

ABSTRACT

Title of dissertation: THE COLLEGE-GOING SELF EFFICACY SCALE FOR HIGH SCHOOL STUDENTS: THE DEVELOPMENT AND VALIDATION OF A MEASURE

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The purpose of the present study was to develop and validate the College-Going Self Efficacy Scale for High School Students (CSHS). The CSHS is a measure of self-efficacy in completing college-going tasks (i.e. acquiring knowledge of oneself, acquiring knowledge about colleges, exploring colleges, completing college application tasks, acquiring information about financial aid/scholarship monies, receiving support from adults, and understanding potential college barriers) experienced by African American urban high school students. Participants ($N = 272$) included a local sample of high school students from a Washington, D.C. charter school. All participants resided in the DC metropolitan area within the continental United States at the time of data collection. Data were collected through the use of a paper-based survey containing the CSHS and measures used to assess convergent and discriminant validity. Internal consistency estimates of subscales ranged from .81 to .87. Convergent validity was supported through positive relations of the CSHS subscales with vocational identity and achievement goals. Discriminant validity was not supported, as there was a positive relation between the CSHS subscales and life satisfaction. Directions for future research and the limitations of this study are discussed.

THE COLLEGE-GOING SELF EFFICACY SCALE FOR HIGH SCHOOL
STUDENTS: THE DEVELOPMENT AND VALIDATION OF A MEASURE

By

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Chapter 1

INTRODUCTION

African American high school students are at risk for academic underachievement. Research has shown that African American adolescents are not entering the college at the same rates as adolescents from other ethnic groups (Bennett & Lutz, 2009). On average, African Americans' academic performance (e.g., performance on standardized tests) is lower than that of their White and Asian American counterparts (Kao & Tienda, 1998; Miller, 1995). Also, academic underachievement has been particularly evident in urban areas where many low-income African Americans reside, which is especially troubling (Gushue et al., 2006).

While educational opportunities were unavailable to African Americans in previous eras, today educational and career opportunities abound. Despite this, African Americans continue to experience lower high school graduation rates compared to rates in the overall population and lower college participation (Knight-Diop, 2010). If this trend of low college participation continues, African Americans will continue to be over-represented in service and labor-related jobs, and underrepresented in professional occupations (Knight-Diop, 2010). This can lead to a lifetime of lower salary and benefits, lower employment rates, lower savings levels, and difficult working conditions, compared to college-educated populations.

Despite this, African American students maintain strong aspirations of attending college (Roderick, Coca, & Nagaoka, 2011). While this is encouraging, the rise in African American college aspirations does not necessarily translate into college enrollment (Kao & Tienda, 1998). Researchers have examined a number of factors that

contribute to the low college enrollment and graduation rates. Many of these studies conclude that cognitive variables, such as scholastic aptitude test scores and high school grade point average are the best predictors of high school students who applied to college (Ellwood & Kane, 2000; Hossler, Schmit, & Vesper, 1999; Manski & Wise, 1983; Plank & Jordan, 2001). Other researchers found that the quality and intensity of the high school curriculum (Perna, 2004) and the highest level of coursework that is completed (Adelman, 1999) are strong predictors of students going to college. Finally, researchers have noted that the school climate, or college-going culture of the high school, predicts academic outcomes (Hill, 2009; Roderick et al., 2012).

While this research is important, it fails to consider factors such as student confidence as a factor in completing college-going tasks. In his research on non-cognitive variables, Sedlacek argues that traditional measures of college entry, including standardized test scores, grades, and letters of recommendation, “overlook the academic potential” of minority students (Sedlacek & Brooks, 1976, p.53) and factors such as having a positive self-concept should be considered. Extending the argument regarding the lack of non cognitive research, there are limited measures assessing the self-efficacy of high school populations to complete college-applications tasks. One promising area of research is studying the self-efficacy African American high students have with regard to seeking admission to college. The purpose of this study is to develop and assess the psychometric properties of a measure of college-going self efficacy, the College-going Self-Efficacy scale for high school students (CSHS) with an understudied and underserved population, African American urban high school students.

Three Stage Model of College Choice

To understand student confidence in completing college-going activities, it is important to first understand the college-going process. The three-stage model of college-choice (Hossler & Gallagher, 1987) describes college choice as a developmental process (Chapman, 1981; Jackson, 1982; Litten, 1982) beginning in middle school and ending in 12th grade (Cabrera & La Nasa, 2000). The three-stage model of college choice includes the predisposition stage, the search stage, and the choice stage. In the predisposition stage, students determine whether or not they would like to continue their formal education beyond high school. (Hossler et al., 1989). In the search stage, students search for attributes and values which characterize college alternatives, while learning about identifying the right attributes to consider. Finally, in the choice stage, students decide which institution to attend.

There is previous research on the stages of the college-choice model. Researchers have examined how each stage of college choice is associated with specific age cohorts (Nora & Cabrera, 1992), examined specific factors and outcomes in each stage (Hossler et al., 1999; McDonough, 1997; Stage & Hossler, 1989), and the links between factors and outcomes in each stage (Berkner & Chavez, 1997; Hossler & Vesper, 1993). Within each stage of college-choice, there is also research on the specific activities that students engage in to navigate them through the stage, leading to desired outcomes. For example, in the predisposition stage, the level of support and encouragement from parents determines, in part, whether a student decides to continue their education beyond high school (Cabrera & La Nasa, 2000).

Within the college-choice model, the stage-related college-choice activities that students engage in can be categorized into three distinct activities. First, there are activities related to acquiring knowledge, including knowledge about oneself and knowledge about colleges. Knowledge-related activities include acquiring knowledge related to understanding academic and vocational ability and acquiring access and information about colleges (Cabrera & La Nasa, 2000). Next, there are activities related to completing college search tasks, including exploring colleges, completing college applications, and completing financial aid and scholarship applications. Task-related activities include narrowing a list of colleges, taking the SAT, filling out a college application, and completed the application for financial aid (Roderick et al., 2011). Finally, there are activities related to obtaining support, including support from adults to understand college application tasks and support from adults to understand potential barriers to attending college. Support-related activities include seeking out adults to assist with college-going activities and seeking out adults to understand financial costs associated with college (Roderick et al., 2011).

To date, most of the research about the activities related to college-choice has focused on relationship between stage factors and stage-related outcomes. Researchers have studied the relationship between students receiving early parental college-related encouragement and whether students decide continue their education beyond high school (Stage & Hossler, 1989). Also, researchers have examined the relationship between perceived costs of college attendance and whether students attend college (Heller, 1997; Hossler, Hu, & Schmit, 1998). However, most of this research fails to predict substantive variance or explain much of why the stage- related outcomes actually occur. As stated

earlier, researchers have attempted to explain outcomes such as college attendance and graduation using promising areas for study including non-cognitive variables (Ancis & Sedlacek, 1993; House, 1996; Sedlacek, 2008). Some non-cognitive self-efficacy constructs are hypothesized to be salient with regard to African American student's college-going behaviors.

Self-Efficacy Theory

The theoretical foundation of this study is self-efficacy theory. Self-efficacy refers to one's belief in the ability to complete the tasks required for achieving a particular goal (Bandura, 1997). Bandura believed that self-efficacy beliefs were the most powerful influence on a person's decision to initiate and persist in a behavior. Self-efficacy is domain specific, so that a student's beliefs about certain skills and abilities must be assessed separately from other beliefs. Self-efficacy is also related to persistence. Some researchers found that academic self-efficacy is linked to a variety of achievement-related outcomes, including persistence on difficult tasks, and enrollment in challenging courses (Pajares, 1996; Pintrich & Schunk, 2002).

Some self-efficacy constructs in the literature seem to be related to confidence about student ability to complete college-going tasks. One type of self-efficacy that is hypothesized to relate to African American students' college seeking behaviors is college-going self efficacy. College-going self-efficacy represents an individual's confidence that he or she can successfully execute activities at selected levels, based on abilities, attitudes, and previous experiences (Lorsbach & Jinks, 1999; Schunk, 1991) in order to attend college. College-going self-efficacy is hypothesized to relate to vocational identity. Vocational identity has been defined as the realization of an increasingly stable

conceptualization of one's own vocational interests, talents, and goals (Holland, Daiger, & Power, 1980). There are several studies that show a relationship between college-going and vocational identity (Diemer & Blustein, 2007; Gushue, Scanlan, Pantzer, & Clarke, 2006; Munson, 1992) Also, college-going self efficacy is hypothesized to relate to achievement goals. An achievement goals orientation can be defined as an individual's set of beliefs that reflect the reasons why they approach and engage in certain tasks (Eccles & Wigfield, 2002; Linnenbrink & Pintrich, 2002a). Bandura (1997) hypothesized that students form their self-efficacy by selecting and interpreting information from four primary sources, the most powerful of which is the result of their own previous achievement, including previous performance or mastery experiences. There are several studies that show a relationship between college-going and achievement goals (Flores, Ojeda, Huang, Gee, & Lee, 2006; Schunk, 1991).

There are limited studies that have developed a measure of college-going self-efficacy. Gibbons and Borders (2010) developed a measure of college-going self-efficacy of middle school students. However, no measure focusing specifically on high school students' college-going self-efficacy exists to date.

Conclusion

Thus, I propose to use self-efficacy theory to develop and assess the psychometric properties of a measure of college-going self efficacy, the College-Going Self Efficacy Scale for High School Students (CSHS) with an understudied and underserved population, African American urban high school students. This is important because the CSHS forms the foundation for theoretically based and empirically derived interventions

to ensure that educational professionals develop therapeutic and educational interventions for this neglected segment of the United States population.

Chapter 2

LITERATURE REVIEW

The purpose of this study was to create a psychometrically sound measure assessing the self-efficacy of high school students to complete college-going activities, using an African American sample. This review will describe what is currently known about African American high school student college-going activities and related outcomes. First, a summary of the college-choice model will be provided, highlighting the factors and outcomes associated with college-going. Also, related research will be discussed, including research on the effects of high school climate on college-going. Next, a summary of self-efficacy theory will be introduced, highlighting how self-efficacy has been used to predict African American academic outcomes in research. Next, a discussion of several college-choice factors, including knowledge factors, task factors, and support factors, will be presented. This will include an overview of the theoretical and empirical literature that examines how these factors are related to college-going outcomes among African American high school students. Finally, existing measures used to assess African-American college-going self-efficacy will be critiqued.

Several inclusion and exclusion criteria were used in the selection of empirical articles for this review. Studies that examine the self-efficacy of African American students living in the continental United States were included. All studies were identified from computer searches on PsycINFO and ERIC (Educational Resources Information Center), which are both comprehensive electronic databases including journals from psychology, education, and related fields.

Studies excluded from this review were those that did not provide information about the college-going self efficacy of African American high school students. Finally, research on samples in Hawaii, Puerto Rico, or outside the United States was excluded. Using the stated inclusion and exclusion criteria, a total of 13 studies were identified for inclusion in this review. This review is organized by content area (e.g., knowledge of oneself, knowledge of colleges, exploration of colleges, college application tasks, financial aid/scholarships, support from adults, understand potential barriers). Thus, those studies that investigated more than one of these topics are discussed in more than one section of this review (e.g., if a study addressed financial aid and support from adults, it was discussed under both sections).

African American Academic Achievement

Research has shown that African American adolescents are not being prepared to enter the college at the same rates as adolescents from other ethnic groups. As a result, African American high school students experience higher dropout rates, lower enrollment in college, and lower college graduation rates, compared with other students (Knight-Diop, 2010; Wilds & Wilson, 1998). While the overall dropout rate for African Americans has declined, it still lags behind whites (Wilds & Wilson, 1998). Also, the gap between the rates of postsecondary attainment for African American compared to Whites still remains large at a 20% difference. From these studies, it is evident that African American students, compared to White students, are having trouble staying in high school and enrolling in college.

Benefits of college

African Americans who attend and graduate from college tend to live better lives than their counterparts who do not attend or graduate from college. Also, graduating from college has economic and social implications. One important reason people decide to attend college is because it is linked to personal financial success (Day & Newburger, 2002) and has major career and financial implications. Many studies have examined the benefits of college using personal economic benefits as its indicators (Perna, 2006, Wilds & Wilson, 1998). From a private economic standpoint, the research in this area suggests that, compared to individual who do not attend college, individuals who attend college are likely to experience higher salary and better benefits). According to Day and Neuberger (2002), Black workers with less than a high school education would earn less than a million dollars during their work-life, increasing to \$1.0 million for workers with a high school education, \$1.7 for a bachelor's degree, and \$2.5 million for an advanced degree. From this study, it is evident that there are long term financial incentives to attending college versus not attending. In addition to earning higher salaries, individuals who attend college have higher employment rates, higher savings levels, improved working conditions, and better personal and professional mobility (Day & Neuberger, 2002; Wilds & Wilson, 1998) compared with individuals who do not attend college.

In addition to the financial benefits, there are also social benefits to attending college. From a social perspective individuals who attend college compared to those that do not are likely to have improved health and life expectancy, improved quality of life, better consumer decision making, increased personal status (Terenzini, 1996), and more hobbies and leisure activities (Pascarella & Terenzini, 2005). From these studies, it is clear that are many financial and social benefits to attending college.

Achievement/Aspirations Paradox

Although African American high school students experience low enrollment in college, most of these students have high aspirations for attending college. These aspirations typically began in middle school or the beginning of high school. However, over their high school careers, African American students' aspirations for attending college fluctuated. Kao and Tienda (1998) conducted a quantitative study of the educational aspirations of minority youth between eighth and twelfth grades, as part of the National Educational Longitudinal Study of 1988. Participants included approximately 25,000 students who were surveyed in the eighth, tenth, and twelfth grade from 1052 randomly selected schools. They found that aspirations for attending college drop between eighth and tenth grades among African American students. They also found that while every minority group experienced a downward trend in college aspirations between the 8th and 10th grades, none was more dramatic than black males. 63% of black male eighth graders expected to graduate from college. Yet, by the time they reached 10th grade, this number drops to 48% expecting to graduate from college, a 15% drop.. From this study, it is evident that African American aspirations to attend college decline between the 8th and 10th grades.

Findings from the Kao and Tienda (1998) study also show that African American aspirations to attend college rise between the 10th and 12th grades. While this is encouraging, the rise in African American college aspirations does not necessarily translate into college enrollment. Roderick and her colleagues (2011) examined the college-going activities of urban high school students and their relationship with application to, enrollment in, and choice among four-year colleges. Participants included

large sample of current and recently graduated urban high school students, including 2,443 African American high school graduates from Chicago Public Schools. In a high school exit survey completed by these participants, the authors found that 100% of the graduated African American students aspired to complete at least a four-year degree. Yet, only 64% applied to college, 53% were accepted, and 41% enrolled in college. This study illustrates the gap between African American student aspirations to attend college, even after graduating high school, and actually completing college-going activities and tasks such as applying to colleges.

Urban African American Achievement

In addition to the challenges listed for African American students generally, African American urban students face additional challenges. Academic underachievement has been particularly evident in urban areas where many low-income African Americans reside, which is especially troubling because academic success remains a primary avenue for social mobility in the United States (Sanders & Jordan, 2000). On average, African Americans' academic performance (e.g., performance on standardized tests) is lower than that of their White and Asian American counterparts (Jencks & Phillips, 1998; Miller, 1995; Sanders & Jordan, 2000).

Research has shown that declines in the condition of African American inner-city neighborhoods, which are typically characterized by increased poverty, joblessness, and out-migration of working- and middle-class families, have negatively impacted adolescents living in these environments (Knight-Diop, 2010). One theory is that because adolescents are only sporadically interacting with employed and financially secure neighbors, they are routinely shown that there are few benefits to achieving success in

school (South & Baumer, 2000). These views, thereby, breed thoughts and feelings of fatalism and hopelessness about the benefits of education (South & Baumer, 2000). As a result, behaviors such as dropping out of high school, grade level failure, and low educational aspirations occur.

Another theory related to African American academic underachievement in urban areas focuses on school location . Schools in urban, poor, and disorganized communities experience more school problems than schools in rural or suburban, affluent, and organized communities (Gottfredson & Gottfredson, 2001). Research has shown that students attending schools in large and/or urban school districts are often subject to conditions of school violence, high dropout rates, vandalism, inadequate equipment and facilities, greater numbers of inexperienced teachers, student and teacher alienation, and academic failure (Deimer & Blustein, 2007).

From these studies it is clear that while some African American students maintain high aspirations to attend college throughout high school, many still do not enroll in college. Researchers have offered several suggestions for the low college enrollment. These include reduced access to college information (Cabrera & La Nasa, 2000), trouble completing college financial aid (De La Rosa, 2006), and low parental support (Plank & Jordan, 2001) as explanations for low enrollment into college. In addition to these factors, researchers also indicate that location of school in urban areas is related to low student achievement. Although all of these factors are important, what is less known is how the factor of student confidence or self-efficacy, affects college-going. This study hopes to create a psychometrically-sound measure assessing the self-efficacy of African American urban high school students to complete college-going activities, including accessing

college information, completing financial aid applications, and receiving support from adults. Results of this study will help parents and educators of these students to understand the challenges associated with tasks related to college-going.

Three-Stage Model of College-Choice

To understand African American confidence in completing college-going activities, it is important to first understand the college-going process. The college-choice three-stage model proposed by Hossler and Gallagher (1987) provides the theory behind the major stages of the college-choice process. The three-stage model describes college choice as a developmental process (Chapman, 1981; Jackson, 1982; Litten, 1982) beginning in middle school and ending in 12th grade (Cabrera & La Nasa, 2000). As part of the developmental process, potential college attenders move through various stages from an initial step of establishing a predisposition towards college to a final set of selecting an institution to attend. At each stage of the student college-choice process, individual and organizational factors interact to predict and produce related outcomes (Hossler & Gallagher, 1987). Each of these stages has particular outcomes that cumulatively influence and prepare high school students to make certain decisions regarding their college education.

Predisposition Stage

The first stage of the three-stage model is characterized as the predisposition stage. During the predisposition stage, students make a tentative conclusion about whether or not they want to continue their formal education after high school (Hossler et al., 1989). The predisposition stage often begins in middle school and ends in the ninth grade (Cabrera & La Nasa, 2000). If they decide to continue their education, students in

the predisposition stage begin making tentative plans for college. According to Cabrera and La Nasa (2000), the predisposition stage “involves the development of occupational and educational aspirations as well as the emergence of intentions to continue education beyond the secondary level” (p. 5).

