 2011; Benner & Graham, 2009; Cohen & Smerdon, 2009; Langenkamp, 2010; Radcliffe & Bos, 2013). Consequently, there is a need for interventions that bolster college and career self-efficacy and college intent beliefs of middle school students. Moreover, the efficacy of college workshops has to be evaluated. Few interventions were found using the collaborative format of a college workshop, and mixed results were achieved. As described earlier, the GEAR UP (Prabhu et al., 2006) and Career Targets (Legume & Hoare, 2004) programs revealed statistically non-significant results regarding students' self-efficacy. However, the AVID program (Huerta et al., 2013) showed significantly higher GPAs for participants, as well as improved state test scores (Radcliffe & Bos, 2011, 2013) or increased efficacy and interest in STEM fields (Knezek et al., 2013; Ting et al., 2012).

As illustrated in the literature review, the paucity of research available on best practices to motivate eighth-grade students to design high school years towards a career or college education (Hirschi, Niles, & Akos, 2010) suggests a gap in the research literature. Unfortunately, little quantitative data is available to identify effective programs. Quantitative research studies are needed to improve understanding of the type of interventions that will increase middle school students' college and career self-efficacy with the goal to instill in them the belief and intent to complete high school, attend college, and pursue a career.

The study aims to contribute to the literature by adding a quantitative study to raise college and career self-efficacy and college intent of students and by expanding the scope to middle school students in a semi-rural environment. The purpose of the study is to provide quantitative data for the college workshop regarding its effectiveness as a tool to influence middle school students' college and career self-efficacy and college intent by using the tenets of self-efficacy theory (Bandura, 1977) and social cognitive career theory (Lent et al., 1994).

CHAPTER THREE: METHODOLOGY

Introduction

The research study contributed to the literature by examining an intervention that motivates middle school students to be more purposeful and goal-directed about college intent, self-efficacy, and career self-efficacy in middle school. More specifically, the study examined the effect of participation in a college workshop on these three variables. Chapter Three includes a description of the study participants, the setting, the instrumentation, the procedures, the research design, and the statistical analysis.

Design

The research design was a quasi-experimental, pretest-posttest non-equivalent waitlist control group design. The independent variable was the participation in the college workshop, and the dependent variables were middle school students' college and career self-efficacy and college intent.

Self-efficacy referred to: (a) students' ability to identify the career clusters in which they might have an aptitude and interest and to conduct career research and identify the academic or vocational pathway that will lead to a chosen career; (b) students' belief in their ability to reach these goals; and (c) students' intent to pursue a college education after high school. The college workshop will be described in detail in the settings section of this chapter.

A true experimental design was not possible because participants could not be randomly sampled nor randomly assigned to the respective groups. Campbell and Stanley (1963) and Rovai et al. (2013) proposed a quasi-experimental research design for experimental studies where a true random sampling is impossible because classrooms are considered "intact, naturally occurring groups and, consequently, do not employ random assignment of research participants

to groups" (p. 89). Additionally, Rovai et al. (2013) and Creswell (2012) stipulated that the design is used when groups may not be similar.

Furthermore, since the school district did not allow studies where a group of students received an educational benefit and the other group did not, a waitlist design was appropriate, where the control group did not receive the treatment until after data had been collected. Finally, a pretest-posttest design was used because of possible differences between the two groups, and a direct comparison could not produce unbiased results because there may have been group differences that existed prior to the treatment (Steiner, Wroblewski, & Cook, 2009). This allowed for the pretest to serve as a control variable for statistical analysis in case the groups were found to be heterogeneous. A review of the literature revealed that other researchers have used this design when investigating the effects of an intervention on adolescents (Cetta, 2013; Conn, 2014; Grenwelge, 2010; Luzzo & Pierce, 1996). Therefore, the design was deemed the most appropriate for the research.

Two intact groups, which could not be randomly assigned, served as the control and treatment group. The treatment group received an intervention, and the control group did not until after the study was completed. Participation in the college workshop was the intervention or independent variable. The college workshop consisted of three days of self-assessment and career exploration using the Florida CHOICES online program at the middle schools during social science class followed by a visit to the college campus. During the college visit, students learned about admissions requirements, academic programs, and financial aid. Students also participated in a panel discussion with first-generation college students from their feeder high schools. Students in the treatment group took the pretest to measure students' existing college intent, self-efficacy, and career self-efficacy just before the Florida CHOICES online self-

assessment and career exploration module. The treatment group took the posttest to measure students' college intent, college self-efficacy, and career self-efficacy at the end of the workshop at the college campus. Students in the control group took the pretest and posttest during regular instruction. As to not withhold any benefit of the intervention, they participated in the Florida CHOICES modules followed by the college campus visit after the completion of the research study. Details of the classroom instruction and the college workshop activities can be found in Appendices A and B and are further explained in the setting section below.

The first dependent variable, the score on the College-Going Self-Efficacy Scale for Middle School Students (CGSES), measured students' college self-efficacy (Gibbons & Borders, 2010). The second dependent variable, the score on the Career Decision Self-Efficacy Scale-Short Form (CDSES-SF), measured whether students were able to research and identify a career path and its requisite educational requirements (Betz & Taylor, 1993). The third dependent variable, the score on the College or Career Intent question, measured whether students had college education as a goal. The three dependent variables served as the pretest and posttest variables. Details will be explained in the instrumentation section.

Where participants cannot be randomly selected or randomly assigned to treatment and control groups, threats to internal validity can exist (Creswell, 2012). One threat is selection bias, which is present when differences exist between the groups prior to the treatment and can interact with the independent variable and cause observed outcomes that are unrelated to the treatment. To compensate for the threat, the pretest was used as a covariate in the statistical analysis. Another threat is history when outside events affect participants' responses. This threat was negligible in light of the short duration of the experiment and the schools' conscious decision not to introduce any college or career-themed events in the activities during the week of

the experiment. Confounding, where any changes in the dependent variable is related to a third variable, was a threat to internal validity. To deal with the threat, treatment and control groups were assessed for homogeneity. Chi-square of independence analyses were used on the demographic data regarding parent prior college, student participation in the free/reduced lunch program as an indicator of the family financial situation, and ethnicity (Gall, Gall, & Borg, 2010). Both groups were not found to be sufficiently similar to be considered homogenous, and a covariate was needed. Finally, the threat of instrumentation was neutralized by providing extensive training to teachers and school counselors on how to administer the survey and by using scripts on how to administer the intervention, as well as the availability of sound reliability and validity data for both survey measurements (Campbell & Stanley, 1963).

Threats to external validity included interaction of treatment and selection, interaction of setting and treatment, and interaction of history and treatment. All three threats may limit the generalizability of the study results to a population other than the study population. Threats to external validity were addressed, although not eliminated, by using the students' teachers and school counselor, to conduct the pretest and the posttest (for the control group) in their natural setting.

Research Questions and Hypotheses

Research Questions

RQ1: Does participation in a college workshop significantly affect the college self-efficacy of eighth grade students while controlling for the pretest?

RQ2: Does participation in a college workshop significantly affect the career self-efficacy of eighth grade students while controlling for the pretest?

RQ3: Does participation in a college workshop significantly affect the college intent of eighth grade students while controlling for the pretest?

Null Hypotheses

$H_0$1: There is no statistically significant difference in the College Self-Efficacy posttest scores of students who participated in the college workshop and those who did not as measured by the College-Going Self-Efficacy Scale for Middle School Students (CGSES) measurement (Gibbons & Borders, 2010) while controlling for the pretest.

$H_0$2: There is no statistically significant difference in students' Career Self-Efficacy post-test scores of students who participated in the college workshop and those who did not as measured by the Career Decision Self-Efficacy Scale-Short Form (CDSES-SF) (Betz & Luzzo, 1996) while controlling for the pretest.

$H_0$3: There is no statistically significant difference in students' *College Intent* posttest scores of students who participated in the college workshop and those who did not as measured by the answer on the demographic survey instrument while controlling for the pretest.

Participants, Setting, and Curriculum

Participants

Study participants were drawn from eighth grade classrooms in a semi-rural west-central Florida school district, with the sample drawn from two of the district's eight middle schools that were convenient to the researcher. The ethnic composition of the district was 71% White, 16% Hispanic, 7% Black, and 2% Asian (County School District, 2014a). The school district had 26 schools, which served a total of 21,729 students for the 2014-15 school year. Sixty-five percent of the district's students were eligible for free/reduced lunch, 3% were English Language Learners, and 11% received Special Education Services. The total number of eighth-grade

students in the district was 1,660, with a convenience sample of 434 eighth-grade students from the two middle schools invited to participate in the study.

The sample came from two middle schools in the district. Students from the eighth grade social science classrooms of Middle School A and B were included in the sample. The sample (N = 173) included 74 males (43%) and 99 females (57%) with an average age of 13.9 years. The ethnic breakdown was as followed: Caucasian (n = 106, 61.3%), Black (n = 10, 5.8%), Hispanic (n = 37, 21.4%) Asian (n = 5, 2.9%), Other (n = 15, 8.7%). One hundred and thirty students (75.1%) received free or reduced lunch. Students also reported on the prior college of their parents: no college (n = 66, 38%), both parents (n = 39, 23%), father only (n = 15, 9%), or mother only (n = 53, 30%).

According to Gall et al. (2007), the minimum sample size needed for a quasi-experimental pretest-posttest nonequivalent waitlist control group design is 66 students for a medium effect size with statistical power of .7 at the .05 alpha level. Creswell (2012) and Rovai et al. (2013) recommended a minimum of 15 participants for each group when using a quasi-experimental design. To determine the needed sample size for the chosen statistical design, an a priori power analysis was conducted using *Power and Precision 4* software, which has been used in other research studies (Borenstein, Rothstein & Cohen, 2001; Thor, 2012). The computer analysis gave a recommended sample size of N = 64 as the minimum with power set at .80 at the .05 alpha level. These values for power and alpha used are commonly recommended values for educational research (Fritz, Morris, & Richler, 2011). Based on the power analysis and research, the sample size of 68 students in the control group and 105 students in the treatment group exceeded the minimum requirements.

A coin toss determined that Middle School B would serve as the treatment group and Middle School A as the control group. As alluded to earlier, this sample was a convenience sample because the researcher had a working relationship with the two schools, and both schools' administrators had expressed a strong interest in participating in the study. The eighth grade classes were chosen purposefully because the students would transition to high school at the beginning of the next school year, and the target population for the study was the last middle school grades. The treatment group at Middle School B consisted of six classes with a total of 233 students. The control group at Middle School A consisted of six classes with a total of 201 students. After obtaining approval from university (Appendix C), the college (Appendix D) and school district (Appendix E) review boards, participation was solicited with a printed letter of invitation (Appendix F), which explained the study. Two weeks before the start of the experiment, students received the paper consent/assent forms (Appendix G) and the field trip permission forms from the two social science instructors at Middle School A and the school counselor at Middle School B to take home to their parents. The schools allowed two weeks for students to return the forms to their teachers. Since the career exploration module was taught during regular class, all students participated in the activities at school, but only those students who provided consent/assent forms were included in the statistical analysis. A total of 68 students in the control group returned signed consent forms and completed both, pretest and posttest, for a volunteer rate of 29%, and 105 students in the treatment group returned signed consent forms and completed both, pretest and posttest, for a volunteer rate of 52%. The total sample size was $N = 173$ with a volunteer rate of 40% of the sample population ($N = 434$). Table 2 displays the demographics of the 173 participants disaggregated by control and treatment group.

Table 2

Frequencies and Percentages of Demographic Variables Disaggregated by Group Assignment

	Control Group (n = 68)		Treatment Group (n = 105)		Total (N = 173)	
	Freq.	%	Freq.	%	Freq.	%
Gender						
Male	38	55.9	36	34.3	74	42.8
Female	30	44.1	69	65.7	99	57.2
Income						
No Free/Reduced Lunch	11	16.2	32	30.5	43	24.9
Free/Reduced Lunch	57	83.8	73	69.5	130	75.1
Ethnicity						
White/Caucasian	42	61.8	65	61.9	107	61.8
Hispanic	14	20.6	22	21.0	36	20.8
Other	12	17.6	18	17.1	30	17.3
Parent Prior College						
No College	22	32.4	38	37.3	60	35.3
One Parent	29	42.6	41	40.2	70	41.2
Both Parents	17	25.0	23	22.5	40	23.5

Note. Because of low frequencies in the ethnic categories of Black (n = 10), and Asian (n = 5), categories were combined into "Other" (n = 30).

Setting

Middle schools. Middle School A and Middle School B were both located in a west-central Florida school district. The county, in which the district lies, encompasses an area of 477 square miles, and is one of the poorer counties in Florida, with a 2009-2013 per capita income of $32,407 compared to $46,956 statewide and 23.4% of people living below the poverty line compared to 16.3% statewide (U.S. Census Bureau, 2014). There is a large agricultural community with remote farms and ranches dispersed throughout the county. The majority of the approximately 174,475 residents live in the western part of the county in proximity of two towns

Census Bureau, 2014). Middle School B was one of four K-8 schools with a total of 1,733

students, of which 233 were in eighth grade. Middle School A was one of four 6th through 8th grade middle schools with a total student body of 587, of which 201 were in eighth grade. Both schools received a grade of "C" in the annual assessment of Florida schools (Florida Department of Education, n.d.).

Students from Middle School B (treatment group) received the treatment during their social studies classes for five days from May 15 – 21, 2015 while students from Middle School A (control group) continued with normal instruction. Students in the control group were given the pretest on May 22, 2015 and the posttest on May 26, 2015 during social studies classes. The instructor for the experiment at Middle School B was one female school counselor, who traditionally talked to students about college and careers. The school counselor had a Bachelor of Arts degree in education and a Master of Arts degree in school counseling. She had worked as an educator for 18 years, first as a Spanish teacher in New York City, then as a school counselor. She had been at Middle School A for 8 years. At Middle School A, the two social science teachers, one female and one male, administered the pre- and posttest to students. The female teacher had a Bachelor of Arts degree in history and completed the Educator Preparatory Institute at the local college to obtain her educator certificate. She held an unencumbered, valid Florida Educator's Certificate and had seven years of experience teaching at this grade level, all at Middle School A. The male teacher had a Bachelor of Arts degree in history and teaching certification in social science for grades 6 – 12. He had been teaching for 17 years.

College campus. The college campus was one of five campuses of a Florida state college in west-central Florida. The campus was only four years old and had a diverse student population of approximately 2,000. The campus had a circular layout of five buildings, which housed the Office of Student Development, a conference center, the Library/Testing Center, and

two classroom buildings, clustered around a large courtyard dotted with benches, gazebos, and green space. The college workshop took place in the conference center, a large building with modern technology and enough room to accommodate the student groups. Student Ambassadors led students, teachers, and chaperones to the conference center where the Provost of the campus welcomed the group. The researcher presented an overview of the academic programs offered at the college, discussed admissions requirements, and spoke about scholarship and financial aid. Students then went on a guided tour, which included the library, Teaching & Learning Center, classroom buildings, and student development offices, accompanied by a Student Ambassador. As a final activity, students met with a panel of first-time college students. The activities of the college visit were all geared toward increasing students' college and career self-efficacy and instilling the intent to attend college, with the content of the presentations explained in the procedures section below. A detailed agenda for the campus visit can be found in Appendix B.

College workshop. Career exploration is a requirement for eighth grade curriculum (Florida Department of Education, 2014a;); however, neither school had a formal lesson plan in place that taught this topic. The assistant principal at Middle School A approached the researcher to collaboratively work on an intervention to engage students in college and career exploration to increase college and career self-efficacy and college intent. The researcher developed the intervention by combining career exploration with a college visit. The intervention in the study consisted of the three-day online career exploration at the middle school using the free web-based program Florida CHOICES and the college visit. The researcher chose the Florida CHOICES program because section 1003.4156 of the Florida Statutes mandated that students take a career and education planning course during any year of middle school (grades 6-8). Schools were tasked to use a course from an approved course list, which can be found on the

website of the Florida Department of Education (2014b). The online course, Florida CHOICES, was specifically designed to meet the statutory requirements. Students explored seven modules, which are described in detail in this section. The school counselor served as facilitator while students completed the assignments independently online. Figure 3 shows a screenshot of the home page of the web-based course.

This website was available at no cost to all Florida middle and high schools to provide an interactive platform for the career and education planning curriculum. The website presented seven modules, which covered topics, such as understanding the workplace, self-awareness, exploring careers, goal setting/decision making, workplace skills, career/education planning, and job search (Florida Department of Education, 2014b). Within each module, students were introduced to the topic, watched PowerPoint presentations, followed links to related resources, and learned the glossary inherent in the topic, such as the Americans with Disabilities Act, aptitude, or job shadowing.

Figure 3. Screenshot of the Flordia CHOICES website.

The seven modules were integrated in the Florida Career and Education Planning Course Standards, which are learning outcomes listed for the career exploration module planned in grade eight. They were:

1. Describe the influences that societal, economic, and technological changes have on employment trends and future training.
2. Develop skills to locate, evaluate, and interpret career information.
3. Identify and demonstrate processes for making short and long term goals.
4. Demonstrate employability skills, such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
5. Understand the relationship between educational achievement and career choices/postsecondary options.
6. Identify a career cluster and related pathways through an interest assessment that match career and educational goals.
7. Develop a career and education plan that includes short- and long-term goals, high school program of study, and postsecondary/career goals.

8. Demonstrate knowledge of technology and its application in career fields/clusters (Florida Department of Education, 2013).

During the three days of classroom instruction, students completed all seven modules. In the first module, students learned about supply and demand, entrepreneurship, and local businesses. They also took a look at the Occupational Outlook Handbook, which provided information on careers. In addition, students viewed a PowerPoint presentation on the workplace, where changes over time were discussed. The module covered standards one and two of the Florida Career and Education Planning Course Standards (Florida Department of Education, 2013).

