

CAREER CAMP: ELEVATING EXPECTATIONS FOR COLLEGE-GOING AND CAREER  
SELF-EFFICACY IN URBAN MIDDLE SCHOOL STUDENTS

by

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AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

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Department of Counseling, Special Education and Student Affairs  
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## **Abstract**

Many efforts have been directed towards providing equitable access to higher education for youth from low-income, first-generation families. Despite gains, attendance and graduation rates from college are consistently lower for these students (U.S. Department of Education National Center for Education Statistics, 2012). A variety of initiatives have been implemented to support students' entry into college, persistence to graduation, and increased access to professional careers. One such program is Talent Search, which provides middle school students opportunities to achieve academic success and to become knowledgeable about college and career options. KU Talent Search offers a summer career camp as part of its programming. The Career Horizons Summer Program (CHSP) exists to help students between 6th and 7th grades explore career possibilities, build potential for success in academics and careers, and become more comfortable in a college environment (Dukstein, 2012b). This study examined beliefs about college and careers in a group of 52 students, as well as the impact of the CHSP on the intervention group.

Educational aspirations and expectations, and career and college-going self-efficacy were assessed. It was predicted that participation in the camp would result in an increase in college-going and career self-efficacy. The study also provided additional insight into the construct of college-going self-efficacy. Using a quantitative comparison group design, data were collected from camp participants and from students who were eligible to participate but did not. Pre and posttest surveys assessed educational aspirations and expectations and included scales to measure career self-efficacy (Fouad & Smith, 1997) and college-going self-efficacy (Gibbons & Borders, 2010a). Educational aspirations and expectations were high in all participants and a bivariate correlation analysis revealed that career self-efficacy and college-going self-efficacy were highly correlated. Comparisons between the intervention and the comparison group suggested that the CHSP did have an impact on career and college self-efficacy.

It is important to understand the characteristics of a successful college and career access program, and to identify interventions that are most impactful. The findings of this study add to

understanding of one such intervention and may have implications for specific practices that can increase potential for college success.

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## **Dedication**

To my late father, Ralph Chubbuck, and to the students of KU Talent Search, past, present, and future.

## Chapter 1 - Introduction

The 1960s was a time of considerable turmoil in the United States as the country struggled with a prolonged unpopular war, political assassinations, and growing concerns about racial discrimination, poverty and educational inequity. Born out of the Civil Rights Movement and President Lyndon Johnson's War on Poverty, in 1964 the federal government enacted the Economic Opportunity Act, which was closely followed by the Higher Education Act of 1965 (Perna, 2002). Progressive policy makers acknowledged that, if they were going to be prepared to attend and to be successful in college, first-generation students from low-income families were in need of both financial assistance and educational support. In addition to direct financial aid, funding was designated for a variety of programs to address the needs of disadvantaged students from middle school through adulthood, in an attempt to raise both college enrollment and completion rates (Bergerson, 2009; Perna, 2002; Pitre & Pitre, 2009).

Fifty years have passed, and researchers, educators and economists continue to express concern over persistent gaps in educational attainment in our nation. Data released recently by the National Center for Educational Statistics (U.S. Department of Education National Center for Education Statistics, 2012) reveals that, despite some gains, attendance at postsecondary institutions is consistently lower for young people from families with low socioeconomic status as well as for African American and Latino students. Poverty rates and membership in racial or ethnic minority groups are consistently linked with regards to both access and success in college; between 1998-2007, college attendance rates were between 20-25% for students who had attended high schools where low-income students were predominant (U.S. Department of Education, National Center for Education Statistics Digest, 2012). In 2010, while between 43% of 18 to 24-year-old White males and 51% of White females enrolled in postsecondary institutions, rates among Blacks (31% of males, 43% of females) and Hispanics (26% of males, 36% of females) were significantly lower (U.S. Department of Education National Center for Education Statistics, 2012).

Programming is often directed at increasing enrollment in college, but persistence and degree completion for this population are attracting a great deal of attention as well (Bui, 2002; Ishitani, 2006; Owens, Lacey, Rawls, & Holbert-Quince, 2010; Reid & Moore, 2008). In 2009-

10, African Americans and Latinos earned just over one fourth of the associate's degrees granted in the United States, and together, only accounted for 19% of the bachelor's degrees earned ((U.S. Department of Education National Center for Education Statistics, 2012). These two groups accounted for 28% of the general population, according to the 2010 U.S. census (U.S. Census Bureau, 2011).

Concerns about these gaps range from fears about a future lack of skilled workers in science, technology, engineering, and math (Flowers, 2012; Gasbarra & Johnson, 2008) to the ramifications and social justice implications of class stratification in college access and degree attainment (Bergerson, 2009). Proposed solutions are many and varied (Bergerson, 2009; Pitre & Pitre, 2009; Tierney, Corwin, & Colyar, 2005). Each year the federal government, state school districts, and postsecondary institutions invest millions of dollars in programs put in place to encourage more low SES, first-generation, and racially diverse students to attend college, but researchers, educators, and policy makers alike admit that the issue is complex. Many in the target population attend school districts that fail to meet academic achievement standards (U.S. Department of Education National Center for Education Statistics, 2012) and when students are not able to complete higher level science and math classes in high school, they are then underprepared for college admissions criteria and coursework. Parents of these students may not understand or value the college experience and students may lack role models for both college attendance and for certain careers (Bui, 2002; Owens et al., 2010; Rowan-Kenyon, Swan, & Creager, 2010; Turner, Steward, & Lapan, 2004). Barriers related to finances, racial discrimination, language proficiency, or academic ability can be both real and perceived (Alliman-Brissett & Turner, 2009; Gibbons & Borders, 2010b; Gushue, Clarke, Pantzer, & Scanlan, 2006; Hossler, 1999; Paa & McWhirter, 2000; Reid & Moore, 2008) and can further impede a student's path to a college education. On the college campus, challenges may continue to arise. A lack of familiarity with the college environment, a sense of alienation, differences between home and campus, and feelings of guilt about the cost of college have been suggested as forces impacting persistence (Bui, 2002; Owens et al., 2010, Tovar-Murray, Jenifer, Andrusyk, D'Angelo, & King, 2012).

While many lament the disparities and debate the causes, fewer have identified specific interventions that might offer solutions. This chapter will describe some theoretical perspectives that can aid understanding of these issues and will outline some well established programs and



interventions that have attempted to address access to higher education for students from first-generation, low-income, and racial or ethnic minority groups. One such program, an intensive summer career education camp for students entering 7th grade, was the focus of the study.

### **Problem Description**

Career theorists can shed some light on the complex issues surrounding a young person's decision to pursue postsecondary education or a career path. Gottfredson (2002) proposed that *occupational aspirations* may be formed early in a child's life, and are a culmination of a process whereby the individual compares self-concept to the supposed desirability of occupations. The list of aspirations is further narrowed by the individual's assessment of both compatibility with and accessibility of the particular list of occupations. Through a process of *circumscription* and *compromise*, the person identifies a list of acceptable job alternatives. These can have a powerful impact on educational and career planning decisions. Many of these decisions are based on an individual's perception of particular career fields or jobs as they relate to gender fit or relative prestige and are often based on limited or even erroneous information. If a child perceives that he or she is the *wrong* gender for a particular career, or that the career is off limits because of race or socioeconomic status, it is likely to be eliminated from a list of acceptable occupations and no further effort will be made to prepare for it. This can clearly have implications for an individual's interest in or desire for a college education (Ivers, Milsom, & Newsome, 2011; Schuette, Ponton, & Charlton, 2012) or pursuit of certain careers.

Social cognitive career theory (Lent, Brown, & Hackett, 2002) suggests that individual factors such as personal values, abilities, needs, and interests interact with contextual and environmental factors to drive career development and choice. Three basic components of social cognitive career theory (SCCT) are *self-efficacy*, *outcome expectations*, and *personal goals*. Self-efficacy is best described as one's belief about the ability to plan and carry out a plan of action that will lead to a certain outcome (Bandura, 1986). Four types of experiences impact self-efficacy beliefs: personal accomplishments (i.e., prior knowledge and experiences), vicarious learning, social persuasion, and the interpretation of physiological and affective states.

SCCT theorists (Lent et al., 2002) propose that personal performance accomplishments have the most powerful impact on self-efficacy beliefs. Outcome expectations represent one's views about the potential result of taking a certain course of action, and personal goals guide

one's decisions to implement an action (Lent et al., 2002). SCCT theorizes that career decisions are a result of the interaction between self-efficacy beliefs, outcome expectations, and personal goals, and that these three constructs impact one another in a circular fashion (Conklin, Dahling, & Garcia, 2012; Gore, 2006). Students from minority groups and/or poor performing school systems may not have adequate opportunities to build self-efficacy in academic areas such as science and math. Positive outcome expectations, based on their ability to see themselves as being able to achieve in these areas, may also fail to develop. SCCT suggests that when career decision self-efficacy and positive outcome expectations are not developed, goal setting and behavior will be impacted.

A recently published study of *prospective* first-generation college students at middle school age (Gibbons & Borders, 2010b) revealed that, while many students had intentions of attending college and pursuing advanced careers, many also felt that there were significant barriers that might prevent them from doing so. The authors speculated that it was not only important to encourage career and college exploration, but also to identify and challenge students' perceptions of barriers and negative outcome expectations (e.g., racial/ethnic discrimination, financial hardship, family issues).

Expectancy-value theory (Wigfield, & Eccles 2000) proposes that achievement and motivation for future education may be influenced by one's expectations for success at a certain task as well as the value that is attached to that task. These beliefs are, in turn, based on the individual's perception of ability or competence for the activity or task. Research seems to indicate that these expectations and subjective values are differentiated fairly early in a person's life (Wigfield, 1994), but tend to shift as young people move through elementary grades into middle and high school. As young people grow and develop, social comparison, evaluation, and feedback from adults, or a shifting academic environment that increasingly emphasizes competition between students may impact competency beliefs. The interactions between competency beliefs, success expectation, subjective values, and future choice are complex, but potentially relevant for this population and the intervention to be studied. Young people from low-income, first-generation families may have high aspirations for pursuing a difficult academic curriculum, admission to college, and a professional career. If, however, belief in academic ability or competency does not develop early or is not sustained across elementary and middle

school, Eccles and Wigfield (2000) would suggest that the expectation for success and the subjective value placed on that course of action will also be impacted.

Boxer, Goldstein, DeLorenzo, Savoy, and Mercado (2011) explored discrepancies between educational aspirations and educational expectations among middle school students. Results revealed that students from economically disadvantaged backgrounds had higher levels of disconnect between their desire to persist at education and pursue higher levels, and their expectations of actually doing so. The research suggests that, through a variety of life experiences, these students have come to believe that they are unlikely to achieve their aspirations. Ambrosino and Sciarra (2011) examined expectations of postsecondary attendance in adolescents in their sophomore year of high school and again as they approached high school graduation. Enrollment in and persistence at college were also measured in the same group. Findings suggest that younger students have higher expectations of attending college, but that those expectations may diminish somewhat as the reality of the academic and financial demands of college present themselves. Nearly half of the African American and Latino students in the study had either never enrolled in or were not attending college two years after graduation, despite expectations of doing so. Boxer et al. (2011) surmised that efforts could be directed at helping students at younger ages address the realities of college preparation, and that school counselors and educators could build self-efficacy through performance opportunities.

From the perspective of SCCT, Lent et al. (2002) proposed that it is crucial for children and adolescents to have self-efficacy beliefs that are in line with their abilities and that "their career-related outcome expectations are based on accurate information" (p. 287). Cognitive structures that underlie beliefs are believed to be fairly flexible during elementary and middle school years, and thus able to be altered with education and strategic interventions. While not as well researched, Gibbons and Borders (2010a) introduced *college-going* beliefs as a separate self-efficacy domain. Because college is seen as the gateway for many professional careers, it is believed that attitudes about one's ability to be prepared for and to persist in college have an impact on attendance and persistence, which in turn, influence one's future career path.

## *Efforts to Address Access to Higher Education*

### *The National Picture*

Some of the most enduring programs that have attempted to address access to higher education for underrepresented youth are the TRIO programs, so named because of the original three interventions: Upward Bound, Talent Search, and Student Support Services (Perna, 2002). The TRIO programs evolved out of the Educational Opportunity Act of 1964, and were founded on the following mission:

The Federal TRIO Programs (TRIO) are federal outreach and student services programs designed to identify and provide services for individuals from disadvantaged backgrounds. TRIO includes eight programs targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities to progress through the academic pipeline from middle school to post baccalaureate programs. (U.S. Department of Education, 2012)

As one of the core programs, the Talent Search's overarching goal is to identify students from disadvantaged backgrounds who need additional support to reach their academic and career goals (U.S. Department of Education, 2012). A specific goal is to see these students both graduate from high school and enroll in postsecondary institutions. Projects sponsored by the Talent Search program can include a variety of interventions such as increased career and academic advising, career exploration, college campus tours, workshops for families, and special activities designed for 6th – 12th grade students.

Because of their longevity, the TRIO programs have been the subject of many studies. Some researchers have tried to identify the successful core characteristics of the programs (Bergerson, 2009; Perna, 2002; Pitre & Pitre, 2009) while others have tried to measure the results (U.S. Department of Education, 2006). In 2011, a policy analysis of the TRIO Supportive Services from 1965-2010, reviewed characteristics of the programs, numbers of students served, average cost per student to administer the programs, and results (Postsecondary Education Opportunity, 2011).

### ***Local Programs***

In 1988, the University of Kansas applied for and received a grant to develop a Talent Search program to serve students from Wyandotte County in Kansas. Wyandotte County ranks as the 2nd poorest county in Kansas, with approximately one-fourth of the population living at or below the federal poverty level (Kansas Health Institute, 2012). In the 2012-2013 school year, over 29,000 students were enrolled in four public school districts (Kansas State Department of Education, 2014). In the two largest districts, between 75 and 90 % qualified for either free or reduced lunches. A breakdown of enrollment by race for 2012 indicated that about three-fourths of the students identify themselves as being in racial or ethnic minority groups (Black, Hispanic, American Indian or Alaska Native, Asian or multi-ethnic) (Kansas State Department of Education, 2012). This is clearly a county that is targeted for interventions such as those provided by the TRIO programs.

According to Dukstein (2012a), the KU Talent Search's goal states that through "early intervention, this program is designed to encourage participants to remain in school and to pursue postsecondary education" (para. 1). Services provided by the program include career exploration and college planning workshops, financial aid information, academic and career advising, campus visits, tutoring, and more.

### ***Career Summer Camp***

A focal point of the students' first year of involvement with the Educational Talent Search program is an intensive career summer camp. The Career Horizons Summer Program (CHSP) is offered to eligible Wyandotte County students who have completed their 6th grade year. The stated participant goals of the CHSP are:

- Explore career possibilities
- Enhance understanding of self to include identifying strengths and improving decision-making strategies
- Increase potential for academic and occupational success
- Develop a positive peer network

(Dukstein, 2012b)

The activities at the camp also have a strong *college-going* foundation, as students attend activities in college classrooms, meet college students, and are immersed in the day-to-day

activities on a large public university campus. Additional activities revolve around exposure to STEM (science, technology, engineering, and math) fields and computer technology. The culmination of the CHSP is a three-day bus tour throughout Kansas, where students visit four additional college campuses, tour science facilities, and spend one night in a college residence hall.

The CHSP has been functioning since 1995. Originally a five-day program preceded by two days of staff training, it has expanded to three days of staff training, six days of camp activities, and a two-night/three-day bus tour of Kansas college campuses and educational facilities (Dukstein, 2012c).

Shortly after the camp was initiated, researchers and staff collected pre and posttest data on the participants to determine if career self-efficacy was enhanced by the activities, and if students indicated that they were considering larger numbers of careers after the camp than they had been before (O'Brien, Dukstein, Jackson, Tomlinson, & Kamatuka, 1999). Using tasks from Holland's (1985) vocational theory, the researchers also looked at whether students indicated higher levels of congruence between their interests and careers considered. Demographics collected at the time of the study indicated the following ethnic and racial breakdown of the participants: 46% African American, 30% White, 9% Hispanic, 5% Asian American, and 2% Native American. Results of the study (O'Brien et al., 1999) indicated that there were increases in students' self-efficacy related to career planning and exploration, vocational and educational development, and careers considered; however, there was no comparison group for comparison.

Since the early days of the KU Talent Search program, and the CHSP, there has been a significant shift in the ethnic and racial demographics of the students served. As noted above, the largest % in the CHSP identified themselves as African American (46%), followed by Whites (30%) (O'Brien et al. 1999). Hispanics accounted for just 9%. Data collected in 2000-2001 on all of the students served by the KU Talent Search program revealed a similar breakdown: African American, 55%; Whites, 26%; Hispanic or Latino, 10% (Dukstein, 2001). In 2011, however, 38% of the participants in the CHSP identified as African American and 33% as Hispanic or Latino. Of the 932 participants served by the entire KU Talent Search program in 2011, 46% identified as Black or African American, 26% as Hispanic or Latino, and 12% as White (Dukstein, 2012d). While the CHSP has evolved and been altered throughout its existence, changes in the demographics of the target population have not led to any specific adjustments to

the camp curriculum (R. Dukstein, personal communication, February 4, 2013). Efforts have been made, however, to hire Spanish-speaking staff for the summer camp. Pre-camp meetings for parents are offered in Spanish, and on the final day of camp, when parents are invited to attend, workshops are offered in both Spanish and English.

The researcher had the privilege of working with the CHSP in the summer of 2012 and saw first hand the outward changes in the students as they gained in self-confidence and became comfortable with the language of college and career. Daily activities included career exploration, lessons on self-awareness, science and computer projects, physical activity, and team building. Observation and anecdotal evidence suggested that the program had an impact in the students' lives, and that enthusiasm for staying in school and attending college was enhanced. During an activity on identifying *stressors* and *concerns* in their lives, however, many participants revealed anxieties about finances, their family's ability to support them in college, and non-academic demands on their time such as caring for younger siblings and needing to help at home while parents worked. The researcher wondered if pre and posttest data collected on the CHSP participants would reveal that, as before, there had been measurable improvements in career self-efficacy. In addition, would participants reveal that they had elevated aspirations for pursuing postsecondary education, and more positive beliefs about their ability to overcome barriers and have college success?

A quantitative study of the CHSP, using the *nonequivalent comparison group design* (Campbell & Stanley, 1978) provided some insight into these questions. A pretest measured pre-existing beliefs in the target population related to aspirations and expectations for college-going, as well as levels of college and career self-efficacy. An analysis of a posttest administered to both the comparison group and to the group who had attended the career camp provided insight into whether or not the intervention (CHSP) led to any significant changes in college-going and/or career self-efficacy.

### **Description of the Study**

Because of its attention to the youngest students served by TRIO programs, and its focus on career exploration, self-awareness, and building familiarity with college, the CHSP offered an opportunity for research into the belief systems of middle school students who were prospective first-generation college students from low-income, racially diverse urban communities. The

study also examined an intervention that may be effective in addressing self-efficacy for staying in school, going to college, and pursuing professional careers.

Eligible students (low SES, prospective first-generation college students) who had completed 6th grade in the target middle schools were nominated by their school counselors, and subsequently invited to apply to participate in the CHSP over the summer of 2013. Not all who were nominated chose to apply, and not all who applied were accepted for participation. KUTS staff made final determinations regarding eligibility for the camp based on application materials and parental consent. This also provided a unique opportunity to establish a comparison group for the study. College-going aspirations and expectations, along with college-going and career self-efficacy, were measured in both participants and non-participants. Those who applied and were accepted for participation in the CHSP became the intervention group. Non-participants made up the comparison group. For the intervention group, a pretest was administered on the first day of the summer camp, and the first posttest was administered on the final day of the camp. The majority of camp participants also completed the college tour, which took place approximately four weeks after the camp. Posttest data was collected again after the bus tour, in order to gain insight into the impact of each portion of the program, as well as longitudinal impact. Non-participants in the CHSP were invited to participate in the study and made up the comparison group. They were given the pretest at the beginning of the summer and the posttest at the end of the summer. Comparison was then made between those who participated in the CHSP and those who did not, to evaluate whether the camp had the anticipated impact on career self-efficacy and college-going self-efficacy. Analysis also provided insight into whether college-going self-efficacy was positively correlated with career self-efficacy, or whether the two constructs diverged.

### ***Purpose of the Study***

Based on national data cited earlier, there is a continued need to provide support for low-income, prospective first-generation college students (U.S. Department of Education National Center for Education Statistics, 2012). Persistent disparities in college enrollment and degree completion rates between low-income groups suggest that there may be discrepancies in academic preparation for entrance into college as well as for success with academic coursework. On a deeper level, however, there may also be discrepancies in attitudes and beliefs about one's personal *fit* for college and for a professional career, and in expectations that one can be



successful in college and expect positive outcomes (Boxer et al., 2011; Gibbons & Borders, 2010b; Gushue et al., 2006; Rowan-Kenyon et al., 2010). Gottfredson's (2002) theory of circumscription and compromise suggests that, at an early age, individuals may already have altered their career aspirations and abandoned certain college or career goals, based on assumptions about their ability to fit into or succeed at those endeavors. Social cognitive career theory proposes that increased self-efficacy and positive outcome expectations should lead to goal-setting and action behaviors (Lent et al., 2002). According to the Expectancy-Value Model (Wigfield & Eccles, 2000), beliefs about one's competence for certain activities impact expectation for success, which in turn can influence the value placed on the activities and future behaviors. It would seem then, that interventions directed at the target population need to be evaluated for their ability to create or encourage college-going aspirations, increase college and career decision self-efficacy, and build positive expectations about attending and persisting at college. In this study, the researcher applied this evaluative lens to one particular intervention, the Career Horizons Summer Program, as conducted by the KU Talent Search TRIO program and examined whether the results might be generalized to the larger population.

Inasmuch, multiple recent studies describe the target population relative to educational aspirations and career pursuit (Boxer, et al., 2011; Gushue et al., 2006; Jackson, Perolini, Fietzer, Altschuler, Woerner, & Hashimoto, 2011; Schuette et al., 2012) while others have looked at predictive factors for educational achievement and postsecondary expectations (Alliman-Brissette & Turner, 2010; Ambrosino & Sciarra, 2011; Close & Solberg, 2008; Gore, 2006). Large scale analyses of college outreach and preparation programs have tried to identify effective strategies for enhancing access (Bergerson, 2009; Perna, 2002; Pitre & Pitre, 2009; Tierney, Corwin & Colyar, 2005). Fewer recent studies were found that measured the impact of specific career development interventions on the target population (Turner & Conkel, 2010, Turner & Lapan, 2005). The researcher did not find specific research comparing career self-efficacy to the proposed construct of college-going self-efficacy. Encouraging low-income first-generation students to build career self-efficacy is desirable. If there is not, however, a parallel development of college-going self-efficacy, those efforts may be to no avail. More information is needed about the similarity or difference between career self-efficacy and college-going self-efficacy, which this study attempted to provide. The study also offered an opportunity to assess

the effectiveness of an intensive program directed at building both career and college self efficacy.

### ***Research Questions***

The study addressed the following questions:

RQ#1: What have students who are eligible for participation (i.e., nominated students) in the Career Horizons Summer Program indicated as their educational aspirations and their educational expectations?

RQ#2: Are there relationships between career self-efficacy and college-going self-efficacy before and after the program by participants and non-participants?

RQ#3: Is there a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational aspirations?

RQ#4: Is there a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational expectations?

RQ#5: Does career self-efficacy increase more in participants than non-participants, following the Career Horizons Summer Program?

RQ#6: Does college-going self-efficacy increase more in participants than non-participants, following the Career Horizons Summer Program?

### ***Working Hypotheses***

1. No hypothesis is related to RQ#1, as it is a descriptive question.
2. There is a relationship between career self-efficacy and college-going self-efficacy before and after the program by participants and non-participants.
3. There is a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational aspirations.
4. There is a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational expectations.
5. Career self-efficacy will increase more in participants than non-participants, following the Career Horizons Summer Program.
6. College-going self-efficacy will increase more in participants than non-participants, following the Career Horizons Summer Program.

### ***Null Hypotheses***

The following null hypotheses were tested:

1. No null hypothesis is related to RQ#1, as it is a descriptive question.
2. There is no relationship between career self-efficacy and college-going self-efficacy before and after the program by participants and non-participants.
3. There is no difference between Career Horizons Summer Program participants' career and college-going self-efficacy by their educational aspirations.
4. There is no difference between Career Horizons Summer Program participants' college-going self-efficacy by their educational expectations.
5. Career self-efficacy will not increase more in participants than non-participants, following the Career Horizons Summer Program.
6. College-going self-efficacy will not increase more in participants than non-participants, following the Career Horizons Summer Program.

### ***Significance of the Study***

The federal government has continuously supported the TRIO programs for nearly 50 years, but, as political and economic policies shift and change, there is always debate over where monies should be invested, how much should be spent, and what programs offer the best outcomes. Faced with continued disparity in college degree attainment between low-income, first-generation students from impoverished backgrounds, lawmakers, educators, and economists alike should be united in support of programs and interventions that lead to a college-going mentality and increased college-going and career decision self-efficacy in the target groups. In a policy analysis of TRIO Supportive Services conducted in 2010 (Postsecondary Education Opportunity Newsletter, 2010), it was estimated that all TRIO programs put together cost an average of \$1075 per year per student served, and that the Talent Search programs cost an average of \$434 per year. If they demonstrate the desired results, it would seem that this is a worthwhile national investment.