The decision to attend college is affected by many environmental and personal factors that interact in a complex manner (Sewell & Shah, 1968; Sewell, Haller, & Portes, 1969). These predisposition factors include student ability, information about colleges, high school resources, socioeconomic status, and parental encouragement. (Cabrera & La Nasa, 2000). These factors interact with each other to produce outcomes, including increased academic skills, increased career and occupational aspirations, educational aspirations, and enrollment in college-bound curriculum. Not included in the predisposition stage are factors related to student confidence in obtaining college-choice outcomes. Further research is needed to explore how student confidence affects ability to complete and obtain college-choice outcomes.

A major outcome of the interaction of predisposition factors is students’ decision to attend college. Jackson (1978) categorized students based on their decision to continue their formal education after high school. He found that following the predisposition stage of college choice, students fall into one of three categories. The first category is students who decide between going to college or not. The second category is students who have decided that they do want to attend college and need to decide which college to attend. Finally, the third group of students who have decided not to attend college. So, at the end of the predisposition phase, students know if they want to attend college or not. If they

decide that they want to go to college, students move into the search stage of the college-choice process.

There has been much research on the developmental phases in the three-stage model of college-going. Research in predisposition stage of college-choice has been extensive. Researchers have typically operationalized “predisposition” in terms of students’ aspirations, expectations, or plans for college (e.g., Hossler et al., 1999; Hossler & Stage, 1992; Kao & Tienda, 1998; Stage & Hossler, 1989). Others (e.g., Hossler et al., 1999; Kao & Tienda, 1998) examined changes in predisposition over the high school years. Also, outcomes such as student aspirations and plans have been linked with factors including parental encouragement (Hamrick & Stage, 2004), parental level of education (Hossler et al., 1999) and student ability (Sternberg et al., 2001).

Search Stage

After students decide to continue their formal education after high school, they must begin the tasks of accumulating and assimilating “information necessary to develop the students’ short list of institutions” (Cabrera & La Nasa, 2000, p. 9). This information-gathering stage is the search stage, which is characterized by searching for colleges that fit students’ needs, thus developing a short list of institutions. The search phase usually begins in tenth grade and ends in the middle of twelfth grade (Cabrera & La Nasa, 2000; Hossler et al., 1989).

Search factors include student ability, educational aspirations, occupational aspirations, saliency of potential institutions, high school resources, socioeconomic status, and parental encouragement (Cabrera & La Nasa, 2000). These factors predict certain search-stage outcomes. These outcomes include the development of a preliminary

list of institutions, the development of a narrowed a list of potential institutions, and gathering information on these institutions (Cabrera & La Nasa, 2000). Not included in the search stage are factors related to student confidence in obtaining college-choice outcomes. For example, there is no literature examining the relationship between student confidence in narrowing a list of institutions and college-going. Further research is needed to explore the student confidence in this area.

Developing a list of institutions is dependent on the level of sophistication and thoroughness of the search process. According to Cabrera and La Nasa (2000), two important factors that affect the search process are the development of expectations and perceptions about different colleges and student access to information. In the search phase, students begin to interact actively with potential institutions (Attinasi, 1989). Visiting campuses, securing catalogues, and talking to friends about college are some of the activities used in seeking such information (Hossler et al., 1989; Litten, 1982).

Literature examining processes and outcomes in the search stage has been more limited than predisposition research. Researchers have used several variables to operationalize academic outcomes in the search phase of the college-choice process. These dependent variables include the number of colleges which a student considers (e.g., Hossler et al., 1999), the number of colleges to which a student applies (Hurtado et al., 1997), the number of various types of colleges to which SAT scores are sent (Long, 2004c), the likelihood of applying to a particular institution (Weiler, 1994), the likelihood of applying to any four-year college (Cabrera & La Nasa, 2001), and the sources of information that students and parents use to learn about college and financial aid (Cabrera & La Nasa, 2001; Hamrick & Hossler, 1996; Hossler & Vesper, 1993).

Choice Stage

Applying to college and enrolling in college are the characteristics of the choice stage. In this stage, students narrow their choice set to specific institutions to enter (Hossler & Gallagher, 1987). Students usually enter the choice phase of college-choice in the eleventh grade and finish in the twelfth grade (Cabrera & La Nasa, 2000). At the end of this stage, students enroll in college.

Some argue that choice is based on economic factors, which involve a rational process in which an individual estimates the economic and social benefits of attending college, comparing them with those of competing alternatives (Manski & Wise, 1983). Freeman (1984) found that the amount a financial aid a student receives influences college choice, except for high-income students that did not rely on financial aid. Others argue that choice is based on sociological factors, stating that high school graduates' socioeconomic characteristics and academic preparation predispose them to enroll at a particular type of college and to aspire to a particular level of postsecondary educational attainment (Cabrera & La Nasa, 2000). Also, as with the other two phases, parental encouragement is a strong predictor. In addition to parental encouragement being a predictor, perceived institutional attributes, perceived support from family, and perceived ability to pay all play important roles in this phase. Not included in the choice stage are factors related to student confidence in obtaining college-choice outcomes. Further research is needed to explore the student confidence in this area.

Finally, the literature examining the choice phase of the college-choice process has been the most frequently examined phase of the process. Many researchers have examined how environmental factors such as family income (Hurtado et al., 1997),

financial aid (Avery & Hoxby, 2004) college costs (Kane, 1999) parental influences (Hossler et al., 1999), and student access to college information (Hossler et al., 1999) predict enrollment in various post-secondary institutions. Also, researchers have operationalized outcomes in the choice phase using dichotomous measures such as whether or not a student enrolled in a four-year college or university (Perna, 2000), enrolled in any postsecondary institution (Ellwood & Kane, 2000; Kane, 1999), or enrolled in their first-choice institution (Hurtado et al., 1997). Others used outcome measures including whether or not a student enrolled in a two-year institution, enrolled in a four-year institution, or did not enroll (Perna & Titus, 2005; Rouse, 1994), enrolled at a four-year institution, enrolled full-time at a two-year institution, enrolled part-time at a two-year institution, or did not enroll (Plank & Jordan, 2001), or enrolled in an in-state public two-year institution, enrolled in an in-state public four-year institution, enrolled in an in-state private four-year institution, enrolled in an out-of-state institution, or did not enroll (Perna & Titus, 2004).

Summary of three-stage model of college-going

The literature on college choice depicts decisions to go to college as the by-product of a three-stage developmental process, which begins as early as middle school and ends when the student enrolls in a postsecondary institution (Cabrera & La Nasa, 2000). In this process, factors including parental encouragement, high school resources, student attitude, and ability are keys to developing postsecondary plans and aspirations toward college, securing the necessary qualifications, applying to college, and enrolling (Cabrera & La Nasa, 2000). Research on the three stages of college-choice has been extensive, especially scholarship examining the relationships between stage-specific

factors and outcomes. Not included in this research are self-efficacy factors related to student confidence in obtaining college-choice outcomes.

There are limited studies that examine the role that student confidence plays in completing stage-related outcomes, particularly with African American populations. Pitre (2006) examined African American ninth grade student aspirations to attend college, a predisposition-stage outcome. He compared African American student aspirations to White student aspirations. Participants in this study included 73 African American ninth grade students and 114 White ninth grade students from four suburban Maryland high schools. The author examined the relationship between African American student perceptions of being prepared to go to college and their aspirations to attend college. Pitre (2006) found that African American student aspirations for attending college were similar to white students, even when African American students had lower levels of academic achievement.

While the Pitre (2006) research is important to the topic of student confidence in predisposition stage-related tasks, more research is needed to examine student confidence in completing search and choice stage-related tasks. Furthermore, the Pitre (2006) study does not examine self-efficacy in completing college-choice activities for African American high school students being educated in urban areas. Thus, a quantitative measure assessing student confidence in completing college-choice activities from all three college-choice stages could help advance knowledge about the role of that confidence plays in urban African American college-bound students.

College-Going Culture

An aforementioned factor, high school climate or “college-going culture”, is another important consideration when thinking about student confidence to navigate the college choice process. McClafferty, McDonough, and Nunez (2002) characterize a college-going culture as a school culture that encourages all students to consider college as an option after high school and prepares them to make informed decisions about post-secondary options. One of the important ways in which schools facilitate college enrollment is by preparing students and their families to navigate the college-linking process—the process of planning, application, and decision making that culminates in enrollment in college.

Over the past four decades, many sociologists have analyzed school effects on educational outcomes, and although much of that research has focused on academic achievement, scholars have also given considerable attention to understanding the relationship between high schools and college enrollment (Alexander & Eckland 1975, 1977; Alwin & Otto 1977; Coleman & Hoffer, 1987). For example, Alexander and Eckland (1977) examined individual and institutional characteristics in providing access to select colleges and universities. They also examined the educational consequences of attending a college of varying selectivity. Participants included 630 youth (356 men and 274 women) who were part of a 15-year longitudinal study, where student data was collected in 1955 and 1970. They were initially examined in second year of high school and followed up 15 years later after attending college. They found that social status composition of a high school was more related to selectivity of a college or university for males than academic quality of the school. In other words, graduating from a socially

elite school enhances the chances of attending an academically selective school, while the academic quality of a school, characterized the intellectual abilities of the student body, do not make a difference where males go to school. In general, the findings of these studies have confirmed that although characteristics of students and families substantially affect college enrollment, a high school's organization also affects college enrollment.

Several recent studies have examined the effects of practices within high school on student college-going activities. Hill (2008) reconsidered school effects on college enrollment by focusing on strategies that schools use to facilitate college transitions. He also examined whether school strategies influence different outcomes for students from different racial/ethnic and socioeconomic backgrounds. Using data from the High School Effectiveness Study, the analysis identified three distinctive "college-linking" strategies: traditional, clearinghouse, and brokering. High schools characterized as traditional were those that encouraged college visits and assisted with college applications but reported limited outreach to parents. Clearinghouse schools directed substantial resources to college planning, provided direct assistance with college applications, and conducted outreach to college representatives but did limited parental outreach. Brokering schools had all of these characteristics and did substantial outreach to parents, thus creating in Hill's term "norms for facilitating access to these resources." The results showed that the strategies that schools use to help students navigate the college-linking process are associated with variation in college enrollment. Aspects of the school environments that utilize clearinghouse and brokering strategies in addition to providing more college-related resources than the traditional strategy may steer students away from two-year institutions.

Roderick et al., 2011 examined the extent that college-going climate of urban high school students are associated with students' application to, and enrollment in four-year colleges. Using participant data from the Chicago Public School System where 53% of participants were African American, they found that developing organizational norms and structures that assist students effectively through the college application process can influence college aspirations. Specifically, they found that students would be approximately 12% to 17% more likely to enroll in a four-year college if he or she attended a high school that was strong versus weak on (1) percentage of prior year graduates who applied to three or more colleges, (2) strong versus weak in the percentage of prior year graduating cohort who completed a FAFSA, and (3) was strong versus weak on teachers expectations related to college. Teacher expectations include that they 1) expect students to go to college, (2) help students plan for college outside of class, (3) use curriculum focused on helping students get ready for college, (4) feel that it is part of their to prepare students for college, and (5) believe that many students were planning to go to college. Thus, differences across high schools in application completion, FAFSA completion, and teachers' reports of their and their colleagues' expectations for and involvement in helping students prepare and plan for college are associated with substantial differences in the extent to which students with similar characteristics take the steps to apply to a four-year college as well as their choice among colleges. These findings suggest that high schools, especially urban high schools serving minority populations, have an important role to play in guiding students into the college application pool and shaping their college choices.

Noncognitive Variables

The relationship between student confidence and academic outcomes has been studied for several decades. Researchers have provided much scholarship on the relationship between student confidence and other similar variables, and college outcomes. Early studies showed that students are more likely to attend college when students' self-esteem is greater (Portes & Wilson, 1976) and when student attitudes about school and success are positive (Carpenter & Fleishman, 1987). This initial finding suggests that there are noncognitive, attitude-related predictors that are related to college-choice, specifically aspirations, attendance, and enrollment.

The term 'non cognitive' often refers to variables relating to adjustment, motivation, and student perceptions, rather than the traditional verbal and quantitative (often called cognitive) areas typically measured by standardized tests and grade point average (Sedlacek, 1998a,b; 2004a). According to Sedlacek and Brooks (1976) the "minority student who feels confident of "making it" though school is more likely to survive and graduate" (p. 53-54). Sedlacek and Brooks (1976) define this positive self-concept as having confidence, strength of character, determination, independence, and strong self-feelings. In addition to this Schauer et al. (2011) state that embracing a positive self-concept means that a person has strength of character; he or she can speak, write, and think positively about him or herself. They also stated a person with a positive self-concept expects to graduate, expects to do well in the academic setting, and is not afraid to face new challenges. In summary, the student who enters college feeling confident that he or she can make it through school is more likely to survive and thrive on campus.

There are studies that link having a positive self-concept to academic outcomes for African American students, and several of these studies have been conducted with college students. DiCesare, Sedlacek, and Brooks (1972) found that African American students who had a strong self concept took a more realistic look at the university, adapted to the university environment, and achieved their goals more than students who had a weak self concept. O'Callaghan and Bryant (1990) found that self-concept was important for the success of African American students at the U. S. Air Force Academy. McNary (1985) emphasizes the significance of self confidence in the academic performance of African Americans. Epps (1969) found that self concept was positively related to academic performance for African American students. Finally, Sedlacek (2003, 2004) found that way students feel about themselves is related to their adjustment and success in college. From these studies, it is evident that a positive self-concept is linked to college academic outcomes.

House (1996) conducted a study where he investigated the efficacy of non cognitive variables and academic background as a function of student ethnic group for the prediction of college grade performance and persistence. Participants in his study included over 9,000 incoming freshman students over four consecutive fall semesters. These variables included achievement expectancies, academic self- concept, financial goals, social goals, desire for recognition, parental education, and high school curriculum. He defined academic self-concept as the sum of student's self-ratings of overall academic ability, drive to achieve, mathematical ability, writing ability, and self-confidence in intellectual ability. Also, he defined achievement expectancies as the sum of student's self-rating of the probability of graduating with honors, making at least a B average, get

a bachelor's degree, and transformed ratings of failing one or more course in college, needing extra time to graduate, and getting tutoring assistance.

All variables in the House (1996) study were analyzed for their efficacy as predictors of college attrition. He found that in addition to other factors, self-concept significantly correlated with grade point average and enrollment status after 2 to 4 years for all students. Academic self concept of African American students was significantly correlated with cumulative GPA after one, two, and four years of college.

Summary of Non Cognitive Variables

In summary, understanding how non cognitive variables relate to college-outcomes for African American students, such as college success, has been important to the college outcome literature. However, there is a lack of research that examines how specific non cognitive factors, specifically student confidence, affect urban African American students' outcomes at the high school level. Understanding how student confidence, in the specific domain of college-going activities, affects high school outcomes is an area for further research. The goal of this study is to create a psychometrically sound measure, the college-going self-efficacy scale for high school students (CSHS), that assesses the self-efficacy of urban high school students to complete college-going activities, using an African American sample.

Self-Efficacy

The theoretical foundation of the CSHS is self-efficacy theory. Self-efficacy is related to the aforementioned constructs including non cognitive factors, positive self concept, and student confidence. Self-efficacy has been defined as one's belief in the ability to complete the tasks required for achieving a particular goal (Bandura, 1977).

Bandura believed that self-efficacy beliefs were the most powerful influence on a person to initiate and persist in a particular behavior. Given that self-efficacy is domain specific, a student's beliefs about completing certain tasks must be assessed separately from other beliefs.

Self-efficacy theory has been linked to career behavior. Hackett and Betz (1981) suggested that self-efficacy beliefs serve as an important cognitive influence on career decisions and achievements, helping to determine people's range of perceived career options and their success and persistence in chosen options. Research primarily using college students has shown consistent support for the relation of career and academic self-efficacy beliefs to various indices of career choice behavior (Betz & Hackett, 1981, 1983; Lent, Brown, & Larkin, 1986; Wheeler, 1983). In addition to self-efficacy being linked to career choice, there is a growing body of literature that supports the relationship between students' self-efficacy beliefs for academic tasks and milestones and their academic performance (Elias & Loomis, 2000; Lent, Brown, & Larkin, 1984, 1986;).

Academic Self-Efficacy

Academic self-efficacy refers to a learner's judgment or beliefs about his or her ability to successfully attain educational goals (Bandura, 1977). Academic self-efficacy has been linked to several college outcomes. Multon, Brown, and Lent (1991) conducted an early meta-analysis of the relationships between students' self-efficacy beliefs for academic tasks and their performance and persistence in school. Their findings suggested that between 11% and 14% of the variance in academic performance and persistence could be accounted for by an individual's academic self-efficacy beliefs.

Lent, Brown and Larkin (1984) examined the relation of self-efficacy beliefs to college students' persistence and success in pursuing science and engineering college majors. Participants were 42 freshman and sophomore students who participated in a 10-week career-planning course on science and engineering fields. They completed several measures of self-efficacy, involving their perceived ability to fulfill the educational requirements and job duties of a variety of technical/scientific occupations. The authors found that participants who reported high self-efficacy for educational requirements achieved higher grades and persisted longer in technical/scientific majors over the following year than those with low self-efficacy.

Lent, Brown, and Larkin (1986) explored the relation of self-efficacy beliefs to educational/vocational choice and performance. Specifically, the authors were interested in whether efficacy beliefs predict academic grades, persistence, and perceived career options in students considering science and engineering fields. Participants were 105 undergraduates in their freshman or sophomore year who participated in a career planning course on science and engineering fields. Findings indicated that self-efficacy contributes significantly to the prediction of technical grades, persistence, and range of career options considered in technical/scientific fields.

Elias and Loomis (2000) conducted a study to determine whether academic self-efficacy could predict academic performance. Participants were 138 undergraduate students. The authors found significant correlations between academic self-efficacy and grade point average (GPA). They also found that academic self-efficacy was a significant predictor of GPA.

From these studies, it is evident that there is a relationship between self-efficacy and college outcomes, such as grades, motivation, and persistence. The proposed measure uses self-efficacy theory as the theoretical basis for the construction of the measure.