In the second module, students used questionnaires to become self-aware of their interests, values, different lifestyles, and skills needed for the workplace. Several PowerPoint presentations showed the importance of matching career options and their own aptitudes. Students selected careers in which they were interested and then explored in more detail. The module covered standards two and three of the Florida Career and Education Planning Course Standards. Figure 4 illustrates the website content for the module (Florida Department of Education, 2013).

The third module taught students how to find and evaluate career information, created an awareness of lifestyle and leisure compared to an occupation, and stressed the importance of making a plan, which students completed by using the Florida *CHOICES* Planner on the website. The module covered standard four of the Florida Career and Education Planning Course Standards (Florida Department of Education, 2013).

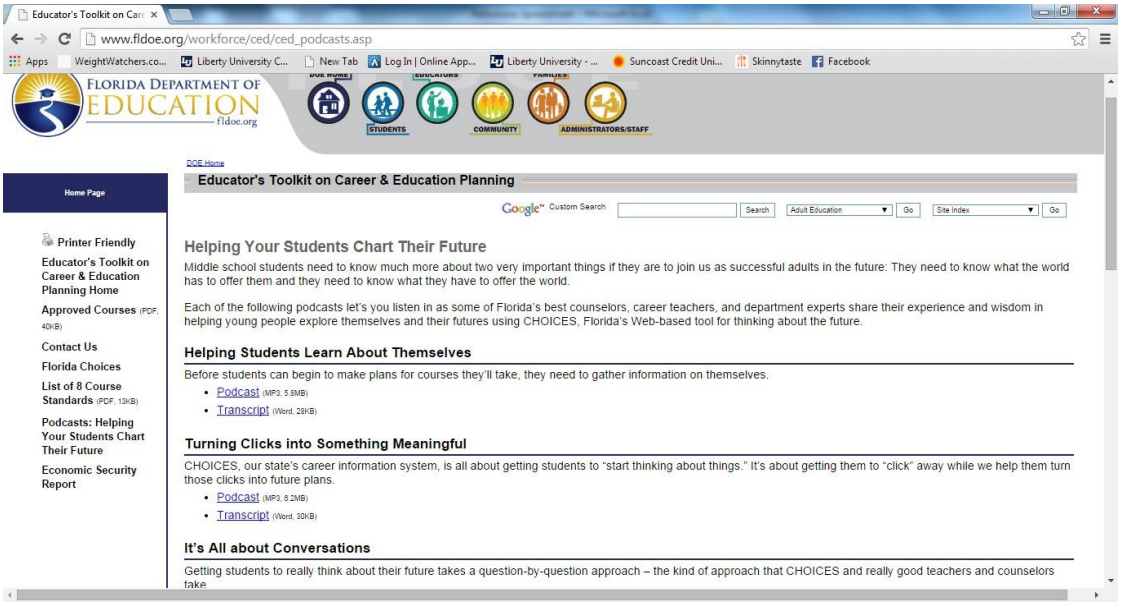


Figure 4. Screenshot of the Florida CHOICES website (goal setting).

In the fourth module, students learned about informed decision-making and goal setting. They practiced time management, setting long- and short-term career and academic goals, as well as good study habits. The module covered standards three and four of the Florida Career and Education Planning Course Standards (Florida Department of Education, 2013).

The fifth module looked at employers' expectations in terms of the soft skills employees should possess, such as positive attitude, good communication skills, teamwork, punctuality, appropriate attire, and a sense of responsibility. The module covered standards three and seven of the Florida Career and Education Planning Course Standards (Florida Department of Education, 2013).

In the sixth module, students added information to their career plans in the *CHOICES* Planner online. They also learned about expectations in high school, career pathways, industry certifications, advanced placement courses, and dual enrollment. In addition, limited information was provided regarding financial aid and other ways to pay for postsecondary

education. The module covered standard seven of the Florida Career and Education Planning Course Standards (Florida Department of Education, 2013).

The final module provided students with the skill to complete a job application and prepare for a job interview. Information was presented on the importance of body language and proper etiquette when applying for a position. Students completed an application and conducted mock interviews in small groups. The module covered standards four and eight of the Florida Career and Education Planning Course Standards (Florida Department of Education, 2013).

The online component of the college workshop guided students through career exploration by providing them with experiential learning, which students tailored to their own abilities and aptitudes. It also addressed each of the eight learning outcomes prescribed in the statute thus fulfilling a statutory requirement. Table 3 in Appendix H illustrates the connection between college workshop activities and the underlying theoretical framework. More information about each day is provided in the procedures section as well as a detailed description of the college visit. Additionally, Table 4 in Appendix M demonstrates how each activity or presentation is connected to the underlying theory and the respective measurement thus demonstrating construct validity with the research.

Instrumentation

The study aimed to assess students' college self-efficacy and career efficacy beliefs as well as the intent to go to college. Two validated scales and a questionnaire were used to measure the dependent variables. The first dependent variable, students' college self-efficacy, was tested using the paper version of the CGSES. The researcher obtained permission from the author via email (see Appendix I). The scale is a widely accepted instrument to measure the college-going beliefs of students in the middle grades, typically seventh or eighth grade

(Gonzalez, Stein, & Huq, 2013; Wilson, 2011). The survey contains a total of 30 questions with two subscales. One subscale includes 14 questions investigating attendance; the other poses 16 questions measuring persistence.

During the development of this scale and using factor analysis, Gibbons and Borders (2010) conducted a validity study, which provided the basis for the use of the composite score. This was supported by a high correlation between the two factors of $r = .77$, $p < .01$, showing a strong relationship between attendance and persistence.

The calculation of a correlation coefficient ($\alpha = .94$) demonstrated good evidence of internal consistency for the composite score, which this study used. A 4-point Likert-type scale (1 = not at all sure, 2 = somewhat sure, 3 = sure, 4 = very sure) was used to elicit students' answers to 30 questions, such as, "I can find a way to pay for college," "I could do the classwork and homework assignments in college classes," or "I could finish college and receive a college degree." A score of 1 described "not sure at all," whereas a score of 4 depicted "very sure" that the student could accomplish the task or achieve the goal. The maximum score was 120 points; the lowest score was 30 points, whereby higher scores depicted higher self-efficacy perceptions the students had of their ability to attend college (Gibbons & Borders, 2010).

The second dependent variable, students' career self-efficacy, was tested using the paper version of the CDSES-SF, which was developed by Betz and Taylor in 1983 and is based on Bandura's self-efficacy theory (1983, 1997). The researcher purchased a license to use the scale in the study (see Appendix J). The instrument measures the level of belief one has in one's own abilities to make decisions regarding career choices. This fulfills the statutory requirements as laid out in Florida Statute 1003.4156, which states that students must complete a personalized academic and career plan using technology. The survey uses a 25-item scale with a 5-point

Likert-type scale (1 = no confidence at all, 2 = very little confidence, 3 = moderate confidence, 4 = much confidence, 5 = complete confidence) asking questions, such as "How much confidence do you have that you could use the internet to find information about occupations that interest you?" or "How much confidence do you have that you could make a plan of your goals for the next five years?" The maximum score possible was 125 points and the minimum score 25 points, with higher scores as an indication of greater levels of career decision self-efficacy (Betz, Hammond, & Multon, 2005). A sample of the survey questions can be found in Appendix L.

Many researchers have used the CDSES-SF instrument to measure career self-efficacy in a variety of research areas, including adolescent career development (Bozgeyikli & Dogan, 2010; Gibbons & Borders, 2010). In 2005, Betz et al. examined the reliability and validity of the CDSE-SF in a study with three separate groups of college students. Concurrent validity for this study was established using three sets of validity measurements: (a) the Career Decision Profile (Jones, 1988), which provides information on participants' certainty and comfort as well as reasons for indecision regarding career planning; (b) the Goal Instability Scale (Robbins & Patton, 1985), which measures subjects' ability to guide their behavior based on goals; and (c) the Career Decision Scale (Osipow, 1987), which measures vocational identity. Results showed values of α from .80 to .84 (Group 1), .81 to .87 (Group 2), and .78 to .85 (Group 3). In addition, an increasing number of researchers have used this scale in their studies where high levels of reliability and validity were found (Bozgeyikli & Dogan, 2010; Gibbons & Borders, 2010; Hartman & Betz, 2007).

The third dependent variable, College Intent, was measured with an item on the demographic questionnaire, which was administered in paper form. The nominal data of Yes = 1 and No = 0 answered the question, "I intend to go to college." Bandura (2001) stated that people

must believe in their ability that they can successfully pursue the goal and, ultimately, achieve it, which is college attendance. A study by Seo and Ilies (2009) indicated that people who believe strongly in their goal will expend great effort to reach it. Table 4 in Appendix M demonstrates how each activity or presentation was connected to the underlying theory and the respective measurement thus demonstrating construct validity within the research.

Procedures

After gaining approval from the university and college institutional review boards (see Appendices C and D) and the school district (see Appendix E), the researcher worked with the social science teachers and school counselor in both middle schools to solicit participation for the study. Two weeks prior to the study, students and parents received a printed information letter from the researcher about the study and a request to participate (see Appendix F). Students were given packets in school by the social science teachers and school counselor, respectively, and hand carried the packet to their homes. The letter, the consent and assent forms, and the permission forms for the field trip were included in the packet. The permission forms were school-specific and are used whenever students went on field trips. Copies of the information letter, consent, and assent forms can be found in Appendices F and G. Students had two weeks to submit parents' consent form, their own assent form, and the field trip permission form to the teacher or school counselor, respectively. Students gave completed forms to the teachers who turned them over to the secretary of the assistant principal in each school. The researcher picked up the forms from the secretaries at the two schools once the deadline had passed.

Also, two weeks prior to the implementation of the study, the researcher met with the teachers in Middle School A and the school counselor in Middle School B, in a two-hour training session at the respective middle schools. The training included the following topics: (a)

discussion of the lesson script as outlined in Appendix B; (b) creating an account at the Florida CHOICES website, going through the modules, downloading and printing any available handouts; (c) an overview of the College visit activities; and (d) familiarization with the survey instruments. Both teachers and the school counselor were experienced in working with middle school students, and they were enthusiastic about their participation in the experiment. The teachers at Middle School A agreed that no part of the intervention would be implemented until after the researcher notified her that data collection had been completed. The teachers and school counselor declined assistance with classroom instruction citing that it would unnecessarily divert students' attention from the task at hand. However, all were aware of the importance of following the script and pledged close adherence to it to ensure treatment fidelity.

The study itself took place over the course of five days with three days of classroom instruction followed by the campus visit. All six eighth-grade classes of Middle School B (treatment group) used laptop computers during their designated social studies class time, took the pretest on the first day and then worked through the activities on the Florida CHOICES website for the next three days. Because the college was unable to accommodate all students at once, they were divided into two groups by the assistant principal on a first-come first-served basis. On the fourth day, the first group traveled to the college, participated in the activities, and took the posttest at the end of the day. On the fifth day, the second group went to the college, participated in the activities, and took the posttest at the end of the day. The activities are described in chronological order below.

Day 1

As an introduction, the school counselor reviewed only the goal of the study since students had already learned details through the letter sent to them and their parents two weeks

prior. The teacher started the script as outlined in Appendix B, administered the paper pretest to students, and had them complete a short student survey soliciting basic demographic information, such as age, gender, ethnicity, as well as answer to the question, "I intend to go to college after high school graduation." The pretest consisted of the 30-question College-Going Self-Efficacy Scale for Middle School Students (Gibbons & Borders, 2010) and the 25-question Career Decision-Making Self-Efficacy Scale-Short Form (Betz & Taylor, 1993). Both surveys took approximately 20 minutes to complete (Betz & Taylor, 1993; Gibbons & Borders, 2010). The researcher picked up the pretest surveys from the assistant principal's secretary on the first day of the experiment.

After taking the pretest, students created an account at the Florida CHOICES website and completed the first module of the website. Figure 5 displays the homepage of this website. Students had to sign in to get access to the modules in the program.

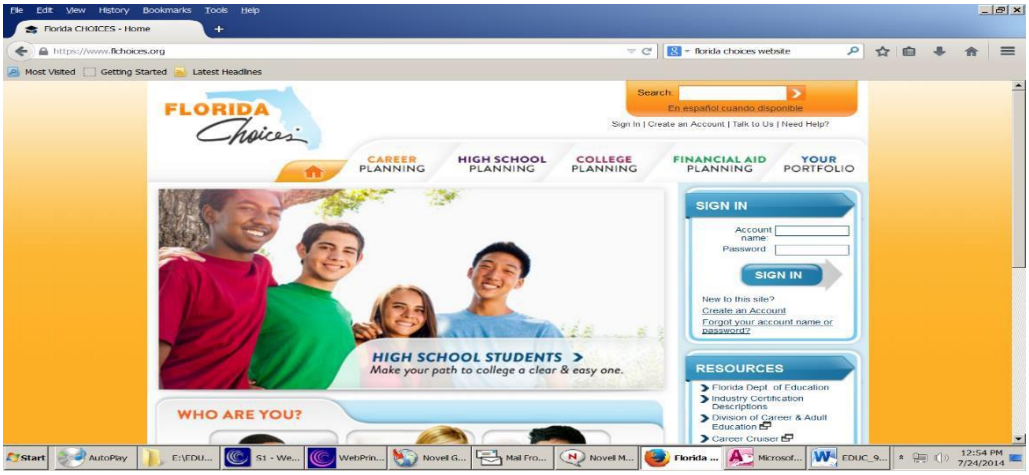


Figure 5. Screenshot of the Florida CHOICES sign-in screen.

Day 2

Students signed back into their accounts and proceeded to take the seven steps in the Florida CHOICES program:

Step 1: Students learned about their own interests, skills, values, and abilities by taking the online aptitude assessments. These assessments resulted in a matching list of occupations.

Step 2: Students selected several occupations, such as nurse, teacher, or engineer, and learned about the education needed to work in these occupations, the average wage in Florida, etc. They could also select a career cluster, such as health, education, science, etc., based on their interest assessment in Step 1, for further exploration.

Step 3: Students analyzed the chosen occupations in terms of positive and negative aspects, where they might find work in these occupations, and what impact this may have on their life, i.e., shift work that might affect family life, travel abroad that would allow them to learn about other cultures. This information was available in the modules of the online program.

Step 4: Finally, students chose a specific career and read program sheets describing the career in detail regarding future job outlook, average wage in Florida, and the education needed.

This program led students step-by-step through the individual modules. They were not able to skip a step, as this would not have allowed them to complete the career and educational plan.

Day 3

On day three, students logged back into their account and continued work on the seven steps on the Florida CHOICES website.

Step 5: Students developed a career and education plan that included activities, a time table to prepare for this career goal, and short- and long-term goals. They researched where they might receive the needed college training or education, and how they may pay for it.

Step 6: Students explored college or trade school websites to get information about the classes needed to attain their career goal.

Step 7: The teacher closed the lesson by encouraging them to periodically review their plan and ensure that they were taking the right steps toward the fulfillment of their plan.

Days 4 and 5

On days four and five, students visited the college campus and participated in the activities, as outlined in Appendix A. Because of the large size of the middle school, only half of the students visited campus each day; thus, there were two groups who came on campus over two consecutive days. The program for each group was identical, as outlined below: Those students whose parents had returned signed consent forms for the field trip were allowed to come to the college campus by bus. At the campus, students learned about academic programs (Associate of Arts degree, Associate of Science degrees, and Technical Certificates), basic financial aid programs (Pell Grant, Florida-specific grants, and scholarships), and the Dual Enrollment program, which allows students to take college classes in high school. Students also

attended a panel discussion with college freshmen from their feeder high schools who answered the following questions:

- What do you remember about your transition from middle to high school?
- Did you participate in any activities to prepare you for high school?
- Is there anything you wished you had known before getting to high school?
- What were your biggest challenges?
- What advice do you have for the students who are moving to high school in August?
- How was the transition to college?
- What advice do you have for the students that will help them be successful in high school and prepare them for college?

The final activity was a guided tour around the campus where the students visited a science classroom with a 3-D printer, the library, the Teaching & Learning Center, and the Student Development Department. Members of the Student Government Association acted as tour guides. At the end of the tour, all students returned to the conference center where they took the paper posttest, which was comprised of the same elements as the pretest. The researcher retained the posttest surveys. After the posttest, the students departed on their buses. Students whose parents did not return the field trip form remained at the middle school and attended their regular classes. Since the career exploration module was taught to all eighth-grade classes, all students took part in the activities at the middle school, but only students with approved field trip forms went on campus. The results of those students who did not participate in the college visit were excluded from the statistical analysis.

Students of Middle School A served as the control group. The social science teachers explained the study and administered the pretest in the computer lab using the instruments, as

described above, and continued with planned curriculum unrelated to the topic of career exploration. Two days later, students took the posttest in the computer lab at the beginning of social science class. Following the paper posttest and data collection for the study, and in adherence with district policy which did not allow unequal treatment of students, the students in the control group entered into the treatment. The researcher picked up the pre- and posttest survey forms from the assistant principal's secretary on the day the students took the posttest.

Data Analysis

All statistical analyses performed for the quasi-experimental pretest-posttest non-equivalent waitlist control group design study were conducted using the Statistical Package for Social Sciences (SPSS®) software program, version 23.

Group Differences

In the study, participants could not be randomly assigned due to the presence of intact groups. As such, preexisting differences between the groups could exist. Chi-square analyses of independence were thus conducted to evaluate proportions of ethnicity, income, parents' prior college, and gender within the groups. The α-level was set at .05. Results pointed to a weak association between parent income and group assignment as well as between gender and group assignment suggesting difference in groups. To ensure that existing differences between the two groups did not influence study results, the pretest of CGSES and CDSES served as covariates in the statistical analysis (Howell, 2011; Rovai et al., 2014).

Research Question One

A one-way between-subjects analysis of covariance (ANCOVA) was performed to test the null hypothesis that there was no statistically significant difference in the college self-efficacy posttest scores of students who participated in the college workshop and those who did

not, as measured by the CGSES (Gibbons & Borders, 2010), while controlling for the CGSES pretest.