While the Career Horizons Summer Camp is only a part of the overall local Talent Search program, it is an intensive intervention aimed at building individual self-efficacy and also increasing peer and adult support for educational and career aspirations and expectations, at an important developmental stage. The camp also represents a partnership and collaborative effort between the Talent Search program and state universities, both of whom have the goals of

increasing college enrollment, retention and degree completion among first-generation students from racial or ethnic minority groups. Societal forces often seem to be at odds: Fiscal conservatives aim to minimize federal spending; postsecondary institutions strive to increase retention and degree completion rates; economists and industrial analysts worry about the shortage of an educated workforce; and social progressives want to ensure equal access to higher education for all groups. If data support the impact and effectiveness of a short-term intervention such as the CHSP, stakeholders should take note.

### ***Definitions of Terms***

*Educational aspirations:* For the purpose of this study, educational aspirations were defined as "The impressions formed about academic abilities and highest level of education an individual would like to attain" (Furlong & Cartmel, 1995, as cited by Rojewski, 2005, p. 146). The participants were asked the question, "What is the highest level of education that you would like to achieve?" Possible responses were: Middle school, High school graduate or GED, Some college, College graduate, Graduate or professional degree.

*Educational expectations:* Boxer et al. (2011) defines this as "how much education youth think they *will* achieve"(p. 609). This was measured with the question, "What is the highest level of education you think you will achieve?" Possible responses were: Middle school, High school graduate or GED, Some college, College graduate, Graduate or professional degree.

*Eligibility for participation in the CHSP:* - According to Dukstein (2012b), students were eligible if they were starting 7th grade in the fall after the CHSP, were participating members of the KU Talent Search/TRIO program, and were available to attend all sessions of the CHSP.

*Prospective first-generation college students:* Gibbons and Borders (2010) use this term to describe "middle and high school students whose parents lack education beyond high school and who have not yet graduated themselves" (p. 194).

*College-going self-efficacy:* For the purpose of this study, college-going self-efficacy (CGSE) was defined as "college-going beliefs regarding both college attendance and college persistence" (Gibbons 2010a, p. 235). CGSE was measured by a score on the *College-Going Self-Efficacy Scale* (Gibbons, 2009), with higher scores indicating a higher degree of CGSE.

*Career self-efficacy:* Betz and Taylor (2006) defines career self-efficacy as "an individual's degree of belief that he/she can successfully complete tasks necessary to making

career decisions" (p. 6). Career self-efficacy was measured with a score on the *Middle School Self-Efficacy Scale* (Fouad & Smith, 1997), with lower scores indicating a higher degree of career self-efficacy.

*Low-income*: An individual is considered *low-income* if his or her family's taxable income in the year prior to participation does not exceed 150% of the poverty income level (U.S. Department of Education, 2012). Federal TRIO program guidelines state that two-thirds of the students served must come from low-income families where neither parent graduated from college (U.S. Dept. of Education, 2012).

## **Chapter 2 - Review of the Literature**

This chapter provides a review of literature relevant to the study of the Career Horizons Summer Program (CHSP), an intensive six-day intervention designed to enhance career self-efficacy and encourage a college-going mentality in middle school students. The chapter will include an overview of three theories that provided underpinnings for the study. Participants in the study were from predominantly low-income families, where neither parent had completed college, and the majority were also from racial or ethnic minority groups. This chapter will also present research about the characteristics of the target population related to education and career development. Current research about academic aspirations, academic expectations, and self-efficacy for careers and college-going will be described, and finally, the chapter will review recent studies that have examined the impact of a variety of career interventions on adolescent populations.

### **Theoretical Support**

The study evaluated the effectiveness of a career intervention designed for middle school students between 6th and 7th grades. Three theories point to the importance of addressing belief systems about abilities and expectation for success at the pivotal age when a student is transitioning between elementary school and middle school. These beliefs may relate to academics or future career options, or both. Because entry into many career fields is dependent on the level of educational success one achieves, it is important to look at the interrelatedness of

beliefs about one's ability to navigate future education as well as to prepare for a specific occupation.

Gottfredson's (2002) theory of circumscription and compromise provides support for a career-related intervention at this particular time in a child's development. Self-concept encompasses one's belief about oneself, and it will include an image of both the private and the public self. Individuals also form opinions about occupations based on observations about the people that hold those occupations, the work involved, the benefits of the occupation, and the types of people for whom the work is appropriate. Gottfredson proposes that young children construct occupational maps where occupations are evaluated according to gender appropriateness and prestige. Individuals will identify occupations that appear to be compatible with their self-concept and will reject those that do not represent a good fit. Through this process, the individual creates a *zone of acceptable alternatives*, which will include both *idealistic aspirations* and *realistic aspirations*. *Circumscription* refers to this process of narrowing the zone, and *compromise* suggests that children will give up on occupations they once preferred if they perceive them as inaccessible. Compromise can take place in anticipation of barriers or after barriers are encountered.

Gottfredson (2002) suggests that self-concept and vocational preferences are intertwined and develop simultaneously in children because "individuals are very concerned about their place in social life, and occupations are a major signal and constraint in the presentation of self to society" (p. 94). The risk for youth is that they often develop opinions about various occupations based on minimal information or inaccurate representations. Occupations may be eliminated from consideration at an early age, and will rarely be reconsidered. By age 13, Gottfredson proposes that adolescents have identified both a ceiling and floor for their aspirations. Counseling interventions suggested by Gottfredson include bringing attention to career options that young people may have rejected as well as those that they say they prefer. This can illuminate assumptions children may have already made about gender fit or other occupational characteristics. Other strategies should attempt to provide realistic views of occupations (e.g., skills required, job availability) and to provide information about the steps one might take to prepare for a certain career.

Social cognitive career theory (Lent et al., 2002) also provides support for career interventions targeted at middle school students. Social cognitive career theory (SCCT) builds

on Bandura's (1986) social cognitive theory to explain how cognition influences career behavior. Bandura proposed that human behavior was self-directed, and was influenced by the dynamic between external events, reinforcement from external sources, and one's own cognitive processes. Behavior is a response to an individual's interpretation of the environment. In a similar triangular relationship, self-efficacy, outcome expectations, and personal goals represent the central components of SCCT (Lent et al., 2002). Self-efficacy is dynamic and fluid, altered by learning experiences and accomplishments. Outcome expectations represent beliefs about the relative benefits or consequences of a certain behavior, and they too, are shaped by learning experiences. They may, however, also reflect observations of others' experiences and awareness of societal forces (e.g., racism or gender stereotyping). Goals represent one's determination to pursue a certain course of action. SCCT suggests that self-efficacy, outcome expectations, and goals influence one another in a triadic relationship. They ultimately will impact personal behavior, including energy expended toward a specific goal and persistence in reaching a goal.

The interest development model of SCCT (Lent et al., 2002) posits that career interests are affected by self-efficacy and outcome expectations. Individuals are likely to pursue a career path when they feel that they have the ability or aptitude for it, and when they perceive that the career path will provide them with positive outcomes. Goals are then established for following this career path, and action is taken.

Social constructs such as gender and ethnicity can impact self-efficacy beliefs, as individuals may not have the opportunities for learning experiences that aid in their development. Lent et al. (2002), acknowledge that "women, members of racial-ethnic minority groups, and persons living in poverty may fail to develop interests in particular career options because they may not have been exposed to opportunities and experiences that would lead them to feel efficacious about their abilities to pursue these careers or optimistic about the outcomes they might receive" (p. 272). Individuals can foreclose prematurely on certain career options.

SCCT (Lent et al., 2002) suggests that efforts to build appropriate self-efficacy beliefs and reliable outcome expectations should be directed at school-aged youth because there may be more flexibility of thought process at that time. Career counseling interventions should address the young person's developing career interests with an eye to understanding the underlying cognitions driving those interests. Opportunities to develop self-efficacy should be provided,

along with accurate information about careers and the outcomes that one can expect from pursuing a certain career path.

Finally, the expectancy-value theory of achievement motivation (Wigfield & Eccles, 2000) examines the relationship between an individual's belief about how successful they will be at an activity, and the value that activity holds for them. Subsequent choices and decisions to persist are impacted by these beliefs. Ability beliefs are based on one's perception of competence for a certain activity, which in turn influence one's expectation for future success. Acknowledging that the constructs in this theory have some overlap with Bandura's social cognitive theory (1986), Wigfield and Eccles propose that the expectancy-value theory (EVT) specifically measures an individual's *own* success expectations, as opposed to the achievement of a successful outcome. In an examination of research on the constructs of success expectancy, value expectancy, and competence beliefs, Wigfield (1994) found that children in elementary school may already have developed strong beliefs about their competence in various academic subjects, as well as beliefs about what is of value to them for the future. These beliefs can change across time, and research has indicated that, for certain activities, children's beliefs can become more negative, especially into early adolescence (Wigfield & Eccles, 2000). The intention to persist in an academic subject seems to be predicted by beliefs about the value of that subject, and beliefs about ability and expectations of success appeared to predict future performance in the subject.

All of these theories point to the importance of examining the developing belief systems of middle school aged students. Evidence suggests (Gottfredson, 2002; Lent et al., 2002; Wigfield, 1994; Wigfield & Eccles, 2000) that foundational beliefs about self (e.g., academic ability, gender constraints, potential for future success) are forming or already formed in the pre-teen years or early adolescence. In order to evaluate the impact of college and career interventions targeted for this age group, it was important to have a good understanding of what middle school students were thinking and how they were already seeing themselves with relation to future education and the pursuit of certain careers. Through assessment of educational aspirations, educational expectations, career self-efficacy beliefs, and college-going self-efficacy beliefs in the sample population, descriptive data were obtained that added to the literature.



## Socioeconomic Status and First-Generation Status

As noted above, there was theoretical support for targeted interventions related to education and career development directed at the middle school age group. Through selection of participants already involved with the TRIO Talent Search program, the study added to the understanding of middle school age children from a population that was predominantly low-income and who will have first-generation status if they choose to pursue postsecondary education. The participants in the study were also from historically underrepresented racial and ethnic groups. These populations have received significant attention from researchers, and several studies have looked at the characteristics of these groups as they relate to academic achievement and career development.

Gibbons and Borders (2010b) studied *potential first-generation college students* (i.e., younger students whose parents have no formal education beyond high school) and their expectations of college-going compared to students whose parents had college experience. The researchers hypothesized that potential first-generation college students (PFGCS) would have lowered expectations for attending college, a higher perception of barriers, and a lower level of social support than those who were not PFGCSs. Participants were 272 seventh-grade students. Within the sample, 109 were PFGCS, 75% of whom identified as either African American or Hispanic/Latino. Students were assessed regarding their college-going self-efficacy, perception of educational barriers, social support, and college-going outcome expectations. Results indicated that PFGCSs had lower self-efficacy related to college-going than their non-PFGCS classmates. PFGCSs also perceived more barriers to college-going, which included racial/ethnic discrimination, concerns with finances, issues related to family, not having college-educated role models, and a lack of information about the college-planning process. Non-PFGCS students also reported barriers, but these were limited to finances and stress. Finally, PFGCSs indicated that they had fewer *positive* outcome expectations for attending college compared to their peers. Variances were also found between Hispanic/Latino students and African American students, with Hispanic/Latinos reporting the highest levels of perceived barriers and the lowest outcome expectations for college-going.

Gibbons and Shoffner (2004) identified five potential differences between first-generation college students and those who had parents who had already attended college. Parents who had not gone to college themselves were often unable to assist their students with

the processes of evaluating and applying for colleges. First-generation students were often ill prepared for college life in general, possibly due to mismatch or cultural constraints. Other differences may have included poor academic preparation during high school, a desire to stay closer to home, and a view of college as primarily a path for job training, as opposed to a holistic life experience.

In a public agenda analysis prepared for the Hispanic Participation in Technology Summit (Gasbarra & Johnson, 2008), leaders expressed concern over the quality of education delivered to many students from ethnic minorities. The Hispanic dropout rate is more than double the rate of non-Hispanic White students and almost double that of African American students. There is also a significant absence of role models for professional careers, especially in areas of science and mathematics. Multiple factors contribute to Hispanic youth not being prepared to attend college or failing to complete a college degree. Sub-par K-12 education, lack of required coursework for college admission, and an absence of knowledge about college in general (e.g., how to apply, financial aid available) are all mentioned as barriers to higher education and professional career paths.

Gushue et al. (2006) studied Latino/a high school students and how career decision self-efficacy and perception of barriers might influence development of vocational identity as well as career exploration behavior. They wondered if gender socialization associated with some Latino cultures would impact career behavior, and whether Latino/a youth perceived societal barriers to certain careers. The participants were 128 high school students from an urban area who identified themselves as Latino/Hispanic. Students took the Career Decision-Making Self-Efficacy Scale - Short Form (CDMSES-SF; Betz, Klein, & Taylor, 1996), the Career Search Activities Index (Solberg, Good, Fischer, Brown, & Nord, 1995), and My Vocational Situation (MVS; Holland, Daiger, & Power, 1980). Perception of barriers was also assessed. The results indicated a positive relationship between career decision-making self-efficacy, career exploration behavior, and vocational identity. There was a positive correlation between perception of barriers and vocational identity, but not between perception of barriers and career search behavior. The authors surmised that when students had more confidence in their abilities to perform career-related tasks, they also had a stronger vision of their career goals, and were more likely to engage in career exploration. In contrast, when students perceived more hurdles related to educational or career barriers, they were also less certain about a career identity.

Applying Gottfredson's (2002) theory of circumscription and compromise, Ivers et al. (2012) suggested that Latino youth often eliminated certain career paths from consideration due to the perception of ethnic or racial barriers. A high dropout rate for this population was attributed to such factors as slower academic progress, outside financial pressures, barriers to college and work, and lack of accurate information about how to proceed towards a career. Latino students may see few role models in careers that require a formal education. The researchers concluded that counseling interventions for middle school age children should be directed towards increasing visibility of Latinos in professional careers, assessing if and why certain careers may have already been circumscribed, introducing students to the processes of getting into college, and helping them understand the connections between academic knowledge and career pursuit.

In a study of African American middle school students, Alliman-Brissett and Turner (2010) studied relationships between academic performance, math-based career interests, math outcome expectations, math efficacy, and perception of racism. Results indicated that when students perceived the presence of both interpersonal and institutional racism, as well as racism connected with pursuing career goals, there was a negative impact on math outcome expectations and math self-efficacy. Alliman-Brissett and Turner surmised that "the greater the barrier of academic performance in math, the less interest adolescents had in math and science careers" (p. 215). Perception of societal barriers may impact outcome expectations, which in turn have an influence on college and career pursuits.

African American males, in particular, may face significant challenges as first-generation college students (Owens et al., 2010). Access to quality education and challenging coursework in middle and high school is frequently limited for those who come from low-income families or communities, making the transition to college difficult. Peer support for academic achievement and access to resources can be lacking for this population, and there may not be a high expectation for educational or career success within the school or the community at large for African American males. Students may also experience a stark contrast between their home environment and the college campus, which in turn may impact persistence and retention.

With an emphasis on assessing educational aspiration and expectation, as well as beliefs about future success in college and career, this study added to the understanding of middle school students from low-income, racially diverse families who are potentially first-generation

college students. Interventions aimed at improving college access, and college and career success for this population can be improved through better understanding of the beliefs that are prevalent at this pivotal developmental stage and the aspects of the interventions that appear to have a positive impact.

## **Variables**

### ***Aspirations and Expectations***

This study examined the relationships between educational aspirations, educational expectations, and self-efficacy, both for careers and for college-going. Aspirations were generally understood to be strong desires for some sort of accomplishment or for an ambitious goal. As they relate to career, Gottfredson (2002) suggested that aspirations were "the joint product of assessments of *compatibility* and *accessibility*" (p. 91). When an individual understands or senses that there are obstacles that might interfere with a goal, the aspiration may be converted to an expectation. Young children observe the world around them, and come to conclusions about their ability to pursue certain occupations based on gender, race, or social class. As children approach the teenage years, they may become keenly aware of how others in their social group view them, and they may begin to evaluate careers as having more or less social prestige. Adults in the child's life (parents, teachers) can also impact this process, as they subtly, or not so subtly, encourage consideration of certain academic or career goals, and discourage others. Dreams for educational or career achievement become altered through this process. Gottfredson described the process of "adjusting aspirations to accommodate an external reality" (p. 100) as *compromise*.

Rojewski (2005) proposed that aspirations were "individual goals given ideal conditions" (p. 132) and that, in a vocational context, were not the same as interests. Evidence suggests that occupational aspirations are predictive of future career paths, and in many cases, are better predictors than interest inventories or personal attributes. Aspirations may reflect both prior experiences and observations about societal constraints, and the ability to attain a specific career goal will also be impacted by the accessibility of education or training. Along with Gottfredson (2002), Rojewski suggested that discrepancies develop between aspirations and expectations when an individual senses that there is less probability of actually achieving their goal. When adolescents, in particular, begin this process of compromising on aspirations for education or

career, they often make decisions that do, in fact, lead to fewer options and therefore, lowered expectations. A discrepancy between occupational or educational aspirations and expectations "may reflect individuals' views toward their particular circumstances, abilities, the likely effects of perceived barriers, and future opportunities" (Rojewski, 2005, p. 133). For example, a student in middle school begins to believe that he or she will not have the academic ability to pursue a career as a scientist, or that the family's poverty level will not allow access to higher education. Expectations for future education and career options are lowered. The student decides not to enroll in the more difficult math curriculum offered in high school, thereby limiting the possibility of being prepared for college level science coursework, and subsequently, limiting options for pursuing a career as a scientist. Rojewski (2005), in a research review, outlined four broad reasons for discrepancy between occupational aspirations and expectations:

- Individuals conclude that they do not have the necessary skills or abilities to be successful in the career they hope to pursue.
- The education or training needed for an occupation seems out of reach based on availability of resources.
- There is a lack of support for the aspiration from friends or family.
- Individuals sense that there are obstacles or barriers, from community or society as a whole that will limit access to their desired educational or career goal.

Recent studies added support to Rojewski's (2005) list of factors that impact a young person's aspirations and expectations for education and careers. Schuette et al. (2012) examined the influence of parent occupation on middle school children's career aspirations, as well as whether students would select work roles based on gender stereotypes. Low-income middle school students were selected for the study and all were given a Career Choices Questionnaire (CCQ) developed by the researchers. They were also asked to indicate an occupation they aspired to and a reason for selecting it, as well as the occupations of their parents (data for this study only used students who indicated they lived with adults of two different genders who worked outside of the home). Males indicated their preference for stereotypically male jobs or for gender-neutral jobs. A majority of females also expressed interest in stereotypically male jobs, suggesting that the girls were somewhat less susceptible to gender stereotypes in their career aspirations. Contrary to their hypothesis, many students aspired to jobs that were more prestigious than those held by their parents. The authors concluded that more research was

necessary to assess the relationship between parental career role modeling, gender stereotyped occupations and children's career aspirations.

McCollum and Yoder (2011) analyzed adolescent perceptions of school climate and teacher support in an effort to see what impact they had on academic aspirations. School climate was defined as "students' general perceptions of the interactions between students at the school as well as with their schooling experience" (p. 69). This was measured with questions about academic programs, discipline, expectation for academic success, and sense of belonging. Teacher regard was assessed with questions about how well students got along with teachers, how they felt their teachers viewed them, and level of happiness with their overall relationships with their teachers. The 7th grade students were also asked how far they wanted to go in school, and how far they expected to go in school. Using multiple regression analysis, the researchers examined the impact of student perception of school climate on academic aspirations, and whether perception of teacher support mediated that effect. Students' academic aspirations and expectations were related to positive perception of school climate, and relationships between students and teachers had an impact as well, with 2% of the variance in academic aspiration predicted by both factors. McCollum and Yoder (2011) suggested that particular importance be given to the impact of teacher-student relationships on middle school students' academic aspirations and expectations. Citing Wigfield and Eccles (2002), they noted that "students who have higher aspirations are more likely to put effort into academic endeavors" (p. 71), and that this in turn can result in increased academic success.

Based on data from the U.S. Department of Education, Ambrosino and Sciarra (2011) measured students' expectations for attending a postsecondary institution when they were high school sophomores and again in their senior year. Follow up was completed two years after graduation to determine if students had in fact, enrolled in college. Teacher and parent expectations for the students was also explored with such questions as "How far do you expect this student will get?" or "Please indicate how far in school you expect your 10th-grader will go" (p. 233). Younger students had higher expectations of attending college than the older students. One explanation offered was that, as graduation from high school became more imminent, students were more realistic about their abilities to either pay for college, or to succeed academically. Teacher expectations for college access and success compared to actual student enrollment were somewhat more accurate than student or parent expectations, raising the

question of whether teacher expectations were causal or simply predictive, due to teachers' presumed understanding of what it takes to achieve postsecondary success. The authors concluded that teacher expectations should match with school counseling goals - encouraging postsecondary access and degree attainment, hence creating a college-going environment, especially for historically underrepresented racial or ethnic groups.

Boxer et al. (2011) studied discrepancies between educational aspirations and expectations in a study of 761 middle school students. They hypothesized that there would be higher discrepancies between educational aspirations and educational expectations in students with low SES or in those who had lower academic performance. Participants were asked about their desire to continue their education through various levels (e.g., high school graduate/GED, graduate or professional degree), as well as their expectation of doing so. Data were also collected on current academic performance, academic behavior, and attitudes about school and peers. Based on information about financial background, students were designated as coming from high, moderate, or low resource neighborhoods. The researchers looked for disconnect between students' responses about aspiration for higher education and expectation for higher education, and compared the level of disconnect to other characteristics. Results indicated a higher aspiration-expectation discrepancy in students from low-resource neighborhoods. Level of parent education also was positively correlated with the amount of aspiration-expectation discrepancy but other demographic factors did not predict discrepancy. Students with high discrepancy also indicated more school-related difficulties than their classmates, such as test-taking anxiety, less connection to school, and emotional or behavioral problems. Boxer et al. noted that a cause and effect relationship cannot be stated, but they did suggest that there was a complex dynamic that existed between students' academic experiences, their aspirations, and their expectations for future success and school behavior. Students from economically disadvantaged backgrounds may be especially vulnerable to low expectations for continuing their education beyond middle or high school.

The gap between educational aspirations and expectations in 8th grade students was also the subject of a study by Kirk, Lewis, Scott, Wren, Nilsen, and Colvin (2012). A higher disparity between aspirations and expectations was associated with lower competency beliefs regarding academics. Conversely, consistency between aspirations and expectations was related to higher levels of motivation.

In a longitudinal study of over 1200 youth from low-income neighborhoods, Ou and Reynolds (2008) examined the factors that appeared to predict future educational achievement. Participants' expectations for attending college were significantly associated with higher levels of education later in life. Students who, by the age of 15 were already expecting to go to college were twice as likely to complete high school. Many other factors appeared to influence educational attainment (e.g., absences, school mobility, parent involvement), but the two strongest predictors of higher grade level completion were educational expectations and attendance at a magnet high school.

Rojewski (2005) noted that social cognitive career theory (Lent et al., 2002) does not specifically name occupational aspirations as a distinct construct, but suggested that aspirations are closely related to goals, and that "occupational aspirations stem partly from an individual's self-efficacy, outcome expectations, and interests and can be important mediators of motivation and development" (p. 137). Expectancy-value theory (Wigfield & Eccles, 2000) posits that expectancies have an impact on performance, perseverance, and choices about what one puts effort into. Among low-income, first-generation students, aspirations and expectations for academic success and occupational choice may be key to creating goal-oriented behavior. Interventions with this population should have the goal of bringing expectations in line with aspirations through building academic self-efficacy, providing accurate information about college and preparation for it, and raising awareness of educational and career options available. This study provided additional insight into low-income, first-generation middle school students' aspirations and expectations for completing high school and pursuing higher education. Data collected on self-efficacy beliefs were compared to the information about educational aspirations and educational expectations in order to increase understanding of how the variables were related.

### ***Career Self-Efficacy***

Self-efficacy is a well-researched and well-accepted construct and several instruments have been developed to measure it. Bandura's (1986) theory of social learning gave rise to the concept of self-efficacy, which was later applied to a variety of domains, including career behaviors (Betz & Hackett, 1981). Betz and Hackett's (1981) original study compared views held by college students about their educational and occupational abilities with the number of career



options they were considering and reported a significant positive relationship between the two. Taylor and Betz (1983) later developed the *Career Decision-Making Self-Efficacy Scale*. The assessment attempts to measure "an individual's degree of belief that he or she can successfully complete tasks necessary for making career decisions" (Betz & Vuyten, 1997, p. 181). As a significant component of SCCT, Lent et al. (2002) suggest that self-efficacy is a force behind goal-directed career behavior.

Swanson and D'Achiardi (2005), in a review of career constructs, noted that career decision-making is often cited as the main goal of career counseling interventions. Within the career decision-making process, individuals demonstrate a style of decision-making as well as beliefs about their own ability to complete the tasks required to move forwards towards a decision. Such beliefs represent career decision-making self-efficacy. The construct is measured as an individual's "feelings of competency in their abilities to self-appraise, gather occupational information, select career goals, engage in career planning, and problem solve when difficulties are encountered" (p. 362).

Due to the interest in measuring career-related self-efficacy in a younger population, Fouad and Smith (1997) developed the *Middle School Self-Efficacy Scale* (MSSSES). Citing Bandura's (1986) hypothesis that self-efficacy was situation specific, the researchers suggested that more measures of self-efficacy were needed. This particular study centered on a career intervention designed for use with Hispanic/Latino students. The goal of the intervention was to encourage enrollment in math and science courses, to raise self-efficacy in those academic areas and to encourage students to consider careers in math and science. Items on the MSSSES were modeled after the Career Decision-Making Self-Efficacy Scale (Taylor & Betz, 1983) but an effort was made to use vocabulary and ideas that were age appropriate. The assessment was also made shorter than the CDMSE. Two scales were used, one that addressed general career self-efficacy and another that was specific to math and science efficacy. Fouad and Smith (1997) felt that the reliability and validity of the general self-efficacy scale was supported by the results; however, there were questions raised about the math and science self-efficacy scale and whether it was as effective in measuring content specific skills. Although the development of an assessment that could be used with younger students seemed promising, subsequent research was not found in a review of the literature.