College-Going Self-Efficacy Scale of High School Students (CSHS)

There are many college-choice factors in the predisposition, search, and choice stages of the college-choice model (Hossler & Gallagher, 1987). These factors include student ability, parental support and encouragement, educational aspirations, and socioeconomic status (Cabrera & La Nasa, 2000). However, missing from these factors is student self-efficacy. Student self-efficacy is an important construct because it focuses on the belief in the ability to complete the tasks required for achieving a particular goal (Bandura, 1977). Bandura believed that self-efficacy belief were the most powerful influence on a person to initiate and persist in a particular behavior. The focus of this study is to understand and measure the self-efficacy of African American high school students to complete college-going activities, using the College-Going Self-Efficacy Scale of High School Students (CSHS).

The outcomes in the college-choice process are particular to their college-choice stage. For example, solidifying educational aspirations is an outcome in the predisposition stage, listing tentative institutions is an outcome in the search stage, and submitting college application is an outcome in the choice stage (Cabrera & La Nasa, 2000). From these examples, it is evident that while there are outcome that are unique to their specific stages.

One way to conceptualize and understand outcomes is to link them to their college-choice. The College-Going Self-Efficacy Scale of High School Students (CSHS)

proposes to conceptualize and understand college-choice outcomes by categorizing them into groups. Within the college-choice model, predisposition-, search-, and choice-related outcomes can be categorized into three distinct groups, knowledge factors, task factors, and support factors.

Knowledge factors

First, knowledge factors can be characterized as a student's ability to use information about their career interests and abilities to further their college plans. For example, knowledge factors include having knowledge about career and occupational requirements and awareness about institutional attributes (Cabrera & La Nasa, 2000). Student ability to acquire knowledge, including knowledge about oneself and knowledge about colleges, is related to academic outcomes (Carbonaro, 2005). By acquiring this knowledge, students develop a vocational identity, based on interests, abilities, and career goals. A review of research examining knowledge factors and African American college-going follows.

Empirical literature on knowledge factors and African American students.

Gushue et al., (2006) explored the relationship between the career decision-making self-efficacy and the outcome variables of vocational identity and career exploration behaviors in a sample of 72 urban African American high school students. Univariate analyses indicated that career decision-making self-efficacy had a significant positive relationship with vocational identity and with career search activities. The authors concluded that students who had greater self-confidence in making career-related decisions were also likely to have a better defined sense of their interests, abilities, and goals as well as to actively engage in activities related to career exploration.

Carbonaro (2005) examined the links among students' effort, tracking, and students' achievement. Participants included a sample of 8th and 10th grade African American students abstracted from the National Educational Longitudinal Study (NELS) database. He found that African American students with well-defined educational goals who invest greater effort and display higher aspirations for status attainment may be more committed to the overall educational process. This study suggests that African American students with well-defined vocational goals may be more invested in pursuing college enrollment than students with less defined goals.

Freeman (1997) conducted a qualitative study examining African American high school students' perceived barriers to pursuing an education beyond high school. Participants included 70 African American tenth, eleventh, and twelfth graders from inner-city and suburban high schools living in one of five U.S. cities including Atlanta, Chicago, Los Angeles, New York, and Washington, DC. Freeman found that African American students largely experienced an intimidation factor related to their academic preparation for college. This fear of the unknown, or global lack of confidence in their abilities, was related to their desire to enroll in college. From this study, it is evident that students, who lack knowledge or confidence regarding their academic preparation, may develop weak aspirations for college and may not attend.

Kao and Tienda (1998) conducted a quantitative study of the educational aspirations of minority youth between eighth and twelfth grades, as part of the National Educational Longitudinal Study of 1988. Participants included approximately 25,000 students who were surveyed in the eighth, tenth, and twelfth grade from 1052 randomly selected schools. They found that black youth tended to have high educational aspirations

even when their scholastic achievement, based on grade point average, is average or below average. This finding indicates that there may be a lack of information about academic ability and academic requirements necessary to be admitted to postsecondary institutions.

Pitre (2006) examined African American student aspirations to attend college, compared to White students. Participants in this study included 73 African American ninth grade students and 114 White ninth grade students from four suburban Maryland high schools. The author found that African American student aspirations for college attendance were similar to white students, even when African American students had lower levels of academic achievement. Similar to the Kao and Tienda (1998) findings, these findings suggest that African American ninth grade students aspirations to attend college may not support they type of academic achievement needed to attend college.

In summary, five studies examined the relationship between acquiring vocational knowledge and college-choice outcomes among African American youth. These studies indicated that African American students have high confidence and aspirations related to attending college, despite having the academic requirement to be admitted to college. The studies also suggest that students who believe that they are able to engage in the career exploration process are more likely to do so and more likely to report a more integrated vocational identity. Furthermore, these findings suggest that self-confidence in making career-related decisions influences a student's vocational identity. A quantitative measure assessing student self-efficacy in acquiring college-related information necessary to make an informed decision about applying to college would be helpful in determining how help students navigate developing a strong vocational identity.

Task Factors

Next, task factors can be characterized as student's ability to complete college search tasks, including the exploring colleges, completing college application tasks, and completing financial aid and scholarship. The tasks factors present in the three-stage model include narrowing a list of colleges, taking the SAT, filling out a college application, and completing the application for financial aid (Cabrera & La Nasa, 2000). A review of research examining task factors and African American college-going follows.

Empirical literature on task factors and African American students. Roderick and colleagues (2011) examined the college-going activities of urban high school students and their relationship with application to, enrollment in, and choice among four-year colleges. Participants included large sample of current and recently graduated urban high school students, including 2,443 African American high school graduates from Chicago Public Schools in 2005. Authors found that the completion of the free application for federal student aid (FAFSA) is a consistent and strong predictor of student behavior in college application and choice. In urban high schools, FASFA completion may serve as a useful indicator of student confidence in completing college-going tasks.

In the same study, Roderick and colleagues (2011) examined the college-going activities of urban high school students and their relationship with application to, enrollment in, and choice among four-year colleges. Authors found that in some Chicago high schools, application to three or more colleges predicted whether urban high school seniors enrolled in college. This finding illustrates that the number of submitted college

applications to colleges may serve as a useful indicator of student confidence in completing college-going tasks.

De la Rosa (2006) examined how low-income students hear about college and financial aid information and what the impact of this information is on their college opportunity. An offer of student financial aid, regardless of the type of aid, plays an important role in predicting college choice decisions. Student financial aid includes need-based and non-need-based grants, subsidized and unsubsidized loans, work-study, and tuition tax credits. Participants included Latina/o and African American students in the 11th and 12th grades in seven high schools from the Los Angeles, California. Students were administered a survey that included sections on plans after high school, perceptions of how to pay for college, and student background information. Findings from the survey illustrate that 50.9% of the 12th graders heard about financial aid information five times or more during the school year. Although this appears to be quite often, only half of the senior class was receiving this information in the schools. For the juniors, 32.4% heard about financial aid information five or more times during the school year. Again, although this seems to be numerous times, less than one third of the juniors received this information at the schools. College-going data indicate that on average, 19% go on to a 4-year California university or college (Academic Preparation Program Reference and Information System, 2004)

Research from a nationwide education data set demonstrates that financial aid awareness and information does play a role in the college decision process for low income, 4-year university-qualified students and their parents. Using National Education Longitudinal Study survey data, Berkner & Chavez (1997) found that all low-income and

middle-income Black and Hispanic students who read information about financial aid from one or more sources were more likely to take steps toward attending a 4-year institution than those who did not read any information. For example, 48% of college-qualified low-income students who did not read any information on financial aid took steps, compared to 70% who obtained information from one or two sources.

Tierney (1980) has reported that low–socioeconomic status (SES) students had fewer information sources than upper-level SES students did and upper-level SES students, compared with lower SES peers, tend to rely on several sources of information, and have parents who have planned and saved for college. Freeman (1984) found that the amount a financial aid a student receives influences college choice, except for high-income students that did not rely on financial aid.

In summary, four studies examined the relationship between completing college search tasks and college-choice outcomes among black youth. Of these studies, two were quantitative. These studies indicated that African American students who complete the FAFSA and apply to multiple colleges are more likely to attend college than African American students who do not do these things. A quantitative measure assessing student self-efficacy in completing the FAFSA and applying to multiple colleges would be helpful in determining how parents and educators can assist students through college search tasks.

Seeking out Support

Finally, there are activities related to support factors, including support from adults and understanding potential barriers to attending college. Support factors present in the three-stage model include getting support from family and friends (Cabrera & La

Nasa, 2000). Support-related activities include seeking out adults to assist with college-going activities and understanding financial costs associated with college. A review of research examining support factors and African American college-going follows.

Empirical literature on support factors and African American students. Research consistently shows that the probability of enrolling in a two-year or a four-year college or university in the fall after graduating from high school increases with the frequency of parent-student discussions about education issues (Perna, 2000; Perna and Titus, 2005; Plank and Jordan, 2001). Researchers have demonstrated that parents' support of African American adolescents' educational and career development is associated with increases in their academic performance (Linnehan, 2001), their mastery of such career development competencies as career decision-making skills (Otto, 2000), and their persistence in pursuing educational and career-related goals (Pearson & Bieschke, 2001). Finally, based on their longitudinal study of Indiana high school students, Hossler et al., (1999) concluded that parental encouragement is the single most important predictor of students' planning to pursue postsecondary education.

Alliman-Brissett et al. (2004) examined African American adolescents' perceived parent support for the four sources of self-efficacy information hypothesized by Bandura (1997) and for their efficacy in four areas: career planning and exploration, knowledge of self and others, career decision-making, and school-to-career transitions. Participants were 81 African American girls (mean age = 13.16, SD = .93) and 81 African American boys (mean age = 13.19, SD = .91) in the eighth grade. They attended one public school in a large Metropolitan community with a population of greater than 2 million. School profiles indicated that approximately 50% of these students lived at or below the poverty

level, and approximately 50% lived at middle-income level. School profiles also indicated that less than 50% of the participants were predicted to graduate from high school on-time.

For African American girls, 40% of the variance in their confidence to know themselves and others in the context of their educational and career endeavors, and 38% of the variance in their career decision-making outcome expectations were predicted by their parents' emotional support. This suggests that when African American girls receive their parents' emotional support, they perceive that they will be able to make effective career choices, and that their career decisions will yield positive consequences.

For African American boys, 25% of the variance in their confidence to engage in career planning and exploration, 29% of the variance in their confidence to transition from school to career, 56% of the variance in their confidence to engage in career decision-making, and 49% of the variance in their positive career decision-making expectations were predicted by their parents' career-related modeling. For boys, 82% of the variance in their confidence to know themselves and others was predicted by their parents' career-related modeling (accounting for 57% of the variance), their parents' instrumental assistance as they practice career-related skills (accounting for 11% of the variance), and their parents' emotional support as they learn about themselves (accounting for 14% of variance). For each of these competencies, parents' career-related modeling was either the only or the primary predictor of African American boys' efficacy and outcome expectations. These results indicate that the primary predictor of girls' self-efficacy was their parents' emotional support and of boys' self-efficacy was their parents' career-related modeling.

Plank and Jordan (2001) examined the level of academic preparation associated with attending college after high school. Participants included approximately 25,000 students who were surveyed in the eighth, tenth, and twelfth grade from 1052 randomly selected schools. The authors found that there was a relationship between the level of support African American students received from adults in college-going activities such as filling out financial aid forms, and the likelihood that these students would attend college.

Stewart (2008) examines individual, family, and school characteristics that influence African American student achievement. Participants included a sample of 10th grade African American students abstracted from the National Educational Longitudinal Study (NELS) database. 1,238 African American students found within 546 high schools. Stewart found that parent-child discussion was significantly associated with academic achievement, thereby suggesting that parental engagement in education-related discussion with their children was an effective tool for increasing students' academic achievement.

Howard (2003) conducted a qualitative study examining the African American high school student's perceptions of their academic identities. Participants included 20 African American students from two urban high schools located in the Midwestern US. Results indicated that students mentioned that the role of their parents had the most powerful influence on their academic identity. This included parental influence helping student reach academic goals.

Some research also suggests that support from counselors and teachers may play a relatively more important role in shaping students' actual postsecondary educational

decisions, such as the choice of college to attend and the formation of students' predisposition toward college (Hossler et al., 1999).

In summary, these studies examined the relationship between having adult support and college-choice outcomes among black youth. These studies indicated that African American students who have the support of their parents and counselors are more likely to attend college than African American students who do not do these things. A quantitative measure assessing student self-efficacy in seeking out parents and counselors would be helpful in determining how parents and educators can assist students through college search tasks.

Achievement goals and self-efficacy

Bandura's (1977; 1997) social cognitive theory (SCT; 1977) model details four types of learning experiences through which self-efficacy beliefs are developed. These include past performance accomplishments, vicarious (or observational) learning, somatic and emotional states (e.g., anxiety), and verbal persuasion (e.g., encouragement).

According to Bandura, the most effective of these forms is performance accomplishments, or obtaining mastery experiences. The theory behind performance accomplishments is that as a person experiences personal success and achievement, they increase their self-efficacy. Bandura (1995) maintains that obtaining mastery experiences is related to understanding and acquiring a variety of cognitive, behavioral, and self-regulatory tools that allow one to evaluate and respond to changing life circumstances successfully.

One possible theoretical framework that can extend Bandura's theory about self-efficacy and performance accomplishments, and aid understanding of students' goals in

navigating the college-going process stems from achievement goal theory (Nicholls, 1984, 1989). Achievement goal theory assumes that there are two predominant goal orientations that people have when striving towards personal success and achievements. These goal orientations are task orientation and ego orientation (Nicholls, 1989). It is believed that task-oriented people have learning goals, and rely on “self-referenced conceptions of success and competence, and focus on learning, improving their performance, and mastering a task” (Kim et al., 2011, p. 32). On the other hand, ego-oriented people have mastery goals and believe that “task mastery or the refinement of their own skill is not sufficient to determine competence or success. Thus, their assessment of proficiency (i.e., success and competence) depends on comparison of their own performance with that of others” (Kim et al., 2011, p. 32). It is believed that task-oriented people focus on mastery goals, while ego-oriented people focus on performance goals (Dweck, 1986).

Mastery goals and performance goals serve different tasks and functions. Within the context of navigating challenging tasks, mastery goals have generally been found to be more beneficial than performance goals. To elaborate, the adoption of mastery goals predicts greater persistence and effort during challenging tasks (Elliott & Dweck, 1988) and increased use of deep-level cognitive processing strategies (Ames & Archer, 1988). In contrast, performance goals generally predict better school performance, especially among college students. Harackiewicz and her colleagues (2002) examined the role of achievement goals, ability, and high school performance in predicting academic success over students' college careers. They found that achievement goals, ability measures, and prior high school performance each contributed unique variance in predicting initial and

long-term outcomes, but these predictors were linked to different educational outcomes. They also found that mastery goals predicted continued interest, whereas performance-approach goals predicted performance. Usher (2008) examined the heuristics students use as they form their mathematics self-efficacy. Participants included eight middle school students who participated in semi-structured interviews and reported either high or low self-efficacy. The study's findings demonstrate that students with high mathematics self-efficacy also reported having high levels of achievement in mathematics, and students with low self-efficacy recounted their poor performance and struggles. In other words, when mathematics self-efficacy is high, students attribute it to having mastery goals. When mathematics self-efficacy is low, students recall their performance goals. This observation is consistent with Bandura's (1997) social cognitive theory, which posits that the interpretations students make of their past successes and failures serve as an important source of information about their efficacy.

There are other ways mastery goals and performance goals differ. When pursuing mastery goals, individuals strive to master a skill, for the internal satisfaction such mastery provides. For example, students with mastery goals might express that the knowledge gained in school is more important than getting good grades (e.g., Robins & Pals, 2002), and students expressing that they study because they like to learn (e.g., Dupeyrat & Marine, 2005). When pursuing performance goals, individuals strive to demonstrate their ability, frequently relative to others (e.g., Leondari & Gialamas, 2002). Examples include students focusing on achieving the grade they wanted (e.g., Dupeyrat & Marine, 2005; Robins & Pals, 2002) and focusing on their achievement compared to others (e.g., Thompson & Musket, 2005).

Within the mastery goals and performance goals literature, there are valenced factors which include approach-oriented goals and avoidance-oriented goals. Approach-oriented goals are directed toward acquiring a desirable outcome, whereas avoidant-oriented goals are directed toward avoiding an undesirable outcome (Elliot, 1999). An example of an approach-oriented mastery goal involves students reporting that they wanted to learn as much as possible (Elliot & McGregor, 2001). An example of an avoidant-oriented mastery goal involves students reporting that they wanted to avoid missing out on learning opportunities (Elliot & McGregor, 2001). An example of an approach-oriented performance goal involves students reporting that doing better than other students in school was important to them and would make them feel successful (Chen & Pajares, 2010). Finally, an example of an avoidant-oriented performance goal involves students reporting that their main goal was to avoid looking stupid in front of their peers (Chen & Pajares, 2010).

Using the achievement goal theory as a framework, I hypothesize that achievement-oriented goals, both mastery goals and performance goals will be positively related to all three factors, including knowledge, task, and support factors, of college-going self-efficacy. To test this, I plan to use the Achievement Goal Questionnaire-Revised (Elliot & Murayama, 2008; AGQ-R), which will assess mastery-approach, performance-approach, performance avoidance, and performance-avoidance goals of students. I also hypothesize that students will endorse having higher performance goals than mastery goals, as it relates to navigating college-going activities.

Social Cognitive Career Theory, Vocational Identity, and Self-Efficacy

Based in part on Bandura's Social Cognitive Theory (1977; 1997), Social Cognitive Career Theory (SCCT) was developed by Lent, Brown, and Hackett (1994; 2000) as a framework for academic and career development. In SCCT, Lent, Brown, and Hackett (1994; 2000) highlighted the four primary learning experiences postulated by Bandura: performance accomplishments, vicarious learning, social persuasion, and physiological and affective states. These theorists also highlighted the three variables that Bandura identified, self-efficacy beliefs, outcome expectations, and career goals, as they predict three career behaviors including forming interests, setting career goals, and making career choices (Brown & Lent, 2005). From this perspective, people's beliefs about their ability to perform certain tasks (i.e., self-efficacy) and their beliefs about whether their efforts will ultimately be successful (i.e., outcome expectations) mediate whether individual preferences will become career goals (and eventually actions). Forming career related interests, setting career goals, and making career choices are all characteristics of vocational identity. Vocational identity has been defined as the realization of an increasingly stable conceptualization of one's own vocational interests, talents, and goals (Holland, Daiger, & Power, 1980). So, in effect, based on SCCT principles, self-efficacy beliefs are related to vocational identity, in that high self-efficacy predicts stronger vocational identity.