Research Question Two

A one-way between-subjects analysis of covariance (ANCOVA) was also performed to test the null hypothesis that there was no statistically significant difference in the career self-efficacy posttest scores of students who participated in the college workshop and those who did not, as measured by the CDSES-SF (Betz & Taylor, 1993) while controlling for the CDSES pretest.

The design was appropriate to test hypotheses 1 and 2 for differences in the means of several groups when the groups are defined on only one independent variable and a covariate is present (Howell, 2011). The analysis of covariance "is used to control for initial differences between groups before a comparison of the within-groups variance and between-groups variance is made" (Gall et al., 2007, p. 320). The significance level for the analyses was set at .05, and the effect sizes were determined using partial eta squared, which indicates "the percent of total variance in the dependent variable accounted for by the variance between categories formed by the independent variable" (Rovai et al., 2014, p. 298). Effect size was interpreted using small = .01, medium = .06, and large = .14 (Tabachnick & Fidell, 2007).

Assumption testing. Several key assumptions had to be examined for the two analyses of covariance (ANCOVA) prior to evaluating hypotheses 1 and 2. These assumptions included independence of observations, linearity, outliers, normality, homogeneity of variance, homoscedasticity, and homogeneity of regression slopes. Independence of observations, which means that the observations were not influenced by outside factors (Rovai et al., 2014), was ascertained because control and treatment groups came from different middle schools and were

not physically co-located. The researcher assumed that all participants answered questions independently without cheating or copying from classmates. The school counselor was present during all data collection, which assisted with this assumption. Linearity was investigated by visually inspecting scatter plots of pre- and posttest scores for each dependent variable disaggregated by group membership. The correlation between career self-efficacy pretest and posttest scores and between college self-efficacy pretest and posttest scores showed strong positive relationships for the control and treatment groups. The assumption of linearity was found tenable. A visual examination of boxplots found no extreme outliers for either dependent variable.

Normality was evaluated with a Kolmogorov-Smirnov *D* test with the Lilliefors correction, which is suggested for samples with 50 or more observations, and is considered less conservative than the Kolmogorov-Smirnov *z*-test. The test examined whether the sample data came from a specific distribution (Rovai et al., 2014). Results showed a normal distribution for the dependent variables and covariates, respectively. Further comparison of the mean, 5% trimmed mean, and median relating to each dependent variable and covariate showed approximate symmetry for the college going self-efficacy pre- and posttests as well as the career self-efficacy pretest and a slight negative skew for the career self-efficacy posttest. Since the analysis of covariance is deemed robust in the face of light of moderate departures from normality (Rovai et al., 2014), the researcher continued with the planned analyses without conducting data transformations.

Homogeneity of variance was evaluated using Levene's test of equality of variances. With the alpha level set at .05, the test provided evidence that the variance in college self-efficacy and career self-efficacy posttests were not significant, and the assumption of equal

variance was tenable (Brown & Forsythe, 1974; Rovai et al., 2014). Scatterplot examination of college and career self-efficacy posttests revealed the same variance for all values of the predicted scores, and the assumption of homoscedasticity was satisfied. The assumption of homogeneity of regression slopes was tested with two preliminary analyses of covariance, which included a custom model of *group x covariate*. Results showed the interaction of college self-efficacy and career self-efficacy was not significant; thus, the assumption was met. The analyses of covariance (ANCOVA) were thus appropriate analyses to analyze null hypotheses 1 and 2. All results are found in Chapter Four.

Research Question Three

The third null hypothesis that there was no statistically significant difference in the college intent posttest scores of students who participated in the college workshop and those who did not, as measured by the college intent question, was tested by conducting a chi-square analysis of independence, while controlling for the pretest. The nonparametric procedure determines the association between two categorical variables and compares the frequencies of two nominal variables (Curtis & Youngquist, 2013; Howell, 2011; Rovai et al., 2014). The effect size was determined using phi. Phi, φ, is calculated using the chi-square statistic and sample size, whereby the values range from -1 to + 1. Lower values describe a weak relationship; values close to 1 describe a very strong relationship. It is agreed that phi of .10, .30, and .50 represent small, medium, and large effect sizes with the significance level set at .05 (Howell, 2011).

Assumption testing. Several key assumptions had to be met for the chi-square test of independence. These assumptions included random selection of samples, independence of observations, and sample size. The assumption of random selection of samples could not be met

due to the study design. However, Levene's test of equality of error variances revealed no statistically significant difference between control and treatment group (Rovai et al., 2014). Variables must be reported in raw frequencies: This assumption was met by using the actual count in each variable. Both variables were mutually exclusive and exhaustive (Rovai et al, 2014). The assumption of independence of observations, which means that the observations were not influenced by an outside factor (Rovai et al., 2014) was tenable because the researcher assumed that all participants answered questions independently without cheating or copying from classmates. Teachers were present during all data collection, and each group came from a different middle school, which were not co-located. Finally, each cell is expected to have a minimum frequency of five (Green & Salkind, 2014; Howell, 2008). The observed frequency of five or more in each cell was not met in one cell; however, Michael (2015) stated that the assumption was tenable as long as no cell had less than one count and 80% of the cells had more than five. Table 5 summarizes the research hypotheses, the independent and dependent variables, the theoretical framework underlying the hypotheses, and the analyses used to evaluate the hypotheses, as well as the measurement instruments.

Table 5

Research Hypotheses and Their Theoretical and Analytical Basis

Hypothesis	Independent Variable	Dependent Variable	Theoretical Framework	Analysis	Measurement Instrument
H1	Participation in College workshop	Score on CGSES	Self-Efficacy (Bandura, 1977)	ANCOVA (pretest-posttest)	College-Going Self-Efficacy Scale for Middle School Students (Gibbons & Borders, 2010)
H2	Participation in College workshop	Score on CDSES-short form	Career Self-Efficacy (Brown & Lent, 1994)	ANCOVA (pretest-posttest)	Career Decision Self-Efficacy Scale – short form (Betz & Taylor, 1993)
H3	Participation in College workshop	Score on "College or Career Intent Question"	Self-Efficacy Theory (Bandura, 1977)	Chi-square (pretest-posttest)	College Intent Question (Student Information Form)

The chapter described the research design, instrumentation, procedures of the study, and data analysis. The quasi-experimental, pretest-posttest non-equivalent waitlist group design was the most appropriate research design to answer the posited research questions and hypotheses. Since classrooms are considered naturally occurring groups that cannot be randomly assigned, it was considered a quasi-experimental design (Campbell & Stanley, 1963). The pretest-posttest non-equivalent group design was used because the two groups were not homogeneous due to group differences that existed prior to the treatment (Steiner et al., 2009). The control group was considered a waitlist control group because the group did not receive the treatment until the experimental study had concluded (Gall et al., 2007). Three analyses were used to examine the data: two analyses of covariance (ANCOVA) and a chi-square analysis of independence. The results of the data analyses are described in Chapter Four.

CHAPTER FOUR: FINDINGS

The purpose of the quasi-experimental, pretest-posttest non-equivalent waitlist control group study was to apply the theory of self-efficacy (Bandura, 1977, 1997) and social cognitive career theory (Lent et al., 1994) to a group of eighth-grade middle school students in a semi-rural school district in west-central Florida. The experiment examined the effect of participation in a college workshop on the career and college self-efficacy and college intent of study participants. Two analyses of covariances (ANCOVAs) and a chi-square analysis of independence were used to test the null hypotheses. Results of the hypothesis testing are presented in Chapter Four. The chapter is divided into five sections: (a) research questions, (b) hypotheses, (c) descriptive statistics, (d) results, and (e) summary. All statistical analyses were performed using the software package for SPSS®.

Research Questions

The study sought to answer the following research questions:

RQ1: Does participation in a college workshop significantly affect the college self-efficacy of eighth grade students while controlling for the pretest?

RQ2: Does participation in a college workshop significantly affect the career self-efficacy of eighth grade students while controlling for the pretest?

RQ3: Does participation in a college workshop significantly affect the college intent of eighth grade students while controlling for the pretest?

Hypotheses

The corresponding null hypotheses and alternative hypotheses are:

$H_0$1: There is no statistically significant difference in the college self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not

as measured by the College-Going Self-Efficacy Scale for Middle School Students (CGSES) measurement while controlling for the pretest (Gibbons & Borders, 2010).

H_A1: There is a statistically significant difference in the college self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the College-Going Self-Efficacy Survey for Middle School Students (CGSES) measurement while controlling for the pretest (Gibbons & Borders, 2010)

$H_0$2: There is no statistically significant difference in students' career self-efficacy post-test scores of eighth grade students who participated in the college workshop and those who did not as measured by the Career Decision Self-Efficacy Scale-Short Form (CDSES-SF) while controlling for the pretest (Betz & Luzzo, 1996).

H_A2: There is a statistically significant difference in students' career self-efficacy post-test scores of eighth grade students who participated in the college workshop and those who did not as measured by the Career Decision Self-Efficacy Scale-Short Form (CDSES-SF) while controlling for the pretest (Betz & Luzzo, 1996).

$H_0$3: There is no statistically significant difference in students' College Intent posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the answer on the demographic survey instrument while controlling for the pretest.

H_A3: There is a statistically significant difference in students' College Intent posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the answer on the demographic survey instrument while controlling for the pretest.

Descriptive Statistics

Sample

The study included a sample population of 434 students from 12 eighth-grade classrooms from two public middle schools in a semi-rural school district in west-central Florida during the 2014-15 school year. In the second semester of academic year 2014-15, 201 eighth-grade students of Middle School A (control group) and 233 eighth-grade students of Middle School B (treatment group) received a written invitation to participate in the study. Of the control group (n = 201), 88 students (44%) volunteered to participate in the study. However, 20 students completed only one test, either pre- or posttest and were, subsequently, excluded from the final data analysis. Sixty-eight students (34%) completed the pretest and posttest. One hundred ten students (47%) of the treatment group (n = 233) returned signed consent forms. One hundred five eligible students (45%) of the treatment group completed the pre- and posttests. Consequently, the study sample included a total of 173 students.

The average age in both groups was 13.9 years. The majority of participants were White/Caucasian (62.9%). In general, both groups showed a similar ethnic composition (see Table 2). A chi-square of independence demonstrated that there was no statistically significant association between ethnicity and group assignment, $\chi^2(1) = 1.941$, $p = .379$. The groups did differ in their proportions of males and females. The control group (n = 68) had 38 male and 30 female students; the treatment group (n = 105) had 36 male and 69 female students. There was a significant association between gender and group assignment, $\chi^2(1) = 7.864$, $\varphi = .213$. $p = .005$. Further examination of group differences ensued. Sixteen percent of students (n = 11) in the control group and 30% of students (n = 32) in the treatment group received no free/reduced lunch; whereas, 84% of students (n = 57) in the control group and 70% of students (n = 73) in the

treatment group reported participation in the free/reduced lunch program indicating lower parental income. Social economic status was measured using participation in the free/reduced lunch and group assignment was significant, $\chi^2(1) = 4.518$, $\varphi = -.162$, $p = .034$, indicating that the groups were dissimilar.

No significant association was found between parents' prior college attendance and group assignment $\chi^2(1) = .441$, $p = .802$. Thirty-two percent of students in the control group reported that their parents had no college ($n = 22$) compared to 36% of students in the treatment group ($n = 38$). Based on the results, the two groups could not be deemed homogeneous and pretests served as covariates for an analysis of covariance (Rovai et al., 2014).

Instrumentation

Three surveys were used to assess the dependent variables of student college and career self-efficacy and college intent: (a) College-Going Self-Efficacy Scale, (b) Career Decision Self-Efficacy Scale-Short Form, and (c) Question on demographic survey.

College-Going Self-Efficacy Scale (CGSES). The survey is a widely accepted instrument to measure the college-going beliefs of students in the middle grades. The CGSES is composed of two subscales measuring attendance and persistence. The maximum score possible was 120 points; the lowest score was 30 points, with a higher score indicative of a higher level of college-going self-efficacy. The composite CGSES was used in the study for both the pretest and posttest. Reliability was established using Cronbach's alpha, with the pretest at $\alpha = .93$, and posttest at $\alpha = .95$, exhibiting very high reliability (Hinkle, Wiersma, & Jurs, 1998; Rovai et al., 2014).

Career Decision Self-Efficacy Scale-Short Form (CDSES-SF). The survey is widely used to measure career self-efficacy with a variety of subjects, including adolescent career

development. The CDSES is composed of five subscales measuring self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. The composite CDSES was used in the study with a higher score indicating a higher level of career decision self-efficacy. Reliability was established using Cronbach's alpha, with the pretest at α = .94, and posttest at α = .96, exhibiting very high reliability (Hinkle et al., 1998; Rovai et al., 2014). Table 6 provides the measures of central tendencies and variability for each survey instrument delineated by group.

College intent. On the college intent pretest, 62 students (91%) of the control group (n = 68) answered "yes" and six (9%) answered "no" to the question whether they intended to attend a college after graduation. Conversely, 100 students (95%) of the treatment group (n = 105) answered "yes" and five (5%) answered "no." On the college intent posttest, 63 students (93%) of the control group (n = 68) answered "yes" and five (7%) answered "no"; whereas, 103 students (98%) of the treatment group (n = 105) answered "yes" and two (2%) answered "no."

Results

Assumption Testing for Hypotheses One and Two

Separate one-way analyses of covariance (ANCOVAs) were conducted to analyze the first and second null hypotheses. Assumption testing was performed to ascertain that the analysis of covariance was appropriate (Gall et al., 2007; Rovai et al., 2014; Warner, 2013) to test null hypothesis one and null hypothesis two. Assumption testing included independence of observations, linearity, outliers, normality, homogeneity of variance, homoscedasticity, and homogeneity of regression slopes.

Table 6

Means and Variability of Survey Results Disaggregated by Group

	Pretest – College Going				Posttest – College Going				Posttest Adjusted	
Group	*M*	*SD*	*Mdn.*	*Range*	*M*	*SD*	*Mdn.*	*Range*	M_{ADJ}	SE_{ADJ}
Control (*n* = 68)	90.18	12.83	89	56	87.72	13.93	89	79	88.72	1.15
Treatment (*n* = 105)	91.57	13.42	90	57	97.83	13	98	54	97.46	.92
	Pretest – Career Decision				Posttest – Career Decision				Posttest Adjusted	
Group	*M*	*SD*	*Mdn.*	*Range*	*M*	*SD*	*Mdn.*	*Range*	M_{ADJ}	SE_{ADJ}
Control (*n* = 68)	95.63	16.64	98.5	67	94.65	15.52	95.5	74	96.25	1.41
Treatment (*n* = 105)	99.46	15.21	100	73	103	16.11	106	57	101.97	1.13

Note. M= Mean; *SD*=Standard Deviation; *Mdn*=Median; M_{ADJ}=Adjusted Mean; SE_{ADJ}=Adjusted Standard error

Independence of observation. Groups were from two different middle schools, not co-located and, thus, independent of each other. In addition, participants were members of only one group, either treatment or control. The assumption of independence of observations was, therefore, met.

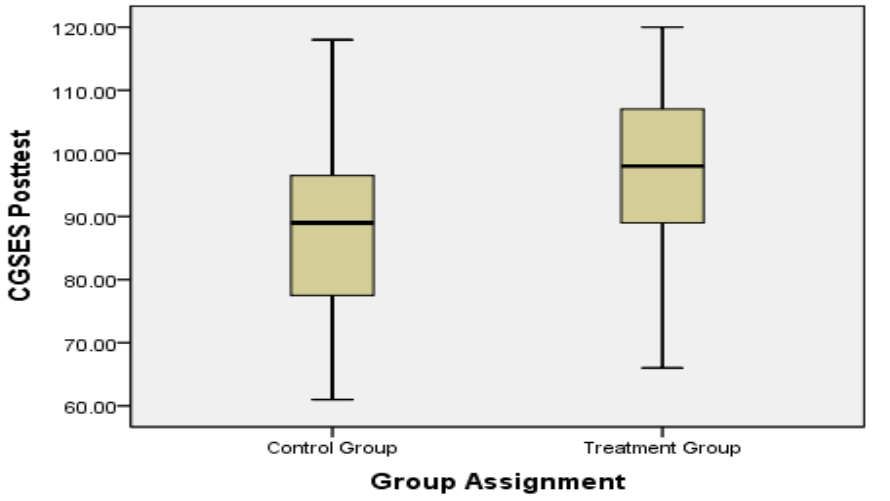
Linearity. Linearity was investigated by visually inspecting scatter plots of pre- and posttest scores. Inspections of scatter plots between pre- and posttest scores for each dependent variable disaggregated by group membership indicated linear relationships. The correlation between college-going self-efficacy pretest and posttest scores, as measured by the College Going Self-Efficacy Scale, indicated strong positive relationships for control group, $r(66) = .80$, $p<.01$ (two-tailed) and treatment group, $r(66) = .62$, $p<.01$ (two-tailed). The correlation between the career decision self-efficacy pretest and posttest scores, as measured by the Career Self-Efficacy Scale-short form, showed strong positive relationships for the control group, $r(66) =$

.71, $p<.01$ (two-tailed) and the treatment group, $r(66) = .67$, $p<.01$ (two-tailed). Based on the findings, the assumption of linearity was tenable (Howell, 2011; Rovai et al., 2014).

Outliers. A visual examination of boxplots indicated no extreme outliers for the dependent variables, college-going self-efficacy posttest scores and career-decision self-efficacy posttest scores (Gall et al., 2007) (see Figure 6).