### *College-Going Self Efficacy*

As a specific construct, *college-going self-efficacy* does not appear to be well established. In multiple studies of career decision-making self-efficacy, it seems assumptions are often made that, if an individual develops career self-efficacy, and decides to pursue a career requiring formal education, he or she will automatically have the drive and persistence to complete that education. Many educators and other professionals call for the creation of a *college-going* atmosphere in middle and high schools, but there is not a full consensus of what this might mean. Few studies appear to have examined whether there is a direct relationship between career decision-making self-efficacy and attitudes about *starting* college and persisting through to degree completion.

Hossler, Schmit, and Vesper (1999) suggested that it was important to understand the *predisposition* stage of a student's decision to attend college, which was defined as the "plans students develop for education or work after they graduate from high school" (p. 9), influenced by academic accomplishments, peers, family context, and other experiences. Data indicated that plans to pursue a college education were made in 8th or 9th grade, although later on, some shifting occurred. Hossler et al. suggested that if interventions are designed to impact educational aspirations, they should be directed at students before the 8th or 9th grade. Students should be encouraged to consider college as a feasible option, to understand how course selection in high school is related to future plans, and to acquire accurate information related to postsecondary education.

The College Board (2013), producer of the SAT college entrance examination, uses the phrase *college-going culture* in their literature and programming. Values emphasized in this culture are an appreciation for learning, aspiration for success, and the desire to go to college. Strategies for creation of such a culture include exposure to college resources, providing information about financial aid, career planning, and individual and group sessions to discuss the academic expectations of college and the process of applying.

In 1993 Solberg, O'Brien, Villarreal, Kennell, and Davis introduced a measure of *college self-efficacy* named the College Self-Efficacy Inventory (CSEI). The survey consisted of 20 items that assessed students' beliefs in their capacity to perform behaviors needed to function successfully in college. Soberg et al. suggested that college self-efficacy was composed of three elements: academic self-efficacy, social self-efficacy, and roommate self-efficacy. Being able to

find research for a paper, understand a textbook, participate in class discussions, and develop good relationships with roommates are all skills that contribute to college self-efficacy. Gore, Leuwerke, and Turley (2006) conducted a study to further elaborate on the construct of college self-efficacy in an effort to understand factors related to retention and persistence at college. They also wanted to look at relationships between college self-efficacy and career or occupational self-efficacy. Students were assessed with both the CSEI and the CDMSE-SF (Betz, Klein & Taylor, 1996). Results suggested that the constructs of college self-efficacy and career decision-making self-efficacy were distinct but related. College self-efficacy beliefs at the end of the first semester of college were significantly correlated with academic performance, suggesting that these beliefs had an impact on students' desire to pursue a degree and persist in spite of challenges.

Gibbons and Borders (2010a) proposed that, just as there is a college self-efficacy construct related to the skills necessary for postsecondary success, in younger students, there may exist *college-going self-efficacy*, which relates to an individual's confidence in being able to get into college and to be successful there. The authors developed the College-Going Self-Efficacy Scale (CGSES), geared towards middle school students. They suggested that younger students were not able to evaluate their abilities to perform specific tasks such as writing research papers or getting along with roommates, so a different measure was needed that was age appropriate. The scale addressed the dual issues of postsecondary attendance and persistence and, through the construction of the items in age appropriate terminology, tried to assess beliefs about capability and not intention. After some initial small revisions, the CGSES was tested with 272 seventh-grade students, where approximately half came from families where parents were not college educated. Gibbons and Borders (2010a) hypothesized that college-going self-efficacy would be lower in students from first-generation families. Results indicated good reliability for the measure. Construct validity was supported by results showing a significant difference between mean scores for potential first-generation college students and non-potential first-generation college students. This measure has not been widely used and no articles were found describing college-going self-efficacy, other than those published by the creators. The measure has reportedly been used with some success by other researchers (M. Gibbons, personal communication, January 28, 2013).

In an experimental study, Destin and Oyserman (2009) examined middle school aged children's beliefs related to college access. They proposed that students would have one of two mind-sets: "a mind-set suggesting that the path to college is open in spite of low family assets, and a mind-set suggesting that the path to college is blocked because of family assets" (p. 415). They hypothesized that when students viewed college as inaccessible to them due to a lack of finances, they would have lowered expectations for college attendance, despite a desire to attend. Using a two-group design, seventh graders from a low-income area and a low-performing school district were given either a message about the high cost of college attendance, or a message about financial aid available to families with high need. After this mind-set message was delivered, students responded to a survey that asked them what grades they thought they would get in English and Math and how much time they expected to spend each night in either reading or studying. Those who received only the message about the high cost of college indicated lowered expectations for grades and lower planned effort in English and Math. A second study compared similar groups who were given either *no* message about college or a positive message about financial aid available to them for college. Current GPA was controlled for. Results were similar in this study, with students indicating higher planned academic effort when the path to college seemed more open to them. The researchers suggested that students as young as 11 from families with high financial need may often foreclose on college attendance, perceiving that it is already out of reach for them. It might be expected that self-efficacy for college-going would be low in these individuals.

Based on these sources, it would appear that many researchers, educators, and counselors believe that there is a college-going mentality that can be cultivated in middle and high school students through the use of interventions. Little research exists, however, on the construct of college-going self-efficacy and on how it might be both described and measured. Low-income first-generation students are not pursuing professional careers at the same rate as other demographic groups (Flowers, 2012), and much of this would seem to be tied to lowered rates of attendance and lack of success in degree completion at postsecondary institutions (U.S. Census Bureau, 2011). If college-going self-efficacy exists as a separate construct from career self-efficacy and does not develop in a parallel fashion in students from disadvantaged populations, this could partially explain why few pursue either a college education or careers that require a college degree. This study assessed both career self-efficacy and college-going self-efficacy in

the study's participants, in an effort to examine whether the constructs were related, and whether either or both were impacted by the intervention of the career summer camp.

### *Interventions*

This study examined the impact of a targeted career summer camp on students who were predominantly low-income and first-generation. Interventions with this target population are not unique, as many educators, counselors, and other stakeholders have searched for activities and strategies that will have an impact on the students' beliefs and subsequently, their goal-oriented behaviors. Multiple studies were found that described self-efficacy building interventions, related to both academics and career.

Trusty, Niles, and Carney (2005) presented a review of the developmental nature of career knowledge, citing national longitudinal studies that attempted to identify the variables that most impacted educational and career planning. Students are often ill prepared for advanced coursework that will make them eligible and ready for college, and this trajectory often begins in middle school. Students at the middle school age are often lacking accurate career information or an understanding of the requirements for a certain occupation precisely at a time when they are making important academic decisions. Trusty et al. offered a framework for career interventions for middle school that included identification of strengths, personal resources and abilities, as well as potential obstacles. They concluded that interests and values should also be explored and accurate information about education, training, and certification steps should be provided.

In a study related to math self-efficacy, Turner, Steward, and Lapan (2004) examined the factors that appeared to relate positively to middle school students' development of math skills. Contextual factors, such as parental support and gender typing of math and science careers were evaluated along with math outcome expectations and math self-efficacy. Results seemed to indicate that math self-efficacy influenced math outcome expectations, and that both impacted the students' interests in math and science careers. Parental support was also positively related to math self-efficacy in this age group. Turner et al. suggested that counseling interventions be directed towards opportunities for building math self-efficacy and encouraging parent support for math and science career development.

A qualitative study of 67 fifth, seventh, and ninth graders (Rowan-Kenyon, Swan, & Creager, 2012) examined the social cognitive factors that impacted adolescents' math and career

interests. Students expressed a preference for small group activities and the utilization of extrinsic motivation, as well as distaste for negative peer behavior. They also indicated that parent and teacher support, along with expectations for academic achievement were also important. Rowan-Kenyon et al. concluded that interventions at this age were important to the future development of math self-efficacy and career interests. Individual efforts directed at doing well in math were positively connected to support and opportunities for engagement.

In a qualitative study of eight African American and Latino students from an urban middle school, Jackson et al. (2011) tried to identify the impact of *career-related success-learning* experiences on career self-efficacy. Students were asked to describe experiences where they thought they had done well, to describe things they enjoyed doing, to tell about jobs or careers in which they were interested, jobs held by people they admired or cared about, and times when they felt good about something they had accomplished. Success-learning experiences were examined for match according to Bandura's (1986) four origins of self-efficacy beliefs: personal performance accomplishments, vicarious learning, verbal/social persuasion, and physiological and emotional arousal states. Participants also took the Self-Directed Search-Career Explorer (SDS-CE; Holland, Fritzsche, & Powell, 1997) and their vocational interests were compared with their success experiences. Although the students were low achieving, they related experiences that were consistent with Bandura's (1986) self-efficacy sources and indicated that these success-learning experiences had already impacted the development of their career interests. Due to the small size of the study, results may not have been generalizable.

A study conducted by Turner and Conkel (2010) used the Integrative Contextual Model of Career Development (ICM) to look at the effectiveness of a career intervention with middle school students from an urban environment. The ICM suggests that individuals who develop specific career development skills will be more efficacious in career activities and more able to navigate future career decisions. The six skills included in the ICM model relate to self- and career-exploration; the ability to relate one's interests, values, abilities, and skills to the world of work; goal-setting; social and prosocial skills (i.e., altruistic thinking); work readiness skills; self-regulation with regard to learning; and the utilization of available support when confronting challenges. When individuals are able to combine and utilize all of these skills, they will be more proactive in their career behavior and able to adapt to changes in their work environment. The outcomes suggested by this model are increased self-efficacy related to achieving career goals,

limiting circumscription of occupations in middle school students through exposure to more vocational information, and increasing the potential for development of a clearer vocational identity. Participants in the study were 142 seventh and eighth grade students from low SES multiethnic families. They were divided into three groups, and all were assessed for perception of both career and educational barriers. During several sessions over 7 days, students participated in either no counseling activities, traditional career counseling activities or activities suggested by the ICM model. Treatment group 1 (Traditional Counseling Model) completed the SDS (SDS; Holland, 1994) and the Work Adjustment Inventory (WAI; Gilliam, 1994) and engaged in discussions about their interests, SDS code, occupations related to their code, and occupational daydreams. Students also researched careers of interest and the educational requirements of those occupations, and discussed possible goals for following this career path. In treatment group 2, additional interventions were added to enhance the development of the skills from the ICM model. Participants were encouraged to identify sources of support and how they might use this support when confronted with challenges. Work readiness skills were explained and students engaged in discussions about the importance of developing these skills. Challenges to educational and career achievement were discussed, and students were encouraged to have a plan for how they could overcome these challenges. Posttest results showed that there were differences between Group 1 and Group 2 in identification of emotional support, but not in other variables. There were several significant differences between the control group and Group 2. The researchers suggested that it was the accumulation of career interventions that had the most impact on the participants. Traditional career interventions plus additional efforts to help students identify support and work readiness skills appeared to lead to increased career self-efficacy. There were no gains in proactivity (assertiveness, flexibility, adaptability) in any of the groups.

In a review of career choice interventions, Brown, Ryan Krane, Brecheisen, Castelino, Budisin, Miller, and Edens (2003) discussed the critical elements that were positively related to career choice outcomes such as choice certainty and choice satisfaction, as well as constructs related to success in career choice-making, including career decision-making self-efficacy. The five components that led to the largest effect size were the use of workbooks and written exercises, individualized interpretations and feedback, world of work information, modeling, and attention to building support. Noting that it was not clear why these elements worked, or exactly

how they might be implemented in career education settings, Brown et al. (2003) called for additional research.

In a review of programs aimed specifically at expanding access to postsecondary opportunities for low SES students and students of color, Tierney, Corwin, and Colyar (2005) named nine elements that were key to creating a successful curriculum: emphasis on the student's culture, family engagement, peer groups, structured intervention not later than ninth grade, knowledgeable counselors and sustained opportunities for interaction, access to college preparation curricula, minimal emphasis on cocurricular activities, mentoring and implementation costs that are reasonable. Emphasis should be on helping students develop the intellectual skills required for college, but also on reaching the individuals in culturally relevant ways (intellectual and cultural scaffolding). Bergerson (2009) also suggested that successful programs work to build self-efficacy around college-going as well as aspirations for attending college, and defined self-efficacy in this context as "students' ability to set goals, plan for, and actualize their educational aspirations" (p. 94). Strategies should help students learn goal-setting and decision-making skills and emphasize course planning for academic preparation.

The Career Horizons Summer Program (CHSP) was the subject of a study conducted in 1999 (O'Brien et al.). Participants were assessed for increases in career self-efficacy and congruence between careers and interests, based on John Holland's (1985) vocational theory. At that time, the camp was five days long. Based on pretest and posttest data, career self-efficacy did appear to be enhanced by participation in the camp, and students also showed increases in educational and vocational development as well as numbers of careers considered. There was, however, no control group available for comparison.

The CHSP is now six days long, and there is an additional three-day college tour which most camp participants also attend. This study examined the impact of the camp, and of the college tour, on participants' career self-efficacy and college-going self-efficacy. A comparison group design provided additional information about the effectiveness of the camp when participants' survey responses were compared with non-participants. Because the camp also had a strong emphasis on becoming comfortable with the college setting and with college as an expectation, this study also provided insight into whether college-going self-efficacy was a construct distinct from career self-efficacy, and whether both were enhanced by the intervention.



## Summary

Much effort has been directed at the study of educational and vocational behavior, with several theories emerging as good models of when, why, and how individuals arrive at decisions about postsecondary and career decisions (Gottfredson, 2002; Lent et al., 2002; Wigfield & Eccles, 2000). Experiences, societal expectations, family support, and perception of barriers may impact an individual's aspirations for pursuing advanced education or careers requiring a college degree. The construct of self-efficacy, and specifically career self-efficacy, has been viewed by many as key to understanding motivation to move towards a career or educational goal.

Many researchers (e.g., Ambrosino & Sciarra, 2011; McCollum & Yoder, 2011; Ou & Reynolds, 2008; Schuette et al., 2012) have studied academic achievement and persistence towards educational goals, especially as they relate to notable gaps in educational attainment among the dominant population and ethnic and racial minority populations. Multiple studies (Alliman-Brissett & Turner, 2009; Gasbarra & Johnson, 2008; Gibbons & Borders, 2010b; Gibbons & Shoffner, 2004; Gushue et al., 2006; Ivers et al., 2012; Owens et al., 2010) have attempted to describe the differences between these populations, in an effort to identify approaches that might be effective in reducing the gaps. Self-efficacy is seen as a key component of academic achievement, and many researchers (e.g., Jackson et al., 2011; Rowan-Kenyon et al., 2012; Turner & Conkel, 2010; Turner & Lapan, 2004) have examined general educational or career education interventions that build self-efficacy, especially in low-achieving populations. Increased self-efficacy is believed to lead to goal-oriented behaviors, which may result in increased academic success and higher educational and career expectations.

Career interventions and college access programs have been examined and evaluated in an effort to identify the elements that appear to be the most successful in enhancing outcomes. Several studies (Brown et al., 2003; Tierney et al., 2005; Trusty et al., 2005) have examined specific interventions that might be successful in working with low-income, first-generation and racially diverse youth, but there are few that utilize a control group design. The design used in this study provided data that allowed for direct comparison between participants in the intervention and non-participants, increasing the generalizability of the results.

Although career self-efficacy has been widely researched, college-going self-efficacy has not. The pursuit of a professional career is closely tied to the ability to be successful in

postsecondary education. When middle school students participate in activities designed to enhance career exploration and efficacy for learning about and pursuing advanced careers, are they also building efficacy for pursuing the education needed for these careers? This study measured efficacy for college-going as well as for careers, in order to shed light on the relationship between these two parallel and perhaps, interrelated constructs.

The intent of this study was to examine several issues. Self-efficacy, for both college-going and career decision-making, in students from first-generation and low-income communities may be impacted by a variety of factors such as perception of barriers, lack of role models, poor performing schools, and lack of accurate information. Aspirations for higher education and professional careers may be moderated by the same factors. Successful interventions should be based on theoretical models that take these into account. This study examined pre-existing beliefs about educational achievement and career and college capabilities in a group of urban, low SES first-generation adolescents, and the impact of an intervention that attempted to raise expectations for college success and for professional career paths. The intervention attempted to do this through building efficacy for college-going and for career decision-making behaviors. This study examined what impact the intervention had, and explored relationships between several variables.

## **Chapter 3 - Method**

The purpose of this study was to examine the educational aspirations and expectations of middle school students from disadvantaged backgrounds, and to examine the impact of a summer career program on career self-efficacy, and college-going self-efficacy. The Career Horizons Summer Program (CHSP) is a week-long day camp for students from the Kansas City, Kansas school district who have already been involved in KU Talent Search, one of the federally funded TRIO programs. Each summer, approximately 40 students apply and are chosen to participate. Busses transport the students from their neighborhoods to the University of Kansas campus each day, where the camp activities are held. Daily activities are centered on team-building, career exploration, career self-awareness, and exposure to science and technology. Students meet professors and other university staff, have access to technology and science laboratories, eat at residence hall dining facilities, and explore other campus facilities. Staff provide personal support in both individual and group settings and there is a strong emphasis on personal growth, increasing knowledge of college and career options, and building efficacy for academic success and career decision-making. A quantitative design was chosen so that four variables could be measured: career decision self-efficacy, college-going self-efficacy, educational aspirations, and educational expectations. This chapter will describe the design, sampling methods, procedures, and measures that were used. Limitations of the study will also be discussed.

### **Research Design**

For this study, a quasi-experimental nonequivalent comparison group design coupled with a modified time series design was used (Campbell & Stanley, 1963). In order to better measure the effects of the Career Horizons Summer Program (CHSP), a comparison group was identified. Group 1 represented students who did not participate in the CHSP, and Group 2 was composed of students who did participate in the CHSP. The independent variable, or intervention was participation in CHSP. Dependent variables were educational aspirations, educational expectations, college-going self-efficacy, and career decision self-efficacy. Demographic data were already available on gender, first-generation status, race, and ethnicity, supplied by the Talent Search office, which administers the program. Permission to conduct the

study was granted by the Institutional Review Board of Kansas State University and the Human Subjects Committee at the University of Kansas (See Appendix E).

## **Population**

The target population was students from a low-income urban setting who were predominantly first-generation students and represented racial and ethnic minorities. The study was conducted in the state of Kansas in the summer of 2013 with the support of the University of Kansas School of Education, Educational Opportunity Programs. The specific program studied was the KU Talent Search CHSP, offered in June of 2013 to students who had completed 6th grade in any one of eight Wyandotte County middle schools. In the spring before the camp, school counselors from the middle schools were asked to nominate 10-15 current 6th graders who they felt would benefit from a summer career exploration program during the summer between their 6th grade and 7th grade year. Nominated students were required to be participants in the KU Talent Search (KUTS) program, which was active during the prior school year.

Pertinent Criteria for participation in KUTS are:

- At least 11 years of age and completion of 5th grade
- Living in Wyandotte County
- Middle School Student
- U.S. Citizen or Permanent Resident
- A desire to pursue and attain a postsecondary education

(The University of Kansas Educational Talent Search brochure, 2012)

While not all students who participate in the KUTS are low-income and first-generation, federal guidelines require that at least two-thirds of the participants in any TRIO program are representative of this population (U.S. Dept. of Education, 2012). Names of nominated students were submitted to the KUTS staff in the spring.

## **Sample**

### ***Sampling Method***

Both the comparison group and the participant group were samples of convenience. Students who were in the intervention group came from a pool of Kansas City, KS. 6th graders

who had already committed to participating in the KU Talent Search program. The number of students in the 6th grade in Wyandotte County for the 2010-2011 school year was 2209 (Kansas State Dept. of Education, 2012) and although data by class year was not available, in that same school year, 589 students from 11-13 years of age were part of the KUTS program (Dukstein, 2012d). In 2011-2012, 2198 students were in the 6th grade (Kansas State Dept. of Education, 2012) and 441 students between ages 10 and 13 were part of KUTS (Dukstein, 2012d). As noted, nominations for participation in the camp were solicited from school counselors at the eight middle schools in the Wyandotte County School District, who were provided a list of students already involved with the KUTS (See Appendix A). The method of selection for participation in the CHSP was for KUTS staff to notify the 104 nominees, after which nominated students were invited to complete an application, obtain a letter of recommendation from a teacher or counselor, and write a short essay about possible career choices and people or events that have had an influence on these choices. Not all students chose to follow through with the application process. From the students who completed the application process, KUTS staff chose 42 participants based on application materials, parent consent for participation, and relevant background information. The 62 students who were nominated by the school counselors for the CHSP but either did not apply or were not accepted into the program were sent letters by the researcher, inviting them to become a part of the study.

### *Sample Size*

Through the process described, 42 students were selected to participate in the CHSP (Group 2). The size of the CHSP group is consistently limited due to budgetary constraints and staffing issues. Counselors were invited to nominate 10-15 students each, resulting in a pool of 100-120 subjects. Out of these nominated students, 42 were selected to participate in the CHSP and became the intervention group. The remaining 62 students were also representative of the target population (prior participants in KUTS) and these students were invited to take part in the study; participation was described as attending two KUTS events over a 16-week period and completing a survey at each event (pre and posttest). Out of the 62 who were invited, 10 responded and became the comparison group. An additional student was later added to this group. The student was originally identified as a participant in the CHSP, completed the pretest on the first day of the camp but failed to attend all remaining sessions of the camp. The student

completed a posttest in response to a final follow-up mailing; responses to this survey were included in the data for the comparison group. Data analysis was based on a final sample size of 41 in the intervention group and 11 in the comparison group.

## **Variables**

The independent variable was participation in the CHSP. The dependent variables were educational aspirations, educational expectations, college-going self-efficacy, and career self-efficacy. As noted earlier, through participation in the KUTS, demographic data on all subjects was already available on gender, race or ethnicity, and first-generation status, and these served as additional comparative independent variables.

Participation in the CHSP was a categorical variable measured by a "yes" or "no" response. Aspiration for postsecondary education and expectation for postsecondary education was measured in survey questions on the pre and posttests. The questions were modeled after similar ones used in studies of aspiration-expectation discrepancies and aspirations and academic achievement (Boxer et al., 2011; Dubow, Boxer, & Huesmann, 2009). Participants in both Group 1 and Group 2 were asked to respond to two questions: "What is the highest level of education that you would like to achieve?" and "What is the highest level of education you think you will achieve?" Possible responses to both questions will be 1. Middle School, 2. High school graduate or GED, 3. Some college, 4. College graduate, 5. Graduate or professional degree (e.g., doctor, lawyer).

Career Self-Efficacy (CSE) was measured with survey questions from the Middle School Self-Efficacy Scale (Fouad & Smith, 1997). The scale was developed to measure "self-efficacy, outcome-expectancy and intentions and goals in career decision making or mathematics/science" (p. 17). Using a 5-point Likert scale, participants were asked to indicate the degree to which they agreed or disagreed with statements about educational goals, occupational choice, exploring careers, and their intent to complete educational or career-related goals (1=Strongly Agree, 2=Agree, 3=Uncertain, 4=Disagree, 5=Strongly Disagree). Based on answers to the 22 items of this scale, an overall mean response score for CSE (between 1 and 5) was calculated for each participant, with lower scores indicative of more agreement with the statements and an estimated higher level of career self-efficacy. Group CSE means were then calculated in order to make comparisons between the comparison and the intervention groups.

College-going self-efficacy (CGSE) was assessed through the use of the College-Going Self-Efficacy Scale (Gibbons, 2009). This scale was developed for use with middle school students as well, and attempts to measure "middle school students' college-going beliefs regarding both college attendance and college persistence" (p. 237). The College-Going Self-Efficacy Scale is made up of 30 items and utilizes a 4-point Likert scale (1=Not at all sure, 2=Somewhat Sure, 3=Sure, 4=Very Sure). Based on the survey responses of each individual, a mean response score for CGSE was calculated on the 30 items (between 1-4) with higher scores indicative of more certainty and an estimated higher level of college-going self-efficacy. An overall group mean response was then calculated for both the comparison and intervention groups so that comparisons in CGSE could be made.

## **Instruments**

### ***Middle School Self-Efficacy Scale***

Due to the age of the participants in the study (between 11-13), it was necessary to use measurement scales that were appropriate, both in reading level, and in assessment of knowledge the students were likely to have. The Middle School Self-Efficacy Scale (MSSSES) (Fouad & Smith, 1997) was used to assess career self-efficacy. The first part of the scale relates specifically to career decision-making. The second part of the scale attempts to measure math and science self-efficacy. Because these specific academic areas were not the primary focus of this study, part 2 was not used. Based largely on the Career Decision Self-Efficacy Scale (CDSSES) (Betz & Klein, 1996; Betz, Hammond, & Multon, 2005), the MSSSES has been adapted for use with younger students. The CDSSES manual (Betz & Taylor, 2006) notes that, to maintain conceptual similarity between the instruments, twelve items were borrowed from the CDSSES but altered so as to be more understandable by 12 to 15 year olds.

There are 22 items in part 1 and reliability was previously tested using an internal consistency coefficient (Fouad & Smith, 1997). Results ranged between .70 and .79 on three subsets (self-efficacy, outcome expectations, intentions/goals). Responses were measured on a 5-point Likert scale (SA=Strongly Agree, A=Agree, UN=Uncertain, D=Disagree, SD=Strongly Disagree). Items assessed the students' beliefs about their ability to learn about careers, make a plan for their educational and career goals, and choose a career based on their interests. There was no indication of a test-retest reliability measurement.