Several studies have supported the link between self-efficacy and vocational identity. Hackett and Betz (1981), examined the self-efficacy expectations and vocational achievement of young adults. They initially hypothesized that personal self-efficacy beliefs would influence the career decision-making processes of people. Results of their

initial studies demonstrated that career decisions, achievements, and behaviors were influenced by self-efficacy beliefs in both young men and women (Hackett & Betz, 1981)

Choi et al., 2012 conducted a meta-analysis to investigate the relationships between career decision self-efficacy (CDSE) and its relevant variables, including vocational identity. The authors aimed to obtain a clear understanding of CDSE's role within the framework of social cognitive career theory (SCCT). The authors searched and selected nine relevant variables (gender, age, race, self-esteem, vocational identity, career barriers, peer support, vocational outcome expectation, and career indecision). The authors found that CDSE correlated significantly to self-esteem, vocational identity, peer support, vocational outcome expectation, and career indecision variables.

Research has indicated positive relationships among career decision-making self-efficacy and career-related constructs in college students. For instance, Taylor and Betz (1983) examined career decision-making self-efficacy in the treatment of career indecision in a sample of university students; they found that students' career decision-making self-efficacy was negatively correlated to levels of career indecision. In other words, the more vocational indecision students had the less self-efficacy they experienced. Taylor and Popma (1990) examined the relationships between career decision-making self-efficacy, vocational indecision, and locus of control. The authors' results were consistent with Taylor and Betz (1983), career decision-making self-efficacy was shown to be negatively related to vocational indecision and locus of control in college students.

Several studies have also examined the relationship between self-efficacy and vocational identity in high school students. Gushue et al. (2006) explored the relationship

between career decision making self efficacy and vocational identity. Participants in their study included 72 urban African American high school students. They found that career decision making self efficacy had a positive relationship with vocational identity. This finding supports the idea that African American students who have greater self-confidence also likely to have a better sense of their vocational interests, abilities, and goals.

Munson (1992) investigated the self-esteem, vocational identity, and career salience of high school students in the context of Super's theory of life span career development (Super, 1980; Super, Starishevsky, Matlin, & Jordaan, 1963). Super's theory posits that high self-esteem students have clearer and more definitive conceptions of themselves relative to career decision making than do low self-esteem students. Using Super's theory of life span career development, Munson (1992) investigated the differences between high school students with high versus low self-esteem on vocational identity and career salience. Participants included 125 male and 126 female high school juniors from urban, suburban, rural, and vocational schools. Munson found that students with high self-esteem scored significantly higher on vocational identity than low self-esteem students. He also found that students high in self-esteem scored high on career salience variables. High self-esteem students could best be differentiated from low self-esteem students on the basis of greater participation, commitment, and values expectations in school and home/family roles.

Using social career cognitive theory as a framework the study by Munson (1992) as a framework, I hypothesize that vocational identity will be positively related to all three factors, including knowledge, task, and support factors, of college-going self

efficacy. To test this, I plan to use the My Vocational Situation Scale (Holland, Daiger, & Power, 1980), which will assess Vocational Identity, the need for Occupational Information, and perceived barriers.

Current Measures

Currently, no psychometrically sound measures have been developed to investigate the college-going self-efficacy of African American urban high school students. The vast majority of the research in this area has been conducted with college populations, and with racially heterogeneous samples. While this research is vital, research is needed for African American high school populations to provide insight into the specificity of college-going experiences.

College-Going Self Efficacy Scale

The only empirically validated measure that has been developed for adolescent students not yet enrolled in college is the College-Going Self-Efficacy Scale (CGSES: Gibbons & Borders, 2010). The CGSES examines college-going self-efficacy of middle school students by examining their beliefs about college attendance and college persistence, which is characterized as beliefs about getting into college and beliefs about staying in college despite challenges, respectively. In the instrument development study related to the CGSES, the authors determined initial reliability of the measure. Participants ($n = 22$) were sixth through eighth graders, whose ages ranged in age from 11 to 13, with a mean age of 11.59 years old ($SD = .67$). Thirteen females and 9 males participated in the study, and most of the study participants were Caucasian ($n = 12$), followed by African American ($n = 6$), multiracial ($n = 2$), Hispanic/Latino ($n = 1$), and

other ($n = 1$). The cronbach's alpha ($n=22$) for the attendance subscale was .81, and for the persistence subscales it was .92. This suggests good internal consistency.

The next part of the study tested the reliability and validity of the scale. Participants included 272 seventh-grade students from four middle schools in a Southeastern state. Regarding gender of the sample, 154 females and 118 males participated in the study, and the average age of the participants was 12.65 ($SD = .61$, range = 12-14 years). In the sample, there was a large representation of Caucasian ($n = 93$), African American ($n = 83$), and Hispanic ($n = 65$) students, and smaller representations of Native American ($n = 1$), Asian American ($n = 5$), multiracial ($n = 17$), and other ($n = 7$) students. The revised version of the CGSES had 14 questions measuring attendance and 16 questions measuring persistence, for a total of 30 questions. Reliability was measured through the Cronbach's alpha coefficient. For the attendance subscale, the reliability alpha was .89; for persistence it was .90. the total scale had a coefficient alpha of .94, suggesting good evidence of internal consistency.

Following certain guidelines which included using simple words in the measure, choosing topics that were already familiar to middle schoolers, and wording items so they could be applied to any type of postsecondary experiences, Gibbons (2010) developed the college-going-self-efficacy measure using 15 items related to college attendance and 16 items related to college persistence. She found that college attendance items reflected financial issues (e.g., "I can find a way to pay for college"); issues related to ability (e.g., "I can get good grades in my high school math classes"); family-related issues (e.g., "I can have family support for going to college"); decision-making skills (e.g., "I can choose a good college"); as well as one overall item, "I can go to college after high school." these

items reflected the themes found in previous research on college attendance beliefs. College persistence items reflected financial questions (e.g., "I could pay for each year of college"); ability items (e.g., "I could do the classwork and homework assignments in college classes"); family items (e.g., "I could get my family to support my wish of finishing college"); and life skills (e.g., "I could set my own schedule while in college"). In addition, two overall items about persistence were included (e.g., "I could fit in at college"). Students respond to the prompt "How sure are you about being able to do the following" using a 4-point Likert-type scale (1 = not at all sure, 2 = somewhat sure, 3 = sure, 4 = very sure).

Finally, test-retest reliability was conducted to test the reliability of the measure over time. Of the 18 students who completed both surveys during a three-week interval, 13 were female and 15 were Caucasian/ White. The Cronbach's alpha of the test-retest bivariate analysis ($n = 18$) was .88, indicating a high level of consistency over time. Both the subscales and the total scale appear to produce similar answers from a single participant over a 3-week period, indicating that the construct of college-going self-efficacy is relatively stable over time.

Limitations of the CGSES

The CGSES was designed to measure college-going beliefs of middle school students in light of empirical evidence (e.g., Atanda, 1999; Oesterreich, 2000; Tierney et al., 2003) that this is a critical time in academic and career decision-making. The CGSES is unique and important because it provides a method for measuring college-going beliefs with a specific population. However, there are some limitations that make the CGSES undesirable for use with high school populations.

First, the CGSES focuses on students in the predisposition stage of college-choice. The CGSES was designed to measure students in the seventh grade, which is typically the beginning of the predisposition stage of college choice (Cabrera & La Nasa, 2000). Students at this stage of college choice development are deciding whether or not to attend college. The CGSES reflects questions that would be asked of students in this phase, including “I would like being in college” and “I can have family support for going to college”. Measure items such as these help students make a decision to attend college. While this is important, the measure does not address issues related to the search or choice stages of college choice, including narrowing down lists of institutions and learning about college costs. These issues would be more appropriate to consider with high school populations actually engaging in the college-going process.

Second, the CGSES was normed with a heterogeneous sample from suburban environments. The CSHS is different because the focus is on urban students, where other factors such as school environment and living environment affect academic outcomes. Understanding the self-efficacy beliefs that high school students face in the college-choice process is an important contribution to the college outcome literature.

Third, the CGSES measures both college attendance and persistence. While it is important to examine both attendance and persistence, the CSHS measures student confidence in completing college-going activities, and does not consider self-efficacy to persist, or complete activities while enrolled in college. Based on Hossler et al. (1989) and Cabrera and La Nasa (2000) there are domain-specific aspects of the college-choice outcomes that are separate from college persistence. Related to this, the CGSES does not take into account the developmental processes that are inherent to the college-going

process. Participants in the Gibbons and Borders (2010) study are asked about their beliefs about attending college, without the consideration that this may change depending on what resources are available to them and what phase there are at in the college-going process.

Finally, the CGSES has not been used with other studies. There are no other studies that have provided support for the validity of the measure. Although the studies suggested use of a total score for the CGSES, additional factor analyses with other populations are needed to confirm this result. Also, since the measure was normed with students from southeastern schools, studies of students outside of the Southeast would help broaden the generalizability of these results. Given all of these limitations of the CGSES, another measure of college-going self-efficacy, the CSHS, is needed to add to the literature of college-going.

Summary

The CSHS is important because it is different from other measures of college-going or academic self-efficacy. Other measures that examine self-efficacy include the College Self-Efficacy Inventory (Solberg et al., 1993), the Academic Self-Efficacy Scale (ASES; Elias & Loomis, 2000), and the Academic Self-Confidence scale (ASC; Le et al., 2005), and the College-Going Self-Efficacy Scale (CGSES; Gibbons & Borders, 2010). These measures differ from the CSHS in their purpose and intent.

Currently, there are no measures that examine high school student college-search self-efficacy beliefs using a predominantly African American sample. The purpose of my study is to create a psychometrically sound measure assessing high school student confidence in completing the tasks related to the college search process. It is

hypothesized that knowledge factors, task factors, and support factors will emerge. Knowledge factors will include confidence in acquiring college-related information necessary to make an informed decision about applying to college. Task factors will include confidence in completing college search tasks, including the exploring colleges, completing college application tasks, and completing financial aid and scholarship. Support factors will include confidence in asking for support from adults and understanding potential barriers to attending college. This will be a contribution to the college-going literature in that it will provide a new measure of student attitudes related to college-going tasks, where previous measures have not existed.

Hypotheses

1. The CSHS will exhibit robust psychometric properties, including a replicable factor structure, and strong internal consistency reliability.
2. Self-efficacy related to knowledge factors will relate positively to vocational identity and achievement goals, based on achievement goal theory, SCCT, and related studies. Knowledge factors will relate positively to each other, and are not expected to relate to life satisfaction.
3. Self-efficacy related to task factors will relate positively to vocational identity and achievement goals, based on achievement goal theory, SCCT, and related studies. Task factors will relate positively to each other, and are not expected to relate to life satisfaction.
4. Self-efficacy related to perceived support factors will relate positively to vocational identity and achievement goals based on achievement goal theory, SCCT, and related

studies. It was also hypothesized that perceived support factors will relate positively to each other, and are not expected to relate to life satisfaction.

5. The CSHS will be positively related to both performance goals and mastery goals, related to achievement as measured by the Achievement Goals Questionnaire-Revised (AGQ-R; Elliot & Murayama, 2008). This based on prior research indicating similar findings.

6. The CSHS will be positively related to vocational identity, as measured by the My Vocational Situations (MVS; Holland, Daiger, & Power, 1980). This based on prior research indicating similar findings.

7. The CSHS will not be related to life satisfaction, as measured by The Satisfaction with Life Scale (Diener, Emmons, Larson, & Griffin, 1985).

Chapter 3

METHOD and RESULTS

The method for this study included three separate phases. In Phase 1, items were generated for the College-Going Self-Efficacy scale of High School students (CSHS). Phase 2 was the main administration of the CSHS. In this phase, data was collected from a sample of high school students. The factor structure was examined and internal consistency and convergent and discriminant validity estimates was computed. Finally, in Phase 3, the test-retest reliability of the CSHS was assessed. The following sections describe the specific method individually.

Phase One: CSHS Item Development

Phase One Method

The purpose of this study was to create a measure of college-going self-efficacy and examine its psychometric properties on a sample of urban high school students living in a large metropolitan area. First, team members, including the primary investigator, his advisor and another professor in counseling psychology, and three graduate students in the Counseling and Personnel Services department, conducted a review of the empirical and theoretical literature examining the college-going experiences of high school students. We focused on articles where self-efficacy predicted the college-going experiences of high school students. Two databases were used to identify the empirical and theoretical literature examining the college-going experiences of high school students: PsycInfo and ERIC (Educational Resources Information Center). These search engines are comprehensive databases of literature in psychology, education, and related fields. All articles containing the terms “self-efficacy” or “college-going” were examined

for information regarding the college-going experiences of high school students and whether self-efficacy played a role in the decision to attend college. From this search, we found that several authors maintained that self-efficacy did play a role in high school students' process of narrowing their list of college choices or in their decision to attend college (e.g., Gibbons & Borders, 2010).

Second, team members developed themes of college-going activities. Next, the team members came to a consensus regarding the themes, and decided on seven thematic categories. These categories included knowledge of oneself, knowledge about colleges, exploration about colleges, college application tasks, seeking financial aid/scholarship monies, support from adults, and potential barriers. Next, items were created to represent each of the themes, totaling 120 initial items. The primary investigator and several graduate students sorted items into themes and the entire team deleted 40 items due to redundancy. Then, a team member gave items with the themes to experts in the field of college access and enrollment, who were asked to sort items into themes and give general feedback. These experts were two female doctoral-level educators who have had at least 10 years of experience with student issues of college access and equity. Team members discussed the feedback and finalized the items for the CSHS. The initial version of the CSHS consisted of 60 items.

Phase One Results

The researchers identified seven thematic categories from their review of the literature. These seven thematic categories were then grouped into three factors: knowledge factors, task factors, and support factors. The knowledge factors included knowledge of oneself and knowledge about colleges. The task factors included

exploration about colleges, college application tasks, and seeking financial aid/scholarship monies. The perceived support factors included support from adults, and potential barriers.

The initial version of the CSHS consisted of 60 items. Seven of the items represented the thematic category confidence in knowledge of oneself, eight items represented the thematic category confidence in knowledge about colleges, ten items represented the thematic category confidence in exploring colleges, eight items represented the thematic category confidence in completing college application tasks, nine items represented the thematic category confidence in acquiring information about financial aid/scholarship monies, nine items represented the thematic category confidence in receiving support from adults, and nine items represented the thematic category confidence in understanding potential college barriers (see Table 1).

Phase Two: Factor Analysis and Initial Reliability and Validity Estimates

Phase Two Method

The purpose of phase 2 was to investigate the factor structure of the CSHS, and to collect reliability and validity data. First, the CSHS was administered via paper copy to 272 high school student residing in the DC metropolitan area. Next, factor analyses were performed and reliability estimates were calculated. In order to assess convergent validity, measures of vocational identity and achievement goals were included in the paper survey. Additionally, to study discriminant validity, a measure of life satisfaction was administered.

Table 1.

Hypothesized Subscales and Items.

Subscale	Item
Knowledge about Oneself (7 items)	CSHS-Q11 (Identify my interests)
	CSHS-Q16 (Identify my values)
	CSHS-Q23 (Know my academic strengths)
	CSHS-Q30 (Know my academic weaknesses)
	CSHS-Q34 (Identify several career goals)
	CSHS-Q36 (Know my learning style)
	CSHS-Q48 (State why going to college is important to me)
Knowledge about College (8 items)	CSHS-Q5 (Clearly describe the type of college I want to attend)
	CSHS-Q8 (Identify college majors that match my abilities)
	CSHS-Q12 (Identify colleges that I have a good chance of being accepted to)
	CSHS-Q17 (Identify college majors that match my interests)
	CSHS-Q15 (Describe the characteristics of three different colleges)
	CSHS-Q18 (Identify colleges that match my abilities)
	CSHS-Q21 (Name three colleges in my state)
CSHS-Q28 (Identify several possible college majors of interest to me)	
Exploration about College (10 items)	CSHS-Q9 (Describe what a college major is)
	CSHS-Q24 (Identify some of the classes that make up a major)
	CSHS-Q26 (Know how college will affect my future)
	CSHS-Q38 (Talk to a teacher about possible college options)
	CSHS-Q41 (Rank colleges on criteria important to me)
	CSHS-Q49 (Talk to an admissions counselor at a college)
	CSHS-Q53 (Visit college campuses to learn more about college life)
CSHS-Q54 (Use resources like the College Source Book to learn about colleges)	
CSHS-Q58 (Use the Internet to learn about several colleges)	
CSHS-Q60 (Talk to my counselor about applying to college)	
College Application Tasks (8 items)	CSHS-Q4 (Complete three college applications)
	CSHS-Q6 (Complete a test preparation course)
	CSHS-Q10 (Develop test taking strategies to improve my test scores)
	CSHS-Q13 (Do well on the necessary tests for college admission)
	CSHS-Q25 (Maintain a 3.0 GPA)
	CSHS-Q27 (Obtain three outstanding letters of recommendation from adults who know me well)
	CSHS-Q44 (Score a 3 or better on all of my advanced placement tests)
CSHS-Q56 (Write an excellent personal statement/essay for college applications)	

Table 1.

Hypothesized Subscales and Items (continued).