Normality. The Kolmogorov-Smirnov *D* test with the Lilliefors correction was used to ascertain normality of test scores of the two dependent variables and two covariates. The test is suggested for samples with 50 or more observations ($N = 173$) (Rovai et al., 2014) and preferred over the Kolmogorov-Smirnov *z*-test because it is less conservative (Gall et al., 2007). Results showed normal distributions for the college self-efficacy dependent variable, $D_{Control}(68) = .058$, $p = .200$ and college self-efficacy covariate, $D_{Control}(68) = .091$, $p = .200$, as well as $D_{Treatment}(105) = .059$, $p = .200$ and college self-efficacy covariate, $D_{Treatment}(105) = .078$, $p = .125$. Normal distribution is also shown for the career decision self-efficacy dependent variable, $D_{Control}(68) = .058$, $p = .200$ and college self-efficacy covariate, $D_{Control}(68) = .091$, $p = .200$, as well as $D_{Treatment}(105) = .076$, $p = .200$ and college self-efficacy covariate, $D_{Treatment}(105) = .106$, $p = .055$. Since the analysis of covariance (ANCOVA) is deemed robust in the face of light to moderate departures from normality (Rovai et al., 2014), the researcher continued with the planned analysis.

Homogeneity of variance. Levene's test of equality of variances was performed to evaluate whether the population variances for the two groups were equal (Green & Salkind, 2014). The results showed that the assumption of homogeneity of variance was tenable for the College-Going Self-Efficacy Scale-Post with $F(1,171) = 5.51$, $p = .20$, and for the Career Decision Self-Efficacy Scale-Post with $F(1,171) = .57$, $p = .45$.



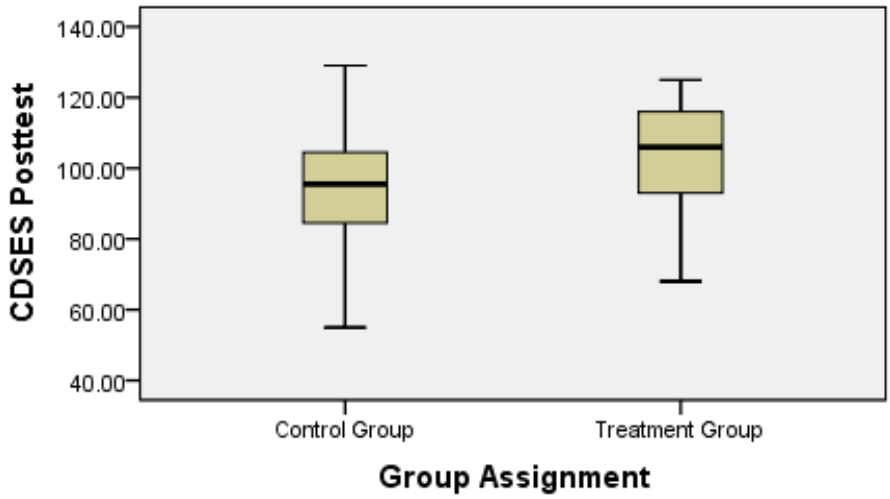


Figure 6. Boxplots of dependent variables one and two.

Homoscedasticity. To ascertain that the variability in scores for college-going self-efficacy and career self-efficacy was approximately the same for both, treatment and control groups, scatter plots were generated and visually examined. Residuals were randomly distributed and had approximately the same variance for all values of the predicted scores, thus the assumption of homoscedasticity was satisfied (Rovai et al., 2014).

Homogeneity of regression slopes. To examine whether an interaction existed between group placement and the covariates, two preliminary analyses of covariance with a custom model that included a *group x covariate* interaction were conducted. The interaction for college-going

self-efficacy was not statistically significant, $F(1,171) = 3.21$, $p = .08$, nor was the interaction for career decision self-efficacy, $F(1,171) = .191$, $p = .67$. Results suggested no significant violation of the assumption of homogeneity of regression slopes (Green & Salkind, 2014).

Following assumption testing, statistical analyses to test null hypotheses commenced. Two one-way analyses of covariance (ANCOVA) examined null hypotheses one and two.

Null Hypothesis One

A one-way analysis of covariance (ANCOVA) was conducted to analyze the first null hypothesis that looked at the difference between the college-going self-efficacy posttest scores of eighth grade students who participated in a college workshop and those who did not, while controlling for the pretest. The independent variable, participation in the college workshop, included two levels: participation and non-participation. The dependent variable was students' posttest score on the CGSES, and the covariate was students' pretest score on the CGSES. A significance level of $p < .05$ and confidence level of 95% were set.

The ANCOVA was significant, $F(1,170) = 35.33$, MSE = 89.07, $p < .01$, with a large effect size ($\eta_p^2 = .17$). Effect size was determined to be .01 = small, .06 = medium, and .14 = large (Tabachnick & Fidell, 2007). The strength of the relationship between the participation factor and dependent variable was strong, as assessed by a partial η^2, with the participation factor accounting for 17% of the variance of the dependent variable, holding constant the level of pretreatment college-going self-efficacy.

Conclusions as relates to Research Question One. There was a statistically significant between-subjects main effect regarding students' participation in the college workshop for the dependent variable of college self-efficacy posttest scores, as indicated by the partial eta squared of .17. Students who participated in the college workshop reported higher college-going self-

efficacy (M_{adj} = 97.46) compared to students who did not (M_{adj} = 88.72). Based on the analysis, the null hypothesis that there is no statistically significant difference in the college self-efficacy posttest scores of eighth-grade students who participated in the college workshop and those who did not was rejected.

Null Hypothesis Two

A one-way analysis of covariance (ANCOVA) was conducted to analyze the second null hypothesis that looked at the difference between the career self-efficacy posttest scores of eighth-grade students who participated in a college workshop and those who did not while controlling for the pretest. The independent variable, participation in the college workshop, included two levels: participation and non-participation. The dependent variable was students' posttest score on the CDSES-SF, and the covariate was students' pretest score on the CDSES. A significance level of $p < .05$ and confidence level of 95% were set.

The ANCOVA was significant, $F(1,170) = 9.94$, $MSE = 133.91$, $p < .01$, with a medium effect size ($\eta_p^2 = .06$). Effect size was determined to be .01 = small, .06 = medium, and .14 = large (Tabachnick & Fidell, 2007). The strength of the relationship between the participation factor and dependent variable was of medium strength, as assessed by a partial η^2, with the participation factor accounting for 6% of the variance of the dependent variable, holding constant the level of pretreatment career self-efficacy.

Conclusions as relates to Research Question Two. There was a statistically significant between-subjects main effect regarding students' participation in the college workshop for the dependent variable of career self-efficacy posttest scores, as indicated by the partial eta squared of .06. Students who participated in the college workshop reported higher career-decision self-efficacy (M_{adj} = 101.97) compared to students who did not (M_{adj} = 96.25). Based on the

analysis, the null hypothesis that there is no statistically significant difference in the career decision self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not was rejected.

Hypothesis Three

A chi-square analysis of independence was performed to evaluate the third hypothesis that looked at the difference between the college intent posttest scores of eighth grade students who participated in a college workshop and those who did not while controlling for the pretest. Key assumptions were tested to ascertain that the analysis was appropriate.

The random selection of samples to allow for generalization to the population could not be met due to the study design. The variables were both measured as categories, reported in raw frequencies, and were mutually exclusive and exhaustive (McHugh, 2013; Rovai et al., 2014).

Independence of observations, which means that the observations were not influenced by an outside factor (Rovai et al., 2014), was met since participants belonged to only one group, and both groups were not geographically co-located. In addition, since the school counselor was present during all data collection, the researcher assumed that all participants answered questions independently without cheating or copying from classmates. The observed frequency of five or more in each cell was not met in one cell (Green & Salkind, 2014; Howell, 2008); all other cells met the assumptions except for the cell with only 2 cases. Michael (2015) stated that the assumption was tenable as long as no cell had less than one count and 80% of the cells had more than five.

The results demonstrated no association between group assignment and college intent on the pretest score with χ^2 (1, 173) = 1.14, p = .285 nor on the posttest score with χ^2 (1, 173) = 3.16, p =.08. This supports the null hypothesis that the participation in the college workshop was not

significantly associated with an increase in student college intent when controlling for the pretest scores. Figures 9 and 10 illustrate the frequencies of the student responses to the question whether they intended to go to college prior to and after the treatment, respectively.

Conclusion as relates to Research Question 3. There were no statistically significant differences in the posttest scores of students who participated in the college workshop compared to those students who did not. Consequently, null hypothesis three could not be rejected.

Summary

The purpose of the study was to determine the effect of participation in a college workshop on the college self-efficacy, career self-efficacy, and college intent on eighth grade students in a semi-rural school district. The researcher hypothesized that participation in the college workshop would lead to statistically significant differences in college and career self-efficacy, as well as college intent between students in the treatment group compared to the control group. Results suggested that a statistically significant difference exists in college self-efficacy and career self-efficacy. However, no statistically significant difference was found between the college intent of students in the treatment group compared to the control group. A summary of the tested null hypotheses and their results can be found in Table 7.

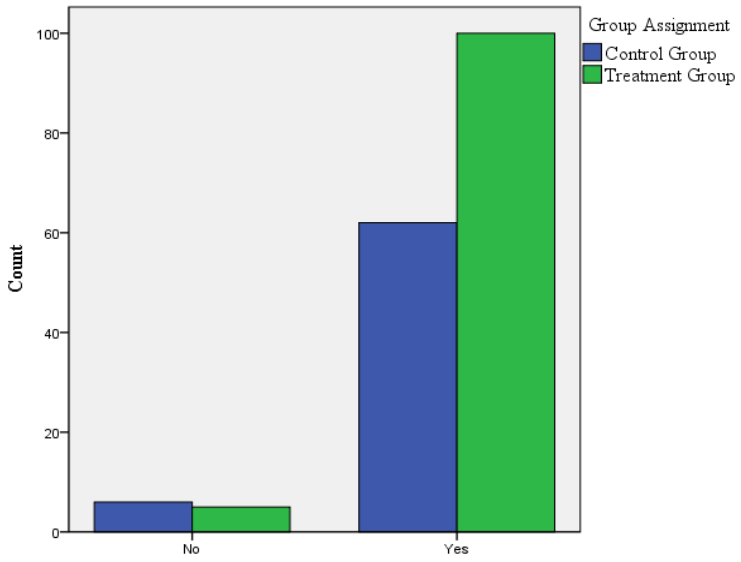


Figure 9. College Intent Pretest

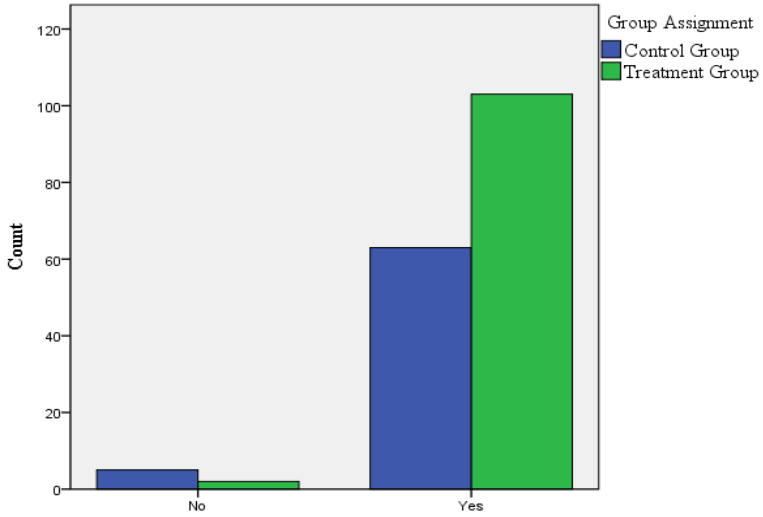


Figure 10. College Intent Posttest

Table 7

Summary of Hypotheses Testing

Hypothesis	Statement	Test	*F*	χ^2	*p*-value	Results
$H_0$1	There is no statistically significant difference in the college self-efficacy posttest scores of eighth grade students who participated in the college workshop and those who did not, as measured by the College-Going Self-Efficacy Scale for Middle School Students (CGSES) measurement while controlling for the pretest.	ANCOVA	35.33		< .001	Reject
$H_0$2	There is no statistically significant difference in students' career self-efficacy post-test scores of eighth grade students who participated in the college workshop and those who did not, as measured by the Career Decision Self-Efficacy Scale (CDSES)-short form while controlling for the pretest.	ANCOVA	9.94		< .001	Reject
$H_0$3	There is no statistically significant difference in students' *College Intent* posttest scores of eighth grade students who participated in the college workshop and those who did not as measured by the answer on the demographic survey instrument while controlling for the pretest.	Chi-Square of Independence		3.16	0.08	Fail to Reject

CHAPTER FIVE: DISCUSSION

Chapter five reviews the findings from the quasi-experimental pretest-posttest non-equivalent waitlist group study. The chapter begins with a review of the methodology and the results of the two analyses of covariance (ANCOVAs) and the chi-square analysis of independence. Next, the chapter reviews the findings in light of existing literature, as well as theoretical and practical implications of the research. The chapter closes with a discussion of study limitations and recommendations for future research.

Discussion

The purpose of the study was to examine the effect of the participation in a college workshop on the college and career self-efficacy and college intent of eighth-grade students in a semi-rural school district. The study investigated three research questions:

1. Does participation in a college workshop significantly affect the college self-efficacy of eighth grade students while controlling for the pretest?
2. Does participation in a college workshop significantly affect the career self-efficacy of eighth grade students while controlling for the pretest?
3. Does participation in a college workshop significantly affect the college intent of eighth grade students while controlling for the pretest?

A convenience sample of eighth grade students (N = 173) in twelve separate classrooms from two middle schools in a semi-rural west-central Florida school district participated in the study. A coin toss determined students from middle Middle School B (n = 105) as the treatment group and students from Middle School A as the waitlist control group (n = 68). Initial analyses of differences of parental income and gender between groups were significant indicating that income and gender between both groups were not proportionally distributed. Since both groups

were intact classrooms, a reassignment of participants to create homogeneous groups was not possible. Consequently, the pretests were included as covariates as part of the study design to control for pre-existing differences related to the dependent variables between the groups (Campbell & Stanley, 1963).

The school counselor at Middle School B (treatment group) administered the College-Going Self-Efficacy Scale for Middle School Students (CGSES) as the pretest measure of college self-efficacy, the Career-Decision Self-Efficacy Scale-Short Form (CDSES-SF) as the pretest measure of career self-efficacy, and the College Intent question as the pretest measure of students' intent to go to college at the start of the experiment. The school counselor also taught the three day online career exploration module at the middle schools. The activities at the college were presented by the researcher. Additionally, the researcher administered the CGSES as the posttest measure of college self-efficacy, the CDSES-SF as the posttest measure of career self-efficacy, and the College Intent question as the posttest measure of students' intent to go to college at the conclusion of the college visit activities.

After the conclusion of the experiment, the social science teachers at Middle School A (control group) administered the CGSES as the pre- and posttest measures of college self-efficacy, the CDSES-SF as the pre-and posttest measures of career self-efficacy, and the College Intent question as the pre-and posttest measures of students' intent to go to college at Middle School A within a three-day time frame. Following all data collection, students in the control group commenced with the same college workshop activities as the treatment group in order to ensure that all study participants received the same treatment benefit.

Conclusions

Null hypothesis one that there is no statistically significant difference in the college self-efficacy posttest scores, as measured by the CGSES, of eighth-grade students who participated in the college workshop and those who did not while controlling for the pretest, was tested with an analysis of covariance (ANCOVA). Results indicated that a statistically significant difference regarding student's college self-efficacy existed between the groups. These results supported the inclusion of the college workshop into the curriculum to increase college self-efficacy of eighth-grade students in a semi-rural environment as the treatment group's scores were significantly higher than those of the control group.

Null hypothesis two that there is no statistically significant difference in the career self-efficacy posttest scores, as measured by the CDSES, of eight- grade students who participated in the college workshop and those who did not while controlling for the pretest, was tested with an analysis of covariance (ANCOVA). The researcher hypothesized that participation in the college workshop would lead to a statistically significant difference in the career self-efficacy posttest scores of students who participated in the workshop and those who did not, as measured by the CDSES. Results indicated that a statistically significant difference of students' career self-efficacy existed between the groups. The treatment group's scores were significantly higher than those of the control group further supporting that the inclusion of the college workshop into the curriculum was an effective way to increase career self-efficacy of eighth-grade students in a semi-rural environment.

Null hypothesis three that there is no statistically significant difference in students' college intent posttest scores of eighth-grade students who participated in the college workshop and those who did not, as measured by the answer on the demographic survey instrument, while

controlling for the pretest. The researcher hypothesized that participation in the college workshop would lead to a statistically significant difference in the college intent posttest scores of students who participated in the workshop and those who did not. Results showed that there were no significantly significant differences in the college intent posttest scores of students who participated in the workshop and those who did not, and the null hypothesis could not be rejected. However, it should be noted that on the pretest, 100 students in the treatment group (n = 105) and 62 students in the control group (n = 68) expressed intent to go to college. In other words, 95% of the treatment group and 91% of the control group stated intent to go to college before the treatment commenced. On the posttest, 103 students of the treatment group (98.1%) and 63 students of the control group (93%) indicated college intent. Because of the high percentage of intent to go to college on the pretest, there was not much room for improvement, and the statistical analysis did not reveal a statistically significant difference between treatment and control groups on the posttest scores while considering the pretest.

Relationship to Prior Research

The study findings demonstrated that if students had the opportunity to acquire knowledge about college admissions, academic programs, and financial aid, as well as hear testimony from college freshmen about their experiences in middle school, high school, and their first semester in college, middle school students' belief that they can successfully plan a college education and identify and pursue a career improved. This is in line with the tenets of self-efficacy theory where Bandura (1977) postulated that mastery and vicarious experiences reinforce beliefs that one can master a task. Furthermore, the findings are in line with social career self-efficacy theory (Lent et al., 1994) that by awakening vocational interest and providing

instances of accomplishment, students develop outcome expectations, and career self-efficacy is increased leading to career choice.

The results are similar to Benson's (2009) findings with gifted students that efficacy beliefs of middle school students increased after meeting with a panel of freshmen students who shared their own experiences and extended it to an academically diverse group. The study also supported findings by Conley (2004) and Gibbons (2004) who found that knowledge about high school and college supports self-efficacy in middle school students. It validated Bandura's (1977) claim that verbal persuasion, here the testimony of first-time college students, is one of the sources of self-efficacy.