Brown, Darden, Shelton, and Dipoto (1999) reported a Cronbach alpha coefficient of .78 when they used the career portion of the MSSSES with a group of 381 high school students. In a study of 293 middle school students, Keller and Whiston (2008) reported an alpha coefficient of .77 using the career decision subscale of the MSSSES.

Validity has been assessed on each part separately using factor analysis (Fouad & Smith, 1997). The career decision-making section of the scale produced an adjusted goodness of fit (AGFI) of .91 and a root-mean square residual (RMR) of .046. A chi-square/df ratio was 1.96. The results of a confirmatory factor analysis showed that the subsets from the two scales (career decision-making process & math and science efficacy) loaded on separate factors (AGFI = .97, RMR = .03) with a chi-square/df ratio close to 2.0.

For analysis purposes, number values were assigned to each answer (SA=1, A=2 U=3, D=4, SD=5). As noted above, lower scores were indicative of a higher level of agreement with the items, which was interpreted as higher career self-efficacy. Permission to use the instrument was given by the author (N.A. Fouad, personal communication, 4/1/2013, See Appendix C).

### ***College-Going Self-Efficacy Scale***

The College-Going Self-Efficacy scale (CGSES) (Gibbons, 2009) was used to measure students' beliefs about going to college. The CGSES utilizes a 4-point Likert scale (1=Not at all sure, 2=Somewhat sure, 3=Sure, 4=Very Sure). The first part of the scale is made up of questions about attendance at college. The second section measures persistence at college. Reliability and validity testing on the instrument has previously been completed in two phases (Gibbons & Borders, 2010a). Phase 1 utilized a sample of 22 students in 6th - 8th grades and small modifications were made to the assessment after this initial review. In phase 2, the CGSES was used with 272 7th graders. Subscales assessed attitudes about college attendance and attitudes about persistence in college. Utilizing Cronbach's alpha coefficient, the attendance subscale indicated  $r$  of .89; the persistence subscale was at .90. A coefficient of .94 was measured on the two scales combined, suggesting internal consistency.

Validity testing was done using a principal component exploratory factor analysis. Two factors (attendance and persistence) appeared to account for 42.2% of the total variance. Factor 1 (attendance) accounted for 21.3% and factor 2 (persistence) accounted for 20.9%. The author notes that there was overlap on several of the items and the results suggest that the use of the



total score is more meaningful than the use of each subscale score separately. Correlation between the two subscales was  $r = .77, p < .01$ .

Higher scores were indicative of more certainty and an estimated higher level of CGSE. Permission to use the scale was given by the author (M. M. Gibbons, personal communication, 1/28/2013, See Appendix C).

### ***Educational Aspirations and Educational Expectations***

Educational aspirations and educational expectations were measured through the use of two survey questions: "What is the highest level of education that you would like to achieve?" and "What is the highest level of education you think you will achieve?" Possible responses to both questions were 1. Middle School, 2. High school graduate, 3. Some college, 4. College graduate, 5. Graduate or professional degree. For each question, participants selected a response ranging from 1-5, with lower numbers indicating lower aspirations or expectations, and higher numbers indicating higher aspirations or expectations.

The aspiration questions, the CGSES items and the MSSES items were combined into one survey for the purposes of this study (See Appendix B). The combined survey was administered in a paper and pencil format.

## **Procedures**

### ***Intervention Group***

Nominations for participation in the CHSP were solicited from counselors in mid-April. Nominees were notified by KUTS and invited to apply to attend the CHSP camp, with applications due on or around May 1. KUTS staff reviewed applications and notified students who were selected to participate in the CHSP. Parents of those students were asked to attend a parent information meeting in mid-May, at which time they received various documents and information regarding their child's attendance at the summer camp. A general announcement was made at the meeting about the proposed study. After they had finalized all camp application materials, a letter explaining the study (See Appendix D) and the appropriate consent form for participation in this study (See Appendix E) were mailed to parents of participating students. An assent to participate letter directed at the students themselves was also included (See Appendix F). A pre-addressed, stamped envelope was included so that parents could return signed consent

forms prior to the start of the camp. Parents were also given the option of having their student return the signed consent form on the first day of camp. All parents of the 42 CHSP participants gave consent. The pretest survey for Group 2 was administered at the beginning of the first day of the summer camp.

Group 2 was given the first posttest survey on the final day of the CHSP 6-day camp. As noted earlier, one CHSP participant did not complete the camp. The three-day college tour took place approximately four weeks after the CHSP, and was promoted as a reward for full participation in the CHSP. Due to funding constraints, the tour has not always been offered for this age group; however, it does provide a second intervention for the students participating, and may contribute to increases in career self-efficacy and college-going self-efficacy. KUTS staff invited all of the CHSP participants to take part in the college tour; however, only 37 were able to take part. The second posttest was administered by KUTS staff at the conclusion of the trip.

Participants in the CHSP are invited to stay involved with the KUTS program through attendance at Saturday Science Academies throughout their 7th grade year. The first Science Academy, held in late September, was used to collect the final posttest data for Group 2. Thirteen students from the intervention group attended the academy and completed posttest 3. Follow-up letters (See Appendix G) and surveys were mailed to the remaining students at home, along with a self-addressed stamped envelope. An additional nine students returned the completed survey by mail.

### ***Comparison Group***

Students who were nominated but chose not to apply, or who applied and were not selected for participation, provided the pool for selection of the comparison group (Group 1). A letter to these students and their parents/guardians was delivered by mail in mid June (See Appendix D), inviting participation in the study through the taking of the pretest and the posttest at KUTS events. The appropriate consent form (See Appendix E), and the Assent to Participate letter to the students (See Appendix F) were included, along with a stamped return envelope. Parents/guardians, if they agreed to participation in the study, were asked to return the signed consent through the mail or to have their student return it at the KUTS event. All students who were nominated for the camp, but who did not apply, were invited to KUTS Pizza Parties, offered on two different dates one week apart. A few days before each event, KUTS staff called

the homes of the students to remind them of the date and to encourage them to come. Although 62 students were invited to participate, no students attended the first pizza party, and only 10 students attended the second party and completed the pretest. At the party, students engaged in social and educational activities related to college and career, led by KUTS staff.

Group 1 participants were invited to a back-to-school event at the end of August, which also included social and educational activities related to college and career. Only three students attended the event and completed the posttest; follow-up letters (See Appendix J) and surveys were mailed to the remaining students. An additional four individuals returned the survey by mail.

As noted earlier, one CHSP participant completed the pretest, but only attended two of the six days of the camp and did not participate in any of the remaining activities that were attended by the intervention group. The individual, in response to the follow up mailing, did complete the final posttest. Because the student's involvement was more consistent with the comparison group than with the intervention group, the scores on this individual's surveys were included as part of the comparison group data.

The pretest and posttests were paper and pencil assessments consisting of multiple measures that have been described in the previous section. Hand scoring was completed by the researcher.

## **Data Analysis**

### ***Statistical Model***

Descriptive statistics were conducted on all pretest data for both Group 1 and Group 2, the intervention and the comparison group. Simple percentages of responses were calculated on the educational aspirations and expectations questions. Bi-variate correlations were used to compare the variables of career self-efficacy (CSE) and college-going self-efficacy (CGSE) among all participants. A one-way (1 x 4) analysis of variance (ANOVA) model was used to analyze differences between CSE and CGSE by educational aspirations. Similarly, a one-way (1 x 4) ANOVA was used to analyze differences between CSE and CGSE by educational expectations. Finally, a factorial 2 x 2 mixed ANOVA, with a repeated-measures within-subjects and between-groups analysis, was conducted to examine differences in pre and posttest scores between camp participants and non-participants.

The researcher's hypotheses suggested that participation in the CHSP camp would have an impact on the variables of educational aspirations, educational expectations, career self-efficacy and college-going self-efficacy. The research questions asked if participation in the camp (independent variable) would have an impact on any of the four dependent variables. The Statistical Package for Social Sciences (SPSS) was used for data analysis and a significance level of .05 was used for reporting of results.

### *Analysis Procedures*

After completion of the pretest and all posttests by both Group 1 and Group 2, percentages of responses to questions about educational aspirations and educational expectations were examined. The percentage of students that responded to each answer about educational aspirations and expectations was also compared across time in Group 2.

An overall mean score for CSE and for CGSE was calculated for each individual and then for each group. Responses for CGSE were transposed in order to be consistent with responses for CSE (higher scale responses indicate higher level of efficacy). A data transformation was done to achieve this. Independent *t*-tests were used to compare pretest scores of CGSE and CSE in subgroups by demographic information on gender, race, ethnicity, low-income status, and first-generation status.

A bivariate correlation analysis was used to address Research Question #2: Are there relationships between career self-efficacy and college-going self-efficacy before and after the program by participants and non-participants. Two-tailed testing was used. It was expected that there would be a relationship between CSE and CGSE for both participants and non-participants.

The following research questions were addressed with 1 x 4 one-way ANOVAs:

RQ#3: Is there a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational aspirations?

RQ#4: Is there a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational expectations?

It was hypothesized that there would be a difference in educational aspirations and expectations by both career and college-going self-efficacy.

Finally, two 2 x 2 mixed ANOVAs with 1 repeated measure and 1 between-group measure, supported with paired samples *t*-tests, were used to address the following research questions:

RQ#5: Does career self-efficacy increase more in participants than non-participants, following the Career Horizons Summer Program?

RQ#6: Does college-going self-efficacy increase more in participants than non-participants, following the Career Horizons Summer Program?

It was expected that, between pre and posttest, both CSE and CGSE would increase more in the intervention group than in the comparison group.

## **Research Validity**

### ***Threats to Internal Validity***

A significant potential threat to the study's internal validity was *history*. The pretest was administered to Groups 1 and 2 in mid June. Posttest data on Group 2 were collected at the end of the camp, and again towards the end of July, at the end of the college bus tour. Posttest data on Group 1 were collected towards the end of August. Because of the long intervening time between pretest and posttest for the comparison group, and pre and posttests three and four for the intervention group, there was a potential for other types of impact on the subjects. Differences in pretest and posttest scores might have been due to an event or events that took place during time between testing rather than to the intervention, although the researcher was not aware of any broad societal or community events that took place and had the potential for impact on the participants.

*Maturation of subjects* was another threat to internal validity. As noted above, there was a significant amount of time that passed between pretest and posttest, for both the comparison and the experimental group. The variables may have been impacted by the simple passing of time for these students, and as such, change in pretest and posttest scores may not be due to the intervention. Although they did not participate in the CHSP, Group 1 participants may have done other things throughout the summer that could have resulted in increased career or college-going self-efficacy, or both. Likewise, participants in the CHSP may have had additional experiences, besides attending camp, which impacted their attitudes and beliefs. This threat will be acknowledged in the discussion.

*Selection* bias was a threat to the internal validity of the study. The intervention and the comparison groups were not randomly selected at any level. Students who were eligible to be nominated for the camp had already been invited and self-selected to participate in the KUTS, a program which as has one of its criteria " a desire to pursue and attain a postsecondary education" (Dukstein, 2012a, para. 2). Nominations by school counselors from the overall KUTS pool were not random. While they are given criteria and basic guidelines, (See Appendix A), the counselors may have used subjective information to identify potential participants. Once students were nominated and informed about the camp, they partially self-selected for attending the CHSP as they made the decision to apply or not to apply. Reasons for deciding to participate in the CHSP may have been many and varied. Some parents may not have supported this activity, families may have been away during the summer, commitment may have been lacking, or students may simply have decided they didn't want to get involved. KU Talent Search (KUTS) staff made final decisions about who was selected to participate, thereby altering the sample as well.

*Selection-maturation interaction* was also a possibility. Those who chose to apply may have represented students who were already more motivated to learn about college and careers, or those whose parents were more proactive about finding opportunities for their children to grow in college and career awareness. Changes in posttest scores may have been related to the types of students who chose to participate or not to participate, rather than to the intervention itself. Pretest data was analyzed to see if differences in the groups already existed. This will be addressed in the discussion.

Once students have committed to the camp, great effort is spent encouraging them to follow through and attend each day, so *mortality* of the intervention group was minimal. Mortality was a concern for the comparison group, as data collection for Group 1 was dependent on attendance at a less structured event. Students may have moved away, changed schools, or lost interest during the summer months, which made it difficult to find and assess all participants. Every effort was made to make contact with comparison group participants, but attrition occurred, making numbers in the comparison group low. The impact of this on the study will be addressed in the discussion.

### ***Threats to External Validity***

The potential for *interaction of testing and treatment* existed in this design. Participants in both the comparison group and the intervention group may have reacted differently to the posttest simply because of its familiarity, making it difficult to know whether changes in scores were due to the intervention or lack of intervention. This may make generalizability to a larger population difficult.

As noted, the students nominated for participation were not randomly selected and they were chosen from a group of students who already were participating in a program focused on access to postsecondary education. Also, those who applied to the CHSP self-selected, resulting in the possibility that differences existed between the intervention and the comparison groups prior to the intervention. Intervention group students may have already been somewhat more motivated to learn about careers and college, and posttest scores could reflect this predisposition rather than the effect of the intervention. The threat of *interaction of selection and X* was a concern. Limitations of generalizability will be addressed in the discussion.

## **Ethical Issues**

### ***Planning***

The process for nominating students for participation in the CHSP has been used by KUTS staff for many years, and has been viewed as an appropriate process for identifying individuals who meet the criteria for the program. This study should not have been seen as interfering or altering that process in any way. Counselors were asked to use the same method as they had before, and potential participants were provided with the same information about the camp and its goals as they had received in prior years. Regardless of the results of this study, KUTS staff members believe that the camp is beneficial to the participants, and that it can have a significant impact on future behavior. Therefore, every effort was made to honor the process of selecting student participants. Through the wording of the consent form, an attempt was made to adequately communicate that participation or non-participation in the camp was not tied to any kind of judgment about the students or parents, or any impact on future participation in other KUTS activities. If students who desired to participate were found ineligible for any reason (e.g., medical concerns, severe behavioral problems), the decision was made by KUTS staff, and not influenced by the researcher.

### ***Consent***

The consent to participate in the study should not have been confused with other forms required for participation in the camp. The consent for the study was distributed separately, through mailings. If parents had questions about the study, they were directed to the researcher, as opposed to the KUTS staff, thereby ensuring consistency of explanation and confidentiality regarding concerns. Contact information was provided to all parents and the researcher had the responsibility of examining all consent forms to determine participation. Because many of the students came from homes where Spanish was the predominant language, the parent information letter, informed consent form, and examples of items from the survey were available in English as well as Spanish, and both versions were included in all mailings to parents. Invitations to the gatherings for the comparison group were also provided in both English and Spanish.

In addition to parental consent forms and parent letters, students were provided with a written explanation of the study as well. Although they were minors, they should have felt that their consent was also being solicited. If students had chosen not to participate at any time, their wishes would have been respected, and no further effort would have been made to solicit their participation. This, however, did not directly appear to be an issue, although it could possibly have accounted for lower attendance at the second event for Group 1.

### ***Individual Freedom***

As noted above, if a participant wished to withdraw from the study, parents were given contact information so that the researcher could be notified directly. This did not occur during the duration of the study.

### ***Subject Discomfort***

The consent form given to the parents outlined the intent of the study, the purpose of the study and the ways in which the information was to be used. Risk of discomfort was addressed in the consent form, as were any possible consequences of participation in the study.

### ***Power Differential***

It should be recognized that there was a potential for perception of a power differential between the researcher and the parents of the students approached regarding the study. Many of the parents may not have attained education beyond high school, or in some cases, beyond



middle school, whereas the researcher, through information supplied in the consent form, was identified as holding advanced education degrees. Based on general demographic information about the school district and the community, a majority of the parents were from racial or ethnic minority groups, whereas the researcher is White. Due to a history of oppression and/or discrimination, there could have existed a prejudice among parents regarding their students' participation in a research study. Effort was made to avoid the perception that students were being viewed simply as research subjects for a member of the dominant culture. Due to its long-term involvement in the community, the KUTS program appears to be well respected. It was hoped that, as parents saw that there was a connection between the study and the KUTS, they were reassured. Through the consent form, parents were fully informed about the study and what the results were to be used for, thereby eliminating concerns. The Director of the KUTS program was fully supportive of the research project, and supplied her contact information in an additional KUTS brochure that was included with the mailings sent to all participants.

## **Chapter 4 - Results**

The purpose of this study was to examine the educational aspirations and expectations of middle school students who were nominated for participation in a TRIO Talent Search program and to examine the impact of an intensive six-day career exploration and college preparation camp on career and college-going self-efficacy on students who chose to participate. Finally, the study examined the relationship between college-going self-efficacy and career self-efficacy in the target group. All variables were measured through the use of a survey made up of two questions regarding aspirations and expectations, the College-Going Self-Efficacy Scale (Gibbons, 2009), and the Middle School Self-Efficacy Scale (Fouad & Smith, 1997). Reliability tests were done on both scales. The College-Going Self-Efficacy Scale had a total reliability of .942 on the 30 items and the coefficient alpha for the Middle School Self-Efficacy Scale was .828 across 22 items.

This chapter will describe the results of the descriptive and comparative analyses, bivariate correlations, one-way (1 x 4) ANOVAs, factorial 2 x 2 mixed ANOVAs, with repeated-measures within-subjects and between-groups analyses, and the paired samples *t*-tests used to examine the data and test the null hypotheses. All analyses were done using SPSS Version 20.

### **Descriptive and Comparative Statistics**

A total of 52 middle school students preparing to enter the 7th grade participated in the study. As noted in Chapter 3, participants in the study were all students who had been nominated by school counselors to attend the Career Horizons Summer Program (CHSP) in June 2013, a six-day camp designed to provide students with career information, and to encourage them to set a goal of entering college and persisting to degree completion. Of those who were nominated, 42 initially chose to attend the CHSP and so became the intervention group. Those who chose not to attend the CHSP were invited to participate in the study and to attend two informal gatherings held in July and August. Ten students agreed to participate and were identified as the comparison group. An additional participant was added to the comparison group when the individual was accepted for participation in the CHSP, but did not attend all sessions of the camp.

The KUTS office supplied the following demographic data: gender, ethnicity as Hispanic/Latino, race, low-income status of family, and first-generation status. As shown in Table 4-1, 29 were female (56%) and 23 were male (44%). Forty-four percent identified as White ( $n = 23$ ), 38.5% as Black/African American ( $n = 20$ ), 7 % ( $n = 4$ ) as more than one race, and 6% ( $n = 3$ ) as Asian. Fifteen students (29%) indicated that they were Hispanic/Latino. A majority ( $n = 43$ ) of the students' families qualified as low-income (83%) and similarly, 89% ( $n = 46$ ) held first-generation status for attending college.

**Table 4-1**  
*Demographic Data*

<i>Characteristic</i>	<i>All Participants</i> ( $N = 52$ )	<i>Intervention Group</i> ( $n = 41$ )	<i>Comparison Group</i> ( $n = 11$ )
	% shown in parentheses*		
Gender			
Male	23 (44.2)	18 (43.9)	5 (45.5)
Female	29 (55.8)	23 (56.1)	6 (54.5)
Race			
Asian	3 (5.8)	2 (4.9)	1 (9.1)
Black/African American	20 (38.5)	17 (41.5)	3 (27.3)
White	23 (44.2)	17 (41.5)	6 (54.5)
More than one	4 (7.7)	3 (7.3)	1 (9.1)
No response	2 (3.8)	2 (4.9)	
Ethnicity			
Hispanic/Latino	15 (28.8)	11 (26.8)	4 (36.4)
Low-income	43 (82.7)	32 (78)	11 (100)
First-generation	46 (88.5)	37 (90.2)	9 (81.8)

\* percents are rounded and do not always add to 100

## Educational Aspirations and Expectations

To measure educational aspirations and educational expectations, on the pretest, all participants were asked the following questions: "What is the highest level of education that you would like to achieve?" and "What is the highest level of education you think you will achieve?" The five possible answers included middle school, high school graduate, some college, college graduate, and graduate or professional degree (e.g., doctor, lawyer). To answer these questions, descriptive statistics were conducted; however, Pearson's chi-square analyses were also conducted to determine whether differences existed in aspirations and expectations by gender, race, and ethnicity. Thus, Research Question #1 became: What have students who are eligible for participation (i.e., nominated students) in the CHSP indicated as their educational aspirations and educational expectations, and do they differ by gender, race, and ethnicity?

On the pretest, nearly all of the students ( $n = 50$ ) aspired to earn a college degree (96%) with over half (59.6%,  $n = 31$ ) hoping to achieve a graduate or professional degree. A chi-square goodness-of-fit test indicated students aspired to achieve graduate or professional degrees ( $n = 31$ ) significantly more than to become college graduates ( $n = 19$ ). This difference was significant at the .05 level ( $\chi^2 = 24.50$ ,  $df = 2$ ,  $p < .05$ ).

Expectations for actually achieving these goals were slightly lower. On the pretest, ninety percent ( $n = 47$ ) expected to earn a college degree, with 40% ( $n = 21$ ) believing they would achieve a graduate or professional degree. Another chi-square goodness-of-fit test indicated students expected to be college graduates ( $n = 26$ ) at a rate slightly above that of those who expected graduate or professional degrees ( $n = 21$ ). The difference was statistically significant at the .05 level ( $\chi^2 = 35.23$ ,  $df = 3$ ,  $p < .05$ ). Thus, students' expectations for highest level achieved do not differ by "college graduate" or "graduate or professional school." Percentages of responses are shown in Table 4-2.

**Table 4-2**  
*Educational Aspirations and Expectations on Pretest*

<i>What is the highest level of education that you would like to achieve?</i>	<i>All (N = 52) % shown in parentheses*</i>
Middle school	0
High school graduate	0
Some college	2 (3.8)
College graduate	19 (36.5)
Graduate or professional degree	31 (59.6)
Total aspiring to earn undergraduate or graduate degree	50 (96.1)
<i>What is the highest level of education you think you will achieve?</i>	
Middle school	0
High school graduate	1 (2.0)
Some college	4 (7.7)
College graduate	26 (50.0)
Graduate or professional degree	21 (40.4)
Total expecting to earn either undergraduate or graduate degree	47 (90.4)

\* percents are rounded and do not always add to 100

Males and females do not differ in either educational aspirations ( $\chi^2 = 2.62, df = 2, p > .05$ ) or expectations ( $\chi^2 = 3.16, df = 3, p > .05$ ). All of the 29 females in the study indicated that they hoped to earn a college degree; 91% of males ( $n = 21$ ) aspired to a college degree. A similar variation was found in educational expectations with 97% of females ( $n = 28$ ) expecting to earn a college degree and 83% of males ( $n = 19$ ) expecting to do so.

There were no significant differences observed in either educational aspirations ( $\chi^2 = 6.27, df = 6, p > .05$ ) or expectations ( $\chi^2 = 8.70, df = 9, p > .05$ ) between students identifying by race. Ninety percent ( $n = 18$ ) of African American students both aspired to and expected to earn a college degree. There were also no significant differences observed in either educational aspirations ( $\chi^2 = 4.68, df = 2, p > .05$ ) or expectations ( $\chi^2 = .93, df = 3, p > .05$ ) by ethnicity. All

Hispanic/Latino students ( $n = 15$ ) aspired to earn a college degree and 93% ( $n = 14$ ) believed they would be able to achieve this goal.

The same questions were asked of all intervention participants on the posttests. The intervention group took posttest 1 on the final day of the CHSP, posttest 2 following the college bus tour, and posttest 3 at the fall KUTS activity. In response to the educational aspirations question, percentages for the intervention group had shifted slightly from the pretest (See Table 4-3). In both the pre and the posttest, 97.5% ( $n = 40$ ) aspired to earn a college degree, but the numbers of those aspiring to earn a graduate or professional degree increased slightly from pretest (59%,  $n = 24$ ) to posttest (71%,  $n = 29$ ). Educational expectations shifted in a similar way; 87.8% ( $n = 36$ ) in both the pre and posttest expected to earn a college degree, but in the posttest, 59% ( $n = 24$ ) of the participants expected to earn a graduate or professional degree as opposed to an undergraduate degree (42%,  $n = 17$ ). A 4 x 5 chi-square test of independence revealed there is not a statistically significant relationship between the intervention group's aspired level of education and time,  $\chi^2(12) = 6.44, p > .05$ . Another 4 x 5 chi-square test of independence revealed there is not a statistically significant relationship between the intervention group's expected level of education and time,  $\chi^2(12) = 12.47, p > .05$ .

**Table 4-3**

*Comparison Between Pre and Posttests, Educational Aspirations and Expectations in the Intervention Group*

What is the highest level of education that you would like to achieve?	Pretest (n=41)	Posttest 1 (n=41)	Posttest 2 (n=37)	Posttest 3 (n=22)
	<i>% shown in parentheses*</i>			
Middle school	0	0	1 (2.7)	0
High school graduate	0	0	0	0
Some college	1 (2.4)	1 (2.4)	1 (2.7)	1 (4.5)
College graduate	16 (39.0)	11 (26.8)	8 (21.6)	8 (36.4)
Graduate or professional degree	24 (58.5)	29 (70.7)	27 (73.0)	13 (59.1)
Total aspiring to earn either undergraduate or graduate degree	40 (97.5)	40 (97.5)	35 (94.6)	21 (95.5)
What is the highest level of education you think you will achieve?				
Middle school	0	0	0	0
High school graduate	1 (2.4)	0	0	1 (4.5)
Some college	4 (9.8)	5 (12.2)	1 (2.7)	2 (9.1)
College graduate	19 (46.3)	12 (29.3)	11 (29.7)	6 (27.3)
Graduate or professional degree	17 (41.5)	24 (58.5)	25 (67.6)	13 (59.1)
Total expecting to earn either undergraduate or graduate degree	36 (87.8)	36 (87.8)	36 (97.3)	19 (86.4)

\* percents are rounded and do not always add to 100

### **Career and College-Going Self-Efficacy**

Overall measures of CSE and of CGSE were calculated for the entire group of participants, both intervention and comparison. For all participants, the CSE mean for the pretest was 4.32 ( $SD = .33$ ) based on a 5-point scale and 4.58 ( $SD = .31$ ) on the posttest. For CGSE, the mean on the pretest was 3.37 ( $SD = .42$ ) based on a 4-point scale, and 3.61 ( $SD = .36$ ) on the posttest.