Subscale	Item
Financial Aid /Scholarship Monies (9 items)	CSHS-Q1 (Determine the cost of attending different colleges)
	CSHS-Q3 (Complete the Free Application for Federal Student Aid (FAFSA) financial aid form)
	CSHS-Q20 (Apply for three scholarships)
	CSHS-Q33 (Identify three possible scholarships that I qualify for)
	CSHS-Q35 (Obtain enough financial assistance to be able to go to college)
	CSHS-Q46 (Save enough money for college)
	CSHS-Q52 (Talk to my family about how much money they can contribute to my college education)
	CSHS-Q57 (Understand the differences between grants, loans, scholarships and work study)
	CSHS-Q59 (Talk to someone at a college about obtaining financial aid for college)
Support From Adults (9 items)	CSHS-Q14 (Find an adult who will read my college essays and give feedback)
	CSHS-Q32 (Obtain emotional support from my parents/guardians to go to college)
	CSHS-Q37 (Receive help from my parents to complete the college applications)
	CSHS-Q39 (Receive encouragement from adults to go to college)
	CSHS-Q40 (Talk to current college students about their college experiences)
	CSHS-Q42 (Talk to 3 adults about their college experience)
	CSHS-Q50 (Receive support from my teachers to complete the college applications)
	CSHS-Q51 (Receive support from my counselor to complete the college applications)
	CSHS-Q55 (Talk with an adult who went to college for advice about the application process)
Potential Barriers (9 items)	CSHS-Q2 (Ask for help when I am having trouble with my college application form)
	CSHS-Q7 (Deal successfully with the things that get in the way of my completing my application)
	CSHS-Q19 (Develop an alternative plan if none of my top choices for college accept me)
	CSHS-Q22 (Not give up when I feel overwhelmed with applying to college)
	CSHS-Q29 (Identify strategies to improve my grade point average)
	CSHS-Q31 (Meet the deadlines for submitting my college applications)
	CSHS-Q43 (Prioritize the tasks needed to complete my college application)
	CSHS-Q45 (Spend time filling out the application when I would rather do something else)
	CSHS-Q47 (Persist in getting answers to my questions about college applications)

Participants

Participants included 272 individuals between the ages of 13 and 18, with a mean age of 15.47, standard deviation of 1.2. The response rate was 45.3%. All participants were high school students at a Washington, DC charter school. All participants resided in the Washington DC metropolitan area within the continental United States at the time of survey administration. 43.4% of respondents were women, 43% were men, and 13.6% did not complete demographic information on gender. No respondents identified as transgendered. 94% of respondents self-identified as African American, while 3% self-identified as Asian, Latino, Native American, or Caucasian, and 3% self-identified in the other category. 26% of respondents were 9th graders, 28% of respondents were 10th graders, 42% of respondents were 11th graders, and 3% of respondents were 12th graders. (See Table 8).

Procedure

All participants were recruited through a local charter school in Washington, DC. Participants from 9th, 10th, 11th and 12th grade students were voluntarily recruited to participate in this study. According to the DC Public Charter School Annual Report (2008), the local charter school used in this study had approximately 1400 students enrolled and is made up of 97% percent African Americans with 67% of the population participate in free/reduced fee lunch program. It also reported a 100% college acceptance rate and \$6,000,000 in total scholarship dollars awarded. The charter school agreed to participate in the study in an effort to get information that could help increase the rate in which students were accepted into selective colleges and universities.

First, the CSHS was administered via paper copy to 600 high school students attending a local charter school in Washington DC. Of the 600 high school students that surveys were given to, 387 attempted to complete the surveys. After checking the surveys, the research team discarded surveys when the team members determined that participants gave patterned responses (responding the same to all items in a row). Three members of the team spot checked all of the 387 surveys and determined to eliminate surveys that contained a patterned response (e.g. single response, zig-zag response) and had missing items from survey. Of the 387 surveys collected, 115 had patterned data or missing items. To elaborate, 43 surveys were eliminated due to insufficient information including not responding to more than 9-items (or 15%) of the 60-item scale. In addition to this, 72 surveys were eliminated due to unlikely response patterns for at least 20 of the items. These respondents chose the same response for every item on a scale, or chose items that in a patterned response. Thus, 272 surveys were retained. These 272 surveys included no more than 9-items of missing data. The response rate was 45.3%. Finally, participants who successfully completed the entire survey were entered into a lottery to win one of three \$100 cash prizes.

Measures

College-Going Self-Efficacy scale of High School students (CSHS). This instrument contained a total of 60 items. All of the items assessed the tasks that students would have to complete in order to prepare for going to college. We hypothesized that the measure would be composed of seven subscales, including: knowledge of oneself (7 items), knowledge about colleges (8 items), exploration about colleges (10 items), college

application tasks (8 items) financial aid/scholarship monies (9 items), support from adults (9 items), and potential barriers (9 items) (See table 1).

Vocational Identity. The My Vocational Situation Scale (Holland, Daiger, & Power, 1980) is a three-scale measure comprised of: (a) the 18-item Vocational Identity (VI) scale: (b) the 4-item occupational Information scale, which allows a client the opportunity to indicate the need for occupational information: and (c) the 4-item barrier scale, which invites a client to indicate perceived external obstacles to a chosen occupational goal (Nicholas & Pretorius, 1994). The VI scale is composed of 18 true or false items. A high score reflects a strong sense of vocational identity, whereas a low score indicates a diffused vocational identity and an interest in receiving vocational assistance.

Estimates of reliability for the VI scale provided by the authors ranged between .86 and .89 (Holland et al., 1980), while a test-retest reliability .64 has also been obtained (Lucas, Gysbers, Buescher, & Heppner, 1988). Regarding the validity of the MVS, small to moderate positive correlations between the three MVS scales and age (Holland, Diager, & Power, 1980) as well as the number and variety of occupational aspirations (Holland, Gottfredson, & Power, 1980) have been reported.

The Occupational Information scale had reliabilities of .39 (men) and .44 (women) for a sample of 496 high school students and .79 (men) and .77 (women) for a sample of 592 college students and workers (Holland et al., 1980). The Barriers scale had a reliability of .23 for college students and .45 (men) and .65 (women) for college students and workers. Holland and his colleagues describe these latter two scales, the

Occupations Information scale and the Barriers scale, as checklists and make no claim that they function as homogeneous scales (Holland et al., 1980)

Achievement goals. The Achievement Goal Questionnaire-Revised (Elliot & Murayama, 2008; AGQ-R) was used to assess achievement goals. Participants respond to the AGQ-R on a scale of 1 (strongly disagree) to 5 (strongly agree), and the items are averaged to form the mastery-approach, performance-approach, mastery avoidance, and performance-avoidance indexes. All of the subscales demonstrated high levels of internal consistency: For mastery approach goals, mastery-avoidance goals, performance-approach goals, and performance-avoidance goals, Cronbach's alpha was .84, .88, .92, and .94, respectively (Elliot & Murayama, 2008). The structural validity and model fit of the scale were evident through the use of confirmatory factor analysis (CFA). The results from the CFA indicate that factor loadings were quite high (ranging from .93 to .73), but each fit statistic met the criteria for a good fitting model: $\chi^2(48, N = 229) = 78.32, p < .01$, $\chi^2/df = 1.63$, CFI = .99, IFI = .99, RMSEA = .053 (Elliot & Murayama, 2008). Due to a clerical error during the administration of the scale, only three of the four subscales were administered: mastery-approach, performance-approach, and performance-avoidance.

Life Satisfaction. The Satisfaction with Life Scale (Diener, Emmons, Larson, & Griffin, 1985) was used to assess global life satisfaction. This scale consists of 5 items using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Example items include "In most ways my life is close to my ideal" and "I am satisfied with my life." Scores on all items are summed; high scores correspond to strong levels of life satisfaction. Pavot et al. (1991) reported that the SWLS correlated positively with

several other measures of positive well-being, thus lending support for the validity of the measure. Finally, an alpha coefficient of .85 was reported for an undergraduate sample (Pavot et al., 1991).

Demographics. A demographic form was developed by the researchers to collect data regarding the following: age, gender, year in school, race/ethnicity, parents' level of education, participation in free/reduced fee lunch program, PSAT and SAT courses, GPA, and enrollment in advanced placement and honors courses.

Phase Two Hypotheses

Table 2 provides item statistics for the CSHS scale for the total sample. The coefficient alpha was .86. The item with the most skewed distribution was item #26 (Know how college will affect my future), Skewness = -1.42. The item demonstrating the largest amount of kurtosis was item #3 (Complete the Free Application for Federal Student Aid (FASFA) financial aid form), kurtosis = -1.03. All item skewness and kurtosis values were in an acceptable range. Overall, the item with the lowest average score is — “Complete a test preparation course”. Although low, the item does not have obvious content or meaning problems, it does have positive correlations with most of the other items in the scale. I decided to retain this item, although it could become a candidate for attempts at improvement in future research.

First, the CSHS was hypothesized to be composed of seven subscales. Specifically, two types of knowledge factors, three types of task factors, and two types of perceived support factors were expected to emerge.

Second, it was hypothesized that the CSHS would exhibit robust psychometric properties, including a replicable factor structure, and strong internal consistency

reliability. It was expected that knowledge factors would relate positively to vocational identity and achievement goals. It was also expected that the knowledge factors would relate positively to each other. Finally, the knowledge factors were not expected to relate to life satisfaction. It also was expected that the task factors would relate positively to vocational identity and achievement goals. It was also expected that the task factors would relate positively to each other and were not expected to relate to life satisfaction. Finally, it was hypothesized that the perceived support factors would relate positively to vocational identity and achievement goals. It was also expected that the perceived support factors would relate positively to each other and were not expected to relate to life satisfaction (see Table 6).

Confirmatory factor analysis (CFA) was performed in order to determine whether the data fit the hypothesized model. Specifically, conducting a CFA allows researchers to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists. As stated earlier, the CSHS was hypothesized to be composed of seven subscales. Specifically, two types of knowledge factors, three types of task factors, and two types of perceived support factors were expected to emerge. This hypothesized model is based on theory.

In addition to testing the factor structure using a CFA, an exploratory factor analysis (EFA) would be performed. In the event that the factor structure is not confirmed, EFA would be the next step. EFA would help to determine what the factor structure looks like according to how participant responded. Also, an EFA would be conducted to identify the underlying relationships between measured variables.

It was anticipated that each subscale of the CSHS would demonstrate unique relations with the measures included to assess validity. These hypotheses remained tentative because we had not established that the expected scales for the CSHS would be supported by factor analyses. Specifically, if a CFA indicated that the predicted subscales emerged, we hypothesized that knowledge about oneself would positively relate most strongly to achievement goals. On the other hand, knowledge about oneself was not expected to relate to life satisfaction. We hypothesized that knowledge about colleges would positively relate most strongly to achievement goals, but not to life satisfaction. We hypothesized that exploration about colleges would positively related to both achievement goals and vocational identity. On the other hand, exploration of colleges was not expected to relate to life satisfaction. We hypothesized that college application tasks would positively relate to both achievement goals and vocational identity. On the other hand, college application tasks were not expected to relate to life satisfaction. We expected task for financial aid/scholarship would positively relate more strongly to achievement goals. Finally, we hypothesized that support from adults and potential barriers would positively related to both achievement goals and vocational identity, but not relate to life satisfaction (see Table 3).

Phase Two Results

Confirmatory factor analyses (CFAs) were conducted on the college-going items using EQS 6.0. The specific model analyzed is depicted in Figure 1. Several indices were examined, including the χ^2 goodness-of-fit statistic, root mean square error of approximation (RMSEA), and comparative fit index (CFI). In order to determine how well the college-going items fit the hypothesized model factor, “goodness-of-fit” indices

were examined. The Goodness-of-fit statistics evaluate the model and determine how well competing models fit the data. For the χ^2 goodness-of-fit statistic, a χ^2 value that is less than twice the model's degrees of freedom indicated an acceptable overall model fit (Hu & Bentler, 1995). Goodness of fit statistic was tested, and the results indicated a poor model fit: χ^2 (df = 1689, N = 272) = 3660.1.

Table 2.

Detailed Item Statistics for College-going Self-Efficacy Scale

Item	Mean	SD	Skewness	Kurtosis
1. (Determine the cost of attending different colleges)	6.09	2.297	-.391	-.649
2. (Ask for help when I am having trouble with my college application form)	7.14	2.380	-1.12	.165
3. (Complete the Free Application for Federal Student Aid (FASFA) financial aid form)	6.01	2.727	-.438	-1.03
4. (Complete three college applications)	6.50	2.766	-.782	-.703
5. (Clearly describe the type of college I want to attend)	7.00	2.281	-.914	-.082
6. (Complete a test preparation course)	5.79	2.437	-.383	-.764
7. (Deal successfully with the things that get in the way of my completing my application)	6.54	2.342	-.660	-.525
8. (Identify college majors that match my abilities)	7.06	2.269	-1.07	.117
9. (Describe what a college major is)	6.64	2.321	-.752	-.380
10. (Develop test taking strategies to improve my test scores)	6.40	2.512	-.685	-.665
11. (Identify my interests)	7.45	2.154	-1.31	.757
12. (Identify colleges that I have a good chance of being accepted to)	6.76	2.363	-.829	-.383
13. (Do well on the necessary tests for college admission)	6.27	2.351	-.657	-.461

Table 2.

Detailed Item Statistics for College-going Self-Efficacy Scale (continued)

Item	Mean	SD	Skewness	Kurtosis
14. (Find an adult who will read my college essays and give feedback)	7.17	2.271	-1.119	.234
15. (Describe the characteristics of three different colleges)	5.93	2.496	-.461	-.846
16. (Identify my values)	6.52	2.505	-.720	-.621
17. (Identify college majors that match my interests)	7.07	2.300	-1.043	.082
18. (Identify colleges that match my abilities)	6.83	2.419	-.952	-.183
19. (Develop an alternative plan if none of my top choices for college accept me)	6.57	2.472	-.777	-.501
20. (Apply for three scholarships)	6.77	2.664	-.965	-.345
21. (Name three colleges in my state)	6.98	2.700	-1.081	-.229
22. (Not give up when I feel overwhelmed with applying to college)	6.99	2.266	-1.046	.133
23. (Know my academic strengths)	7.03	2.184	-1.048	.385
24. (Identify some of the classes that make up a major)	6.35	2.409	-.694	-.379
25. (Maintain a 3.0 GPA)	6.75	2.399	-.754	-.516
26. (Know how college will affect my future)	7.63	2.056	-1.417	.949
27. (Obtain three outstanding letters of recommendation from adults who know me well)	7.13	2.326	-1.173	.353
28. (Identify several possible college majors of interest to me)	6.92	2.357	-1.013	.046
29. (Identify strategies to improve my grade point average)	7.03	2.249	-1.035	.194

Table 2.

Detailed Item Statistics for College-going Self-Efficacy Scale (continued)

Item	Mean	SD	Skewness	Kurtosis
30. (Know my academic weaknesses)	6.92	2.408	-.943	-.260
31. (Meet the deadlines for submitting my college applications)	6.73	2.540	-.915	-.313
32. (Obtain emotional support from my parents/guardians to go to college)	7.13	2.375	-1.120	.146
33. (Identify three possible scholarships that I qualify for)	6.35	2.634	-.691	-.721
34. (Identify several career goals)	7.09	2.410	-1.131	.183
35. (Obtain enough financial assistance to be able to go to college)	6.13	2.602	-.617	-.767
36. (Know my learning style)	7.16	2.072	-.966	.085
37. (Receive help from my parents to complete the college applications)	6.91	2.510	-1.011	-.160
38. (Talk to a teacher about possible college options)	7.08	2.442	-1.149	.194
39. (Receive encouragement from adults to go to college)	7.37	2.320	-1.341	.676
40. (Talk to current college students about their college experiences)	7.16	2.403	-1.247	.482
41. (Rank colleges on criteria important to me)	6.23	2.710	-.589	-.910
42. (Talk to 3 adults about their college experience)	6.58	2.556	-.825	-.509
43. (Prioritize the tasks needed to complete my college application)	6.70	2.441	-.855	-.345
44. (Score a 3 or better on all of my advanced placement tests)	5.83	2.489	-.415	-.789
45. (Spend time filling out the application when I would rather do something else)	6.57	2.574	-.907	-.300

Table 2.

Detailed Item Statistics for College-going Self-Efficacy Scale (continued)

Item	Mean	SD	Skewness	Kurtosis
46. (Save enough money for college)	6.29	2.537	-.628	-.755
47. (Persist in getting answers to my questions about college applications)	6.67	2.461	-.816	-.393
48. (State why going to college is important to me)	7.35	2.218	-1.241	.561
49. (Talk to an admissions counselor at a college)	6.51	2.524	-.749	-.542
50. (Receive support from my teachers to complete the college applications)	6.89	2.497	-1.003	-.129
51. (Receive support from my counselor to complete the college applications)	6.74	2.594	-.961	-.265
52. (Talk to my family about how much money they can contribute to my college education)	6.77	2.509	-.904	-.344
53. (Visit college campuses to learn more about college life)	7.16	2.311	-1.165	.355
54. (Use resources like the College Source Book to learn about colleges)	6.48	2.534	-.821	-.419
55. (Talk with an adult who went to college for advice about the application process)	6.79	2.546	-.938	-.280
56. (Write an excellent personal statement/essay for college applications)	6.47	2.488	-.866	-.252
57. (Understand the differences between grants, loans, scholarships and work study)	6.71	2.466	-.907	-.192
58. (Use the Internet to learn about several colleges)	7.37	2.124	-1.291	.807
59. (Talk to someone at a college about obtaining financial aid for college)	6.83	2.429	-.989	-.031
60. (Talk to my counselor about applying to college)	6.91	2.580	-1.026	-.172

The RMSEA is an absolute fit index that assesses how well an a priori model reproduces the sample data (Hu & Bentler, 1999). RMSEA values $<.06$ are considered to indicate good fit between the hypothesized model and the observed data (Hu & Bentler, 1999). The RMSEA value for the proposed model was $.079$, indicated a poor fit between the proposed model and the data. Finally, the CFI is an incremental fit index where fit is determined by comparing a target model with a more restricted, nested base model (Hu & Bentler, 1999). Values of $.95$ or greater indicate acceptable model fit (Hu & Bentler, 1999). CFI values were $.715$, indicated a poor model fit. Since the factor structure was not confirmed using a CFA, EFA was performed.

Prior to running the EFA, the factorability of the data set was assessed. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test of sphericity were used to assess the suitability of the data set for structure detection. The KMO is a statistic that indicates the proportion of variance in your variables that might be caused by underlying factors. The KMO assesses the probability that a data set contains factors as opposed to correlations based purely on chance. This test yields a score between 0 and 1, with values closer to 1 indicating a greater likelihood of the presence of true factors. A minimum KMO score of $.60$ is needed to determine that the sample is adequate for a factor analysis. The KMO score for the data set in the present study was $.93$. Furthermore, Kaiser's measure of sampling adequacy (MSA) for all items was greater than $.90$ which is considered very good (Pett, Lackey, & Sullivan, 2003).

Table 3.

Relationship between hypothesized CSHS scales and other measures.