The findings are analogous to research by Radcliffe and Bos (2011, 2013) that college visits will lead to increased college self-efficacy and a more positive attitude towards college and extends research to another ethnic group. As Radcliffe and Bos' study centered on primarily on Hispanic students, the current study participants were majority Caucasian, expanding research to another ethnic group. The study also extended the work of researchers who explored interventions to raise self-efficacy of high school students in mostly urban environments (American Institutes for Research, 2009; Baker et al., 2007; Neild, 2009; St. John & Hu, 2006; Royster et al., 2015; Vile et al., 2009), as the current study focused on middle school students in a semi-rural school district. The study showed that the online career program, Florida CHOICES, combined with a college visit can increase middle school students' career self-efficacy. Students explored their aptitudes and attitudes with self-assessment tools and found careers that aligned with the self-assessment.

The study further corroborated findings by McComb-Beverage (2012) who used the Virginia Career View program and found that an online career program will increase career self-

efficacy of seventh-grade students and expanded it to include eighth-grade students. McComb-Beverage found that rural seventh-grade students are able to select a career path through an online career intervention, and the current study produced comparable findings with eighth-grade students who lived in a semi-rural environment. However, the study results contradicted findings by Legum and Hoare (2004) who used a similar intervention with sixth- and seventh-grade students in a suburban school district and whose findings were statistically non-significant. This may be due to the sample population, which was at-risk students in a suburban area of a major East Coast city; whereas, McComb-Beverage (2012) and the current study used general education middle school students in a rural and semi-rural environment, respectively. At-risk students may have additional barriers toward college and career self-efficacy than regular students (Fouad & Keeley, 1992; McLaughlin & Vacha, 1992) and different interventions may be needed to increase the self-efficacy of at-risk students. In addition, at-risk students may need prolonged exposure to mastery experiences, vicarious experiences, and positive models (Bandura, 1977) to help overcome these barriers and to help at-risk students develop vocational interests and values toward a career choice (Lent et al., 1994).

The study's conclusions that the treatment does not make a statistically significant difference in the college intent of students is counterintuitive to the findings of other researchers, who postulated that enrichment programs that include academic preparation (Gentle-Genitty, 2009; Niehaus, Rudasill, & Adelson, 2012) often combined with college visits (Huerta et al., 2013; Radcliffe & Bos, 2013) increase middle school students' knowledge about college and, consequently, supported college intent in this age group (Beer et al., 2008). In the current study, the very high number of students who expressed college intent on the pretest did not allow for much improvement after treatment. Bandura (1997) found that adolescents may overestimate

their ability or identify themselves as superior to others. This overestimation has been demonstrated in even younger children (Chase, Ewing, Lirgg, & George, 1994) and may explain the initial high number of students who felt confident that they would go to college. However, study results point to a need of further exploration of the influence of self-image and self-perception of abilities (Dunning, 2005) on goal setting and self-image of this age group.

Implications

The results of the study have implications for both practice and theory. Study results are examined for implications for students, teachers, and other stakeholders, as well as for the theoretical framework underlying the study.

Theoretical Implications

Piaget's (1952) stage theory provided justification to include middle school students in the study, which tested the tenets of self-efficacy theory on adolescents in the formal operational stage of their cognitive development. Piaget posited that students of middle school age can think hypothetically, test these hypotheses, and reach correct conclusions. Study results affirmed Piaget's conclusions by illustrating that eighth-grade middle school students are (a) capable of using information found in the Florida CHOICES career program, (b) able to state their aptitudes and attitudes, and (c) competent at deciding on a corresponding career.

Combined with Piaget's (1952) stage theory, Bandura's (2001) self-efficacy theory, with its four sources of mastery experiences, vicarious experiences, verbal persuasion, and affective states, explains the study's significant findings regarding college self-efficacy of middle school students. The treatment, the college workshop, was specifically designed to increase college self-efficacy of participants. Results showed that through the presentations of college programs, admissions and financial aid processes, and exposure to college life, students' college self-

efficacy increased significantly. The study results provide support that Bandura's theory is applicable not only for adults or high school students, not only in urban or suburban environments, but also in the lower middle school grades in semi-rural or rural school districts.

Social cognitive career theory (Lent et al., 1994) guided the hypothesis about the expected relationship between participation in the college workshop and participants' career self-efficacy. The theory would suggest that as students discover their attitudes and aptitudes toward certain career fields, choose a career, and prepare an educational plan toward the career, student career self-efficacy would increase. Results substantiated the expectation and confirmed the assumptions of social cognitive career theory.

Practical Implications

Results of the research study also have practical implications for students, teachers, and other stakeholders within the education field. The results of research questions 1 and 2, specifically, regarding college and career self-efficacy support the introduction of the college workshop into eighth-grade curriculum. Study findings contribute to the growing evidence that specific interventions can lead to improved student career and college self-efficacy. The findings expand research from college-age or high school-age populations to middle school grades. Study findings also provide evidence that interventions provide successful results not just in urban environments but also with middle school populations in semi-rural school districts.

The college workshop used elements that have already proven successful to increase middle school students' career self-efficacy in Europe, Eurasia, and Asia where pre-vocational career curriculum in the middle school grades with interventions that include classroom instruction and college visits have been implemented (Berger et al., 2012; Brockman et al., 2008; Makkonen & Lin, 2012; Powell et al., 2012). The college workshop allowed students to evaluate

their own preferences for a possible future career. Additionally, they walked away from the workshop with a tangible product: an academic plan toward the goal of working in the chosen career in the future. Having a goal may keep students motivated as they transition to high school and keep them in school until graduation. Even if career plans change as students mature, they now have the tools to investigate other careers and academic goals.

Furthermore, study results provide evidence that the Florida CHOICES program is an effective tool for teachers to engage middle school students in career exploration. The workshop also helps school administrators to identify students with low levels of college and self-efficacy, who may be at risk for disengagement at school and for not completing a high school education. School counselors and teachers can provide additional counseling and assistance to students in an attempt to raise their self-efficacy and allow for a successful transition to high school.

The study also has implications for other stakeholders. Section 1003.4156 of the Florida Statutes requires school districts to provide career and education planning during the middle school years. The Florida CHOICES course was designed specifically to meet statutory requirements, and the college workshop uses the course as one of its two main elements. Study results show that it is effective in increasing middle school students' career and college self-efficacy. However, amid increased mandatory testing and limited resources, districts have put emphasis on teaching those content areas that are tested on state tests, and career education has become an afterthought, often with a one-day career day activity at the schools.

In light of study results pointing to increased college and career self-efficacy of middle school students, with implications toward persistence and high school graduation, law makers would be well-advised to critically evaluate testing mandates to free up instructional time. In addition, funding should be increased to teach the college workshop, in collaboration with school

districts and community resources, in every eighth grade classroom. Moreover, career education programs should be evaluated nationally in terms of effectiveness, and school districts should collaborate with community partners to provide programs in the lower grades to reduce high school dropout rates, increase graduation rates, and instill a college- and career-going attitude in all students.

Limitations

Because the study used intact groups, a true experimental research design could not be used (Rovai et al., 2013) and limitations have to be considered. As a quasi-experimental pretest-posttest non-equivalent waitlist control group study was used, the selection bias was present. The possibility of non-equivalent groups was dealt with by the use of a pretest-posttest design, and all participants took the pretest to control for the lack of random assignment (Campbell & Stanley, 1963). Another study limitation was testing. Since the study design included a pretest, student exposure to the pretest could have influenced posttest results. The use of a control group negated the threat of testing and also sensitization since any effect would be present in both groups (Campbell & Stanley, 1963). However, studies in the future that do not include pretests could have different results.

Self-report bias was also a limitation. The CGSES instrument measures students' self-assessment of their abilities to attend college and persist to graduation (Gibbons & Borders, 2010). The CDSES-SF measures students' self-assessment of their ability to research careers and the respective educational path to work in the chosen career fields (Betz & Taylor, 1993). Dunning (2005) reported that self-ratings of aptitude are only moderately related to actual performance and that students tend to be overly optimistic in their predictions about the future, especially when they do not have sufficient information. However, the researcher assumed that

all responses were given truthfully (Warner, 2013) even though self-reported items are considered the least reliable form of measurement (Rovai et al., 2014).

Treatment implementation may have been a study limitation. There is a possibility that multiple treatment groups did not receive the same treatment (Rovai et al., 2014). However, the researcher ensured treatment fidelity by providing content to the teachers and by stressing the importance of following the lesson script. It was assumed that the school counselor in the treatment group implemented the treatment as outlined in the script and as discussed during training. It was further assumed that the teachers and school counselor administered the CGSES and CSDES-SF instruments according to instruction and that they followed the script as agreed. The researcher was in regular contact with teachers and the school counselor, by phone and email, to address any questions and/or concerns regarding study implementation.

A further limitation could pertain to the wording of the College Intent question, "I intend to go to college." Students in both groups responded positively with unusually high numbers in both groups even before treatment began. Consequently, there was little variance between groups in the pre and post tests, and the results did not demonstrate a statistically significant difference in students' intent to attend college. There are a number of reasons for this. The overestimation of abilities in this age group similar to what found by Bandura (1997) and Chase et al. (1994) could account for the results. Students' intent to go to college might also have been inspired by the students living in a college town where the public school district and the college enjoy a close collaboration. Students may think it is expected of them to attend college even if they do not believe they have the ability to do so. Thus, the wording of the question may have also attributed to students' positive responses. The results may have differed if the question had

been worded, "I know I can go to college," which may have more accurately assessed students self-efficacy.

An external threat to validity may have been population validity. Generalization of study results to the population was limited (Gall et al., 2007) because the study population consisted of a convenience sample of intact classrooms. It was assumed that the sample population was representative of all eighth-grade students in the district as a comparison of ethnicity and parents' income of students in the sample (n = 434; 61% Caucasian, 21% Hispanic, and 6% Black; 75% free/reduced lunch) and the population (N = 1,660; 71% Caucasian, 16% Hispanic, and 7% Black; 65% free/reduced lunch) were found similar. More studies are needed with the same population to negate the external threat and provide generalizability of study results.

Recommendations for Future Research

Limitations give rise to more needed research, and throughout the planning stages for the study and the review of existing literature, several recommendations for future research were identified. The current study included a four-day college workshop to increase the college and career self-efficacy and college intent of eighth-grade middle school students. Other interventions lasted over longer time frames, such as several days (Chung et al., 2014), one month (Niehaus et al., 2011), several months (Britner & Pajares, 2006), or several years (Prablu et al., 2006). Future research could expand the workshop activities to a once-per-week lesson for the whole semester or longer period to investigate if prolonged exposure to the topic leads to higher levels of college and career self-efficacy. Another recommendation is to duplicate the study with students in sixth and seventh grade since the current study focused on eighth-grade students. If results show that the age groups can successfully complete college and career exploration and gain self-efficacy, college and career education could be introduced at the

beginning of middle school and increase in complexity through eighth grade before students transition to high school.

The majority of participants in the current study were Caucasian. Consequently, a further recommendation is to conduct additional studies with middle school students from diverse backgrounds who live in semi-rural areas to add to the research base on career and college self-efficacy of semi-rural student populations. As an extension, the college workshop could be presented to middle school students in urban and suburban environments to investigate the workshop's effectiveness with yet another subgroup. Furthermore, a longitudinal study to follow study participants through high school and college would identify the long-term effects of the college workshop regarding participants' college and career self-efficacy and their intent and resilience to pursue a chosen career. Additionally, a recommendation is to conduct the study with the same college workshop elements and conduct a case study consisting of students, parents, and teachers to solicit their views on how and why the workshop was beneficial. Finally, a study with additional comparison groups should be conducted to further examine the effect of each treatment element. Three treatment groups and a control group should take part in the study: (1) a group who completes only the online career exploration modules, (2) a group who only completes the college visit, (3) a group that completes both elements of the treatment, and (4) a control group. This would provide a clearer and more accurate picture of the elements that affect students' self-efficacy and intent.

Adolescent college and career self-efficacy are critical topics for future research. As accountability measures increasingly affect public schools, quantitative and qualitative studies can provide valuable information for school counselors, teachers, administrators, and legislators

to focus initiatives and expenditures on those programs that promise to raise student achievement to include self-efficacy and the intent to go to college.

Summary

The purpose of this study was to examine the effect of participation in a college workshop on the college and career self-efficacy and college intent of eighth-grade middle school students. Results indicated that a statistically significant difference in college and career self-efficacy did exist. However, the correlation between participation in the college workshop and student college intent was not statistically evident and may be explained by the positive skew in the pretest scores.

These results provided evidence to support the inclusion of the college workshop into the eighth grade curriculum to improve student college and career self-efficacy. While the study supports the practice of participation in the college workshop as an instructional strategy, more research is still needed to identify strategies that will nurture the development of college intent in middle school students in a semi-rural school district.

REFERENCES

Adams, J. (2012). *College planning starts in the 8th grade*. Retrieved from http://academicachievers.wordpress.com/2012/02/20/college-planning-starts-in-the-8th-grade

Akos, P., & Galassi, J. P. (2004). Middle and high school transitions as viewed by students, parents, and teachers. *Professional School Counseling, 7*(4), 212-222.

Akos, P., Konold, T., & Niles, S. G. (2004). A career readiness typology and typal membership in middle school. *The Career Development Quarterly, 53*, 53-66.

Alam, M. M. (2013). A study of test anxiety, self-esteem and academic performance among adolescents. *IUP Journal of Organizational Behavior, 12*(4), 33-43.

Albert, K. A., & Luzzo, D. A. (1999). The role of perceived barriers in career development: A social cognitive perspective. *Journal of Counseling & Development, 77*, 431-436.

Alleman, N. F., & Holly, L. N. (2013). Multiple points of contact: Promoting rural postsecondary preparation through school-community partnerships. *Rural Educator, 34*(2), 1-11.

Alliance for Excellent Education. (2011). *The high cost of high school dropouts: What the nation pays for inadequate high schools.* Retrieved from http://all4ed.org/reports-factsheets/the-high-cost-of-high-school-dropouts-what-the-nation-pays-for-inadequate-high-schools/

America's Career Resources Network. (n.d.). The national career development guidelines. Retrieved from acrn.ovae.org/ncdg.htm

American College Testing. (2008). The forgotten middle: Ensuring that all students are on target for college and career readiness before high school. Iowa City, IA: ACT, Inc.

American College Testing. (2009). Preparation by eighth grade critical to college and career readiness. Iowa City, IA: ACT, Inc.

American College Testing. (2013). Readiness matters: The impact of college readiness on college persistence and degree completion. Iowa City, IA: ACT, Inc.

American Institutes for Research & SRI International. (2009). *Fifth annual Early College and High School Initiative evaluation synthesis report: Six years and counting: The ECHSI matures*. Washington, DC: American Institutes for Research.

Andrews, C., & Bishop, P. (2012). Middle grades transition programs around the globe: Effective school transition programs take a comprehensive approach to ensuring student success in the middle grades. *Middle School Journal*, *44*(1), 8-14.

Ascher, C. (2006). NCLB's supplemental educational services: Is this what our students need? *Phi Delta Kappan, 88*(2), 136-144.

Baker, D. B., Gratama, C. A., Stroh, H. R., & Scott, S. G. (2007). *Achievers and comparison high school study: Year 2 evaluation report*. Bothell, WA: Fouts & Associates.

Bandura, A. (1969). *Principles of behavior modification*. New York: Holt, Rinehart & Winston.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Bandura, A. (1982). The self and mechanism of agency. In J. Suls (Eds.), *Psychological perspectives on self* (pp. 3-39). Hillsdale, NJ: Erlbaum.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Upper Saddle River, NJ: Pearson Education.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*(9), 1175-1184.

Bandura, A. (1991). Self-efficacy mechanism in physiological activation and health-promoting behavior. In J. Madden, IV (Ed.), *Neurobiology of learning, emotion, and* affect (pp. 229-270). New York: Raven.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*(2), 117-148.

Bandura, A. (1995). *Self-efficacy in changing societies*. Cambridge, UK: Cambridge University Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman and Company.

Bandura, A. (1999). A social cognitive theory of personality. In L. Pervin & O. John (Eds.), *Handbook of personality* (2nd ed.) (pp. 154-196). New York: Guilford.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 521*, 1-26.

Bandura, A. (2005). Adolescent development from an agentic perspective. *Self-Efficacy Beliefs of Adolescents*. Charlotte, NC: Information Age Publishing, Inc.

Bandura, A. (2006). Adolescent development from an agentic perspective. In F. Pajares & T. Urdan (Eds.*), Self-efficacy beliefs of adolescents* (pp.1– 43). Greenwich, CT: Information Age.

Bandura, A. (2011). On the functional properties of perceived self-efficacy revisited. *Journal of Management, 38*(9), 9-44. doi:10.1177/0149206311410606.

Bandura, A., & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology, 45*(5), 1017-1028.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*, 586-598.

Bandura, A., & Walters, R. H. (1959). *Adolescent aggression.* New York: Ronald Press.

Bardick, A. D., Bernes, K. B., Magnusson, K. C., & Witko, K. D. (2006). Junior high school students' career plans for the future. *Journal of Career Development, 32*(3), 250-271.

Barrett, J. (2013, September). U.S. News: Colleges worry big bills will keep students away. *Wall Street Journal,* A.2.

Batool, H., Naureen, S., & Kanwal, S. (2010). Studying the effects of socio-economic status of parents on student's academic achievement. *Journal of Educational Research, 13*(2), 204-215.

Beer, G., Le Blanc, M., & Miller, M. J. (2008). Summer learning camps: Helping students to prepare for college. *College Student Journal, 42*(3), 930-938.

Benner, A. D. (2011). The transition to high school: Current knowledge, future directions. *Educational Psychology Review, 23*(3), 299-328.

Benner, A. D., & Graham, S. (2009). The transition to high school as a developmental process among multiethnic urban youth. *Child Development, 80*(2), 356-376.