Independent samples *t*-tests were completed to examine whether there were differences on the pretest in CGSE or CSE by demographic subgroups of gender, race, ethnicity, income, and first-generation status. Comparing gender groups, males had a mean score of 3.38 ( $SD = .08$ ) on CGSE; the mean for females was 3.36 ( $SD = .08$ ),  $t(50) = .172, p > .05$ . For CSE, the

mean for males was 4.34 ( $SD = .07$ ) and the mean for females was 4.31 ( $SD = .06$ ),  $t(50) = .306$ ,  $p > .05$ . Differences between racial or ethnicity groups were also not statistically significant. For race, a comparison was made only between those identifying as White and those identifying as Black/African American; those two categories accounted for 83% of study participants and other categories had fewer than five each. Students identifying as White had a mean score of 3.43 ( $SD = .08$ ) on CGSE; the mean for Black/African American students was 3.40 ( $SD = .09$ ),  $t(41) = .264$ ,  $p > .05$ . On CSE, White students had a mean score of 4.39 ( $SD = .06$ ) and for Black/African American students, the mean was 4.34 ( $SD = .08$ ),  $t(41) = .524$ ,  $p > .05$ . Fifteen students identified as Hispanic/Latino; their mean score for CGSE was 3.44 ( $SD = .11$ ) compared to a mean score of 3.36 ( $SD = .08$ ) for those who did not identify as Hispanic/Latino,  $t(44) = .592$ ,  $p > .05$ . These groups showed no statistically significant differences on CSE. Hispanic/Latino students had a mean score of 4.40 ( $SD = .09$ ); non-Hispanic/Latino study participants had a mean score of 4.32 ( $SD = .06$ ),  $t(44) = .890$ ,  $p > .05$ .

There were no statistically significant differences found between groups based on income or on first-generation status. For CGSE, students who were low-income had a mean score of 3.39 ( $SD = .06$ ) while those who were not low-income had a mean of 3.28 ( $SD = .15$ ),  $t(49) = .629$ ,  $p > .05$ . Low-income students had a mean of 4.31 ( $SD = .05$ ) on CSE; those who were not low-income had a mean of 4.42 ( $SD = .11$ ),  $t(49) = .842$ ,  $p > .05$ . The mean on CGSE for students with first-generation status was 3.37 ( $SD = .06$ ). Students who were not first-generation had a mean of 3.35 ( $SD = .22$ ),  $t(49) = .127$ ,  $p > .05$ . For CSE, first-generation students had a mean of 4.32 ( $SD = .05$ ) and those who were not first-generation had a mean of 4.41 ( $SD = .05$ ),  $t(49) = .594$ ,  $p > .05$ .

### **Relationship Between College-Going and Career Self-Efficacy**

Bivariate correlation analyses were used to address Research Question #2: Are there relationships between career self-efficacy and college-going self-efficacy before and after the program by participants and non-participants? Two-tailed testing was used.

CSE was significantly correlated with CGSE in pretest measures of the intervention group,  $r = .64$ ,  $p < .05$  as well as the comparison group,  $r = .77$ ,  $p < .05$ . A similarly high correlation was noted in the intervention group's posttest scores,  $r = .58$ ,  $p < .05$ . Correlation between CSE and CGSE in the comparison group's posttest scores was not significant,  $r = .52$ ,



$p > .05$ . The strength of the correlation across the analyses indicates a high effect size, thus the null hypothesis was rejected. Results are shown in Table 4-4.

**Table 4-4**  
*Correlation Between Career Self-Efficacy (CSE) and College-Going Self-Efficacy (CGSE) in Pre and Posttest*

		CHSP Participants ( $n=41$ )		Comparison Group ( $n=11$ )	
Pretest		Pre CSE	Pre CGSE	Pre CSE	Pre CGSE
CHSP Participants	Pre CSE	1	.64**	-	-
	Pre CGSE	.64**	1	-	-
Comparison Group	Pre CSE	-	-	1	.77**
	Pre CGSE	-	-	.77**	1
Posttest		Post CSE	Post CGSE	Post CSE	Post CGSE
CHSP Participants	Post CSE	1	.58**	-	-
	Post CGSE	.58**	1	-	-
Comparison Group ( $n=8$ )	Post CSE	-	-	1	.52
	Post CGSE	-	-	.52	1

\*\* $p < .001$

### Analysis of Variance

Research Question #3 asks if there is a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational aspirations. A one-way 1 x 4 ANOVA was used to compare participants' indication of CSE with their responses to the pretest survey question about educational aspirations. The same analysis was also done to compare means of CGSE with indication of aspiration. There was a significant effect of reported CSE on educational aspirations,  $F(2, 40) = 3.72, p < .05$ , as well as reported CGSE on educational aspirations,  $F(2, 40) = 8.49, p < .05$ , rejecting the null. Students who aspire to a graduate or professional degree from college reported higher CGSE ( $M = 3.57, SD = .29$ ) than those who aspired to an undergraduate degree ( $M = 3.10, SD = .44$ ). Similarly, means for CSE were also higher in those who aspired to a higher level of college education. Out of 41 participants, none indicated Middle School or High School for their aspiration and only one

indicated Some College. For this reason, in Table 4-5, only means for the choices of College Graduate and Graduate or Professional Degree are shown.

**Table 4-5**  
*Comparison of Means - Career Self-Efficacy (CSE) and College-Going Self-Efficacy (CGSE) by Educational Aspirations*

	CSE <i>M (SD)</i>	CGSE <i>M (SD)</i>
<i>Educational Aspiration</i>		
College Graduate ( <i>n</i> =16)	4.24 (.23)	3.10 (.44)
Graduate or Professional Degree ( <i>n</i> =24)	4.47 (.30)	3.57 (.29)

CSE and CGSE were also analyzed for effect on educational expectations. As with educational aspirations, participants with higher reported CSE also expected that they would achieve a higher level of education,  $F(3, 40) = 3.47, p < .05$ . The null hypothesis was rejected. Higher reported CGSE was also associated with a higher expected level of education, but the results in this analysis were not statistically significant,  $F(3,40) = 2.64, p > .05$ . Out of the 41 students surveyed, only one selected High School as their expected educational level; four indicated Some College. Post hoc tests were not performed because at least one category (aspiration or education level) in each analysis had fewer than two cases. Table 4-6 displays the results of those choosing at least some college or above as their response.

**Table 4-6**  
*Comparison of Means - Career Self-Efficacy (CSE) and College-Going Self-Efficacy (CGSE) by Educational Expectations*

	CSE <i>M (SD)</i>	CGSE <i>M (SD)</i>
<i>Educational Expectations</i>		
Some College ( <i>n</i> =4)	4.02 (.20)	3.15 (.60)
College Graduate ( <i>n</i> =19)	4.35 (.26)	3.26 (.37)
Graduate or Professional Degree ( <i>n</i> =17)	4.48 (.30)	3.58 (.37)

### **Change in Career and College-Going Self-Efficacy**

In order to assess the impact of the Career Horizons Summer Program (CHSP) on the participants, 2x2 mixed ANOVAs with 1 repeated measure and 1 between-group measure were

used to compare the intervention group with the comparison group from pretest to posttest. Paired samples *t*-tests supported the results of the ANOVA.

In the first analysis, CGSE on the pretest and posttest was compared by group. There was no time by group interaction,  $F(1, 47) = 2.51, p > .05$ . A small effect size (.16) was produced. Although there was no interaction, there was a significant time main effect  $F(1, 47) = 9.00, p < .05$ , rejecting the null hypothesis for time. Within-subjects contrasts produced an observed power of .84 for the time main effect. There was not a significant difference between intervention and comparison group scores on the pretest,  $F(1,47) < 1, p > .05$ .

A paired samples *t*-test indicated a significant change in CGSE between the pretest ( $M=3.39, SD=.06$ ) and the posttest ( $M=3.63, SD=.06$ ),  $t(40) = 5.97, p < .05$  for the CHSP campers. The change in CGSE between pretest ( $M=3.46, SD=.14$ ) and posttest ( $M=3.54, SD=.13$ ) for the comparison group was *not* statistically significant,  $t(7) = .621, p > .05$ . See Table 4-7 and Figure 4-1.

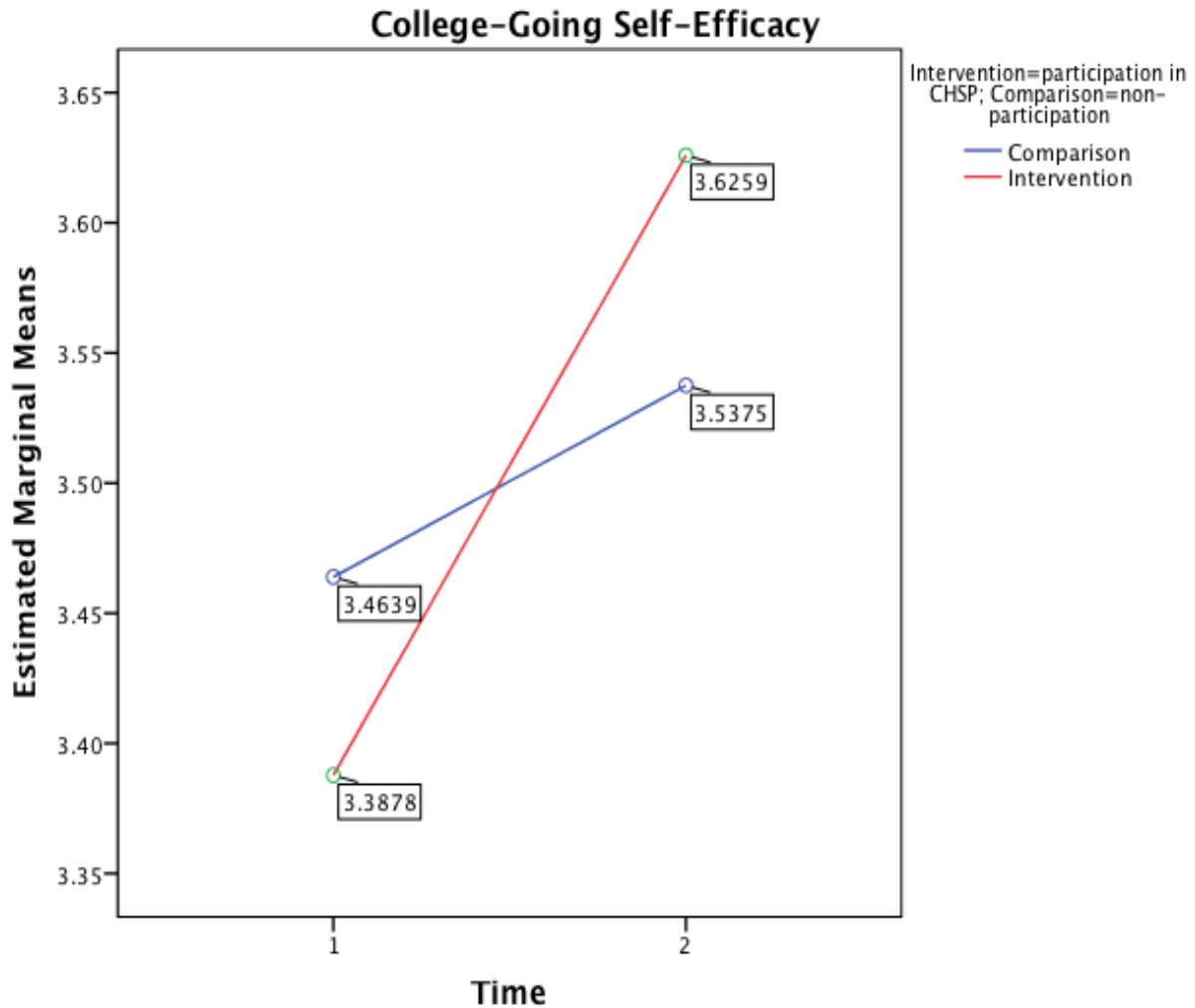
**Table 4-7**  
*Tests of Within-Subjects Effects, College-Going Self-Efficacy*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Square	Noncent. Parameter	Observed Power <sup>a</sup>	
Time	Sphericity Assumed	.325	1	.325	9.003	.004	.161	9.003	.836
	Greenhouse-Geisser	.325	1.000	.325	9.003	.004	.161	9.003	.836
	Huynh-Feldt	.325	1.000	.325	9.003	.004	.161	9.003	.836
	Lower-bound	.325	1.000	.325	9.003	.004	.161	9.003	.836
Time * Group	Sphericity Assumed	.091	1	.091	2.509	.120	.051	2.509	.342
	Greenhouse-Geisser	.091	1.000	.091	2.509	.120	.051	2.509	.342
	Huynh-Feldt	.091	1.000	.091	2.509	.120	.051	2.509	.342
	Lower-bound	.091	1.000	.091	2.509	.120	.051	2.509	.342
Error(Time)	Sphericity Assumed	1.697	47	.036					
	Greenhouse-Geisser	1.697	47.000	.036					
	Huynh-Feldt	1.697	47.000	.036					
	Lower-bound	1.697	47.000	.036					

a. Computed using alpha =

**Figure 4-1**

*Comparison of College-Going Self-Efficacy between Pretest and Posttest for Intervention and Comparison Groups*



A second 2x2 ANOVA was done to compare pretest and posttest scores of CSE in both the intervention and the comparison group. There was a significant interaction of time by group,  $F(1, 47) = 4.46, p < .05$ , but a very small effect size ( $\eta^2 = .09$ ). There was also a significant time main effect,  $F(1, 47) = 12.01, p < .05$ . Tests of within-subjects contrast produced an observed power of .92 for the time main effect. The two groups were different in CSE at the pretest,  $F(1, 47) = 4.87, p < .05$ , with the participating group scoring higher ( $M = 4.38, SD = .05$ ) than non-participants ( $M = 4.24, SD = .14$ ).

Participants in the CHSP indicated a significant change in CSE between the pretest

( $M = 4.38$ ,  $SD = .05$ ) and the posttest ( $M = 4.63$ ,  $SD = .04$ ),  $t(40) = 7.37$ ,  $p < .05$ , again rejecting the null hypothesis. Members of the comparison group did *not* experience a statistically significant change in CSE between the pretest ( $M = 4.24$ ,  $SD = .14$ ) and the posttest ( $M = 4.30$ ,  $SD = .10$ ),  $t(7) = .566$ ,  $p > .05$ . Results are displayed in Table 4-8 and Figure 4-2.

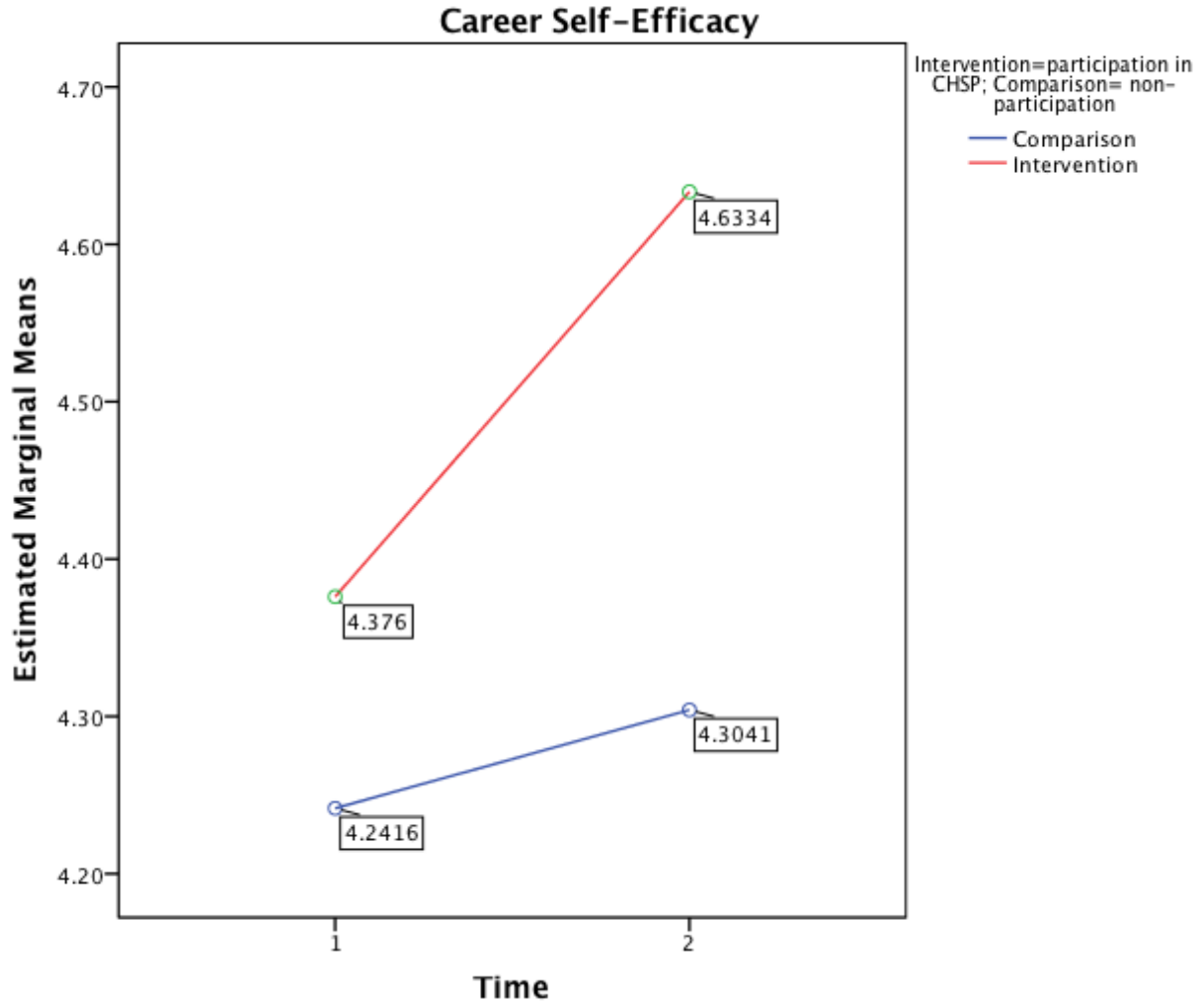
**Table 4-8**  
*Tests of Within-Subjects Effects, Career Self-Efficacy*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Square	Noncent. Parameter	Observed Power <sup>a</sup>
Time	Sphericity Assumed	.342	1	.342	12.008	.001	.204	.924
	Greenhouse-Geisser	.342	1.000	.342	12.008	.001	.204	.924
	Huynh-Feldt	.342	1.000	.342	12.008	.001	.204	.924
	Lower-bound	.342	1.000	.342	12.008	.001	.204	.924
Time * Group	Sphericity Assumed	.127	1	.127	4.456	.040	.087	.543
	Greenhouse-Geisser	.127	1.000	.127	4.456	.040	.087	.543
	Huynh-Feldt	.127	1.000	.127	4.456	.040	.087	.543
	Lower-bound	.127	1.000	.127	4.456	.040	.087	.543
Error(Time)	Sphericity Assumed	1.340	47	.029				
	Greenhouse-Geisser	1.340	47.000	.029				
	Huynh-Feldt	1.340	47.000	.029				
	Lower-bound	1.340	47.000	.029				

a. Computed using alpha =

**Figure 4-2**

*Comparison of Career Self-Efficacy between Pretest and Posttest for Intervention and Comparison Groups*



The intervention group was administered the survey four times; the pretest was administered the first day of the CHSP and a first posttest (Posttest 1) was given on the final day of the camp. Approximately four weeks after the camp, 37 of the 41 CHSP participants went on a three-day bus trip in order to tour college campuses throughout the state. On the final day of the bus trip, the students were asked to again complete the survey (Posttest 2). A final survey was given to 21 study participants who chose to attend an early fall follow-up event (Posttest 3).

As a follow-up to research questions # 5 and # 6, although not hypothesized in the proposal, a comparison of CSE and CGSE means across the four surveys was completed.

A repeated measures analysis for the four surveys indicated the following for CGSE: There was a significant difference between the pretest mean ( $M = 3.31$ ,  $SD = .42$ ) and the posttest 1 mean ( $M = 3.56$ ,  $SD = .42$ ),  $F(1,20) = 20.16$ ,  $p < .05$ , but not a significant difference between posttest 1 and posttest 2 ( $M = 3.47$ ,  $SD = .36$ ),  $F(1,20) = 2.32$ ,  $p > .05$ , or between posttest two and posttest 3 ( $M = 3.51$ ,  $SD = .38$ ),  $F(1,20) = .57$ ,  $p > .05$ .

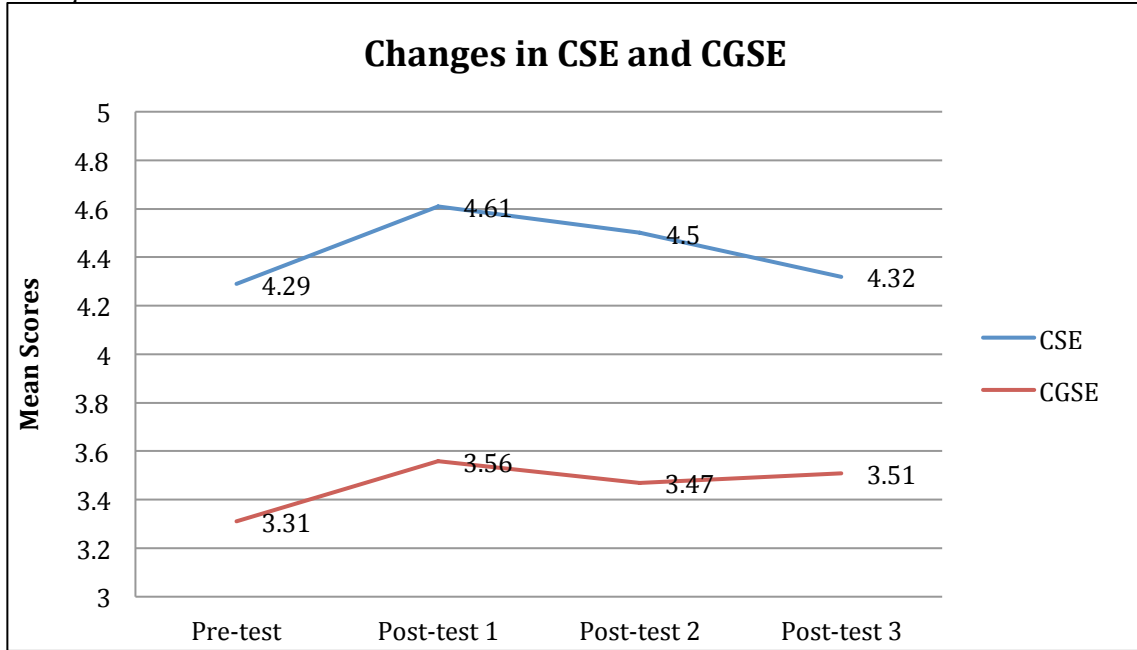
The same analysis for CSE showed a statistically significant difference between the pretest mean ( $M = 4.29$ ,  $SD = .26$ ) and posttest 1 mean ( $M = 4.62$ ,  $SD = .28$ ),  $F(1,20) = 38.06$ ,  $p < .05$  as well as a statistically significant difference between posttest 1 and posttest 2,  $F(1,20) = 4.52$ ,  $p < .05$ . This difference represented a negative change in CSE, with the mean dropping from 4.62 ( $SD = .28$ ) at posttest 1 to 4.50 ( $SD = .34$ ) at posttest 2. There was not a significant difference between posttest 2 and posttest three ( $M = 4.32$ ,  $SD = .71$ ),  $F(1,20) = 2.09$ ,  $p > .05$ .

Attrition makes it difficult to assess significance of change across time; however, it does appear that for the 21 participants who completed all 4 surveys, the immediate increase in CSE between pretest and posttest 1 was not sustained through the next three months. In a comparison of participants who took the pretest and posttest 3, the pretest CSE mean was 4.30 ( $SD = .05$ ) and the final posttest mean for the same students was 4.34 ( $SD = .15$ ). A paired samples  $t$ -test between pretest and the final posttest indicates that this change was not statistically significant,  $t(21) = .28$ ,  $p > .05$ . Changes in CGSE between pretest ( $M = 3.33$ ,  $SD = .09$ ) and the final posttest ( $M = 3.52$ ,  $SD = .08$ ) for these same participants were statistically significant,  $t(21) = 2.70$ ,  $p < .05$  (See Figure 4-3). The level of CGSE appears to have been maintained for the same intervention group participants.



**Figure 4-3**

*Changes in Career Self-Efficacy (CSE) and College-Going Self-Efficacy (CGSE) in Intervention Group*



## **Chapter 5 - Discussion and Recommendations for Research and Practice**

Since the 1960s, much national attention has been focused on the disparities in higher education achievement among low-income and first-generation students. Furthermore, there has been a significant shift in U.S. demographics; Hispanic/Latino and African Americans now comprise approximately 30% of the population (U.S. Census Bureau, 2014), but a corresponding shift in numbers of Latino and African Americans pursuing college and professional careers has not occurred. School districts, universities, and state and federal agencies have implemented a myriad of programs and interventions in an effort to address the gap, and although improvements have been made, discrepancies persist.