NR – No Relationship

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Knowledge about Oneself	1													
2. Knowledge about College	+	1												
3. Exploration about College	+	+	1											
4. College Application Tasks	+	+	+	1										
5. Financial Aid	+	+	+	+	1									
6. Scholarship Monies	+	+	+	+	+	1								
7. Support From Adults	+	+	+	+	+	+	1							
8. Vocational Identity	+	+	+	+	+	+	+	1						
9. Occupational Information	-	-	-	-	-	-	-	+	1					
10. Barriers	-	-	-	-	-	-	-	+	+	1				
11. Mastery Approach	+	+	+	+	+	+	+	+	+	+	1			
12. Performance Approach	+	+	+	+	+	+	+	+	+	+	+	1		
13. Performance Avoidance	+	+	+	+	+	+	+	+	+	+	+	+	1	
14. Satisfaction with Life	NR	NR	NR	NR	NR	NR	NR	+	+	-	NR	NR	NR	1

Bartlett's (1950) test of sphericity is used to test the null hypothesis that the correlation matrix is random. Bartlett's test of sphericity tests the hypothesis that your correlation matrix is an identity matrix, which would indicate that your variables are unrelated and therefore unsuitable for structure detection. Bartlett's test was used and the results were significant, χ^2 (df= 300, $N = 272$) = 3281.8, $p < .01$. Thus the KMO score and Bartlett's test confirmed the factorability of the data set.

Exploratory factor analyses were used to examine the factor structure of the CSHS. In order to interpret factor structure, the pattern matrix and structure matrix were examined for item loadings to determine the number of factors to retain; several methods including Kaiser's (1960) eigenvalues greater than one rule, Cattell's (1966) scree test, total variance, and residuals (the difference between the empirical and reproduced correlations) were utilized (Mertler & Vannatta, 2010; Stevens, 2010). The method of extraction employed was principal axis factor analysis, which examines only shared variance among items. As the purpose of the factor analysis was to uncover latent variables represented by the items on the CSHS, principal axis factor analysis was the most appropriate method of extraction (Kahn, 2006; Worthington & Whittaker, 2006). The Promax rotation was selected because the hypothesized factors of the MCRS were expected to be correlated. Kahn (2006) recommends the Promax procedure as superior to other oblique rotations because using this method with orthogonal and correlated factors can provide a truer fit for the data than other rotations.

A Principal axis factor analysis with the Promax rotation (number of factors unspecified) was computed for the data set. The scree plot was examined using a scree line to determine the point at which the variance contributed by the factors leveled off.

The results of this assessment suggested a three or four factor solution. Next, the variance accounted for by each solution was considered. The three factor solution accounted for 49.6% of the total variance, whereas the four factor solution accounted for 53.7%.

Two Principal axis factor analyses with promax rotations were computed, with three and four factors extracted. Each factor solution was independently considered by each researcher to determine the most promising solution. Special attention was given to find the solution with the highest loading items with fewest cross-loadings, and greatest variance explained while maintaining parsimony. Based upon these criteria, both researchers independently selected the four factor solution as the best fit for the data.

The data set included the original 60 items. To retain only the most robust items in the four-factor solution, we eliminated any items loading below .35 on any factor. This would allow for at least 4 items on each factor. This eliminated seven of the original 60 items, reducing our data set to 53. Next, we eliminated items that displayed multiple loadings of at least .30. This eliminated nine items, reducing our data set to 44. The factor analysis was re-run, and four items with multiple loadings of at least .30 were eliminated, reducing the data set to 40 items. We decided to include 8 items in each scale, except the last scale which only had four items. We eliminated any items beyond the highest 8 loading items for any factor. Thus, five items on factor 1, three items on factor 2, and four items on factor 3 were all eliminated, leaving 28 retained items. Finally, the factor analysis was run again with the 28 retained items. All items (except for the 1 item on factor 4) loaded above .40, thus all 28 items were retained.

Description of Factors on the CSHS

When the items on the CSHS were first developed, the hypotheses posed that seven factors would emerge from the 60 original items. The seven hypothesized factors included knowledge of oneself, knowledge of college, exploration of colleges, completing college application tasks, acquiring information about financial aid, receiving support from adults, and understanding barriers. Based on the results of the CFA, the specific factors that emerged did not match the hypotheses. Thus, the specific hypotheses regarding the subscales and their relations with the measures included to assess validity cannot be assessed. However, the relationships among the actual CSHS factors and the scales used to assess construct validity showed patterns that were both consistent and inconsistent with our hypotheses.

Factor 1: Making a decision to attend college. Factor one appeared to measure how confident students were in completing tasks related to deciding to go to college. The name of the factor was chosen because a number of items on the factor described activities that students would need to explore before applying to college, including “state why going to college is important to me”. This factor included knowledge activities that would assist students in deciding whether to attend college, with items such as “knowing how college will affect my future”. The factor also included support activities needed to help in the pre-decision process, with items such as “receive encouragement from adults to go to college”. The highest loaded item on Factor 1 was “receive encouragement from adults to go to college”. The lowest loaded factor on Factor 1 was “find an adult who will read my college essays and give feedback”.

Table 4.

Final items retained on College-Going Self-Efficacy scale for High School students

Item	Factor Loadings
<i>FACTOR 1: Making a Decision to Attend College</i>	
CSHS-Q39 (Receive encouragement from adults to go to college)	.944
CSHS-Q48 (State why going to college is important to me)	.628
CSHS-Q26 (Know how college will affect my future)	.607
CSHS-Q30 (Know my academic weaknesses)	.550
CSHS-Q38 (Talk to a teacher about possible college options)	.534
CSHS-Q32 (Obtain emotional support from my parents/guardians to go to college)	.534
CSHS-Q34 (Identify several career goals)	.527
CSHS-Q14 (Find an adult who will read my college essays and give feedback)	.478
<i>FACTOR 2: Applying to College</i>	
CSHS-Q6 (Complete a test preparation course)	.793
CSHS-Q15 (Describe the characteristics of three different colleges)	.617
CSHS-Q24 (Identify some of the classes that make up a major)	.604
CSHS-Q10 (Develop test taking strategies to improve my test scores)	.579
CSHS-Q9 (Describe what a college major is)	.568
CSHS-Q4 (Complete three college applications)	.552
CSHS-Q3 (Complete the Free Application for Federal Student Aid (FASFA) financial aid form)	.540
CSHS-Q23 (Know my academic strengths)	.489

Table 4.

Final items retained on College-Going Self-Efficacy scale for High School students (continued)

Item	Factor Loadings
<i>FACTOR 3: Preparing to Apply to College</i>	
CSHS-Q56 (Write an excellent personal statement/essay for college applications)	.652
CSHS-Q60 (Talk to my counselor about applying to college)	.646
CSHS-Q49 (Talk to an admissions counselor at a college)	.627
CSHS-Q51 (Receive support from my counselor to complete the college applications)	.581
CSHS-Q59 (Talk to someone at a college about obtaining financial aid for college)	.581
CSHS-Q52 (Talk to my family about how much money they can contribute to my college education)	.571
CSHS-Q46 (Save enough money for college)	.565
CSHS-Q54 (Use resources like the College Source Book to learn about colleges)	.538
<i>FACTOR 4: Deciding a College to Attend</i>	
CSHS-Q18 (Identify colleges that match my abilities)	.796
CSHS-Q17 (Identify college majors that match my interests)	.523
CSHS-Q12 (Identify colleges that I have a good chance of being accepted to)	.391
CSHS-Q19 (Develop an alternative plan if none of my top choices for college accept me)	.336

Factor 2: Applying to college. Factor two appeared to measure how confident students were in completing tasks related to applying to college. The name of the factor was chosen because a number of items on the factor described activities that students would need to explore in order to apply to college, including “complete three college applications” and “complete the free application for federal student aid”. The factor had

task activities directly related to the college application process, including “complete a test preparation course” and “complete three college applications”. The factors also included knowledge activities related to applying to colleges based on vocational interest, including “identify some to the classes that make up a major”. The highest loaded factor on Factor 2 was “complete a test preparation course”. The lowest loaded factor on Factor 2 was “know my academic strengths”.

Factor 3: Preparing to apply to college. Factor three appeared to measure how confident students were in completing tasks related to making preparations to apply to college. The name of the factor was chosen because a number of items on the factor described activities that students would need to explore in order to prepare for applying to college, including “talk to my counselor about applying to college” and “and talk to my family about how much they can contribute to my college education”. The factor was comprised of many task and support related activities. Task activities included items related to obtaining financial aid needed before applying to college, including “save enough money for college” and “talk to my family about how much money they can contribute to my college education”. Task activities also included items related to learning more about college before applying, including “use resources like the College Source Book to learn about colleges. The factor also included support items needed before applying to college, such as “receive support from my counselor to complete the college applications”. The highest loaded factor on Factor 3 was “write an excellent personal statement/essay for college applications”. The lowest loaded factor on Factor 2 was “save enough money for college”.

Factor 4. Deciding where to go to college. Factor four appeared to measure how confident students were in completing tasks related to deciding where to go to college. The name of the factor was chosen because a number of items on the factor described activities that students would need to explore in order to decide where to go to college after completing all the others steps, including “Identify colleges that match my abilities” and “identify college majors that match my interests”. The highest loaded factor on Factor 4 was “Identify colleges that match my abilities”. The lowest loaded factor on Factor 2 was “develop an alternative plan if none of my top choices for college accept me”.

Factors relationship to others measures. The four factors of the college-going self efficacy scale related to vocational identity, achievement goals, and satisfaction with life. The reliability for Factor 1 (making a decision to attend college) was .87. Table 6 indicated that Making a decision to attend college was moderately and positively related to Vocational Identity ($r = .29, p < 0.01$), mastery approach ($r = .45, p < 0.01$), performance avoidance ($r = .34, p < 0.01$), performance approach ($r = .44, p < 0.01$), and satisfaction with life ($r = .31, p < 0.01$). This factor was slightly negatively related to Barriers ($r = -.15, p = 0.02$). On average, participants reported quite a bit of confidence of confidence in tasks related to making a decision to attend college.

The reliability for Factor 2 (applying to college) was .86. Table 6 indicated that applying to college was slightly positively related to vocational identity ($r = .22, p = 0.01$) and grade point average ($r = .22, p = 0.03$). This factor was moderately and positively related to mastery approach ($r = .41, p < 0.01$), performance avoidance ($r = .28, p < 0.01$), performance approach ($r = .40, p < 0.01$), and satisfaction with life ($r = .34, p <$

0.01). This factor was slightly negatively related to Barriers ($r = -.16$, $p = 0.02$). On average, participants reported having some confidence in completing tasks related to applying to college.

The reliability for Factor 3 (preparing to go to college) was .86. Table 6 indicated that preparing to apply to college was slightly positively related to vocational identity ($r = .15$, $p = 0.02$). Factor three Preparing to apply to college was moderately and positively related to mastery approach ($r = .34$, $p < 0.01$), performance avoidance ($r = .25$, $p < 0.01$), performance approach ($r = .28$, $p < 0.01$), and satisfaction with life ($r = .31$, $p < 0.01$). On average, participants reported having some confidence in completing tasks related to preparing to apply to college.

Finally, the reliability for Factor 4 (deciding where to go to college) was .81. Table 6 indicated that deciding where to go to college was slightly positively related to PSAT-reading scores ($r = .21$, $p = 0.02$). Deciding where to go to college Factor four was moderately and positively related to vocational identity ($r = .28$, $p < 0.01$), mastery approach ($r = .40$, $p < 0.01$), performance avoidance ($r = .35$, $p < 0.01$), performance approach ($r = .37$, $p < 0.01$), and satisfaction with life ($r = .28$, $p < 0.01$). On average, participants reported having some confidence in completing tasks related to deciding where to go to college.

Descriptive Analyses: Description of Sample

Overall, the participants reported confidence associated with completing college-going tasks. Specifically, the sample demonstrated some confidence related to preparing to apply to college, applying to college, and deciding where to go to college. The sample demonstrated quite a bit of confidence related to making a decision to go to college.

Additionally, the sample exhibited slightly below average levels of vocational identity. On average, respondents indicated that they needed above average occupational information and indicated having below average barriers in occupational planning. On average, respondents possessed learning goals and performance goals in their classes. In addition to this, respondents indicated having avoidance goals in their classes. On average, respondents slightly agreed that they were satisfied with life.

Relationships between Factors on the CSHS Scale

The factors on the College-Going Self Efficacy Scale for High School Students exhibited several large intercorrelations. Making a decision to go to college was strongly and positively related to Preparing to Apply to College ($r = .64, p < 0.01$), Applying to College ($r = .66, p < 0.01$), and Deciding where to Go to College ($r = .63, p < 0.01$). Preparing to Apply to College was strongly and positively related to Applying to College ($r = .62, p < 0.01$), and Deciding when to Go to College ($r = .62, p < 0.01$). Finally, Applying to College was strongly and positively related to Deciding when to Go to College ($r = .67, p < 0.01$).

Table 5.

Intercorrelations between factors on the CSHS

Measures	1	2	3	4
1. Making a Decision	1.00			
2. Preparing to Apply	.64*	1.00		
3. Applying to College	.66*	.62*	1.00	
4. Deciding where to go	.63*	.62*	.67*	1.00

$p < .01$

Post-Hoc Analyses

Several post-hoc analyses were examined. Using Tamhane's T2 test, we examined whether confidence was differed based on grade level. Overall, there is only a

significant difference between grade levels in one factor - Preparing to Decide, $F(3, 227) = 3.365$, $p = .019$. There are no significant difference between grade levels in Applying to College, $F(3, 227) = 1.373$, $p = .252$, Preparing to apply for college, $F(3, 227) = 1.641$, $p = .181$, and Deciding where to go to college, $F(3, 227) = 1.276$, $p = .283$. Based on grade level, high school juniors are more confident than high school sophomores about Preparing to decide (mean difference = .885, $p = .026$). There was no significant difference between any other grade levels in Preparing to Decide.

We examined whether student college-going confidence was significant based on mother's and father's level of education. We found that there were no significant differences in college-going confidence on mother's level of education – Preparing to Decide, $F(5, 213) = 1.777$, $p = .119$, Applying to College, $F(5, 213) = .613$, $p = .690$, Preparing to Apply to College, $F(5, 213) = .723$, $p = .607$, Deciding where to go to college, $F(5, 213) = .207$, $p = .959$. We also found that there were no significant differences in college-going confidence based on father's level of education - Preparing to Decide, $F(5, 213) = 0.608$, $p = .964$; Applying to college, $F(5, 213) = 1.138$, $p = .341$; Preparing to apply to college, $F(5, 213) = .669$, $p = .647$; Deciding where to go, $F(5, 213) = .926$, $p = .463$.

We examined whether student college-going confidence was significantly different based on student's gender. We found that there were no significant differences in college-going confidence based on student's gender. Using Levene's test of Equality of Variance, we found no significance in Preparing to Decide, $F = 16.040$, $p = .06$, Applying to College, $F = 2.263$, $p = .134$, Preparing to Apply to College, $F = 2.984$, $p = .085$, and Deciding where to go to college, $F = 3.571$, $p = .060$.

We examined whether student college-going confidence was significantly different based on student's free and reduced meal status. We found that there were no significant differences in college-going confidence based on student's free and reduced meal status. Using Levene's test of Equality of Variance, we found no significance in Preparing to Decide, $F = 1.040$, $p = .310$, Applying to College, $F = 1.312$, $p = .254$, Preparing to Apply to College, $F = .018$, $p = .894$, and Deciding where to go to college, $F = .434$, $p = .511$.

Phase Three: Additional Reliability Estimates

Phase Three Method

The purpose of this study was to obtain additional reliability estimates for the CSHS scale. Internal consistency reliability estimates were reassessed and test-retest reliability was computed.

Participants

Participants included 22 students between the ages of 15 and 18 involved in the University of Maryland Upward Bound program. All students lived in Prince Georges County, Maryland, a suburb of Washington, DC. The mean age of 16.3, with a standard deviation of 1.1. Although 45 students were recruited, only 22 completed the surveys. Thus, response rate was 48.9%. 68% of participants were African American, 23% were Hispanic, and 9% were Asian American. Participants included five 10th grade students, eleven 11th grade students, and six 12th grade students.

Procedures

Twenty-two individuals involved in the University of Maryland Upward Bound program completed the CSHS measure and the demographic information sheet. During

participants' study hall period, the CSHS measure was administered and took approximately 45 minutes to complete. Two weeks after the first survey administration, participants were asked to complete the survey again. Finally, participants who successfully completed the entire survey were entered into a lottery to win one of three \$100 cash prizes.

Measures

College-going Self Efficacy scale (CSHS). The original 60-item CSHS will be administered.

Demographic questionnaire. The demographic form solicited the following information: age, gender, year in school, race/ethnicity, parents level of education, participation in free/reduced fee lunch program, PSAT and SAT courses, GPA, and enrollment in advanced placement and honors courses.

Phase Three Hypotheses

It was hypothesized that the CSHS would demonstrate adequate internal consistency and test-retest reliability because test-retest data were collected over a short span of time.

Test-retest reliability will be examined by examining the correlation of scores on the CSHS measure taken at two-separate times, by the same individuals within a two-week time. This will yield two set of scores for each person and the correlation between these two sets of scores is the test-retest reliability coefficient. If the test is reliable, there will be a high positive association between the scores, close to 1.0 than 0.

Phase Three Results

All subscales of the College-going Self Efficacy Scale exhibited adequate reliability (alphas ranging from .81 to .87). The two-week test-retest reliability estimates for the subscales were as follows: Preparing to Decide (.67, $p = .001$), Preparing to Go (.68, $p = .001$), Applying to College (.75, $p = .000$), and Deciding where to go (.84, $p = .000$).