Benson, M. B., IV. (2009). Gifted middle school students transitioning to high school: How one teacher helped his students feel less anxious. *Gifted Child Today, 32(*2), 29-33.

Berger, S., Canning, R., Dolan, M., Kurek, S., Pilz, M., & Rachwal, T. (2012). Curriculum-making in pre-vocational education in the lower secondary school: A regional comparative analysis within Europe. *Journal of Curriculum Studies, 44*(5), 679-701.

Betz, N. E., & Hackett, G. (1997). Applications of self-efficacy theory to the career assessment of women. *Journal of Career Assessment, 5*(4), 383-402.

Betz, N. E., Hammond, M. S., & Multon, K. D. (2005). Reliability and validity of five-level response continua for the Career Decision Self-Efficacy Scale. *Journal of Career Assessment, 13*(2), 131-149.

Betz, N. E., & Luzzo, D. A. (1996). Career assessment and the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment, 4*, 413-428.

Betz, N. E., & Taylor, K. M. (n.d.1993). Career Decision Self-Efficacy Scale. *Mental Measurements Yearbook with Tests in Print*. EBSCO host.

Biran, M., & Wilson, G. T. (1981). Treatment of phobic disorders using cognitive and exposure methods: A self-efficacy analysis. *Journal of Counseling and Clinical Psychology, 49*(6), 886-899.

Bloom, H. S., Michaelopoulos, C., & Hill, C. J. (2005). Using experiments to assess nonexperimental comparison-group methods for measuring program effects. In H. S. Bloom (Ed.), *Learning more from social experiments* (pp. 173-235). New York: Russell Sage Foundation.

Borenstein, M., Rothstein, H., & Cohen, J. (2001). *Power and Precision TM*. Retrieved from http://www.power-analysis.com/pdfs/power_precision_manual.pdf

Bouffard-Bouchard, T., Parent, S., & Larivee, S. (1991). Influence of self-efficacy on self-regulation and performance among junior and senior high school age students. *International Journal of Behavioral Development, 14*, 153-164.

Bozgeyikli, H., Bacanli, F., & Dogan, H. (2009). Examination of 8th grade elementary school students' career decision making self-efficacy predictors. *Selcuk Universitesi Sosyal Bilimler Enstitusu Dergisi, 21*, 125-136.

Bozgeyikli, H., & Dogan, H. (2010). The effect of computer assisted career group guidance on the self-efficacy levels of career decision making in students. *European Journal of Educational Studies, 2*(2), 77-86.

Britner, S. L., & Pajares, F. (2006). Sources of science self-efficacy beliefs in middle school students. *Journal for Research in Science Teaching, 43*, 485-499.

Brockmann, M., Clarke, L., & Winch, C. (2008). Knowledge, skills, competence: European divergences in vocational education and training (VET) – The English, German, and Dutch cases. *Oxford Review of Education, 34*(5), 547-567.

Brown, B. L. (1999). Self-efficacy beliefs and career development. *ERIC Digest, 205*.

Brown, I., Jr., & Inouye, D. K. (1978). Learned helplessness through modeling: The role of perceived similarity in competence. *Journal of Personality and Social Psychology, 36*, 900-908.

Brown, S. D., & Lent, R. W. (1996). A social cognitive framework for career choice counseling. *The Career Development Quarterly, 44*, 354-366.

Burrus, J., Elliott, D., Brenneman, M., Markle, R., Carney, L., Moore, G., ... Roberts, R. D. (2013). *Putting and keeping students on track: Toward a comprehensive model of college persistence and goal attainment*. (ETS Research Report RR-13-14). Retrieved from ETS Research website: http://www.ets.org/Media/Research/pdf/RR-13-14.pdf

Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research.* Belmont, CA: Wadsworth.

Canning, R. (2007). A history of core skills policy development in Scotland. *Scottish Education Review, 39*(2), 138-147.

Caprara, G. V., Vecchione, M., Alessandri, M. G., & Barbaranelli, C. (2011). The contribution of personality traits and self-efficacy beliefs to academic achievement: A longitudinal study. *British Journal of Educational Psychology, 81*, 78-96.

Carnevale, A. P., Smith, N., & Strohl, J. (2010). Help wanted: Projections of jobs and education requirement through 2018. Washington, D.C.: Georgetown University, Center on Education and the Workforce.

Cetta, M. A. (2013). *Ninth-grade academic impact on achievement of students from economically disadvantaged backgrounds* (Doctoral dissertation). Retrieved from ProQuest. (3589235)

Chase, M. A., Ewing, M. E., Lirgg, C. D., & George, T. R. (1994). The effects of equipment modification on children's self-efficacy and basketball shooting performance. *Research Quarterly, 65*, 159–168.

Chih-Ming, C., & Sheng-Hui, H. (2014). Web-based reading annotation system with an attention-based self-regulated learning mechanism for promoting reading performance. *British Journal of Educational Technology, 45*(5), 959-980.

Chin, D., & Kameoka, V. A. (2002). Psychosocial and contextual predictors of educational and occupational self-efficacy among Hispanic inner-city adolescents. *Hispanic Journal of Behavioral Sciences, 24*, 448-464.

Choi, Y., Kim, J., & Kim, S. (2014). Career development and school success in adolescents: The role of career interventions. *The Career Development Quarterly, 63*, 171-186.

Choudhury, S., Blakemore, S. J., & Charman, T. (2006). Social cognitive development during adolescence. *Social Cognitive and Affective Neuroscience, 1*(3), 165-174.

Chung, C. J., Cartwright, C., Cole, M. (2014). Assessing the impact of an autonomous robotics competition for STEM education. *Journal of STEM Education, 15*(2), 24-34.

Cohen, J. S., & Smerdon, B. A. (2009). Tightening the dropout tourniquet: Easing the transition from middle to high school. *Preventing School Failure, 53*(3), 177-184.

Collins, J. L. (1982, March). Self-efficacy and ability in achievement behavior. Paper presented at the annual meeting of the American Educational Research Association, New York.

Committee on Vocational Education Research and Development. (1976). *Assessing vocational education research and development.* Washington, DC: National Academy of Science. Retrieved from http://www.nap.edu/openbook.php?record_id=9577&page=R1.

Conley, D. T. (2010). *College and career ready: Helping all students succeed beyond high school.* San Francisco, CA: Jossey-Bass.

Conley, D. T. (2008).Rethinking college readiness. *New Directions for Higher Education, 144*, 3-13.

Conn, B. E. (2014). *Interventions for at-risk adolescents: Self-esteem and empowerment as predictors of increased work effort* (Unpublished doctoral dissertation). Alliant International University, Fresno, CA.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson Education, Inc.

Curtis, K., & Youngquist, S. T. (2013). Part 21: Categoric analysis: Pearson Chi-B132-Square Test. *Basics of Research, 32*(4), 179-180.

Dahir, C. A. (2001). Career planning in middle school. *The Education Digest, 67*(4), 65-67.

Deschenes, S., Little, P., Grossman, J., & Arbreton, A. (2010). Participation over time: Keeping youth engaged from middle school to high school. *Afterschool Matters, Fall 2010,* 1-8.

Desmond, R., Brown, R. D., & LaFauci, J. M. (2006). Freshman transition programs: Long-term and comprehensive. *Principals' Research Review, 1*.

Dubetz, T., & Wilson, J. A. (2013). Girls in engineering, mathematics and science, GEMS: A science outreach program for middle school female students. *Journal of STEM Education, 14*(3), 41-47.

Dunning, D. M. (2005). Picture imperfect. *Scientific American Mind, 16*(4), 20-27.

Eccles, J. S., Lord, S., & Midgley, C. (1991). What are we doing to early adolescents? The impact of educational contexts on early adolescents. *American Journal of Education, 99,* 521-542.

Erikson, E. H. (1950). *Childhood and society*. New York: W.W. Norton & Company.

Erlich, R. J., & Russ-Eft, D. (2011). Applying social cognitive theory to academic advising to assess student learning outcomes. *NACADA Journal, 31*(2), 5-15.

Evans, J. H., & Burck, H. D. (1992). The effects of career education intervention on academic achievement: A meta-analysis. *Journal of Counseling and Development, 71*, 59-109.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fleischman, K., Smothers, M. K., Christianson, H. F., Carter, L., Hains, A. A., & Davies, W. (2011). Experiences of adolescents with Type 1 diabetes as they transition from middle school to high school. *Journal of School Counseling,* 9, 1-26.

Fleming, N. (2011). Middle schoolers getting prepped for higher education. *Education Week, 31*(13), 10-11.

Florida Department of Education (n.d.). *Florida school grades.* Retrieved from schoolgrades.fldoe.org.

Florida Department of Education. (2013). *Florida CHOICES website*. Retrieved from https://fldoe.org/choices.

Florida Department of Education. (2014a). *Career and education planning course standards.* Retrieved from http://www.fldoe.org/core/fileparse.php/3/urlt/ceplanningcoursecompetencies.pdf

Florida Department of Education. (2014b). *Educators' toolkit.* Retrieved from http://www.fldoe.org/workforce/ced/

Flouri, E., & Buchanan, A. (2002). The role of work-related skills and career role models in adolescent career maturity. *The Career Development Quarterly, 51*(1), 36-43.

Fouad, N. A., & Keeley, T. J. (1992). The relationship between attitudinal and behavioral aspects of career maturity. *The Career Development Quarterly, 40,* 257-271.

Fouad, N. A., & Smith, P. L. (1997). Reliability and validity evidence for the middle school self-efficacy scale. *Measurement & Evaluation in Counseling & Development, 30*(1), 17.

Fritz, C. O., Morris, P. E., & Richler, J. J. (2011). Effect size estimates: Current use, calculations, and interpretation. *Journal of Experimental Psychology: General, 141*(1), 2-18.

Gall, M. D., Gall J. P., & Borg, W. R. (2007). *Educational research: an introduction*. Boston, MA: Pearson Education, Inc.

Gentle-Genitty, C. (2009). Best practice program for low-income African-American students transitioning from middle to high school. *Children & Schools, 31*(2), 109-117.

Gibbons, M. M. (2010). Prospective first-generation college students: A social-cognitive perspective. *The Career Development Quarterly, 58*(3), 194-208.

Gibbons, M. M., & Borders, L. D. (2010). A measure of college-going self-efficacy for middle school students. *Professional School Counseling, 13*(4), 234-243.

Gibbons, M. M., & Shoffner, M. F. (2004). Prospective first-generation college students: Meeting their needs through social cognitive career theory. *Professional School Counseling, 8*(1), 91-97.

Giedd, J. N., Snell, J. W., & Lange, N. (1996). Quantitative magnetic resonance imaging of human brain development: Ages 4-18. *Cerebral Cortex, 6*, 551-560.

Gomezelj, D. O., Fister, K., & Trunk, N. S. (2008). The support of employers in the system of workplace learning recognition. *International Journal of Innovation and Learning, 5*(1), 38-50.

Gonzalez, L. M., Stein, G. L., & Huq, N. (2013). The influence of cultural identify and perceived barriers on college-going beliefs and aspirations of Latino youth in emerging immigrant communities. *Hispanic Journal of Behavioral Sciences, 35*(1), 103-120.

Green, S. B., & Salkind, N. J. (2014). *Using SPSS for Windows and MacIntosh: Analyzing and understanding data.* Upper Saddle River, NJ: Prentice Hall.

Grenwelge, C. H. (2010). *The effects of the Texas statewide youth leadership forum summer training events on the self-advocacy abilities of high school students with disabilities* (Doctoral dissertation). Retrieved from ProQuest. (3416195)

Grossman, J. B., & Cooney, S. M. (2009). *Paving the way for success in high school and beyond: The importance of preparing middle school students for the transition to ninth grade.* New York: PPV GroundWork.

Hackett, G., & Betz, N. E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior, 18*, 326-339.

Halvorsen, M., Hertzog, N. B., & Childers, S. A. (2013). University of Washington transition school: College preparation and teaching for transformation. *Gifted Child Today, 36*(3), 187-192.

Hartung, P. J., & Bluestein, D. L. (2002). Reason, institution, and social justice: Elaborating on Parson's career decision-making model. *Journal of Counseling & Development, 80*, 41-47.

Hartung, P. J., Profeli, E. J., & Vondracek, F. W. (2008). Career adaptability in childhood. *The Career Development Quarterly, 57*, 63-74.

Herr, E. L. (2013). Trends in the history of vocational guidance. *The Career Development Quarterly, 61*, 277-282.

Hinkle, D. E., Wiersma, W., & Jurs, S. G. (1998). *Applied statistics for the behavioral sciences* (4th ed.). Chicago, IL: Rand McNally College Publishing.

Hirschi, A., Niles, S. G., & Akos, P. (2010). Engagement in adolescent career preparation: Social support, personality, and the development of choice decidedness and congruence. *Journal of Adolescence, 34*(1), 173-182.

Hoest, A., Jensen, V. M., & Nielsen, L. P. (2013). Increasing the admission rate to upper secondary school: the case of lower secondary school student career guidance. *Education Economics, 21*(3), 213-229.

Holcomb-McCoy, C. (2007). Transitioning to high school: Issues and challenges for African-American students. *Professional School Counseling, 10*, 253-260.

Hollender, J. (1971). Development of vocational decisions during adolescence. *Journal of Counseling Psychology, 18*, 244-248.

Horwitz, A., & Snipes, J. (2008). *Supporting successful transitions to high school.* Retrieved from http://www.cgcs.org/publications/CGCS_SuccessfulTransitions.pdf

Huerta, J. J., Watt, K. M., & Butcher, J. T. (2013). Examining Advancement Via Individual Determination (AVID) and its impact on middle school rigor and student preparedness. *American Secondary Education, 41*(2), 24-37.

Jackson, M.A., Perolini, C.M., Fietzer, A.W., Altschuler, E., Woerner, S., & Hashimoto, N. (2011). Career-related success-learning experiences of academically underachieving urban middle school students. *The Counseling Psychologist, 39*(7), 1024-1060.

Johnson, L. S. (2000). The relevance of school to career: A study of student awareness. *Journal of Career Development, 26*(4), 263-276

Johnston, W. B., & Packer, A. H. (1987). *Workforce 2000: Work and workers for the 21st century*. Indianapolis, IN: Hudson Institute.

Jones, L. K. (1988). *The Career Decision Profile.* (Available from Lawrence K. Jones, North Carolina State University, College of Education and Psychology, Department of Counselor Education, Box 7801, Raleigh, NC 27695).

Jones, V. R. (2010). Virginia's academic and career plan emphasizes middle school. *Guidance and Career Development, 85*(7), 24-27.

Joyner, R. L., Rouse, W. A., & Glatthorn, A. A. (2013). *Writing the winning thesis or dissertation*. Thousand Oaks, CA: Sage Publications.

Kalchik, S., & Oertle, K. (2010). The integral role of career development in supporting programs of study and career pathways. *Office of Community College Research and Leadership, 1*, 1-8.

Karaarslan, G., & Sungur, S. (2011). Elementary students' self-efficacy in science: Role of grade level, gender, and socio-economic status. *Science Education International, 22*(1), 72-79.

Kemple, J. J., Connell, J. P., Legters, N., & Eccles, J. (2006). *Making the move to and through high school: How freshman academies and thematic small learning communities can support successful transitions.* Retrieved from http:slcp.ed.gov/documents/issue_paper_6_making_the_move.pdf

Kimberly, R. M. (1989). An examination of the effectiveness of the Choices computer assisted career guidance system with post-secondary vocational business students (Doctoral dissertation, Texas A & M University, 1988). *Dissertation Abstracts International, 49,* 2633A.

King, F. J. (1982). A summary of the usefulness of Florida Choices in Florida CETA settings. Unpublished manuscript, Florida Department of Education, Bureau for Career Development, Tallahassee.

Knezek, G., Christensen, R., Tyler-Wood, T., & Periathiruvadi, S. (2013). Impact of environmental power monitoring activities on middle school student perceptions of STEM. *Science Education International, 24*(1), 98-123.

Koivisto, P., Vinokur, A. D., & Vuori, J. (2011). Effects of career choice intervention on components of career preparation. *Career Development Quarterly, 59*(4), 345-366.

Kultusministerkonferenz. (2015). *Uebersicht schulsystem.* Retrieved from http://www.kmk.org/bildung-schule/allgemeine-bildung/uebersicht-schulsystem.html

Langenkamp, A. G. (2009). Following different pathways: Social integration, achievement, and the transition to high school. *American Journal of Education, 116,* 69-97.

Langenkamp, A. G. (2010). Academic vulnerability and resilience during the transition to high school: The role of social relationships and district context. *Sociology of Education, 83*(1), 1-19.

Legters, N., & Balfanz, R. (2010). Do we have what it takes to put all students on the graduation path? *New Directions for Youth Development, 127*, 11-24.

Legum, H. L., & Hoare, C. H. (2004). Impact of a career intervention on at-risk middle school students' career maturity levels, academic achievement, and self-esteem. *Professional School Counseling, 8*(2), 148.

Lent, R. W., Brown, S. D, & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance [Monograph]. *Journal of Vocational Behavior, 45*, 79-122.

Lent, R. W., Brown, S. D., & Hackett, G. (1996). Career development from a social cognitive perspective. In D. Brown, L. Brooks, & Associates (Eds.), *Career choice and development* (3rd ed., pp. 373-421). San Francisco, CA: Jossey-Bass.

Lent, R. W., Hackett, G., & Brown, S. D. (1996). A social cognitive framework for studying career choice and transition to work. *Journal of Vocational Education Research, 21*(4), 3-31.

Lewis, M. V., & Stone, J. R., III. (2013). Perspectives in HRS – Origins, chronology, and current status of the National Research center for Career and Technical Education: 1963-2012. *New Horizons in Adult Education & Human Resource Development, 25*(2), 107-120.

Luzzo, D. A., & Pierce, G. (1996). Effects of DISCOVER on the career maturity of middle school students. *The Career Development Quarterly, 45*(2), 170-172.