Multiple theorists (Gottfredson, 2002; Lent et al., 2002; Wigfield & Eccles, 2000) point to the importance of the middle school years (ages 11-14) in developing beliefs about the ability to be successful in academics and in future careers. Beliefs that begin to form at this age may be influenced by gender roles, observations of one's environment, learning experiences, exposure to information and role models, and an assessment of the potential for success, and are subsequently a powerful force in shaping future efforts. The Career Horizons Summer Program (CHSP), a component of the federal TRIO Talent Search, attempts to intervene at a pivotal age (between 6th & 7th grades) with low-income, first-generation students from an urban setting, in hopes of impacting self-efficacy beliefs and increasing potential for success in both academics and career pursuit (Dukstein, 2012b). This study examined the aspirations and expectations for college degree pursuit in students eligible for participation in the CHSP, as well as the impact of the CHSP on college-going and career self-efficacy in its participants.

The following section reviews the results of the study. Each research hypothesis will be addressed using the findings from the analyses, and consistency or inconsistency with prior research will be noted. Limitations of the study and implications for future research will also be discussed.

## Research Question #1

*What have students who are eligible for participation (i.e., nominated students) in the Career Horizons Summer Program indicated as their educational aspirations and their educational expectations?*

The participants have high aspirations for earning a college degree, and only slightly lower expectations that they actually will be able to do so. These findings are consistent with other studies (Ambrosino & Sciarra, 2011; Boxer et al., 2011; Kirk et al., 2012; U.S. Dept. of Education, 2012) and add to the understanding of the target population.

The majority of students who participated in the study were designated as eligible for the Talent Search program during the prior school year and would have attended Academic Development Activities where study skills and goal setting were emphasized (R. Dukstein, personal communication, July 1, 2014). The exposure to messages about the importance of academic preparation and college may have already had an impact on students' perception of the value of attending college and earning a degree although it is impossible to know at this point what other factors may have influenced these perceptions. All of the students who participated in the study had already been exposed to activities to encourage college preparation, so the high aspirations and expectations indicated on the surveys may have been elevated due to students already knowing the focus of the program and feeling that there were *supposed* to answer that they wanted to pursue college. In order to clarify the difference between a "college graduate" and a "graduate or professional degree," examples of professions requiring a graduate or professional degree were provided in parentheses (e.g., doctor, lawyer). These two professions not only require an advanced degree, but may also be associated with both a high level of prestige as well as income. Although unintentional, these two examples may have influenced participants' responses, based on the social desirability of the career as opposed to the educational level. Because the aspirations and expectations questions were multiple choice, participants may have been influenced simply by the answer choices available to them.

Educational aspirations and expectations have been shown to be correlated with educational attainment (Beal & Crockett, 2010; Ou & Reynolds, 2008; Trusty, 2000). For this reason, the high aspirations and expectations for pursuing and earning a college degree in study participants would seem to indicate a positive trend for these low-income, first-generation students. However, national data suggest that only 20-25% of students coming from schools

similar to those where the participants came from go on to study at postsecondary institutions (U.S. Department of Education, National Center for Education Statistics Digest, 2012). Gottfredson (2002) proposes that, in the realm of occupational pursuit, aspirations are better classified as *idealistic aspirations* until they are balanced against a realistic understanding of both barriers and opportunities. Although the results would suggest that this has not happened to educational aspirations to a large degree yet, it is possible that, based on age as well as limited exposure to college, both educational aspirations and expectations are high for participants because they do not as yet have a realistic understanding of what may be required of them to prepare for and attend college. As students progress in their awareness of what is required to attend a university, both academically and financially, a compromise between what they aspire to and what they expect may occur. The current discrepancy between aspirations and expectations may be an indication of this.

It is promising that in the intervention group, aspiration/expectation levels stayed high across the summer activities. If students' high ratings initially were based on the lack of realistic information about both the academic and financial realities of attending a college, then a result might be that as more information is provided during the camp, and students start to understand the realities of attending a university, ratings could go down (Ambrosino & Sciarra, 2011). As the intervention group participants were exposed to a college campus, visited university classrooms and met college professors, aspirations and expectations stayed at the same level. The 2nd posttest was given at the end of a 3-day college campus tour where participants visited multiple universities across the state, spent the night in a residence hall and met college student ambassadors. It is interesting to note that the educational *expectation* responses peaked at this time, with an additional 10% of the students, compared to the pretest and posttest at the end of the camp, responding that they expected to be able to earn a college degree. The results suggest that the additional exposure to real college environments may be important to raising the students' expectations for their ability to be successful at a college. Although attrition in the intervention group makes it difficult to make additional assumptions, the percentage of students expecting to earn a college degree had dropped slightly below the pretest and first posttest levels two months after the bus trip and three months after the CHSP camp, suggesting that, for some students, the enthusiasm about attending college and subsequent expectation of being able to do so was not sustained.

One of the goals of the CHSP is to help students identify a peer group that is supportive and positive. In their study of variables that impacted middle school students' later academic behavior, Murdock, Anderman, and Hodge (2000) identified peer aspirations as a strong contributor to positive views of self and motivation for effort later on in high school. Being supported by peers who are also excited about college and career pursuit may impact educational aspirations and expectations. During the week of camp, CHSP participants meet and spend time with students who can become a positive peer influence not only for that week, but for the future. If the majority of the students have their own high aspirations for education, they may impact one another in a positive fashion, thereby increasing the potential for academic goal-setting and achievement.

## **Research Question #2**

*Are there relationships between career self-efficacy and college-going self-efficacy before and after the program by participants and non-participants?*

Based on the results of the study, the null hypothesis (*There is no relationship between career self-efficacy and college-going self-efficacy before and after the program by participants and non-participants*) was rejected. There was a strong correlation between the two measures. One comparison, between the comparison group's CSE and CGSE in the posttest was not statistically significant, but all other comparisons were significant. The small size of the comparison group (8) in the posttest may have impacted this comparison.

This study attempted to provide additional understanding of college-going beliefs as a distinct self-efficacy domain and to examine the relationship between efficacy beliefs about college with those about careers. Ratings on the Career Self-Efficacy Scale (CSE) (Fouad & Smith, 1997) and the College-Going Self-Efficacy Scale (CGSE) (Gibbons & Borders, 2010a) were relatively high for all participants in the pretest. As noted earlier, all study participants had been involved in the first year of the Talent Search program at school, and had been exposed to some discussion about college and careers, as well as setting high academic achievement goals. This may partially account for the high CSE and CGSE ratings.

The scales used to measure CGSE and CSE both stress accessing information, making plans, and trusting decision-making, yet clearly use language related to college or career specific behaviors. The high correlation between the two ratings, in both the pre and posttest, suggest that

the efficacy beliefs may overlap, or be parallel; however, a factor analysis was not conducted to determine whether two discrete domains emerged due to the insufficient sample size for factoring.

Beliefs about one's ability to successfully attend college could simply be a subset of the larger career self-efficacy construct. Lent (2005) outlines multiple ideas for increasing career self-efficacy according to the SCCT model. Opportunities to experience academic success, exposure to career or academic role models, and building social support for new tasks and exploration could be overlapping behaviors between career self-efficacy and college-going self-efficacy. There may be, however, enough distinction between general career self-efficacy and specific college-going self-efficacy to warrant separate efforts. *College Self-Efficacy*, as a construct, has been measured in older students who are beginning their first year of college, and at points later on in the first year through the use of the College Self-Efficacy Inventory (CSEI) (Gore et al., 2006). Scores on the CSEI appear to be correlated with academic success and retention at the two-year mark. This provides support for a distinct set of efficacy beliefs related to college success. While the CGSE Scale (Gibbons & Borders 2010a) assesses beliefs about college that are more appropriate for a middle school student, the emphasis is still on whether one is able to imagine both accessing and persisting at college. High CGSE scores may have positive implications for future academic success.

National data suggests that first-generation college students do not persist at college or attain degrees at as high a level as those whose parents have attended college (U.S. Department of Education National Center for Education Statistics, 2012). In the target population, individuals have not had significant exposure to the skills, attitudes and behaviors that are important if one hopes to succeed at college. Therefore, addressing self-efficacy related specifically to college-going may represent an approach that has merit.

The SCCT model acknowledges that beliefs about pursuing a specific career may not be crystallized until an individual has a significant number of experiences and has acquired more in-depth knowledge about oneself and career options (Lent, 2005). While building career self-efficacy in young adolescents is still a desirable and important outcome, it may be 6 to 10 years before some of the behaviors will be put into practice through college major selection or career choice. Given that many professional careers to which young people aspire require a college education, their access to these careers will be dependent on their ability to get into college and

persist to degree attainment (Bandura, 1986). Beliefs and behaviors associated with gaining entrance to a college and persisting to degree completion may be more relevant to the students' immediate future. Choices about taking challenging math and science classes and even staying in high school until graduation will be made in the next two to four years. An emphasis on building college-going self-efficacy could address some of the more pressing concerns for these students. It is interesting to note that, while CSE scores in the intervention group peaked immediately after the CHSP intervention, and then dropped off, CGSE scores peaked after the camp but stayed at a higher level through the following two months (See Figure 4.3). Although further research on CGSE is needed, this provides additional support for a distinction between CSE and CGSE and may have implications for the types of activities that are successful in increasing self-efficacy beliefs about suitability for and access to college.

### **Research Questions #3 and #4**

*RQ#3: Is there a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational aspirations?*

*RQ#4: Is there a difference between Career Horizon Summer Program participants' career and college-going self-efficacy by their educational expectations?*

The results of the study support the hypothesis for effect of career and college-going self-efficacy on educational aspirations, thus, rejecting the null, and partially support the hypothesis for effect of career and college-going self-efficacy on educational expectations. There was a statistically significant effect of CSE on educational expectations, but not for CGSE on educational expectations.

It was the hope of this study to add to the understanding of the relationship between educational aspirations and expectations and the constructs of both career self-efficacy and college-going self-efficacy. Social Cognitive Career Theory (Lent et al., 2002) emphasizes the dynamic and mutual relationship between self-efficacy, outcome expectations, and goal-oriented behavior, but does not directly address aspirations and expectations. The high effect of both educational aspirations and expectations on CSE and CGSE in this study is supportive of prior research (Ali & McWhirter, 2006; Rottinghaus et al., 2002; Trusty, 2000).

Rojewski (2005) proposes that aspirations for education or career are a reflection of an individual's personal goals in that moment, given the ideal situation (If I could, I would), and so

are linked to goal-setting behaviors outlined in SCCT. Likewise, expectations for pursuing a certain level of education are related to SCCT's outcome expectations; educational expectations are based on one's assessment of ability based on past performances (I think this will happen if I try). Educational aspirations, in particular, are believed to be highly predictive of subsequent educational and career choice (Rojewski, 2005).

If educational aspirations and expectations are facets of SCCT's goals and outcome expectations, the high effect of self-efficacy in this study supports the SCCT model; self-efficacy beliefs can influence one's desire or aspiration for achieving a goal as well as the expectation for success in attaining that goal.

### **Research Question # 5**

*Does career self-efficacy increase more in participants than non-participants, following the Career Horizons Summer Program?*

Although there was a significant difference between the intervention and the comparison group in the pretest, the comparison group scored the same on the posttest, while CHSP campers scored significantly better on the posttest on average, thus supporting research hypothesis #5 and rejecting the null hypothesis. Although other studies have examined factors related to career self-efficacy (Alliman-Brissett & Turner, 2009; Gushue et al., 2006; Paa & McWhirter, 2000; Schuette et al., 2010) or the effectiveness of career interventions in similar populations (Bergerson, 2009; Jackson et al., 2011; Perna, 2002; O'Brien et al., 1999), few studies were found where comparisons were made between a treatment and control group (Turner & Conkel, 2010; Turner & Lapan, 2005). Although the comparison group in this study was small, the increase in CSE in the intervention group suggests that the CHSP is an intervention that builds beliefs in one's ability to successfully engage in career decision making.

All of the students who were nominated for the CHSP had already been exposed to some college and career activities through KUTS, and were aware that they had been nominated by their counselors for a college and career focused summer program. The difference between the two groups at the outset indicate that those who chose to apply for the CHSP were already higher in CSE, and therefore may have been more likely to want to participate in the summer camp. Students who applied might have had additional experiences with family, school or peers that built efficacy for careers and predisposed them to take advantage of the opportunity to attend the



camp. An alternative explanation is that simply being accepted to the camp and arriving for the first day activities at the CHSP resulted in higher CSE at the time of the pretest. Despite the differences at the time of pretest, the analysis indicates that there was a statistically significant change in participants' CSE immediately after the camp, while the same did not occur for those students who only attended the two KUTS pizza parties.

Lent et al. (2002) suggest that when individuals feel they are competent in an activity and anticipate positive outcomes for pursuing that activity, they may develop sustained interest, which in turn leads to goal-setting behavior. Competency for an activity, in adolescence, develops through repetition, modeling, and receiving feedback from others whose opinions are valued. According to SCCT, this particular self-efficacy dynamic influences the development of career interests. The CHSP had an impact on level of CSE because it incorporates strategies that support this dynamic. Participants are given opportunities, throughout the week, to build competence for career-related activities. They conduct science experiments, meet professionals from a variety of career fields, use technology, and become part of close-knit peer groups where career exploration is encouraged. Other activities build knowledge of career options and assess students' personality related to careers. A visit to the university's career center helps students understand how to access additional vocational information. All of these activities may help students develop competence for career exploration and decision-making, facets of CSE.

Questions on the CSE section of the survey asked students to indicate how certain they were that they could perform activities such as "find information about five occupations I am interested in" and "describe the job skills of a career I might like to enter" (See Appendix B). These questions and others assess specific skills that are certainly emphasized in the CHSP activities. The increase in campers' scores on CSE would seem to be directly related to these types of activities.

The increase in CSE, while desirable, is not the ultimate goal of the CHSP. It is hoped that students who participate continue to achieve academic success, complete high school, enter postsecondary education, and complete a college degree. The value of the camp is in its ability to increase potential for these accomplishments. If participants develop competence for career-related activities, and anticipate positive outcomes for pursuing a certain academic or career path, they may be more likely to set goals that will help them achieve these outcomes.

Of the five critical ingredients of career choice interventions suggested by Brown et al. (2003), the CHSP incorporates three (workbooks and written exercises, world of work information, and attention to building support). Additional components listed by Brown et al., and used in CHSP, include a self-report inventory, vocational exploration, personal performance accomplishments, counselor support, and decision-making models and strategies. Although not all of the specific intervention strategies used in the camp have a career self-efficacy focus, they are built around the broad objectives of exploring and expanding career possibilities, enhancing understanding of self, increasing potential for academic and occupational success, and developing a positive network (Dukstein, 2012b).

The CHSP also incorporates several of the components named by Corwin et al. (2005) as essential for programs that aim to increase access to higher education in students of color or low SES. Although it is a short-term intervention, delivery of the CHSP occurs prior to ninth grade, and there is emphasis on building peer relationships and access to knowledgeable counselors. The findings are also consistent with the results from the 1999 study of the CHSP (O'Brien et al., 1999) as it existed at that time. While not every school district will have access to intensive programs like the CHSP, the timing, strategies, and activities might be replicated on a smaller scale through building level counselors and teachers in order to enhance students' career self-efficacy

### **Research Question #6**

*Does college-going self-efficacy increase more in participants than non-participants, following the Career Horizons Summer Program?*

Intervention and comparison group participants started at the same place on scores of CGSE. At posttest #1, camp participants reported a significant increase in CGSE while the comparison group indicated no change. These results support research hypothesis #6 that the intervention appeared to lead to a positive increase in CGSE; thus the null is rejected.

The CHSP does not explicitly address college-going attitudes in their program goals, however exposure to college campuses, staff, and instructors is clearly embedded in all aspects of the program. Whether it is explicitly stated as a goal for the CHSP, the emphasis on gaining familiarity with the college environment demonstrated a positive impact on the participants.

CGSE is a construct that merits further investigation. Students from low-income and first-generation families earn college degrees at a much lower rate than their counterparts (U.S. Dept. of Education, 2012). Gibbons and Borders (2010) suggest that first-generation students perceive barriers to postsecondary education and often have negative outcome expectations for attending college. As they transition from middle school to high school, they are making decisions about academics that can impact their ability to access college in just a few short years. As with CSE, if students build competence for college-related activities, and experience success, positive outcome expectations may result, which in turn can lead to improved goal-setting. At the CHSP, campers visit college classrooms, meet professors, interact with college students, eat at residence halls, and explore campus. Staff and helpers provide modeling of college competence for campers. All of these strategies serve to build CGSE and increase the chances that students will achieve both immediate academic success, and will also set goals for both entering college and for earning degrees.

An examination of the responses to specific items on the College-Going Self-Efficacy scale provides additional insight into possible areas of concern regarding college. For all study participants on the pretest, items with a mean response of below a 3.00 (Somewhat sure or Not at all sure) were "I can pay for college even if my family cannot help me," "I can know enough about computers to get into college," and "I could pay for each year of college" (Means of 2.63, 2.30, and 2.84, respectively). The ability to address the financial aspect of attending college would appear to be a consistent concern, although the item "I can find a way to pay for college" had a mean response of slightly above a 3.00. Uncertainty about finances needed for college is not surprising, as the majority of students are from families with low SES. Three items out of the six with the highest mean responses were related to family support for attending college: I can have family support for going to college ( $M=3.70$ ), I can make my family proud with my choices after high school ( $M=3.70$ ), and I could get my family to support my wish of finishing college ( $M=3.73$ ). Students report clarity on family support for attending college, but uncertain about how they will find the financial support.

A similar analysis of individual item responses in the first posttest for the intervention group suggests that concerns about finances appear to have been partly addressed by the CHSP. Mean scores for the three items related to paying for college were all above a 3.00. Although only eight students in the comparison group completed both the pre and posttest, items about

paying for college all show mean scores of below a 3.00 and are the three lowest means in the survey. Consistent with an overall increase in CGSE for CHSP participants versus non-participants, the specific concern about being able to pay for college is mediated at least partly by information gained during the CHSP.

For campers who took all four surveys and participated in not only the CHSP, but also the three-day college bus tour and the follow up science academy, CGSE was maintained at a higher level than CSE, and peaked at the conclusion of the bus tour. The bus tour provides additional opportunities for students to gain competence for attending college. They explore additional campuses, meet university students who are first-generation and from racial or ethnic minorities, and spend nights in residence halls. This additional exposure to college appeared to have an impact on expectations for degree completion, suggesting that students had a more realistic picture of themselves as future college students.

In order to impact CGSE, first-generation low-income students need to have opportunities to get comfortable with college, to understand what may be expected of them, and to build positive expectations for success at the university level. Interventions like the CHSP can have an impact on CGSE and should be used as models for programming that could be implemented by other school professionals.

### **Limitations**

The small sample size of the study may limit the generalizability of the results. The intervention group size stayed stable through the first and second posttests, allowing for good in-group comparison, however the small comparison group size limited the ability to provide a strong between-group contrast. Although the potential pool for the comparison group was 63, only 11 agreed to participate, and of those, only eight completed both the pre and posttest, making it difficult to make any broad statements about differences between the groups. The lack of response from students who did not choose to apply for or participate in the CHSP may, however shed some light on the overall willingness to engage. Although all participants had already been involved in some KUTS activities throughout the previous academic year, and all had been nominated through a similar process across schools, those who applied for the CHSP had already indicated a higher level of desire for engagement. By not applying, those who were

eligible for the comparison group had already opted out of the intervention, and therefore, may have been less likely to engage in any summer career and college activities, including completion of the survey and the associated events. The group means for Career Self-Efficacy and College-Going Self-Efficacy were slightly lower for the comparison group in the pretest, suggesting that the two groups were already somewhat different (Group 1 -  $M$  for CSE = 4.13,  $M$  for CGSE = 3.32; Group 2 -  $M$  for CSE = 4.38,  $M$  for CGSE = 3.39).

In order to follow the comparison group design with an educational intervention, procedures for selecting CHSP participants followed the protocols of the existing program, and therefore were samples of convenience. For this particular study, the approach was appropriate, and allowed for self-selection regarding the intervention, as opposed to random selection by the researcher. This approach to participant selection, however, may also limit generalizability to a larger population.

Significant time intervals elapsed between the first posttest and the two additional posttests for the intervention group, and between the pre and posttest for the comparison group. This was partly necessitated by the timing of the activities and access to the participants, but may have impacted the results. It is impossible to know what other events might have influenced the ideas and beliefs of the students in the time between the surveys. Assumptions about the impact of either the CHSP or the college tour bus trip on the intervention group are limited.

Familiarity with the survey itself may have impacted the results. Students in the intervention group saw the survey four times, and may have become so accustomed to the same questions that they answered without a great deal of thought to the meaning behind the questions. Although it was the intention that all surveys would be administered at face-to-face events, due to the poor attendance at the 2nd event for the comparison group and the final event for the intervention group, it was decided to mail the surveys in hopes of having sufficient numbers for the study. If participants filled out the surveys at home, having family members around or having family members possibly reading the survey questions along with the student may have influenced the answers.

## **Implications**

Although the sample size may somewhat limit generalizability, the study does support prior research (Ambrosino & Sciarra, 2011; Boxer et al., 2011; Kirk et al., 2012) that indicates

that young people from low-income first-generation households have high aspirations for attending college. Whether these aspirations develop from parental attitudes, the influence of school personnel, or are a reflection of societal values, they may form a solid foundation upon which to build self-efficacy and goal-setting behaviors, which can in turn lead to success at both accessing and persisting at college.

The findings support the existence of *college-going self-efficacy* as a construct that is both parallel but distinct from career self-efficacy, as measured in this age group. Due to the potential for foreclosure about certain careers at an early age, it remains important to address career self-efficacy in youth who may not have access to accurate information about the wide range of occupations that are available to them as they become adults. Given, however, that college degrees are essential for many of these careers, and that many students from low-income and racial or ethnic minorities find themselves unable to access postsecondary education due to poor performance in middle and high school academics, it may be equally important for school and academic support professionals to place an emphasis on building college-going self-efficacy before, or alongside of, career self-efficacy.

Students who participated in this study want very much to attend a university and to attain a college degree, but their responses to the surveys indicate that they are not fully convinced that they will be able to do either of these, and that worries about finances are at the forefront of their concerns. If middle school students are already concerned that college is not realistically accessible to them, they may not see the value of taking more challenging coursework, keeping grades high, or even completing high school. Interventions for this population may need to be focused not only on keeping aspirations for college pursuit high, but on building efficacy for college-going: sharing realistic information about financing college with both students and parents, helping students become familiar and comfortable with the college setting, and encouraging students to follow an academic plan that will prepare them for college-level academic work. While many middle school students may not be able to clearly identify a career path for themselves yet, they can set themselves on a course which will increase their chances for being able to attend college and persist to degree completion, which will in turn, create access to a wider variety of occupations.

Based on the results of the study, the Career Horizons Summer Program (CHSP), as a college and career-focused intervention, does demonstrate an impact on both career and college-

going self-efficacy, although, without additional longitudinal data, it is difficult to know if the increases are sustained over time. The KUTS program offers additional programming for career preparation throughout the school year, which might be effective in addressing the drop-off in career self-efficacy scores that was noted two months after the camp. The timing of the camp would seem to be ideal. The students are entering the middle school years where they, and their parents, will be making important decisions about classes in science and math, and where success in these classes may have direct implications for high school placement and the ability to be prepared for college entrance. Aspirations for attending college are also high and can be used to influence expectation for success and goal-setting behavior.

The CHSP uses strategies that have been shown to be successful in other career-focused interventions, but offers them in a focused and intense format, which may have additional benefits for the participants. Self-efficacy, in general, is enhanced when one has opportunities to try out different behaviors and to experience opportunities for success. When the participants in the study attend the CHSP, they are exposed to direct learning about careers and colleges, but they are also *practicing* becoming college students - leaving their homes to go to a campus, interacting with university students, staff and professors, attending classes in college buildings, and participating in science and technology activities typical of college students. The success of the CHSP may be in part due to these opportunities to build competency beliefs and positive outcome expectations. It may not be realistic that all students from low-income, first-generation backgrounds will be able to participate in programs like the CHSP, but given that it is offered as one component of a TRIO Talent Search federal program, it should be promoted as an intervention that has the potential to have a significant impact on the target population.

In the absence of a TRIO Talent Search program, school counselors at the middle school level might be able to implement similar activities on a smaller scale that could also have an impact on efficacy beliefs about both college and career. While many high school success programs involve exposure to college options, visits to campuses and college preparation curriculum, these interventions are not as common at the middle school level. The multiple career development theories discussed in this study point to the necessity of building efficacy in adolescence, at a crucial age when foreclosure about future options may be taking place. School counseling programs at the middle school level could offer more opportunities for students to be exposed not only to the diversity of career options, but also to the postsecondary opportunities

that are available to them, as well as to the skills and experiences that will be necessary for access to college. Low-income and first-generation students should be a primary focus for these strategies. Parents of these students should also be provided access to accurate information about what is needed, both academically and financially, for pursuit of a college degree.

Institutions of higher education are taking a hard look at programs that increase retention and degree completion, especially in populations that are underrepresented. The CHSP is an example of a program that has been successful in influencing efficacy beliefs about college and careers, and that also brings young students from low-income first-generation families to campuses at an early age. To exist, the CHSP requires collaboration between postsecondary institutions and federal college access programs, both of which desire the same thing - increased access to and success at college for the target population. Universities might benefit from increased involvement with and pursuit of grants to implement programs like Talent Search and the CHSP, viewing them as potential pipelines for increasing enrollment and assisting in eventual retention of low-income first-generation and racially/ethnically diverse students.