Table 6

Bivariate Correlations Among Scales and Internal Consistency Estimates, Means, Standard Deviations, Actual Ranges, and Possible Ranges of Measured Variables

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	1.00															
2. GPA	-.06	1.00														
3. PSAT – Reading	-.13	.05	1.00													
4. PSAT - Math	-.11	.04	.93*	1.00												
5. PSAT - Writing	-.13	.04	.95*	.90*	1.00											
6. Making a Decision	-.03	.14	.16	.07	.09	1.00										
7. Preparing to Apply	-.03	.10	.16	.05	.09	.64*	1.00									
8. Applying to College	.01	.22*	.15	.04	.05	.66*	.62*	1.00								
9. Deciding where to go	-.03	.13	.21*	.09	.11	.63*	.62*	.67*	1.00							
10. Vocational Identity	.04	.19*	.08	.03	.06	.29*	.15*	.22*	.28*	1.00						
11. Occupational Information	.22*	-.5	.13	.08	.08	.10	.09	.03	.06	-.04	1.00					
12. Barriers	-.09	-.13	-.11	-.07	-.1	-.15*	-.04	-.16*	-.11	-.15	-.13*	1.00				
13. Mastery Approach	-.05	.02	.05	-.01	.01	.45*	.34*	.41*	.40*	.22*	.13*	-.12	1.00			
14. Performance Approach	.01	.09	.08	.01	.03	.44*	.28*	.40*	.35*	.16*	.09	-.14*	.67*	1.00		
15. Performance Avoidance	-.04	.07	-.07	-.07	-.1	.34*	.25*	.28*	.28*	.13	.18	-.09	.61*	.65*	1.00	
16. Satisfaction with Life	-.03	.08	.08	.13	.12	.31*	.34*	.34*	.37*	.16*	-.03	.01	.52*	.40*	.35*	1.00
Mean	15.5	2.83	n/a	n/a	n/a	7.22	6.63	6.33	6.81	.54	.61	.39	4.24	4.14	4.09	4.88
Standard Deviation	1.17	.71	n/a	n/a	n/a	2.31	2.52	2.48	2.39	.19	.22	.12	0.98	1.07	1.08	1.47
Actual Range	13-19	0-4	0-800	0-800	0-800	0-9	0-9	0-9	0-9	0-1	0-1	0-1	1-5	1-5	1-5	1-7
Possible Range	13+	0-5	0-800	0-800	0-800	0-9	0-9	0-9	0-9	0-1	0-1	0-1	1-5	1-5	1-5	1-7
Alpha	n/a	n/a	n/a	n/a	n/a	.87	.86	.86	.81	.75	.67	.55	.89	.89	.84	.84

Note. *p < .05

Figure 1.

Confirmatory Factor Analysis.

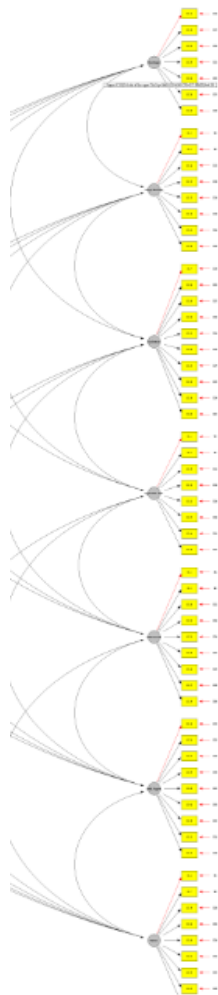


Table 7.

Hypothesized and Actual Subscale Loadings of Items

Item	Hypothesized Subscale	Actual Subscale
Receive encouragement from adults to go to college	Support from Adults	Prepare to decide
Find an adult who will read my college essays and give feedback	Support from Adults	Prepare to decide
Obtain emotional support from my parents/guardians to go to college	Support from Adults	Prepare to decide
Know my academic weaknesses	Knowledge about oneself	Prepare to decide
Identify several career goals	Knowledge about oneself	Prepare to decide
State why going to college is important to me	Knowledge about oneself	Prepare to decide
Know how college will affect my future	Exploration about College	Prepare to decide
Talk to a teacher about possible college options	Exploration about College	Prepare to decide
Complete the Free Application for Federal Student Aid financial aid form	Financial Aid/Scholarship Monies	Applying to College
Complete three college applications	College Application Tasks	Applying to College
Complete a test preparation course	College Application Tasks	Applying to College
Develop test taking strategies to improve my test scores	College Application Tasks	Applying to College
Describe what a college major is	Exploration about College	Applying to College
Identify some of the classes that make up a major	Exploration about College	Applying to College
Know my academic strengths	Knowledge about oneself	Applying to College
Describe the characteristics of three different colleges	Knowledge about College	Applying to College
Talk to my counselor about applying to college	Exploration about College	Preparing to Apply
Use resources like the College Source Book to learn about colleges	Exploration about College	Preparing to Apply
Talk to an admissions counselor at a college	Exploration about College	Preparing to Apply
Talk to someone at a college about obtaining financial aid for college	Financial Aid/Scholarship Monies	Preparing to Apply
Talk to my family about how much money they can contribute to my college education	Financial Aid/Scholarship Monies	Preparing to Apply
Save enough money for college	Financial Aid/Scholarship Monies	Preparing to Apply
Write an excellent personal statement/essay for college applications	College Application Tasks	Preparing to Apply
Receive support from my counselor to complete the college applications	Support from Adults subscale	Preparing to Apply
Identify colleges that match my abilities	Knowledge about College	Decide what college to attend
Identify college majors that match my interests	Knowledge about College	Decide what college to attend
Identify colleges that I have a good chance of being accepted to	Knowledge about College	Decide what college to attend
Develop an alternative plan if none of my top choices for college accept me	Potential Barriers	Decide what college to attend

Table 8.

Demographic Information		Number of Participants
Sex	Male	118
	Female	117
	Missing data	37
	Total	272
Race	Asian	1
	Black/African American	257
	Latino Hispanic	2
	Native American	3
	White	2
	Other	7
	Total	272
Father's Level of Education	Below HS	12
	HS or GED	75
	Some college	28
	College graduate	19
	Graduate school	14
	Don't know	71
	Missing data	53
Total	272	
Mother's Level of Education	Below HS	6
	HS or GED	83
	Some college	52
	College graduate	26
	Graduate school	14
	Don't know	38
	Missing data	53
Total	272	
Year in High School	Ninth	79
	Tenth	48
	Junior	92
	Senior	12
	Missing data	41
Total	272	
Free or Reduced Lunch Status	Y-yes	76
	N-no	50
	M-Don't know	85
	Missing data	61
	Total	61

Chapter 4

DISCUSSION

The purpose of the present study was to create a psychometrically sound measure of College-Going Self Efficacy. The results of this study suggested that the CSHS demonstrated satisfactory psychometric properties when used with urban African American high school students. CSHS is a measure of self-efficacy in completing college-going tasks, hypothesized to be *acquiring knowledge of oneself, acquiring knowledge about colleges, exploring colleges, completing college application tasks, acquiring information about financial aid/scholarship monies, receiving support from adults, and understanding potential college barriers* experienced by African American urban high school students. However, factor analyses of the CSHS suggested a four factor structure instead of a hypothesized seven factor structure. Rather than see college-going self-efficacy as a set of discreet skills, as hypothesized, students in this sample appeared to view college-going self-efficacy as developmental tasks that combined several discrete skills for each task. Internal consistency estimates for the subscales of the CSHS were moderate to high and the test retest reliability scores over a two-week period were adequate. Additionally, the factor analytically derived scales showed relationships with variables theorized to be related to college-going self-efficacy.

Description of Sample

In general, participants reported having quite a bit of confidence in completing tasks related to college-going. Thus, it seemed that the sample was highly confident and motivated to complete college-going tasks. There may be several reasons for this high rating of confidence. It is possible that African American students attending charter

schools have greater levels of confidence, given that charter schools generally have greater accountability of their student's performance. School effects, such as having a college-going culture, seem to outweigh any environment effects when related to college-going confidence. It is possible that high school students attending schools with a college-going culture develop confidence about college-going because of the increased focus and attention given to college attendance. Given the relatively low rate of participation for contacted individuals it is also possible that individuals who felt highly confident about their college-going activities chose to participate in this study, whereas those who did not feel efficacious chose not to respond to the survey.

Finally, it is equally possible that participants overestimated their confidence in completing college-going activities. Previous research has shown that African American students may have an overly optimistic view of their academic abilities (Steinberg, Dornbusch, & Brown, 1992). Another explanation is that African American students' high level of confidence is due to effects of the school's college-going culture. Roderick et al., (2012) found that a high schools college-going climate, which includes indicators such as student's engagement in college-going activities and level of teacher expectations about students attending college, is strongly positively associated with student achievement. Other early studies showed a link between high school climate and academic outcomes (Alexander & Eckland, 1977). The fact that participants attended a high school with a college-going culture may have influenced their college-going self-efficacy. Finally, differential student responding to the surveyed may have created a bias in the sample (See above).

Participants' responses to the validity measures provided further support that this sample seemed to be highly confident. The participants exhibited very positive attitudes about their own vocational identity and achievement goals. This is evident from the participants' relatively high scores on vocational identity and achievement goals, suggesting that academic self-efficacy is positively related to vocational identity and achievement goals. Participants also exhibited high levels of satisfaction with life.

Participants indicated high levels of vocational identity, as evidenced by their endorsement of 10 out of 18 items as false. This indicates that participants had a strong sense of goals, interests, and talents (Holland et al., 1980). Individuals who score high on the VI scale may have confidence in their ability to make vocational decisions, as well as high self-esteem (Holland et al., 1993).

On the occupational information scale, participants' scores fell in the average range of needing occupational information, as evidenced by their endorsement of 2.4 out of 4 items in this subscale. This indicated that participants need additional information about occupations. This included needing information about how to find a job in their chosen career, the kinds of people that enter different occupations, employment opportunities, and how to get necessary training. This indicates that although students have high levels of vocational identity and confidence to make vocational decisions, they also need information about various occupations.

Participants reported below average concerns related to navigating barriers related to their educational and vocational goals. This is evidenced by their average score of 1.5 items being true out of 4. Of the four items on this subscale, including being uncertain about finishing their necessary education, not have money to follow their career, lacking

special talents to follow career choice, and having an influential personal disapprove their vocational choice, on average students answered that they did not have these concerns or difficulties. This is in line with research that stated that African American students often over report their ability to navigate difficulties. Another explanation is that students in this sample did not have concerns about barriers.

Participants in this study had strong inclinations towards mastery-approach goals, performance-approach goals, and performance avoidance goals. From prior literature, mastery-based standards tend to focus individuals on learning, whereas performance-based standards tend to focus individuals on performing (Dweck, 1986). Mastery-approach goals had the highest average score at 4.2 out of 5. This indicates that students agree with the fact that their goal is to completely master the material presented and to learn as much as possible. Performance-avoidance goals had the lowest average score, with the average score being 4.1 out of 5. This indicates that most students agree with the fact that their goal is to avoid performing worse than others. The fact that participants also had high confidence in navigating college-going activities may suggest that completing college-going activities forces students to master college-going activities, perform well on college-going activities, and avoid performing worse than others on college-going activities.

The fact that participants scored relatively equally on learning and performing and that these participants had high levels of college-going confidence and vocational identity, suggests that more studies need to be conducted to see if mastery-approach goals, performance-approach-goals, and performance-avoidance goals differ based on specific college-going activities, as they do in other areas. For example, Elliot and

Harackiewicz (1996) observed that when instructions for completing a puzzle were more performance-approach orientated, students performed better than when the instructions were more performance-avoidance related. Hannon (2012) found that performance-avoidance goals differed for males and females in SAT performance. Future studies should focus on specific college-going tasks and their relationship to achievement goals.

It is possible that the procedures used to recruit participants influenced responses on these scales. For example, researchers visited classrooms of individuals giving information about the study. In addition to this, researchers informed prospective participants that if they attempted to complete the survey, they would be entered into a raffle for one of three \$100 cash gifts. Research has shown that monetary incentives are often used to facilitate survey recruitment and motivate participation among individuals who might otherwise not respond (e.g., Church, 1993; Singer, 2002). In addition to being in a school that promoted college-going activities, participants' enthusiasm about the potential cash gift may have influenced their ratings of confidence and their scores on validity measures. Future research should diversify avenues of recruiting participants to minimize the possibility of such an effect.

Potential Biases in the Data Due to Sampling Procedure

The sample of high school students represented in this study included only individuals attending high schools with a college-going culture. The experiences of high schools students attending high schools without a college-going culture might differ from the experiences of these participants. High school students attending a school without a college-going culture might reported lower levels of confidence to complete college-going tasks. Related, they may also report lower levels of vocational identity and lower

levels of achievement goals. It might be possible that student attending a school with a strong college-going culture and encouraged by teachers and counselors to achieve high academic goals.

Additionally, participation in this study relied on an individual's willingness to respond to the advertisement and volunteer to complete the survey. Thus, the sample probably reflects a selection bias. For example, is likely that individuals who volunteered to participate in this study may be comfortable acknowledging their level of college-going self-efficacy.

Additionally, participation in this study was limited to high school students attending a single charter school in the DC Metro area. Thus, a limitation to the sampling strategy used in this study was the range restriction in the variability of scores on the measures included in the survey (i.e. high scores on confidence, life satisfaction, vocational identity, and achievement goals, and low scores on barriers). Range restriction results in an underestimation of the relationships between variables (Sackett et al., 2007), making it more difficult for significant findings to surface. This suggests that the relationships that emerged in this study, specifically in the area of perceived barriers, may be even stronger in a more representative sample of high school students.

Hypothesized and Actual Factor Structures

It was hypothesized that the CSHS would have a seven factor structure with two knowledge subscales, three task subscales, and two support subscales. This hypothesis was not confirmed because the CFA indicated a poor fit to this hypothesized structure. After conducting an exploratory factor analysis, in order to uncover the underlying structure of the items on the CSHS measure that did not fit the confirmatory factor

analysis, the CSHS seemed to best fit a four factor structure. This structure was comprised of the following factors: *Deciding whether to Attend College*, *Preparing to Apply to College*, *Applying to College*, and *Choosing where to go to college*. The four factor structure appears to suggest that confidence follows a developmental process similar to the college-choice model. To explain, the factor *Deciding whether to attend college* relates similarly to the predisposition phase of college-choice. The factors, *Preparing to apply to college* and *Applying to college*, relate similarly to the search phase activities of college-choice. Finally, *Deciding where to go to college* relates similarly to the choice phase in the college-choice literature.

In the college-choice literature, students in the predisposition phase decide whether or not they want to attend college. The activities that affect outcomes in the predisposition phase include activities related to acquiring knowledge, completing tasks, and receiving support and encouragement. For example, in the predisposition stage, activities such as acquiring information about college, seeking information about college costs, receiving support and encouragement from parents determines, in part, whether a student decides to continue their education beyond high school (Cabrera & La Nasa, 2000). Similarly, the factor *Deciding whether to attend college* includes items reflecting confidence in knowledge, tasks, support from others. The *Deciding whether to attend college* factor included items that reflect confidence in knowing academic weakness, confidence in talking to others about college options, and confidence in receiving emotional support from parents.

In the college-choice literature, students in the search phase narrow their lists of potential colleges. Similar to the predisposition phase, the activities that affect outcomes

in the search phase include activities related to acquiring knowledge, completing tasks, and receiving support and encouragement. For example, in the search phase, students begin to interact with potential institutions, by talking with college admissions officers and guidance counselors. They also visit campuses, secure information about college through catalogues, and talk to friends about college in order to help narrow down their list of potential colleges to attend (Cabrera & La Nasa, 2000). Similarly, the factors *Preparing to Apply to College* and *Applying to College* includes items reflecting confidence in knowledge, confidence in tasks, and confidence in support from others related to search phase activities. *Preparing to Apply to College* and *Applying to College* factors included items that reflect confidence in knowing academic weakness, confidence in talking to others about college options, and confidence in receiving emotional support from parents. In addition to this, items reflecting confidence in knowledge, confidence in tasks, and confidence in support from others.

In the college-choice literature, students in the choice phase narrow their lists of potential colleges. Similar to the predisposition and search phases, the activities that affect outcomes in the choice phase include activities related to acquiring knowledge, completing tasks, and receiving support and encouragement. For example, in the choice phase, students talk with others to decide which college to attend based on financial aid available, and a match in interests and needs (Cabrera & La Nasa, 2000). Similarly, the factors *Choosing where to go to college* includes items reflecting confidence in knowledge, confidence in tasks, and confidence in support from others.

The factors that emerged were similar to the hypothesized factors in that knowledge, tasks, and support items were included in each of the actual factors. For

example, it was originally expected that the *knowledge of oneself* factor would emerge as an important factor and that this subscale would include items assessing a high school student's confidence in knowing about their interests, values, academic strengths and weaknesses, career goals, learning style, and importance of college attendance. However, in this study, items in the *knowledge of oneself* factor loaded onto several factors, including *preparing to decide to go to college* and *applying to college*. This suggests that confidence in knowledge of oneself relates across several developmental domains of college-going. In other words, students need to have confidence in their strengths and weaknesses and goals in order to navigate deciding whether to attend college and applying to college. Items that cross loaded onto multiple factors and were eliminated included identify my values, identify my interests, and know my learning style.

Knowledge of College also was a hypothesized factor. This factor was expected to include items assessing a high school student's confidence in their ability to talk to about college to others, and use resources to gather knowledge about colleges. However, in this study, items in the *knowledge of college* factor loaded onto several factors, including *applying to college* and *choosing where to attend college*. This suggests that confidence in knowledge of college relates across several developmental domains of college-going. For instance, students need to have confidence in their ability to describe the differences between colleges and identify college that match their interests in order to navigate applying to college and choosing where to attend college, respectively.

Exploring Colleges was expected to emerge as a factor. This factor was expected to include items assessing a high school student's confidence in their ability to use resources like the Internet and other College references to gather information about

colleges, talk to an admissions counselor, and visit colleges. However, in this study, items in the *exploring colleges* factor loaded onto several factors, including *applying to college* and *choosing where to attend college*. This suggests that confidence in knowledge of college relates across several developmental domains of college-going. For instance, students need to have confidence in their ability to describe the differences between colleges and identify colleges that match their interests in order to navigate applying to college and choosing where to attend college, respectively.

Completing college application tasks also was a hypothesized factor. This factor was expected to include items assessing a high school student's confidence in their ability to complete documents related to college admissions. This includes completing college applications college admissions exams, advanced placement exams, and obtaining letters of recommendation. However, items in *completing college application tasks* factor loaded onto several other factors, including *preparing to apply to college* and *applying to college*. This suggests that confidence in completing college applications tasks relates both a student preparing to apply to college and actually applying. It also suggests that completing college application tasks would not be important for students deciding whether they want to attend college, or for those choosing which college to attend.

Acquiring information about financial aid/scholarship monies was expected to emerge as a factor. This factor was expected to include items assessing a high school student's confidence in their ability to complete scholarship and financial aid application, determine the costs of college, and seek help from others in understanding college costs. However, in this study, items in the *acquiring information about financial aid/scholarship monies* factor loaded onto several factors, including *preparing to apply to*

college and *applying to college*. This suggests that confidence in talking about college-related costs relates to activities students participate in when preparing to apply and applying to college.