Lys, D. B. (2009). Supporting high school graduation aspirations among Latino middle school students. *RMLE Online: Research in Middle Level Education, 33*(3), 1-12.

MacBrayne, P. S. (1987). Educational and occupational aspirations of rural youth: A review of the literature. *Research in Rural Education, 4*(3), 135-141.

McCallumore, K. M, & Sparapani, E. F. (2010). The importance of ninth grade on high school graduation rates and student success in high school. *Education, 130*(3), 447-456.

Makkonen, T., & Lin, B. (2012). Continuing vocational training and innovation in Europe. *International Journal of Innovation and Learning, 11*(4), 325-338.

Margolis, H., & McCabe, P. P. (2006). Improving self-efficacy and motivation: What to do, what to say. *Intervention in School and Clinic, 41*(40), 218-227.

McCollough, C. A. (2011). Creating a college-going culture. *Science Teacher, 78*(3), 51-55.

McCollum, E. C., & Yoder, N. P. (2011). School culture, teacher regard, and academic aspirations among middle school students. *Middle Grades Research Journal 6*(2), 65-74.

McComb-Beverage, S. K. (2012). An experimental design: Examining the effectiveness of the Virginia career view program on creating 7th grade student career self-efficacy. (Unpublished doctoral dissertation). Liberty University, Lynchburg, VA.

McLaughlin, T. F., & Vacha, E. F. (1992). The at-risk student: A proposal for action. *Journal of Instructional Psychology, 19*(1), 66-68.

Metheny, J., & McWhirter, E. H. (2013). Contributions of social status and family support to college students' career decision self-efficacy and outcome expectations. *Journal of Career Assessment, 21*(3), 378-394.

Michael, R. S. (2015). *Crosstabulation and chi square*. Retrieved from http://www.indiana.edu/~educy520/sec6342/week_10/chi_sq_summary011020.pdf

Ministerium für Kultus, Jugend und Sport Baden Württemberg (n.d.). *Werkrealschule und Hauptschule*. Retrieved from http://www.kultusportal-bw.de/,Lde/Startseite/schulebw/Werkrealschule+und+Hauptschule

Mittendorff, K., den Brok, P., & Beijaard, D. (2010). Career conversations in vocational schools. *British Journal of Guidance & Counselling*, (*38)*2, 143-165.

Montesano, N., & Geist, H. (1964). Differences in occupational choice between ninth and twelfth grade boys. *Personnel and Guidance Journal, 43*, 150-154.

Moore, E. A. (2002). Implementing career education programs during contemporary times. *The Agricultural Education Magazine, 74*, 8-9.

National Center for Education Statistics. (2010). *Status and trends in the education of racial and ethnic minorities*. Retrieved from http://nces.ed.gov/pubs2010/2010015/indicator1_5.asp

Neild, R. C. (2009). Falling off track during the transition to high school: What we know and what can be done. *Future of Children, 19*(1), 53-76.

Niehaus, K., Rudasill, K. M., & Adelson, J. L. (2012). Self-efficacy, intrinsic motivation, and academic outcomes among Latino middle school students participating in an after-school program. *Hispanic Journal of Behavioral Sciences, 34*(118), 118-136.

Olson, J. S. (2013). Opportunities, obstacles, and options: First-generation college graduates and Social Cognitive Career Theory. *Journal of Career Development, 41*, 199-217. doi:10.1177/0894845313486352

Orthner, D. K., Akos, P., Rose, R., Jones-Sanpei, H., Mercado, M., & Wooley, M. E. (2010). CareerStart: A middle school student engagement and academic achievement program. *Children & Schools, 32*(4), 223-234.

Osipow, S. H. (1987). *Career decision manual*. Odessa, FL: Psychological Assessment Resources.

Pajares, F. (2006). Self-efficacy during childhood and adolescence: Implications for teachers and parents. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp.1– 43). Greenwich, CT: Information Age.

Parsons, F. (1909). *Choosing a vocation.* Boston, MA: Houghton Mifflin.

Perlstein, L. (2003). *Not much, just chillin': The hidden lives of middle schoolers.* New York: Ballantine Books

Perna, L. W. (2002). Precollege outreach programs: Characteristics of programs serving historically underrepresented students. *Journal of College Student Development, 43*(1), 64-83.

Piaget, J. (1952). The stages of the intellectual development of the child. *Bulletin of the Menninger Clinic, 26*(3), 120-128.

Powell, J. J. W., Bernard, N., & Graf, L. (2012). The emergent European model in skill formation: Comparing higher education and vocational training in the Bologna and Copenhagen processes. *Sociology of Education, 85*(3), 240-258. doi:10.1177/0038040711427313

Powell, J. J. W., Graf, L., Bernhard, N., Coutrot, L., & Kieffer, A. (2012). The shifting relationship between vocational and higher education in France and Germany: Towards convergence? *European Journal of Education, 47*(3), 405-423.

Radcliffe, R., & Stephens, L. C. (2008). Preservice teachers are creating a college culture for at-risk middle school students. *Research in Middle Level Education, 32*(4), 1-15.

Radcliffe, R., & Bos, B. (2011). Mentoring approaches to create a college-going culture for at-risk secondary level students. *American Secondary Education, 39*(3), 86-107.

Radcliffe, R. A., Bos, B. (2013). Strategies to prepare middle school and high school students for college and career readiness. *The Clearing House, 86*(4), 136-141.

Ramsey, J. (2008). *Creating a high school culture of college-going: The case of Washington State Achievers*. Washington, DC: Institute for Higher Education Policy

Regional Educational Laboratory Southeast. (2008). Evidence based education request desk. *Educational Laboratory Southeast, EBE #209.* Greensboro, NC: REL.

Rinke, C. R., Arsenie, M. E., & Bell, S. (2012). College is a good place to go to become what you want to become. *Teacher Education Quarterly, Winter 2012*, 99-120.

Roaten, G. K., & Roaten, D. J. (2012). Adolescent brain development: Current research and the impact on secondary school counseling programs. *Journal of School Counseling, 10*(18), 1-27.

Robbins, S. B. (1987). Predicting change in career indecision from a self-psychology perspective. *Career Development Quarterly, 35*, 288-296.

Rogers, M. E., & Creed, P. A. (2011). A longitudinal examination of adolescent career planning and exploration using a social cognitive career theory framework. *Journal of Adolescence, 34,* 163-172.

Rovai, A. P., Baker, J. D., Ponton, M. K. (2013). *Social science research design and statistics: A practitioner's guide to research methods and SPSS analysis.* Chesapeake, VA: Watertree Press.

Royster, P., Gross, J., & Hochbein, C. (2015). Timing is everything: Getting students back on track to college readiness in high school. *The High School Journal, 98*(3), 208-225.

Sampson, J. P., Jr., & Norris, D. S. (1997). An evaluation of computer-assisted career guidance implementation effectiveness. *Career Planning and Adult Development Journal, 13,* 75-86.

Schaefer, M. B, Rivera, L. M., & Ophals, E. (2010). Creating a collaborative career development program for middle grades students. *Middle School Journal, 42*(2), 30-38.

Schwartz, S., & Suyemoto, K. (2013). Creating change from the inside: Youth development within a youth community organization program. *Journal of Community Psychology, 41*(3), 341-358.

Scottish Consultative Committee Curriculum. (1989). *Curriculum design for the secondary stages.* Glasgow: Scottish Consultative Committee Curriculum

Scottish Qualifying Authority. (2005). *Automatic certification of core skills.* Glasgow: Scottish Qualifying Authority.

Seo, M., & Ilies, R. (2009). The role of self-efficacy, goal, and affect in dynamic motivational self-regulation, organizational behavior, and human decision processes. *Organizational Behavior and Human Decision Processes, 109,* 120-133.

Smith, J. B. (1997). Effects of eighth-grade transition programs on high school transition programs on high school retention and experiences. *The Journal of Educational Research, 90,* 144-152.

Smith-Hughes Act of 1917, Pub. L., No. 64-347 (1917).

St. John, E. P., & Hu, S. (2006). *School reform, scholarship guarantees and college enrollment: A study of the Washington State Achievers program.* Seattle, WA: The Bill & Melinda Gates Foundation.

Steinberg, L. (2011). Demystifying the adolescent brain. *Educational Leadership, 68*(7), 42-46.

Steinberg, L. (2012). Should the science of adolescent brain development inform public policy? *Issues in Science and Technology, Spring 2012*, 67-78.

Steiner, P. M., Wroblewski, A., & Cook, T. D. (2009). Randomized experiments and quasi-experimental designs in educational research. In K. E. Ryan & J. B. Cousins (Eds.), *The Sage international handbook on educational evaluation* (pp. 75-95). Thousand Oaks, CA: Sage.

Sultana, R. G. (2010). Career guidance and social inclusion: A challenge for Europe. *Australian Journal of Career Development, 19*(1), 18-22.

Swanson, J. L., Daniels, K. K., & Tokar, D. M. (1996). Measuring perceptions of career related barriers: The Career Barriers Inventory. *Journal of Career Assessment, 4*, 219-244.

The White House (Office of the Press Secretary). (2009). *The race to the top: Promoting innovation, reform, and excellence in America's public schools.* Retrieved from https://www.whitehouse.gov/the-press-office/fact-sheet-race-top

Thor, S. (2012). Organizational excellence: a study of the relationship between emotional intelligence and work engagement in process improvement experts (Unpublished doctoral dissertation). Retrieved from http://digitalcommons.georgefox.edu/cgi/viewcontent.cgi?article=1009&context=dba

Ting, S. R., Leung, Y. F., Stewart, K., Smith, A. C., Roberts, G. L., & Dees, S. (2012). A preliminary study of career education in middle school. *Journal of Career and Technical Education, 27*(2), 84-97.

Turner, S. L., Trotter, M. J., Lapan, R. T., Czajka, K. A., Yang, P., & Brissett, A. E. A. (2006). Vocational skills and outcomes among Native American adolescents: A test of the

integrative contextual model of career development. *The Career Development Quarterly, 54*, 216-226.

U.S. Census Bureau. (2014). *QuickFacts: Hernando CDP, Florida*. Retrieved from http://quickfacts.census.gov/qfd/states/12/1229425.html

van de Werfhorst, H. G. (2014). Changing societies and four tasks of schooling: Challenges for strongly differentiated educational system. *International Review of Education, 60,* 123-144.

Vile, J. D., Arcaira, E., & Reisner, E. (2009). *Progress toward high school graduation: Citizens School' youth outcomes in Boston.* Washington, DC: Policy Studies Associates.

Vuong, M., Brown-Welty, S., & Tracz, S. (2010). The effects of self-efficacy on academic success of first-generation college sophomore students. *Journal of College Student Development, 51*(1), 50-64.

Wang, L., & Jiang, D. (2013). Chinese vocational education: Borrowing and reforming. *Chinese Education and Society, 46*(4), 92-99.

Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques*. Los Angeles, CA: SAGE Publications, Inc.

Watson, J. B. (1913). Psychology as the behaviorist views it. *Psychological Review, 20,* 158-177.

Watson, J. B. (1924). *Behaviorism*. New York, NY: People's Institute Publishing Company.

What Works Clearinghouse. (2009). *Dropout prevention*. Retrieved from http://ies.ed.gov/ncee/wwc/reports/topic.aspx?tid=06

Wilson, R. C., Jr. (2011). The relationship between middle school students' college-going beliefs and sense of belonging in school. *Education Doctoral,* Paper 39.

Witherspoon, D., & Ennett, S. (2011). Stability and change in rural youths' educational outcomes through the middle and high school years. *Journal of Youth Adolescence, 40,* 1077-1090. doi:10.1007/s10964-010-9614-6.

APPENDIX A: Script for Experiment at Middle School A

DAY 1:

Introduction (35 minutes)

Good morning/good afternoon, class. Today is the first day of the study about academic and career exploration. You will all do the same activities because this module is part of our regular social studies curriculum, but we will only use the results of those of you, who agreed to participate and whose parents gave permission. There will be no negative consequences for students who don't participate, and you can tell us that you don't want to be part of the experiment at any time.

This is a three-day activity. The first two days, you will do the activities on the Florida CHOICES website where you will explore careers and, in the end, create an academic and career plan for yourself. On the third day, you will take the bus and visit the college campus, where you will learn about college, financial aid, the "fun part" of college, talk to students who just graduated from high school and are in their first year, and go on a campus tour.

At the end of the campus activity, you will get back on the bus and go to a local restaurant for lunch and then back to your school. Any questions? Alright, let's begin.

Step 1: Take pretest

Before you begin our online activity, we want to find out how you feel about your ability to go to college, to research a career, and to find the training needed to work in this career. You will complete two surveys. The first survey is has 30 questions, which you answer with one of four possible answers: not sure at all, somewhat sure, sure, and very sure. The second survey has 25 questions, which you answer with one of five possible answers: no confidence at all, very little confidence, moderate confidence, much confidence, and complete confidence. There is no

right or wrong answer; don't think about the question very long; just go with your feeling, and select the answer that best describes how you feel about it. The last survey just asks for general information about yourself, such as your age, gender, and ethnicity and also whether you plan to continue your education or training after high school. When you've completed the surveys, raise your hand, and your teacher will come and collect the papers. This should take about 30 minutes to complete.

Step 2: Create an Account (10 minutes)

- Go to the website https://www.flchoices.org/
- Under the *Sign In* tab, click on "create account."
- Under *Who are you,* choose "Middle School/Junior High School Student"
- Enter your date of birth and type "Fox Chapel Middle School" - SEARCH – Select our school and ENTER
- Enter your first name and last name
    - Enter your email address if you have one; otherwise click on "*Check here if you do not have your own email….."*
    - Create an account name: Type in your first name and first initial of your last name plus your birth year, i.e., **KimK2001**.
    - Create a password that you will remember.
    - Type in a question that you can use in case you forget the password later on, and you have to create a new password.
    - Click on "*I'll do it later when I need it"* in the section Import from a CHOICES portfolio…
    - Click on *"I have read and agree to the privacy policy…."*

- CREATE YOUR ACCOUNT
- CLICK HERE TO CONTINUE

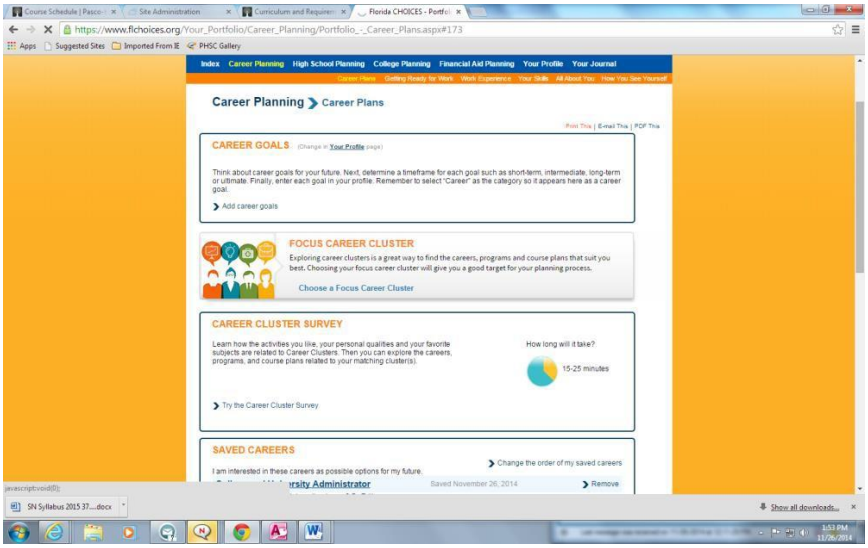
STEP 2: Get ready for High School (15 minutes)

- Click on *Identify careers that match your interests*
- Get started
    - Indicate how much you like or dislike each activity – be honest; there is no right or wrong answer.
    - Read the results of your inventory
- Matching careers
    - Select one of the careers and study the following
        - *What They Do*
        - *Is This for You?*
        - *Skills You Need*
        - *What to Learn*
            - Look at one of the elements
        - *Money and Outlook*
        - *Connections*

DAY 2:

Sign back into your account on the website and continue with the activities (60 min.)

- Add the career to your portfolio
- Create a career plan
    - Read the page, then click on START YOUR PLAN NOW
    - Click on your chosen career
    - Answer the questions to confirm your career choice
    - Confirm your high school plan; click on SAVE AND CONTINUE
- Choose an educational plan – ADD
    - Confirm you educational plan; click on SAVE AND CONTINUE
- Choose a post-secondary school
    - Select "Florida" as your state
    - Select a college or university you would like to attend
    - Confirm your choice, click on SAVE AND CONTINUE
- Make some lifestyle Predictions
    - Enter the information and click on SAVE AND CONTINUE
- Make your plan happen, then click on CONTINUE
- Print your Career Plan, write your name on it, and give it to your teacher


https://www.flchoices.org/Your_Portfolio/Career_Planning/Portfolio_-_Career_Plans.aspx#173
Index
Career Planning
High School Planning
College Planning
Financial Aid Planning
Your Profile
Your Journal
Career Planning
Career Plans
CAREER GOALS
Think about career goals for your future. Next, determine a timeframe for each goal such as short-term, intermediate, long-term or ultimate. Finally, enter each goal in your profile. Remember to select "Career" as the category so it appears here as a career goal.
Add career goals
FOCUS CAREER CLUSTER
Exploring career clusters is a great way to find the careers, programs and course plans that suit you best. Choosing your focus career cluster will give you a good target for your planning process.
Choose a Focus Career Cluster
CAREER CLUSTER SURVEY
Learn how the activities you like, your personal qualities and your favorite subjects are related to Career Clusters. Then you can explore the careers, programs, and course plans related to your matching cluster(s).
How long will it take?
15-25 minutes
Try the Career Cluster Survey
SAVED CAREERS
I am interested in these careers as possible options for my future.
Change the order of my saved careers
Saved November 26, 2014
Remove

APPENDIX B: Agenda and Script for College Campus Visit

9:45 a.m. Buses arrive

Students arrive on campus and meet in the conference center, bldg. B, where they sign in and receive their group assignments, which are colored notecards (blue, red, green, and yellow).