### **Recommendations for Future Research**

College-going self-efficacy, as a distinct self-efficacy domain that can be measured in middle school or high school students, warrants further study. As the sample size in this study was relatively small, and only surveyed low-income, first-generation students, further research should be done with larger numbers of students from all demographic groups to determine how CGSE may vary in accordance with other factors (SES, race, ethnicity, gender, grade level).

The particular intervention (Career Horizons Summer Camp) had an impact on both college-going self-efficacy (CGSE) and career self-efficacy (CSE). Additional research should examine other career or college focused interventions or learning opportunities for their impact on either CGSE and CSE or both. This would provide additional insight into what activities or strategies might be most successful in impacting either the general or the target population.

This study attempted to compare CGSE with CSE to determine if they were similar. While it appeared that these variables had high levels of co-variance, additional research would be necessary to support this relationship. In addition, a larger sample would allow for further construct analysis.



Qualitative studies might be appropriate for examining some of the facets of self-efficacy that do not lend themselves as well to survey questions. Students revealed concerns about whether their families would be able to help them with college and uncertainty about using computers for college. These kinds of worries and their perceived impact on college and career planning could be explored more in depth through qualitative inquiry.

Finally, data on KUTS students as they progress through middle and high school, and possibly into postsecondary institutions, would be valuable in shedding light on the long-term effects of a program like the CHSP. Students who participate in the camp are encouraged to stay involved in the Talent Search program and are given additional opportunities to learn about careers and college. Some students continue with the program while others do not. Follow up studies on the CHSP participants of any given year could reveal multiple factors that influence college-going and career self-efficacy (e.g., continued participation in the program, attendance at future Talent Search events, success opportunities in academic coursework) and ultimately future academic success and access to college.

## **Conclusion**

The null hypotheses proposed in this study were rejected. The results provided insight into the attitudes held about college access and success in a group of urban middle school students who were predominantly from low-income families and whose parents have not earned a college degree. Participants in the study were also largely from racial or ethnic minorities. Their aspirations for attending college and earning a degree were quite high and they indicated general optimism about their ability to make this happen. While this is encouraging, national data from the past 50 years suggests that students from these demographic groups are *not* achieving what this group of students currently hopes to achieve. The study attempted to examine whether a targeted intervention was successful in building both college-going and career self-efficacy. A week-long summer career camp offered as part of the federal Talent Search program provides opportunities for middle school students from low-income families to experience a college setting, learn about a wide variety of occupations, build competency in science and technology, and generally develop expectations for success in future college and career endeavors. Based on the results of this study, the camp does appear to increase self-efficacy beliefs about attending and persisting at college and being able to pursue a variety of

careers. The students who had higher aspirations and expectations about pursuing college also had higher levels of college-going and career self-efficacy, supporting the reciprocal influence of these variables that has been proposed in SCCT.

National programs have, for many years, been directed at helping students from low-income and diverse demographic groups access post secondary education and the careers that are only available as a result of obtaining a college degree. Although representation of these groups in universities and professional careers has increased, gaps persist. To address this discrepancy, it is imperative that researchers continue to examine the factors that sustain it, as well as those that can address it. There are many complex issues that impact the decision to pursue college, persist to degree completion, and pursue a professional career. This study has examined one practice that may have a positive impact on aspirations, expectations for success, and self-efficacy beliefs, and has added to expanding knowledge about how to best help students from disadvantaged groups have increased access to higher education and the advantages it provides.

## References

- Ali, S.R., & McWhirter, E.H. (2006). Rural Appalachian youth's vocational/educational postsecondary aspirations: Applying social cognitive career theory. *Journal of Career Development, 33*, 87-111.
- Alliman-Brissett, A.E., & Turner, S.L. (2009). Racism, parent support, and math-based career interests, efficacy, and outcome expectations among African American adolescents. *Journal of Black Psychology, 36*, 197-225.
- Ambrosino, K.E., & Sciarra, D.T. (2011). Post-secondary expectations and educational attainment. *Professional School Counseling, 14*, 231-245. Retrieved from <http://go.galegroup.com.er.lib.kstate.edu/ps/i.do?id=GALE%7CA250134011&v=2.1&u=ksu&it=r&p=AONE&sw=w>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Beal, S.J., & Crockett, L.J. (2010). Adolescents' occupational and educational aspirations and expectations: Links to high school activities and adult educational attainment. *Developmental Psychology, 46*, 258-265.
- Bergerson, A.A. (2009). College preparation programs. *ASHE Higher Education Report, 35*(4), 85-97.
- Betz, N.E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college women and men. *Journal of Counseling Psychology, 28*, 399-410.
- Betz, N.E., Hammond, M., & Multon, K. (2005). Reliability and validity of response continua for the Career Decision Self-Efficacy Scale. *Journal of Career Assessment, 13*, 131-149.
- Betz, N., & Klein, K. (1996). Relationships among measures of career self-efficacy, generalized self-efficacy, and global self-esteem. *Journal of Career Assessment, 4*, 285-298.
- Betz, N.E., Klein, K.L., & Taylor, K.M. (1996). Evaluation of a short form of the Career Decision-Making Self-Efficacy Scale. *Journal of Career Assessment, 4*, 47-57.
- Betz, N.E., & Taylor, K.M. (2006). *Manual for the Career Decision Self-Efficacy Scale and CDSE-Short Form*. Retrieved from <http://www.mindgarden.com/products/cdse.htm#ms>.
- Betz, N.E., & Voyten, K.K. (1997). Efficacy and outcome expectations influence career exploration and decidedness. *The Career Development Quarterly, 46*, 179-189.
- Boxer, P., Goldstein, S.E., DeLorenzo, T., Savoy, S., & Mercado, I. (2011). Educational aspiration-expectation discrepancies: Relation to socioeconomic and academic risk-related factors. *Journal of Adolescence, 34*, 609-617.

- Brown, C., Darden, E.E., Shelton, M.L., & Dipoto, M.C. (1999). Career exploration and self-efficacy of high school students: Are there urban/suburban differences? *Journal of Career Assessment*, 7, 227-337.
- Brown, S.D., Ryan Krane, N.E., Brecheisen, J., Castelino, P., Budisin, I., Miller, M., & Edens, L. (2003). Critical ingredients of career choice interventions: More analyses and new hypotheses. *Journal of Vocational Behavior*, 62, 411-428.
- Bui, K.T. (2002). First-generation college students at a four-year university: Background characteristics, reasons for pursuing higher education, and first-year experience. *The College Student Journal*, 36, 3-12.
- Campbell, D.T., & Stanley, J.C. (1963). *Experimental and quasi-experimental designs for research*. Boston, MA: Houghton Mifflin.
- Close, W., & S. (2008). Predicting achievement, distress, and retention among lower-income Latino youth. *Journal of Vocational Behavior*, 72, 31-42.
- Conklin, A.M., Dahling, J.J., & Garcia, P.A. (2013). Linking affective commitment, career self-efficacy, and outcome expectations: A test of social cognitive career theory. *Journal of Career Development*, 40, 68-83.
- Destin, M., & Oyserman, D. (2009). From assets to school outcomes: How finances shape children's perceived possibilities and intentions. *Psychological Science*, 20, 414-418. doi: 10.1111/j.1467-9280.2009.02309.x
- Dubow, E.F., Boxer, P., & Huesman, L.R. (2009). Long-term effects of parents' education on children's' educational and occupational success: Mediation by family interactions, child aggression and teenage aspirations. *Merrill-Palmer Quarterly*, 55, 224-249.
- Dukstein, R.D. (2001). *Talent search project data*. Unpublished Raw Data.
- Dukstein, R.D. (2012b). *Broaden your career horizons*. Brochure. Lawrence, KS., The University of Kansas School of Education, Educational Opportunity Programs, Educational Talent Search.
- Dukstein, R.D. (2012a). *Educational talent search*. Brochure. Lawrence, KS., The University of Kansas School of Education, Educational Opportunity Programs, Educational Talent Search.
- Dukstein, R.D. (2012c). *KU Talent Search Career Horizons Summer Program*. Lawrence, KS., The University of Kansas School of Education, Educational Opportunity Programs, Educational Talent Search.
- Dukstein, R.D. (2012d). *Talent search project data*. Unpublished Raw Data.

- Federal Register (2013, January). Annual update of the health and human services poverty guidelines (78 FR 5182). Retrieved from <https://federalregister.gov/a/2013-01422>
- Flowers, L.O. (2012). Various programs are in place to help minorities successfully pursue STEM graduate degrees. *Diverse Issues in Higher Education*, 29.1, 19. Retrieved from <http://go.galegroup.com.er.lib.kstate.edu/ps/i.do?id=GALE%7CA280720434&v=2.1&u=ksu&it=r&p=AONE&sw=w>
- Fouad, N.A., & Smith, P.L. (1997). Reliability and validity evidence for the middle school self-efficacy scale. *Measurement and Evaluation in Counseling and Development*, 30, 17-32.
- Gasbarra, P., & Johnson, J. (2008). *Out before the game begins*. Report presented at the America's Competitiveness: Hispanic Participation in Technology Careers Summit, Palisades, NY. Report retrieved from <http://www.publicagenda.com/reports/out-game-begins>
- Gibbons, M.M. (2009). College-going self-efficacy scale. Unpublished instrument. Provided by author.
- Gibbons, M.M., & Borders, D. (2010a). A measure of college-going self-efficacy for middle school students. *Professional School Counseling*, 13, 234-243.
- Gibbons, M.M., & Borders, D. (2010b). Prospective first-generation college students: A social-cognitive perspective. *The Career Development Quarterly*, 58, 194-209.
- Gibbons, M.M., & Shoffner, M.F. (2004). Prospective first-generation college students: Meeting their needs through social cognitive career theory. *Professional School Counseling*, 8, 91-100.
- Gilliam, J.E. (1994). *The Work Adjustment Inventory (WAI)*. Austin, TX: Pro-Ed.
- Gore, P.A. (2006). Academic self-efficacy as a predictor of college outcomes: Two incremental validity studies. *Journal of Career Assessment*, 14, 92-115.
- Gore, P.A., Leuwerke, W.C., & Turley, S.E. (2005-2006). A psychometric study of the college self-efficacy inventory. *Journal of College Student Retention*, 7, 227-244.
- Gottfredson, L. S. (2002). Gottfredson's Theory of Circumscription. In D. Brown & Associates *Career choice and development* (pp. 85-148). San Francisco, CA: Jossey-Bass.
- Gushue, G.V., Clarke, C.P., Pantzer, K.M., & Scanlan, K.R.L. (2006). Self-efficacy, perceptions of barriers, vocational identity, and the career exploration behavior of Latino/a high school students. *The Career Development Quarterly*, 54, 307-317.

- Holland, J.L. (1985). *Making vocational choices: A theory of careers* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Holland, J.L. (1994). *The Self-Directed Search, Form R* (4th ed.). Lutz, FL: Psychological Assessment Resources.
- Holland, J.L., Daiger, D.C., & Power, P.G. (1980). *My Vocational Situation: Description of an experimental diagnostic form for the selection of vocational assistance*. Palo Alto, CA: Consulting Psychologists Press.
- Holland, J.L., Fritzsche, B.A., & Powell, A.B. (1997). *Self-Directed Search technical manual*. Odessa, FL: Psychological Assessment Resources.
- Hossler, D., Schmit, J., & Vesper, N. (1999). *Going to college: How social, economic, and educational factors influence the decisions students make*. Baltimore, MD: Johns Hopkins University Press.
- Ishitani, T. (2006). Studying attrition and degree completion behavior among first-generation college students in the United States. *The Journal of Higher Education*, 77, 861-885.
- Ivers, N.N., Milsom, A., & Newsome, D.W. (2012). Using Gottfredson's theory of circumscription and compromise to improve Latino students' school success. *The Career Development Quarterly*, 60, 231-242.
- 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, 1024-1060. Retrieved from <http://tcp.sagepub.com/content/39/7/1024>
- Keller, B.K., & Whiston, S.C. (2008). The role of parental influences on young adolescents' career development. *Journal of Career Assessment*, 16, 198-217.
- Kirk, C.M., Lewis, R.K., Scott, A., Wren, D., Nilsen, C., & Colvin, D.Q. (2012). Exploring the educational aspirations-expectations gap in eighth grade students: implications for educational interventions and school reform. *Educational Studies*, 38, 1-13.
- Kansas Health Institute. (2012). Number of Kansas children in high-poverty areas triples since 2000. Retrieved from <http://www.khi.org/news/2012/feb/23/number-children-high-poverty-areas-triples-2000/>
- Kansas State Department of Education. (2012). *County statistics*. Retrieved from [http://svapp15586.ksde.org/k12/CountyStatics.aspx?cnty\\_no=105](http://svapp15586.ksde.org/k12/CountyStatics.aspx?cnty_no=105)
- Kansas State Department of Education. (2014). *County statistics*. Retrieved from [http://svapp15586.ksde.org/rcard/county.aspx?cnty\\_no=105](http://svapp15586.ksde.org/rcard/county.aspx?cnty_no=105)

- Keller, B.K., & Whiston, S.C. (2008). The role of parental influences on young adolescents' career development. *Journal of Career Assessment, 16*, 198-217.
- Lent, R.W., Brown, S.D., & Hackett, G. (2002). Social Cognitive Career Theory. In D. Brown & Associates *Career choice and development* (pp. 255-311). San Francisco, CA: Jossey-Bass.
- Lent, R.W. (2005). In S.D. Brown & R.W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 131-154). Hoboken, NJ: John Wiley & Sons.
- McCollum, E.C., & Yoder, N. P. (2011). School culture, teacher regard, and academic aspirations among middle school students. *Middle Grades Research Journal, 6*, 65-74.
- Murdock, T.B., Anderman, L. H., Hodge, S. A. (2000). Multi-grade predictors of students' motivation and behavior in high school. *Journal of Adolescent Research, 15*, 327-351.
- O'Brien, K.M., Dukstein, R.D., Jackson, S.L, Tomlinson, M.J., & Kamatuka, N.A. (1999). Broadening career horizons for students in at-risk environments. *The Career Development Quarterly, 47*, 215-229.
- Ou, S., & Reynolds, A.J. (2008). Predictors of educational attainment in the Chicago longitudinal study. *School Psychology Quarterly, 23*, 199-229.
- Owens, D., Lacey, K., Rawls, G., & Holbert-Quince, J. (2010). First-generation African American male college students: Implications for career counselors. *The Career Development Quarterly, 58*, 291-301.
- Paa, H.K., & McWhirter, E. H. (2000). Perceived influences on high school students' current career expectations. *The Career Development Quarterly, 49*, 29-44.
- Perna, L.W. (2002). Precollege outreach programs: Characteristics of programs serving historically underrepresented groups of students. *Journal of College Student Development, 43*, 64-83.
- Pitre, C.O., & Pitre, P. (2009). Increasing underrepresented high school students' college transitions and achievements: TRIO educational opportunity programs. *National Association of Secondary School Principals Bulletin, 93*, 96-110. doi: 10.1177/0192636509340691
- Postsecondary Education Opportunity. (2011). *TRIO supportive services* (Report No. 234). Retrieved from <http://www.postsecondary.org/articlesyearlist.asp?cat5='2011'>
- Reid, M.J., & Moore, J.L. (2008). College readiness and academic preparation for postsecondary education: Oral histories of first-generation urban college students. *Urban Education, 43*, 240-261.

- Rojewski, J.W. (2005). Occupational aspirations: Constructs, meanings, and application. In S.D. Brown & R.W. Lent (Eds.), *Career development and counseling: Putting theory and research to work*. (pp. 131-154). Hoboken, NJ: John Wiley & Sons.
- Rottinghaus, P.J., Lindley, L.D., Green, M.A., & Borgen, F.H. (2002). Educational aspirations: The contribution of personality, self-efficacy, and interests. *Journal of Vocational Behavior, 61*, 1-19.
- Rowan-Kenyon, H.T., Swan, A.K., & Creager, M.F. (2012). Social cognitive factors, support, and engagement: Early adolescents' math interests as precursors to choice of career. *The Career Development Quarterly, 60*, 2-15.
- Schuette, C.T., Ponton, M.K., & Charlton, M.L. (2012). Middle school children's career aspirations: Relationship to adult occupations and gender. *The Career Development Quarterly, 60*, 36-46.
- Solberg, V.S., Good, G.E., Fischer, A.R., Brown, S.D., & Nord, D. (1995). Career decision making and career search activities: Relative effects of career search activities and human agency. *Journal of Counseling Psychology, 42*, 448-455.
- Solberg, V.S., O'Brien, K., Villareal, P., Kennel, R., & Davis, B. (1993). Self-efficacy and Hispanic college students: Validation of the college self-efficacy instrument. *Hispanic Journal of Behavioral Sciences, 15*, 80-96.
- Supporting a college-going culture. (2013). *College Board*, Retrieved from <http://professionals.collegeboard.com/guidance/counseling/culture>.
- Swanson, J.L., & D'Achiardi, C.D. (2005). Beyond interests, needs/values, and abilities: Assessing other important career constructs over the life span. In S.D. Brown & R.W. Lent (Eds.), *Career development and counseling: Putting theory and research to work*. (pp. 131-154). Hoboken, NJ: John Wiley & Sons.
- Taylor, K.M., & Betz, N.E. (1983). Applications of self-efficacy theory to the understanding and treatment of career indecision. *Journal of Vocational Behavior, 22*, 63-81.
- Tierney, W.G., Corwin, Z.B., Colyar, J.E. (2005). *Preparing for college: Nine elements of effective outreach*. Albany, NY: State University of New York Press.
- Tovar-Murray, D., Jenifer, E.S., Andrusyk, J., D'Angelo, R., & King, T. (2012). Racism-related stress and ethnic identity as determinants of African American college students' career aspirations. *The Career Development Quarterly, 60*, 254-262.
- Turner, S.L., & Conkel, J.L. (2010). Evaluation of a career development skills intervention with adolescents living in an inner city. *Journal of Counseling & Development, 88*, 457-465.



- Turner, S.L., & Lapan, R.T. (2004). Evaluation of an intervention to increase non-traditional career interests and career-related self-efficacy among middle-school adolescents. *Journal of Vocational Behavior, 66*, 516-531.
- Turner, S.L., Steward, J.C., & Lapan, R.T. (2004). Family factors associated with sixth-grade adolescents' math and science career interests. *The Career Development Quarterly, 53*, 41-52.
- Trusty, J. (2000). High educational expectations and low achievement: Stability of educational goals across adolescence. *The Journal of Educational Research, 93*, 356-365.
- Trusty, J., Niles, S., & Carney, J.V. (2005). Education-career planning and middle school counselors. *Professional School Counseling, 9*, 136-143.
- U.S. Census Bureau. (2011). *Overview of race and Hispanic origin: 2010, 2010 census brief* (C2010BR-02). Retrieved from <http://www.census.gov/library/publications/2011/demo/c2010br-02.html>
- U.S. Census Bureau Current Population Reports. (2013). *Income, poverty, and health insurance coverage in the United States: 2012* (P60-245). Washington, DC: Government Printing Office.
- U.S. Census Bureau. (2014). U.S. Census Bureau: State and County QuickFacts. Retrieved from <http://quickfacts.census.gov/qfd/states/00000.html>.
- U.S. Department of Education, Office of Planning, Evaluation, and Policy Department, Policy and Program Studies Service. (2006). *A study of the effect of the talent search program on secondary and postsecondary outcomes in Florida, Indiana, and Texas: Final report from phase II of the national evaluation*. Retrieved from <http://ed.gov/rschstat/eval/highered/talentsearch-outcomes/ts-report.pdf>
- U.S. Dept. of Education, National Center for Education Statistics. (2012). *Higher education: Gaps in access and persistence study* (NCES Publication No. 2012-046). Washington, DC: Government Printing Office.
- U.S. Dept. of Education, Institute of Education Sciences, National Center for Education Statistics. (2012). *Digest of Education Statistics*. Retrieved from [http://nces.ed.gov/programs/digest/d12/tables/dt12\\_237.asp](http://nces.ed.gov/programs/digest/d12/tables/dt12_237.asp)
- U.S. Dept. of Education. (2012). *Federal TRIO programs*. Retrieved from <http://www2.ed.gov/about/offices/list/ope/trio/2012-low-income.html>
- Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. *Educational Psychology Review, 6*, 49-78.
- Wigfield, A., & Eccles, J.S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*, 68-81.

## Appendix A - Sample Letter Requesting Nominations

Ms. Pan  
Rosedale Middle School  
3600 Springfield Street  
Kansas City, KS 66103

Dear Ms. Pan,

The University of Kansas Educational Talent Search Program will again have two programs this summer for middle school students held on the University of Kansas campus. Enclosed you will find brochures describing each of these summer programs in detail. I have included additional brochures for you to share with teachers and other school personnel.

We are excited about our 16<sup>th</sup> Annual Career Horizons Summer Program to be held this June. This **free** summer program is designed for 6<sup>th</sup> grade students to broaden their occupational choices, increase awareness of their strengths, enhance study skills, and develop positive peer relationships. During the week of Monday, June 14<sup>th</sup> through Saturday, June 19<sup>th</sup> students will participate in a variety of educational, vocational, and recreational activities on the University of Kansas campus in Lawrence.

We would also like to inform you about our 12<sup>th</sup> Annual Discover Technology Summer Program. This **free** program is designed for 7<sup>th</sup> grade students to enhance their computer knowledge and increase their awareness of math and science related career opportunities. During the week of Monday, July 12<sup>th</sup> through Saturday, July 17<sup>th</sup> students will participate in a variety of educational, vocational, and recreational activities on the University of Kansas campus in Lawrence.

We would appreciate your assistance this year in identifying students from your school to participate in the Career Horizons Program and the Discover Technology Program. Approximately 30 students from the eight middle schools in the Kansas City Kansas Public Schools will participate in each of these program. After you nominate those students from your school, I will meet with each group of students (6<sup>th</sup> and 7<sup>th</sup> separately) to discuss the summer program and the application process. Each student will be asked to complete an application packet (i.e., application form, written recommendation from a teacher or counselor, 1-page essay) and return it to the Talent Search office no later than May 5th. Individuals may be asked to interview with the Talent Search selection committee. The Talent Search staff will make final decisions, and students will be notified of their status by the end of the school year.

Your role is very important in this initial stage of the selection process. On the following page you will find guidelines to aid you in identifying potential Career Horizons and Discover Technology participants.

GUIDELINES FOR NOMINATION FOR CAREER HORIZONS SUMMER PROGRAM

- ◆ Select between **10-12** students from the Talent Search master list. Please try to select both males and females.
- ◆ Students who would benefit from a career exploration program.
- ◆ Students who are committed to completing high school and pursuing postsecondary education.
- ◆ Students must be entering the 7th grade in the Fall of 2010.

GUIDELINES FOR NOMINATION FOR DISCOVER TECHNOLOGY SUMMER PROGRAM

- ◆ Select between **10-12** students from the Talent Search master list). Please try to select both males and females.
- ◆ Students who would benefit from a summer program design to enhance knowledge in computer, science, and math related careers.
- ◆ Students who are committed to completing high school and pursuing postsecondary education.
- ◆ Students must be entering the 8th grade in the Fall of 2010.

*Please submit the candidates' names to me as soon as you can:*

E-mail: dukstein@ku.edu  
Phone #: 913-342-9823; or  
Fax #: 913-371-8558; or  
Mail: Rebecca Dukstein  
Gateway Tower II, Suite 103  
400 State Ave  
Kansas City, KS 66101

When I have received your lists, I will then meet with the nominated students at your school to review the application process with them. Please do not hesitate to call me at (913) 342-9823 if you have any questions or need additional information. Thank you very much for your time and cooperation.

Sincerely,

Rebecca Dukstein  
Associate Director  
KU Talent Search

## Appendix B - Survey

### Education Questionnaire

**Directions:** Please read each of the following statements and answer them as honestly as possible. **Circle** the response that best describes how you feel about the statement.

1. What is the highest level of education that you would like to achieve?

1. Middle school
2. High school graduate
3. Some college
4. College graduate
5. Graduate or professional degree (e.g., doctor, lawyer)

2. What is the highest level of education you think you will achieve?

1. Middle school
2. High school graduate
3. Some college
4. College graduate
5. Graduate or professional degree (e.g., doctor, lawyer)

### College-Going Self-Efficacy

**Directions:** Please read each of the following questions and answer them as honestly as possible. Circle the response that best describes how sure you feel about each question. There are no right or wrong answers. When answering these questions, remember that college means any type of schooling after high school (community college, four-year university).