Support from adults also was a hypothesized factor. This factor was expected to include items assessing a high school student's confidence in their ability to talk to adults about various aspects of the college-going process. This includes talk to adults about college applications and college essays. In this study, items in the *support from adults* factor loaded onto several factors, including *deciding whether to attend college* and *preparing to Apply to College*. This suggests that confidence in talking to adults relates across several early processes of college-going. It seems that support in talking to adults is more important in the beginning phases of college-choice, especially when helping students decide if they want to attend college and helping students prepare for the application process. Support from parents was not seen in applying for college or choosing which college to attend. Perhaps this is because in the application and choice stage, students feel more autonomous in their decisions and need less support from adults.

Finally, *understanding potential college barriers* was expected to emerge as a factor. This factor was expected to include items assessing a high school student's confidence in their ability ask for help and persevere through unexpected challenges. In this study, only one item in the *understanding potential college barriers* factor loaded onto one factor, *deciding whether to attend college*. This suggests that confidence in understanding potential barriers are not related to deciding to go to college, preparing to apply to college, or applying to college. Only one item loaded onto the *understanding*

potential college barriers – develop an alternative plan if none of my top choices for college accept me. Perhaps the rest of the items in the understand barriers factor are assumed in other factors. Understanding barriers may be related to a students' ability to ask for help from others, especially parents and counselors. For instance, students may have confidence in receiving support from others which would minimize their need to understand potential barriers..

Convergent and Discriminant Validity of the CSHS

The convergent validity of the CSHS scale was generally supported by the relations with other variables with which they were expected to relate. Specifically, Vocational Identity, related positively to confidence on all four subscales, *Deciding whether to Attend College, Preparing to Apply to College, Applying to College, and Choosing where to go to college*. However, Occupational Information was not significantly related to any of the four scales of the CSHS. So, while students, on average, indicated needing occupational information, this was not related to their confidence in completing college-going activities. Perhaps this was because students did not base their confidence on completing college-going tasks on having occupational information. Also, Barriers only slightly positively related to *Deciding whether to Attend College* and *Applying to College*.

All of the tested subscales of the AGQ-R related to the CSHS. To elaborate, Mastery approach, Performance avoidance, and Performance approach were all positively related to college-going self-efficacy. It should also be noted that the validity of these measures was not differential. In other words, all of these scales related to all of the variables assessing convergent validity equally.

On the other hand, discriminant validity was not supported. It was hypothesized that college-going self efficacy would not be related to satisfaction with life, but in fact, there was a positive relationship. This indicates that these two scales measure theoretically similar constructs. In previous studies, life satisfaction was related to family well-being (Huebner, Suldo, Smith, & McKnight, 2004) and neighborhood satisfaction (Shin et al., 2010), and was not related to school satisfaction (Vera et al., 2011), especially for African American females. These studies were used for the basis of the hypothesis that life satisfaction would be unrelated to college-going self-efficacy. In previous studies, however, there has been a link between life satisfaction and academic related outcomes (Haranin, Huebner, & Suldo, 2007; O'Sullivan, 2011) among other racial groups in living environments other than urban settings. In this case, perhaps the relation between life satisfaction and self-efficacy is due to the fact that participants in the sample were part of a college-going culture, and that students who are encouraged to engage in college-going tasks and actually participate in them are more satisfied with their lives. Also, in previous studies there has been a link between academic self-efficacy and life satisfaction

Other relationships.

GPA was positively related to Vocational Identity. In other words, as a participant's GPA increased, so did their vocational identity. Perhaps as students' grades increased, they gained more understanding of vocational choices available to them. Also, age was slightly positively related to Occupational Information. This indicated that as age increased, so did the need for occupational information.

Test Re-test Reliability

All of subscales appeared to be stable over a two-week time period.

Post-hoc Analyses

High schools juniors were more confident about college-going in *Deciding whether to Attend College* than high school sophomores. This suggests that juniors were more confident than sophomores in knowing their academic weaknesses, in talking to others about college options, and in receiving emotional support from parents, tasks similar to the predisposition phase of college-choice. This makes sense from a developmental perspective-as students navigate through grade levels, their confidence in completing an early developmental indicator should rise given the increased likelihood that they have already completed these tasks. In other words, these findings may suggest that more juniors than sophomores that have decided whether to attend college and have completed tasks related to deciding to attend college. Furthermore, it may also suggest juniors that have decided to attend college, are more confident as a group than sophomores. Other than that, there were no significant differences in confidence, based on grade level. The present study did not find any significant differences in parental level of education or free and reduced lunch meal status responses to the CSHS scales.

Future Research and Possible Interventions

First, the psychometric properties of the CSHS should be tested on other samples through the use of confirmatory factor analysis. If replicated, the CSHS can be used to further knowledge regarding college-going self-efficacy high school students. Education researchers and school counselors might use the CSHS to identify relations between confidence in deciding, preparing, applying, and choosing colleges in the lives of high

school students. Additional validity studies of the CSHS would further support its use by school counselors as well as education researchers. Future research could also include concurrent validity studies, which might include measures of another self-efficacy scale or other measures of beliefs about college-going. Future research could also test the discriminant validity of CSHS against other measures.

Also, the present study did not find sex differences in responses to the CSHS scales. However, research suggested that there are sex differences in student confidence to navigate college-choice activities experienced by African American students. Specifically, one study found that gender differences have been observed in young African Americans' educational and career-related achievements (Alliman-Brissett et al., 2004; Osborne, 1997). In both of these studies, participants attended public schools. So, perhaps African American boys attending charter schools report similar levels of college-going confidence as African American girls. Perhaps African American boys who attend public schools will have less college-going confidence than African American boys who attend charter schools. Future research should investigate gender differences in responses to the CSHS. Future research can also examine the relationship between CSHS scores on college-going confidence and the actual enrollment of students into college.

Finally, several interventions should be considered. For example, students with low college-going self-efficacy might become part of a group designed to address this deficit, and the CSHS could be used as a pre-post measure of the effectiveness of the group. In addition to this, future studies involving the CSHS can help students with specific factor-related deficits related to college-going. For example, using the results from subscales, educators and school counselors can examine student concerns about

college finances, abilities, receiving support from others, the application process, and the decision-making process, along with general feelings about attending college. Students who score low on the financially-related questions can be given concrete information about the actual costs of college, financial aid, and how to select a college that is both economical and selective. Involving parents in the conversation about financially related questions may provide more opportunities for success. Similar interventions could target other belief categories.

Limitations.

There are several limitations to this study. The CSHS was created to understand the confidence of students to complete college-going tasks. The population examined was urban African American students attending a charter school with a college-going culture. However, the CSHS does not adequately take into account the culture-specific aspects of African American students living in an urban area (Gushue et al., 2006). Thus, there may exist other culture-related factors that influence student confidence in urban African American high school students that the CSHS does not consider. This may include the availability of economic resources within their families of origin, schools, and communities; accessibility to career role models; and the presence of systemic and institutional discrimination based on race (Ladany, Melincoff, Constantine, & Love, 1997). Also, the CSHS examines student confidence with one segment of the African American population without considering other African American students. It is unclear if the confidence levels of African Americans in rural settings would differ from African Americans education in urban environments.

The CSHS was created to understand the confidence of students to complete college-going tasks. Participants included urban African American students attending a charter school with a college-going culture. However, the CSHS does not adequately take into account school how environment affects confidence. Students who attend high schools with a college-going culture may have different outcomes than students who do not. Thus, the CSHS may not be appropriate for use in understanding the confidence in completing college-going tasks for students not attending charter schools. This affects the generalizability of the measure. Also, given other characteristics of the sample, to include race and environmental setting, it is hard to generalize the findings of this measure to other high school students outside of this unique demographic. Thus, the CSHS may not appropriate for use in understanding the confidence in completing college-going tasks for students who are not African American, not living in urban areas, and not attending charter schools. Future studies will have to examine college-going confidence based on different school environments.

Another limitation is the effect of mandatory college acceptance on the study participants. All participants in the study were enrolled in a charter school where there was an expectation that the entire student population would be accepted to college. Further, in order to graduate, students had to apply and be accepted to a community college, technical school, junior college, or 4-year college or university. Because of these graduation expectations, the confidence rates of participants may have been uncharacteristically high compared to students who did not attend schools with such a requirement. Future studies need to exam college-going confidence of students who do not have an expectation of college acceptance.

Conclusion:

To understand and respond to lower academic outcomes for students in our country, it is critical that counseling psychologists study the confidence of urban high school students, an understudied and rapidly growing population. The development of this instrument will provide a tool for future quantitative investigations and theory building regarding the confidence of high school students in living in the United States. Furthermore, this scale can assist in the development of interventions aimed at increasing confidence among high school students.

APPENDIX A

College-Going Self-Efficacy Scale for High School Students (CSHS) Part 1

College-Going Self-Efficacy Scale for High School Students (CSHS)

Directions: For Section 1, questions 1 – 60, please indicate how confident you are by FILLING IN THE RESPONSE on the answer sheet the letter that corresponds to your confidence level.

SECTION 1

HOW CONFIDENT ARE YOU IN EACH OF THE FOLLOWING AREAS?

Not at all Confident A	B	Very Little Confidence C	D	Some Confidence E	F	Quite a bit of Confidence G	H	A Great Deal of Confidence I	
1.									A B C D E F G H I
2.									A B C D E F G H I
3.									A B C D E F G H I
4.									A B C D E F G H I
5.									A B C D E F G H I
6.									A B C D E F G H I
7.									A B C D E F G H I
8.									A B C D E F G H I
9.									A B C D E F G H I
10.									A B C D E F G H I
11.									A B C D E F G H I
12.									A B C D E F G H I
13.									A B C D E F G H I
14.									A B C D E F G H I
15.									A B C D E F G H I
16.									A B C D E F G H I
17.									A B C D E F G H I
18.									A B C D E F G H I
19.									A B C D E F G H I
20.									A B C D E F G H I

APPENDIX A
College-Going Self-Efficacy Scale for High School Students (CSHS) Part 2

College-Going Self-Efficacy Scale for High School Students (CSHS)

SECTION 1

HOW CONFIDENT ARE YOU IN EACH OF THE FOLLOWING AREAS?

Not at all Confident		Very Little Confidence		Some Confidence		Quite a bit of Confidence		A Great Deal of Confidence	
A	B	C	D	E	F	G	H	I	
21.	Name three colleges in my state					A B C D E F G H I			
22.	Not give up when I feel overwhelmed with applying to college					A B C D E F G H I			
23.	Know my academic strengths					A B C D E F G H I			
24.	Identify some of the classes that make up a major					A B C D E F G H I			
25.	Maintain a 3.0 GPA					A B C D E F G H I			
26.	Know how college will affect my future					A B C D E F G H I			
27.	Obtain three outstanding letters of recommendation from adults who know me well					A B C D E F G H I			
28.	Identify several possible college majors of interest to me					A B C D E F G H I			
29.	Identify strategies to improve my grade point average					A B C D E F G H I			
30.	Know my academic weaknesses					A B C D E F G H I			
31.	Meet the deadlines for submitting my college applications					A B C D E F G H I			
32.	Obtain emotional support from my parents/guardians to go to college					A B C D E F G H I			
33.	Identify three possible scholarships that I qualify for					A B C D E F G H I			
34.	Identify several career goals					A B C D E F G H I			
35.	Obtain enough financial assistance to be able to go to college					A B C D E F G H I			
36.	Know my learning style					A B C D E F G H I			
37.	Receive help from my parents to complete the college applications					A B C D E F G H I			
38.	Talk to a teacher about possible college options					A B C D E F G H I			
39.	Receive encouragement from adults to go to college					A B C D E F G H I			
40.	Talk to current college students about their college experiences					A B C D E F G H I			

APPENDIX A
College-Going Self-Efficacy Scale for High School Students (CSHS) Part 3

College-Going Self-Efficacy Scale for High School Students (CSHS)

SECTION 1 (continued)

HOW CONFIDENT ARE YOU IN EACH OF THE FOLLOWING AREAS?

Not at all Confident		Very Little Confidence		Some Confidence		Quite a bit of Confidence		A Great Deal of Confidence	
A	B	C	D	E	F	G	H	I	
41.	Rank colleges on criteria important to me					A B C D E F G H I			
42.	Talk to 3 adults about their college experience					A B C D E F G H I			
43.	Prioritize the tasks needed to complete my college application					A B C D E F G H I			
44.	Score a 3 or better on all of my advanced placement tests					A B C D E F G H I			
45.	Spend time filling out the application when I would rather do something else					A B C D E F G H I			
46.	Save enough money for college					A B C D E F G H I			
47.	Persist in getting answers to my questions about college applications					A B C D E F G H I			
48.	State why going to college is important to me					A B C D E F G H I			
49.	Talk to an admissions counselor at a college					A B C D E F G H I			
50.	Receive support from my teachers to complete the college applications					A B C D E F G H I			
51.	Receive support from my counselor to complete the college applications					A B C D E F G H I			
52.	Talk to my family about how much money they can contribute to my college education					A B C D E F G H I			
53.	Visit college campuses to learn more about college life					A B C D E F G H I			
54.	Use resources like the College Source Book to learn about colleges					A B C D E F G H I			
55.	Talk with an adult who went to college for advice about the application process					A B C D E F G H I			
56.	Write an excellent personal statement/essay for college applications					A B C D E F G H I			
57.	Understand the differences between grants, loans, scholarships and work study					A B C D E F G H I			
58.	Use the Internet to learn about several colleges					A B C D E F G H I			
59.	Talk to someone at a college about obtaining financial aid for college					A B C D E F G H I			
60.	Talk to my counselor about applying to college					A B C D E F G H I			

APPENDIX B
My Vocational Situation

Try to answer all the following statements as mostly TRUE or mostly FALSE.
Mark the answer that best represents your present opinion.

In thinking about your present job or in planning for an occupation or career:

- | | |
|--|-----|
| 1. I need reassurance that I have made the right choice of occupation. | T F |
| 2. I am concerned that my present interests may change over time. | T F |
| 3. I am uncertain about the occupations I could perform well. | T F |
| 4. I don't know what my major strengths and weaknesses are. | T F |
| 5. The jobs I can do may not pay enough to live the kind of life I want. | T F |
| 6. If I had to make an occupational choice right now, I am afraid I would make a bad choice. | T F |
| 7. I need to find out what kind of career I should follow. | T F |
| 8. Making up my mind about a career has been a long and difficult problem for me. | T F |
| 9. I am confused about the whole problem of deciding on a career. | T F |
| 10. I am not sure that my present occupational choice or job is right for me. | T F |
| 11. I don't know enough about what workers do in various occupations. | T F |
| 12. No single occupation appeals strongly to me. | T F |
| 13. I am uncertain about which occupation I would enjoy. | T F |
| 14. I would like to increase the number of occupations I could consider. | T F |
| 15. My estimates of my abilities and talents vary a lot from year to year | T F |
| 16. I am not sure of myself in many areas of life. | T F |
| 17. I have known that occupation I want to follow for less than one year. | T F |
| 18. I can't understand how some people can be so set about what they want to do. | T F |

I need the following information:

- | | | |
|---|-----|----|
| 1. How to find a job in my chosen career. | Yes | No |
| 2. What kinds of people enter different occupations. | Yes | No |
| 3. More information about employment opportunities. | Yes | No |
| 4. How to get necessary training in my chosen career. | Yes | No |

I have the following difficulties:

- | | | |
|---|-----|----|
| 1. I am uncertain about my ability to finish necessary education or training. | Yes | No |
| 2. I don't have the money to follow the career I want most. | Yes | No |
| 3. I lack the special talents to follow my first choice. | Yes | No |
| 4. An influential person in my life does not approve of my vocational choice. | Yes | No |

APPENDIX C
Achievement Goals Questionnaire-Revised

Please indicate a response to the following statements:

Strongly Disagree	Disagree	Neither Agree Or Disagree	Agree	Strongly Agree
A	B	C	D	E
1. My aim is to completely master the material presented in my classes				A B C D E
2. I am striving to understand the content of my classes as thoroughly as possible.				A B C D E
3. My goal is to learn as much as possible.				A B C D E
4. My aim is to perform well compared to others.				A B C D E
5. I am striving to do well compared to other students.				A B C D E
6. My goal is to perform better than other students.				A B C D E
7. My aim is to avoid doing worse than other students				A B C D E
8. I am striving to avoid performing worse than others.				A B C D E
9. My goal is to avoid performing poorly compared to others.				A B C D E

APPENDIX D
Satisfaction with Life Scale

Below are 5 statements that with which you may agree or disagree. Using the scale below, indicate your agreement with each item.

- A= Strongly disagree
 B= Disagree
 C= Slightly disagree
 D=Neither agree or disagree
 E= Slightly agree
 F= Agree
 G= Strongly Agree

- | | |
|---|---------------|
| 1. In most ways my life is close to ideal. | A B C D E F G |
| 2. The conditions of my life are excellent. | A B C D E F G |
| 3. I am satisfied with my life. | A B C D E F G |
| 4. So far, I have gotten the important things I want in life. | A B C D E F G |
| 5. If I could live my life over, I would change almost nothing. | A B C D E F G |

APPENDIX E
Demographic Questionnaire

1. Age: _____

2. Sex: Female _____ Male _____

3. Year in School:

_____ Seventh Grade

_____ Eighth Grade

_____ Ninth Grade

_____ Tenth Grade

_____ Eleventh Grade

_____ Twelfth Grade

4. Race/Ethnicity:

_____ Black or African American

_____ Latina/o or Hispanic

_____ White or European American

_____ Asian/Pacific Island American

_____ Native American

_____ Other (please specify) _____

5. What is your mother's highest level of education:

_____ Below High School

_____ High School Graduate or GED

_____ Some College

_____ College Graduate

_____ Graduate School

_____ Don't know

6. What is your father's highest level of education:

_____ Below High School

_____ High School Graduate or GED

_____ Some College

_____ College Graduate

_____ Graduate School

_____ Don't know

APPENDIX E
Demographic Questionnaire

7. Do you participate in your school's free and reduced-lunch program?

Yes

No

8. What is your grade point average (GPA)?

9. How many advanced placement (AP) classes have you taken?

10. How many honors classes have you already taken?

11. PSAT scores

Reading

Math

Writing

12. SAT scores (composite)

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