10:00 a.m. Welcome by campus Provost

10:05 a.m. Academic Programs Overview

An academic advisor will show a PowerPoint presentation illustrating the academic and vocational programs offered at the college. She will explain the difference between a technical certificate and an Associate's degree; go over admissions requirements; talk about full-time vs. part-time status; and show students the college's website where this information can be found. She will also speak about transfers to 4-year universities and colleges.

The advisor will ask students about their academic and education plan they created through the Florida CHOICES website. She will select 2 – 3 of these careers and show students what kind of entrance requirements might exist for these careers. She will also show students on the college website how they can explore the courses they'll have to take for the degree.

10:20 a.m. Campus Tours and Classroom Visit

Students will assemble into their color groups and take their passports plus a pen. Each group is led by a study volunteer. At each stop, students will find answers to questions that are in their passports. During the tour, each group will visit

- the Library – Library Director will talk about the resources available to students, study rooms, computers.
- the Teaching & Learning Center – TLC Coordinator will talk about tutoring and testing services.

- Student Development – The Student Development Assistant will introduce each area and explain its function.
- Classroom – A science professor will show students the 3-D printers he uses to produce items he designed. He will talk about this new technology and its application to everyday life. Each student will receive a small item produced by the 3-D printer.

The stops at the library, teaching and learning center, and student development office will take around ten minutes. Each time, students will have an opportunity to ask questions. The first group in the classroom will spend approximately 30 minutes with the professor. The other three groups will start at each of the other three departments and end up together in the classroom.

11:20 a.m. Financial Aid Overview and Florida Bright Futures Scholarship

A financial aid advisor will clarify need-based financial assistance, especially the PELL grant, Florida Student Assistance Grant (FSAG), Student Educational Opportunity Grant (SEOG), and scholarships available at the college. Emphasis will be on the availability of funds for students from low income households as well as talent-based scholarships, such as music, sports, arts, etc. The advisor will also show students the outside scholarship opportunities that are available for the county and nation-wide.

An advisor will talk about the Florida Bright Futures scholarship program and discuss the eligibility requirements while emphasizing that this currently covers over 40% of tuition at the college and that income plays no role in the awarding of this scholarship. Since community service is a component of the scholarship, the advisor will solicit from students ideas as to where they might earn their service hours and how to find available opportunities.

11:35 a.m. Dual Enrollment Program

An academic advisor will present the Dual Enrollment Program, which is available to students starting the second semester of their 9th grade. She will explain the eligibility requirements and emphasize that students can earn free college credit, up to the receipt of an A.A. degree upon their high school graduation. The advisor will encourage students to talk to their high school counselors about the DE program when they sign up for their first-semester of high school classes.

11:45 a.m. Student Activities and Student Testimonials

The campus Student Activities Coordinator will show a short video with highlights of the many extracurricular activities offered at the college. She will talk to students about the benefits of getting involved in clubs and organization and explain what Student Government is.

Several first-year students, who graduated from the high schools into which Middle School A and B feed, will describe their experiences at the college and also in high school. They will give tips to the students on how to navigate high school; what worked well for them, what didn't.

12:10 a.m. Posttest for Middle School A and Wrap Up

Recap of what students have experienced; sharing of the answers from their passport; followed by a Question & Answer session. The posttest will be administered in the same manner as the pretest. Paper surveys and pens will be distributed and the script read to the students. When students are finished, volunteers will collect the papers, and give them to the researcher, who will be present throughout the events.

APPENDIX C: Liberty University Institutional Review Board

LIBERTY UNIVERSITY

INSTITUTIONAL REVIEW BOARD

April 22, 2015
Karin L Glessner

IRB Approval2177.042215: Yes, I Can: A Quasi-Experimental, Pretest-Posttest Non• equivalent Design Study to Determine the Effect of Participation in a College Workshop on the College and Career Self-Efficacy and College Intent of Eighth-Grade Students at Two Middle Schools in Semi-Rural West-Central Florida

Dear Karin,

We are pleased to inform you that your above study has been approved by the Liberty IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely!

[redacted]

(434) 592-4054

APPENDIX D: Approval by State College

Independent Research Review (IRR) approval to conduct research at [redacted] [redacted]State College

---

From:
To: Glessner, Karin
Date: Tuesday - May 5, 2015 6:43 PM

Subject: Independent Research Review (IRR) approval to conduct research at Pasco-[redacted]State College.

Congratulations, Karin!

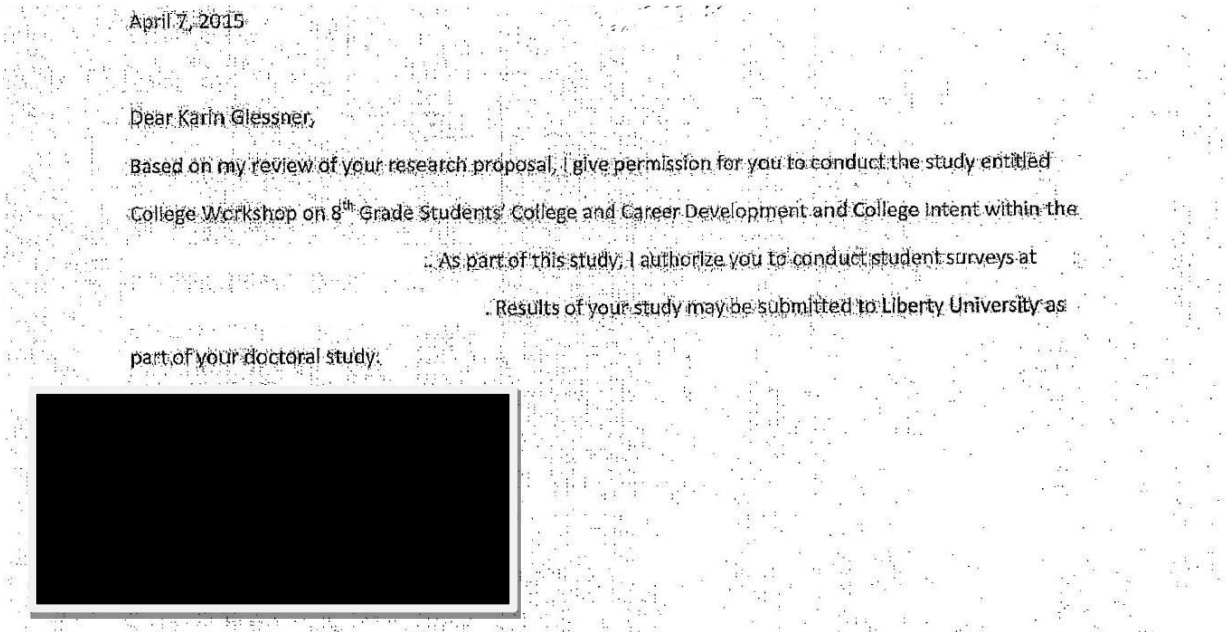
This email is to advise you that your [redacted]State College Independent Research Review (IRR) application was approved by the full President's Cabinet. If you need an official letter from me please let me know; otherwise, this email is your official approval to proceed with your research as indicated in your IRR application.

Best wishes to you in your research. We would be very interested in knowing the results of your study.

With best regards,

[redacted]

APPENDIX E: Approval from School District



April 7, 2015

Dear Karin Glessner,

Based on my review of your research proposal, I give permission for you to conduct the study entitled College Workshop on 8th Grade Students' College and Career Development and College Intent within the . As part of this study, I authorize you to conduct student surveys at . Results of your study may be submitted to Liberty University as part of your doctoral study.

[redacted]

APPENDIX F: Information Letter to Parents/Guardians

Review Board has approved this document
for use from 4/22/15 to 4/21/16; Protocol #
2177.042215

Karin Glessner
[redacted]

May 2015

Dear Parents/Guardians and Students:

My name is Karin Glessner. I am the Assistant Dean, Student Development, at [redacted] and also a doctoral student at Liberty University. At the end of the school year, your student is invited to be in a research study whose goal is to determine the effectiveness of a college workshop on eighth grade college and career development. All eighth grade students at the school are being asked to participate in the research study, and I am asking for parents'/guardians' and students' consent to participate. I ask that you read the enclosed consent form carefully and ask any questions you may have before agreeing to let the student participate in the study.

During the month of May, teachers will introduce a college and career exploration lesson. The program will take place within the students' regular social studies classrooms. During the course of the study, students will participate in three days of online activities on the Florida CHOICES career exploration website, learn about different careers, choose one that may interest them, and develop an academic plan on how to work in this profession. On the fourth day, students will come on the [redacted] campus of [redacted] State College, where they will learn about academic programs, scholarships and other financial aid available, and student activities. They will also talk to first-year students who graduated from a [redacted] County high school.

As part of the study, students will answer survey questions to determine how confident they are that they can research careers and identify the training needed to work in the chosen career. The two surveys are the Career Decision Making Self-Efficacy Scale-Short Form

(CDSES-SF) and the College-Going Self-Efficacy Scale for Middle School Students (CSGSES). The first survey has 30 questions related to college attendance and the ability to complete college. The second survey has 25 questions that ask about students' beliefs whether they can research occupations, set goals, plan for the future, and solve problems. In addition to the two surveys, students will also the question whether they intend/plan to go to college, as well as provide demographic information about ethnicity, free/reduced lunch, and parents' prior college.

In the past, these types of activities were held in high school, but research shows that we have to get students interested in career and college exploration at a younger age. The college workshop of this study is geared toward increasing students' interest in this topic and, if it proves effective, may be used throughout the school district with all eighth grade students and may lead to a better transition to high school and an increase in high school graduation.

I hope that you will find the study beneficial for the student and your family and that you both give your permission to participate in the study. Please, feel free to call if I can answer any questions you may have or contact me by email at kglessner@liberty.edu.

Respectfully,

Karin Glessner

APPENDIX G: Consent Form

Review Board has approved this document for use from
4/22/15 to 4/21/16; Protocol # 2177.042215

CONSENT FORM

Yes, I Can! A Study to Determine the Effect of a College Workshop on the College and Career Self-Efficacy and College Intent of Eighth-Grade Students at Two Middle Schools in Semi-Rural West-Central Florida

Karin Glessner Liberty
University School of
Education

You are invited to be in a research study about career and college beliefs of middle school students. You were selected as a possible participant because your middle school agreed to serve as a location for this study. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Karin Glessner, a doctoral candidate in the School of Education at Liberty University is conducting the study.

Background Information:
The purpose of the study·is to determine the effectiveness of a college workshop on eighth-grade students' beliefs regarding college and career development and the decision to go to college.

Procedures:
If you agree to be in this study, I would ask you to do the following things:

- Attend school on the days of the study.
- Complete the pretest and posttest surveys. It will take approximately 30 minutes to complete both surveys.

The study will take three days and will take place at your school.

Risks and Benefits of being in the Study: ·
The risks to you are no different than what you would encounter in everyday life. There will be no direct benefit as a result of the study.

Compensation:
You will not be compensated for participation in the study; however, you will receive a bag with informational material regarding college programs and financial aid information, as well as a few small pro1notional items fron1 the college.

Confidentiality:

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records.

All pretest and posttest documents will be coded with your initials and your school ID. I will have no access to the school information and will not be able to identify students.

The coding information is used only to match up pre- and posttest instruments. School personnel will not keep copies of any study documents; however, I will retain all documents in a locked file cabinet in my office for the required 3-year period, after which I will shred all study documents.

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

Contacts and Questions:
You may ask any questions you have now. If you have questions later, you are encouraged to contact me at (352) 340-4823 or via email at kglessner@liberty.edu. You may also contact my Committee Chairperson, [redacted] at or aszapkiw@liberty.edu.

If you have any questions or concerns ·regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at irb@Iiberty.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:
I have read and understood the above inforn1ation. I have asked questions and have received answers. I consent to participate in the study.

Signature:_____ Date: _____

Signature of parent/guardian:_____ Date: _____

Signature of Investigator:_____Date: _____

APPENDIX H: Table 3 – Workshop Activities and Connection to Theory

Table 3

Workshop Activities and Connection to Theory

Workshop Activity	Segment of Workshop	Construct	Theory
Learn about own interests, skills, values, and abilities	Florida CHOICES	Development of basic academic and career interests	Career Self-Efficacy (Lent et al., 1994)
Select and investigate occupations	Florida CHOICES	Development of basic academic and career interests	Career Self-Efficacy (Lent et al., 1994)
Analyze the occupations	Florida CHOICES	Development of basic academic and career interests	Career Self-Efficacy (Lent et al., 1994)
Choose a particular career or career cluster.	Florida CHOICES & Campus Visit	Development of basic academic and career interests	Career Self-Efficacy (Lent et al., 1994)
Develop a career and education plan	Florida CHOICES & Campus Visit	Development of basic academic and career interests	Career Self-Efficacy (Lent et al., 1994)
Explore college or trade school websites	Florida CHOICES & Campus Visit	Development of basic academic and career interests	Career Self-Efficacy (Lent et al., 1994)
Periodically review your plan	Florida CHOICES	Development of basic academic and career interests	Career Self-Efficacy (Lent et al., 1994)
Academic/dual enroll./ vocational programs at the College	Campus Visit	Mastery experiences	College-Going Self-Efficacy (Bandura, 1993, 1997)
Financial aid presentation	Campus Visit	Mastery experiences	College-Going Self-Efficacy (Bandura, 1993, 1997)
Student activities	Campus Visit	Verbal persuasion	College-Going Self-Efficacy (Bandura, 1993, 1997)
Freshmen student panel	Campus Visit	Vicarious experiences Affective states	College-Going Self-Efficacy (Bandura, 1993, 1997)
Intent to go to college	Florida CHOICES & Campus Visit	Attitude toward behavior	College-Going Self-Efficacy (Ajzen & Fishbein, 1980; Bandura, 1993, 1997)

APPENDIX I: Approval Letter for College-Going Self-Efficacy Scale

Students (CGSES) survey

Gibbons, Melinda Miller <mgibbon2@utk.edu>
Mon 11/11/2013 11:47 AM

To:Glessner Karin <kglessner@liberty.edu>;
1 attachment

CGSES.docx;

Karin,

You are welcome to use the CGSES in your dissertation work. Good luck with your study!

From: L. DiAnne Borders
Sent: Saturday, November 09, 2013-11:56 AM To:
Gibbons, Melinda Miller
Subject: Fwd: Use of The College-Going Self-Efficacy for Middle School Students (CGSES) survey

Your call on this as it is your measure. Still getting a lot of interest! ldb

APPENDIX J: Commercial Licensure for Use of Career Decision Self-Efficacy Scale Instrument

Career Decision Self-Efficacy Scale Instrument and Scoring Guide

by Nancy E. Betz

and Karen

M. Taylor

Published by Mind Garden, Inc. info@mindgarden.com

www.mindgarden.com

APPENDIX K: Connection Between Activities, Theories, and Measurements

Table 4

Connection Between Activities, Theories, and Measurements

Workshop Activity	Theory	Segment of Workshop	Measurement (Question #)
Learn about own interests, skills, values, and abilities	Career Self-Efficacy	Florida CHOICES	CDSES-SF: 1, 5, 11, 14, 16, 22, 24 CSGSE: 10, 11, 18, 21, 22, 23, 27, 28, 29
Select and investigate occupations	Career Self-Efficacy	Florida CHOICES	CDSES-SF: 2, 19, 25 CSGSES: 26
Analyze the occupations	Career Self-Efficacy	Florida CHOICES	CDSES-SF: 9, 10, 15
Choose a particular career or career cluster	Career Self-Efficacy	Florida CHOICES & Campus Visit	CDSES-SF: 6, 20, 21
Develop a career and education plan	Career Self-Efficacy	Florida CHOICES & Campus Visit	CDSES-SF: 3, 4, 7, 12 CSGSES: 6, 8, 12, 16, 25, 30
Explore college or trade school websites	Career Self-Efficacy	Florida CHOICES & Campus Visit	CDSES-SF: 13, 23 CSGSES: 4
Periodically review your plan	Career Self-Efficacy	Florida CHOICES	CDSES-SF: 8, 17, 18
Academic, dual enrollment, and vocational programs at the College	College-Going Self-Efficacy	Campus Visit	CSGSES: 3
Financial aid presentation	College-Going Self-Efficacy	Campus Visit	CSGSES: 1, 5, 9, 20
Student activities	College-Going Self-Efficacy	Campus Visit	CSGSES: 19, 24
Freshmen student panel	College-Going Self-Efficacy	Campus Visit	CSGSES: 3, 7, 14, 17

Intent to go to college	College-Going Self-Efficacy	Florida CHOICES & Campus Visit	Question on Demographic Form
Family Income	College-Going Self-Efficacy	Pretest/Posttest	Question on Demographic Form
Parents' Prior College	College-Going Self-Efficacy	Pretest/Posttest	Question on Demographic Form
Ethnicity	College-Going Self-Efficacy	Pretest/Posttest	Question on Demographic Form

APPENDIX L: Permission to Reproduce Instruments

a. Career Decision Self-Efficacy(short form)

For use by Karin Glessner only. Received from Mind Garden, Inc. on April 16. 2015

For Dissertation and Thesis Appendices:

You cannot include an entire instrument in your thesis or dissertation, however you can use up to five sample items. Academic committees understand the requirements of copyright and are satisfied with sample items for appendices and tables. For customers needing permission to reproduce five sample items in a proposal, thesis, or dissertation the following page includes the permission form and reference information needed to satisfy the requirements of an academic committee.

Putting Mind Garden Instruments on the Web:

If your research uses a Web form, you will need to meet Mind Garden's requirements by following the procedure described at htto:l/www.mindgarden.com/how.htm#instrumentweb .

All Other Special Reproductions:

For any other special purposes requiring permissions for reproduction of this instrument, please contact info@mindgarden.com .

b. College-Going Self-Efficacy Survey

Hi Karin,

Congrats on your successful defense! Yes, feel free to list a sampling of survey questions in your manuscript.

Warmly,
[redacted]