***How sure are you about being able to do the following:***

1. I can find a way to pay for college

Not at all Sure          Somewhat Sure          Sure          Very Sure

2. I can get accepted to a college

Not at all Sure          Somewhat Sure          Sure          Very Sure

3. I can have family support for going to college

Not at all Sure          Somewhat Sure          Sure          Very Sure

4. I can choose a good college

Not at all Sure          Somewhat Sure          Sure          Very Sure

5. I can get a scholarship or grant for college

Not at all Sure          Somewhat Sure          Sure          Very Sure

6. I can make an educational plan that will prepare me for college

Not at all Sure          Somewhat Sure          Sure          Very Sure

7. I can make my family proud with my choices after high school

Not at all Sure          Somewhat Sure          Sure          Very Sure

8. I can choose college courses that best fit my interests

Not at all Sure          Somewhat Sure          Sure          Very Sure

9. I can pay for college even if my family cannot help me

Not at all Sure          Somewhat Sure          Sure          Very Sure

10. I can get good grades in my high school math classes

Not at all Sure          Somewhat Sure          Sure          Very Sure

11. I can get good grades in my high school science classes

Not at all Sure          Somewhat Sure          Sure          Very Sure

12. I can choose the high school classes needed to get into a good college

Not at all Sure          Somewhat Sure          Sure          Very Sure

13. I can know enough about computers to get into college

Not at all Sure          Somewhat Sure          Sure          Very Sure

14. I can go to college after high school

Not at all Sure          Somewhat Sure          Sure          Very Sure

***If you do go to college, how sure are you about being able to do the following:***

1. I could pay for each year of college

Not at all Sure          Somewhat Sure          Sure          Very Sure

2. I could get A's and B's in college

Not at all Sure          Somewhat Sure          Sure          Very Sure

3. I could get my family to support my wish of finishing college

Not at all Sure          Somewhat Sure          Sure          Very Sure

4. I could take care of myself at college

Not at all Sure          Somewhat Sure          Sure          Very Sure

5. I could fit in at college

Not at all Sure          Somewhat Sure          Sure          Very Sure

6. I could get good enough grades to get or keep a scholarship

Not at all Sure          Somewhat Sure          Sure          Very Sure

7. I could finish college and receive a college degree

Not at all Sure          Somewhat Sure          Sure          Very Sure

8. I could care for my family responsibilities while in college

Not at all Sure          Somewhat Sure          Sure          Very Sure

9. I could set my own schedule while in college

Not at all Sure          Somewhat Sure          Sure          Very Sure

10. I could make friends at college

Not at all Sure          Somewhat Sure          Sure          Very Sure

11. I could get the education I need for my choice of career

Not at all Sure          Somewhat Sure          Sure          Very Sure

12. I could get a job after I graduate from college

Not at all Sure          Somewhat Sure          Sure          Very Sure

13. I would like being in college

Not at all Sure          Somewhat Sure          Sure          Very Sure

14. I could be smart enough to finish college

Not at all Sure          Somewhat Sure          Sure          Very Sure

15. I could pick the right things to study in college

Not at all Sure          Somewhat Sure          Sure          Very Sure

16. I could do the classwork and homework assignments in college classes

Not at all Sure          Somewhat Sure          Sure          Very Sure

### **Middle School Self-Efficacy**

#### **Directions**

Part 1: Please indicate the degree to which you agree or disagree that you could do each statement below by circling the appropriate letter code to the right of each statement.

**SA**=Strongly Agree   **A**=Agree   **U**=Uncertain   **D**=Disagree   **SD**=Strongly Disagree

1. Find information about five occupations I am interested in.

SA   A   U   D   SD

2. Make a plan of my educational goals for the next three years.

SA A U D SD

3. Select one occupation from a list of possible occupations I am considering.

SA A U D SD

4. Determine what occupation would be best for me.

SA A U D SD

5. Decide what I value most in an occupation.

SA A U D SD

6. Resist attempts of parents or friends to push me into a career I believe is beyond my abilities or not for me.

SA A U D SD

7. Describe the job skills of a career I might like to enter.

SA A U D SD

8. Choose a career in which most workers are the opposite sex.

SA A U D SD

9. Choose a career that will fit my interests.

SA A U D SD

10. Decide what kind of schooling I will need to achieve my career goal.

SA A U D SD

11. Find out the average salary of people in an occupation.

SA A U D SD

12. Talk with a person already employed in a field I am interested in.

SA A U D SD



Part 2: Please indicate the degree to which you agree or disagree that you could do each statement below by circling the appropriate letter code to the right of each statement.

**SA**=Strongly Agree **A**=Agree **U**=Uncertain **D**=Disagree **SD**=Strongly Disagree

1. If I learn more about different careers, I will make a better career decision.

SA A U D SD

2. If I know my interests and abilities, then I will be able to choose a good career for me.

SA A U D SD

3. If I make a good career decision, then my parents will approve of me.

SA A U D SD

4. If I know about the education I need for different careers, I will make a better career decision.

SA A U D SD

5. If I spend enough time gathering information about careers, I can learn what I need to know when I make a decision.

SA A U D SD

6. I intend to spend more time learning about careers than I have been.

SA A U D SD

7. I plan to talk to lots of people about careers.

SA A U D SD

8. I am determined to talk to my teachers about career opportunities.

SA A U D SD

9. I am committed to learning more about my abilities and interests.

SA A U D SD

10. I intend to get all the education I need for my career choice.

SA A U D SD

## **Appendix C - Permission to Use Instruments**

### **Middle School Self-Efficacy Scale**

Monday, April 01, 2013 10:58 AM

Dear Dr. Fouad,

I am in the dissertation proposal phase of a PhD in Counseling and Student Development at Kansas State University. I am proposing a study of an intensive career camp for middle school students from disadvantaged backgrounds, and am looking at a comparison of career self-efficacy and college-going self-efficacy.

I discovered your Middle School Self-Efficacy Scale in the 1997 published article in *Measurement and Evaluation in Counseling and Development*, and was wondering if you would be opposed to me using the scale in my study. I was also wondering if you have continued using it in your work, and if so, whether you have additional data on reliability and validity.

Thank you very much!

**Julie Hamel**

Assistant Director, Career Education  
University Career Center  
The University of Kansas  
Burge Union, 1601 Irving Hill Rd., Rm. 110  
Lawrence, KS 66045-7557

nadya@uwm.edu

To: Hamel, Julie Ann

**Attachments:**

[ms cdmse oe ig \(489 KB\)](#)

Monday, April 01, 2013 1:11 PM

Sure, go ahead and use it- I've not done much since, but you might find some other research on it, since I get about a request to use it each month. It's in this entire set- with the math science ones (back when we still used dot-matrix printers!)

Nadya A. Fouad, Ph.D. ABPP  
University Distinguished Professor and Chair  
Educational Psychology  
(414) 229-6830

### **College-Going Self-Efficacy Scale**

Tuesday, January 22, 2013 4:50 PM

Dear Ms. Gibbons,

I currently work as a career counselor for the University of Kansas, but was a high school counselor prior to that. I'm in the proposal phase of my dissertation for a PhD in Counseling and Student Development.

A couple of years ago, I came across your article about prospective first generation college students, and really got interested in your approach to looking at perceived barriers in middle school students. My research area has been access to higher education for first generation and/or multicultural students, and based on my work with high school students, I've felt that addressing both real and perceived barriers was key to effective counseling.

Last summer, I had the privilege of working as a career educator for KU's Talent Search program, through the TRiO grant. One of the main components of the program is a career

education camp for students who are between 6<sup>th</sup> & 7<sup>th</sup> grades, from the Kansas City, Kansas school district. They are generally both low SES and first generation, and come from primarily Latino and African American families. With the blessing of the director, and my program advisors, I'm going to build my dissertation around the effectiveness of this camp, especially as it relates to building self-efficacy, broadening career aspirations and raising expectations for entry into and completion of college.

I remembered that you had worked on developing a college-going self-efficacy instrument, and came across your April 2010 article in Professional School Counseling, regarding the instrument.

I'm wondering if you are still researching in this area, and if you're continuing to use this scale. I have struggled with testing "career" self-efficacy at an early age, and feel that your efforts at measuring college-going skills is a really appropriate measure for younger students. I would enjoy hearing more about your work, and whether your scale could be used with a project such as mine. If you would ever be willing to visit on the phone, that would be great, or any information you could provide through email would be much appreciated as well.

Thank you for your time,

**Julie Hamel**

Assistant Director, Career Education  
University Career Center  
The University of Kansas  
Burge Union, 1601 Irving Hill Rd., Rm. 110  
Lawrence, KS 66045-7557

Gibbons, Melinda Miller [mgibbon2@utk.edu]

**To:**

Hamel, Julie Ann

**Attachments:**

CGSES.docx (13 KB)

Monday, January 28, 2013 12:54 PM

Julie,

Thank you for your interest in my self-efficacy instrument. I have had requests from several people asking to use the CGSES in their work. I am always happy to provide that permission. I have not used it recently, but others have, with good success. If you would like to talk about the survey more, I am happy to do so. If you just need permission to use the instrument, it is attached.

Melinda

Melinda M. Gibbons, Ph.D., NCC

Associate Professor

School Counseling Coordinator

Counselor Education

Department of Educational Psychology and Counseling

441 Claxton Complex

University of Tennessee

Knoxville, TN 37996

865-974-4477

mgibbon2@utk.edu

## **Appendix D - Parent Information Letters for Intervention and Comparison Groups**

### **Intervention Group**

Dear Parent or Guardian,

In cooperation with the KU Talent Search Program, I would like to invite your child to participate in a research project to gather information on beliefs about college and career, to evaluate the existing curriculum of the Career Horizons Summer Program, and to find out more about what aspects of the KU Talent Search Program have an influence on the career development of the participants.

I am a doctoral student at Kansas State University, in the department of Special Education, Counseling, and Student Affairs, and had the pleasure of working with the KU Talent Search staff in the summer of 2012. With this project entitled *Evaluating college-going and career self-efficacy in middle school students*, I am hoping to learn more about the attitudes and beliefs of middle school students with regards to college and career.

With your permission, your child will be asked to complete multiple-choice surveys four times at intervals over the next 16 weeks. Two surveys, *Middle School Self-Efficacy Scale (MSSES)*, and *College-Going Self-Efficacy Scale (CGSES)*, contain approximately 50 items, and will take around 30 minute to complete. The MSSES asks students to rate how they feel about their ability to explore and choose a future career. The CGSES asks students to indicate how they feel about preparing for and attending college. Finally, a 2-question survey on educational aspirations and expectations asks students how far they would like to go in school.

The surveys will be administered during the camp, and later, at other KU Talent Search events. Please refer to the enclosed sheet for example items from the surveys. You are also welcome to examine a copy of the entire survey, by contacting me at the address listed below. If you have any questions about the surveys, you may contact my supervisor, Judy Hughey, whose information is also listed below.

Participation in this study, or questions about this study will not affect your child's access to the KU Talent Search program or the Career Horizons Summer Program camp. Your student may also

withdraw from the study at any time, which will not impact his or her participation in the summer program or any other Talent Search activities. Please see the consent form for a full description of the study. At the completion of the study, you may contact me if you would like to receive a copy of the results.

If you are willing for your child to participate in the study, please sign the enclosed consent form and return it to me in the self-addressed stamped envelope, or to a member of the KU Talent Search staff on the first day of camp.

Thank you very much for your consideration of my request.

Julie Hamel, MS., Doctoral Candidate  
University Career Center  
1601 Irving Hill Rd., 110  
The University of Kansas  
Lawrence, KS 66045  
785-864-2766  
julie.hamel@ku.edu

Supervisor:  
Judy Hughey, NCC  
Dept. of Special Education  
Counseling & Student Affairs  
316 Bluemont Hall  
Kansas State University  
Manhattan, KS 66506  
785-532-5527  
jhughey@ksu.edu

Supervisor:  
Dr. Ngondi Kamatuka  
Director CEOP  
Institute for  
Educational Research  
1122 W Campus Rd.  
Lawrence, KS 66045  
785-864-3401  
kamatuka@ku.edu



## Comparison Group

Dear Parent or Guardian,

In cooperation with the KU Talent Search Program, I would like to invite your child to participate in a research project to gather information on beliefs about college and career, to evaluate the existing curriculum of the Career Horizons Summer Program, and to find out more about what aspects of the KU Talent Search Program have an influence on the career development of the participants.

I am a doctoral student at Kansas State University, in the department of Special Education, Counseling, and Student Affairs, and had the pleasure of working with the KU Talent Search staff in the summer of 2012. With this project entitled *Evaluating college-going and career self-efficacy in middle school students*, I am hoping to learn more about the attitudes and beliefs of middle school students with regards to college and career.

With your permission, your child will be asked to complete multiple-choice surveys two times at intervals over the next 16 weeks. Two surveys, *Middle School Self-Efficacy Scale (MSSES)*, and *College-Going Self-Efficacy Scale (CGSES)*, contain approximately 50 items, and will take around 30 minutes to complete. The MSSES asks students to rate how they feel about their ability to explore and choose a future career. The CGSES asks students to indicate how they feel about preparing for and attending college. Finally, a 2-question survey on educational aspirations and expectations asks students how far they would like to go in school.

The surveys will be delivered to your child at KU Talent Search events, or will be mailed directly to your home. The first survey will be given at the KUTS Pizza Party to which your student is invited (see enclosed invitation). Please refer to the enclosed sheet for example items from the surveys. You are also welcome to examine a copy of the entire survey, by contacting me at the address listed below. If you have any questions about the surveys, you may contact my supervisor, Judy Hughey, whose information is also listed below.

Participation in this study, or questions about this study will not affect your child's access to the KU Talent Search program. Your student may also withdraw from the study at any time, which will not impact his or her participation in the summer events or any other Talent Search activities. Please see the consent form for a full description of the study. At the completion of the study, you may contact me if you would like to receive a copy of the results.

If you are willing for your child to participate in the study, please sign the enclosed consent form and return it to me in the self-addressed stamped envelope, or to a member of the KU Talent Search staff at the KUTS event on either Monday, June 24th or Monday, July 1st.

Thank you very much for your consideration of my request.

Julie Hamel, MS., Doctoral Candidate	Supervisor:	Supervisor:
University Career Center	Judy Hughey, NCC	Dr. Ngondi Kamatuka
1601 Irving Hill Rd., 110	Dept. of Special Education	Director CEOP
The University of Kansas	Counseling & Student Affairs	Institute for
Lawrence, KS 66045	316 Bluemont Hall	Educational Research
785-864-2766	Kansas State University	1122 W Campus Rd.
julie.hamel@ku.edu	Manhattan, KS 66506	Lawrence, KS 66045
	785-532-5527	785-864-3401
	jhughey@ksu.edu	kamatuka@ku.edu

## Appendix E - Consent Form

KANSAS STATE UNIVERSITY  
THE UNIVERSITY OF KANSAS

Approved by the Human Subjects Committee University of  
Kansas, Lawrence Campus (HSCL). Approval expires one  
year from 6/12/2013. HSCL # 20862

### INFORMED CONSENT

**PROJECT TITLE:** Evaluating college-going and career self-efficacy in middle school students

**APPROVAL DATE OF PROJECT:** 5/1/2013      **EXPIRATION DATE OF PROJECT:** 5/1/2014

**PRINCIPAL INVESTIGATOR:** Judy Hughey, Kansas State University, College of Education

**CONTACT AND PHONE FOR ANY PROBLEMS/QUESTIONS:** Judy Hughey, Associate Professor, Special Education, Counseling, & Student Affairs, 316 Bluemont Hall, 785-532-5527 (jhughey@ksu.edu); Dr. Ngondi Kamatuka, Director CEOP, 1122 W Campus Rd., Lawrence, KS 66045, 785-864-3401 (kamatuka@ku.edu)

#### IRB CHAIR CONTACT/PHONE INFORMATION:

- Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.
- Jerry Jaax, Associate Vice President for Research Compliance and University Veterinarian, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

**PURPOSE OF THE RESEARCH:** The purpose of the research is to gain awareness of the various factors that influence middle school students' beliefs about going to college and about pursuing careers, and to evaluate the curriculum of a career focused summer camp for middle school students.

**PROCEDURES OR METHODS TO BE USED:** A quantitative study of participants in the KU Talent Search Program. The study will use three written surveys that participants will be asked to complete 2 times over a twelve-week period. The *Middle School Self-Efficacy Scale (MSSES)*, *College-Going Self-Efficacy Scale (CGSES)*, and a 2-question survey regarding educational aspirations and expectations will take approximately 30 minutes to complete. The educational aspirations/expectations questions will ask students about how far they would like to go in school. The MSSES asks students to rate how they feel about their ability to explore and choose a future career. The CGSES asks students to indicate how they feel about preparing for and attending college

**LENGTH OF STUDY:** Twelve weeks

**RISKS ANTICIPATED:** There are no physical or emotional risks anticipated.

**BENEFITS ANTICIPATED:** Findings will be used for curriculum evaluation, program modifications, presentations and article publications.

**EXTENT OF CONFIDENTIALITY:** All data collected and research notes will be coded throughout the study to protect participant identity. Documents will be secured in locked file cabinets and electronic data will be stored within a password protected computer network. Surveys will be administered by the researcher or by members of the KU Talent Search staff during KU Talent Search events, or through private distribution and in-home mailings. At no point will individual level information be revealed. Individuals will not be identified in any written reports or oral presentations on the research findings.

**TERMS OF PARTICIPATION:** I understand this project is research, and that my child's participation is completely voluntary. I also understand that if I decide my child may participate in this study, I may withdraw my consent at any time, and stop my child from participating at any time without explanation, penalty, or loss of benefits to which he or she may be otherwise entitled.

I verify that my signature below indicates that I have read and understand this consent form, and willingly agree to allow my child to participate in this study under the terms described above, and that my signature acknowledges that I received a signed and dated copy of this consent form (copy will be returned by mail).

**Participant Name (printed):** \_\_\_\_\_

**Parent or Guardian Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Witness to Signature: (project staff)** \_\_\_\_\_ **Date:** \_\_\_\_\_

## KANSAS STATE UNIVERSITY/THE UNIVERSITY OF KANSAS

### CONSENTIMIENTO INFORMADO

**TÍTULO DEL PROYECTO:** La evaluación de autoeficacia en estudiantes intermedias con relación a la universidad y carrera

**FECHA DE APROBACIÓN:** 5/1/2013    **FECHA DE EXPIRACIÓN PARA EL PROYECTO:** 5/1/2014

**INVESTIGADOR PRINCIPAL:** Judy Hughey, Kansas State University, College of Education

**CONTACTO Y TELÉFONO PARA CUALQUIER PROBLEMAS/PREGUNTAS:** Judy Hughey, Associate Professor, Special Education, Counseling, & Student Affairs, 316 Bluemont Hall, Manhattan, KS. 66506, 785-532-5527; Dr. Ngondi Kamatuka, Director CEOP, 1122 W Campus Rd., Lawrence, KS 66045, 785-864-3401 (kamatuka@ku.edu)

**CONTACTO Y TELÉFONO PARA EL PRESIDENTE DEL COMITÉ IRB:**

- Rick Scheidt, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.
- Jerry Jaax, Associate Vice President for Research Compliance and University Veterinarian, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

**OBJETO DEL ESTUDIO:** El objeto del estudio es ganar conciencia acerca de los varios factores que influyen las creencias sobre la universidad e orientaciones profesionales en estudiantes intermedias, y también evaluar el programa de estudios de un campamento del verano para estudiantes intermedias que concentra en carreras.

**PROCEDIMIENTOS O MÉTODOS QUE SE USAN:** Un estudio cuantitativo de participantes en el KU Talent Search Program. En el estudio se usan encuestas escritas que participantes completarán dos veces durante un período de dieciséis semanas. Se puede completar la *Escala de Autoeficacia en Estudiantes de Escuela Intermedia (MSSES)*, la *Escala de Autoeficacia sobre la Universidad (CGSES)*, y una encuesta de dos preguntas sobre aspiraciones y expectativas para educación en aproximadamente 30 minutos. Los participantes se preguntarán sobre las aspiraciones y expectativas que tienen para su educación. La *MSSES* pregunta a los participantes que evalúen su capacidad de explorar y escoger una carrera. La *CGSES* pregunta a los estudiantes como se sienten acerca de la preparación para la universidad o acerca de asistir a la universidad.

**DURACIÓN DEL ESTUDIO:** Dieciséis semanas

**RIESGOS ANTICIPADOS:** No hay riesgos físicos ni emocionales anticipados.

**BENEFICIOS ANTICIPADOS:** Los resultados estarán usados para evaluación del programa de estudios, modificaciones al programa, presentaciones, y publicaciones de artículos.

**GRADO DE CONFIDENCIALIDAD:** Todo el dato y las notas del estudio estarán codificados por toda la investigación para proteger la identidad del participante. Documentos estarán asegurados en gabinetes con llave, y datos electrónicos estarán asegurados en computadores protegidas con contraseñas. Las encuestas estarán administradas por la investigadora o personales del KU Talent Search durante eventos de KU Talent Search, o por distribución privada y enviado por correo. Información individual no estará revelada en ningún momento. No se identifican individuos en cualquier reportajes escritos ni presentaciones oral sobre el estudio.

**TERMINOS DE PARTICIPACIÓN:** Yo entiendo completamente que este proyecto es una investigación, y que la participación de mi niño/niña es completamente voluntaria. También entiendo que si decido que mi niño/niña pueda participar en el estudio, puedo retirar mi consentimiento en cualquier momento, y le impido que participe sin explicación, sanción, o pérdida de beneficios a que él o ella tiene derecho.

Yo verifico que mi firma al revés indica que he leído y he comprendido esta forma de consentimiento, y que voluntariamente estoy de acuerdo que mi niño/niña puede participar en este estudio bajo los términos descritos anteriormente, y que mi firma acusa recibo de una copia de esta forma de consentimiento que está firmada y que indica la fecha (esta copia se le enviará por correo).

## **Appendix F - Assent to Participate**

This explanation was provided in writing & mailed along with the parent information letter and parental consent form. It was reviewed again prior to the administration of the surveys at either the camp, or at the KUTS pizza parties. Students were given the opportunity to give assent or to withhold assent at that time.

### **Intervention Group**

Dear Student,

My name is Julie Hamel. I am interested in learning about how middle school students like you feel about preparing for and going to college, learning about careers, and what it takes to be able to do a career you're interested in. Understanding how you feel about these things helps groups like Talent Search make better decisions about programs and activities for you. If you would like, you can be in my study. I would like you to fill a questionnaire that will take about 30 minutes and then re-take it 3 times over the next 16 weeks.

If you decide you want to be in my study, you will fill out the questionnaire on the first day of the Career Horizons Summer Camp. The questionnaire will ask your opinions on high school classes, planning for college, what it takes to be successful in college, and how you might go about preparing for certain careers. Career Horizons Summer Program campers will see the same questionnaire again at the end of the summer camp, at the end of the bus tour, and at another KU Talent Search workshop in August.

There are no right or wrong answers on the questionnaire! It's possible that you might feel a little uncomfortable as you read and answer the questions on the survey, but you can ask me, or anyone from the KU Talent Search, questions at any time while you're filling out the survey. Your answers will help me understand how middle school students feel about college and careers, which can help Talent Search and TRIO do a better job of designing camps and other activities for you and other students like you.

Other people will not know if you are in my study. I will put things I learn about you together with things I learn about other middle school students, so no one can tell what things came from you. When I tell other people about my research, I will not use your name, so no one can tell who I am talking about.

Your parents or guardian have to say it's OK for you to be in the study. After they decide, you get to choose if you want to do it too. If you don't want to be in the study, no one will be mad at you. If you want to be in the study now and change your mind later, that's OK. You can stop at any time. If you decide you don't want to be in the study, or want to stop after you start, you can still be a part of any of the KU Talent Search activities!

I'll go over this right after you arrive for the first day of camp, and you can tell me if you'd like to be in the study or not.

Thank you!

Julie Hamel



## Comparison Group

Dear Student,

My name is Julie Hamel. I am interested in learning about how middle school students like you feel about preparing for and going to college, learning about careers, and what it takes to be able to do a career you're interested in. Understanding how you feel about these things helps groups like Talent Search make better decisions about programs and activities for you. If you would like, you can be in my study. I would like you to fill a questionnaire that will take about 30 minutes and then re-take it one more time in the next 10 weeks.

If you decide you want to be in my study, you will fill out the questionnaire at the KU Talent Search Pizza Party that you're invited to on either June 24th or July 1st. The questionnaire will ask your opinions on high school classes, planning for college, what it takes to be successful in college, and how you might go about preparing for certain careers. I'll have you take the questionnaire a second time at a KU Talent Search workshop in August.

There are no right or wrong answers on the questionnaire! It's possible that you might feel a little uncomfortable as you read and answer the questions on the survey, but you can ask me, or anyone from the KU Talent Search, questions at any time while you're filling out the survey. Your answers will help me understand how middle school students feel about college and careers, which can help Talent Search and TRIO do a better job of designing camps and other activities for you and other students like you.

Other people will not know if you are in my study. I will put things I learn about you together with things I learn about other middle school students, so no one can tell what things came from you. When I tell other people about my research, I will not use your name, so no one can tell who I am talking about.

Your parents or guardian have to say it's OK for you to be in the study. After they decide, you get to choose if you want to do it too. If you don't want to be in the study, no one will be mad at you. If you want to be in the study now and change your mind later, that's OK. You can stop at any time. If you decide you don't want to be in the study, or want to stop after you start, you can still be a part of any of the KU Talent Search activities!

I'll review this at the KUTS pizza party, and you can tell me there if you'd like to be in the study or not.

Thank you!

Julie Hamel

## **Appendix G - Follow-up Letters for Intervention and Comparison Groups**

Dear \_\_\_\_\_,

I'm sorry I wasn't able to connect with you at the KU Talent Search Science Academy this past Saturday! I'm enclosing the final survey that we gave there for the research project on career and college, and am hoping you'll fill it out for me and return it in the self-addressed stamped envelope. You can answer the questions in the same way as you did before, or differently, if you feel differently!

I really appreciate your participation in my research project these past months! It's important to know how you feel about college and careers.

I wish you a great school year and maybe I'll see you someday on the KU campus where I work!

Thank you,

Julie Hamel

University of Kansas Career Center

110 Burge Union

Lawrence, KS 66045

Dear \_\_\_\_\_,

I'm sorry you weren't able to make it to our KU Talent Search "Back to School Lunch" this past Saturday! I'm enclosing the 2nd survey that we gave there, and am hoping you'll fill it out for me and return it in the self-addressed stamped envelope. You can answer the questions in the same way as you did before, or differently, if you feel differently!

I really appreciate your participation in my research project! It's important to know how you feel about college and careers.

I wish you a great school year and maybe I'll see you someday on the KU campus where I work.

Thank you,

Julie Hamel