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An Investigation of Self-Efficacy and its Relationship to College-Going Self-Efficacy Among Middle School Students

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ABSTRACT: For many decades, policy makers have struggled in closing the academic achievement gap present in schools across America. Most recently charter schools were integrated into federal law as one of many approaches to narrow the academic achievement and attainment gaps. Previous research has shown that there are differences in self-efficacy beliefs and that these beliefs can help account for the academic achievement and attainment differences that exist. Furthermore, with post-secondary goals and choices often made before students are upperclassmen in high school, middle school is the prime time for decisions. This study used an empirical research approach method to investigate the self-efficacy scores of students and its relationship to college-going self-efficacy using two research instruments: Bandura's Children's Self-Efficacy Scale, a questionnaire used to measure students' confidence on school-related tasks, and Gibbons and Borders' College-Going Self-Efficacy Survey, a questionnaire used to measure students' confidence on college related tasks. The results of the Pearson Correlation revealed a strong positive correlation between self-efficacy and college-going self-efficacy scores.

KEYWORDS: self-efficacy, college-going self-efficacy, middle-school, charter school, academic achievement gap, attainment gap

Introduction

In the United States, citizens are blessed that all children have the right to receive equal access to education (National Education Association 2015; United States 1965). However, despite educational initiatives at the federal, state, and local levels and even though students should have an equal opportunity to education regardless of their gender or ethnic background, in reality, they do not (National Center for Educational Statistics 2012; National Education Association 2015). The problems presented by the academic achievement gaps between students of different ethnicities and gender have "deprived the U.S. economy of as much as $2.3 trillion in economic output in 2008" (Auguste, Hancock, & Laboissiere 2009, para. 1).

A Nation at Risk (United States 1983) sounded the alarm that the United States educational system was failing to educate students and therefore lagged behind that of other countries around the world. One of the solutions to the failure of public schools in the U.S. arising from the report by The National Commission on Excellence in Education was to add school choice in the form of charter schools (Peterson 2016). Unlike private schools, charter schools are public and therefore must accept applicants of all demographics. With charter schools being the "fastest-growing choice option in the U.S. public education," they are prone to experience similar challenges in closing the academic achievement gaps (National Alliance for Public Charter Schools 2015, p. 2). According to the NEA's report by McLaughlin (2016), 30% of charter schools have been classified as having low graduation rates with the national average graduation rate being 15% lower than that of regular high schools.

Charter schools have been able to develop innovative curriculum, because unlike public schools, they are able to "structure their own curriculum and school environment" (Angrist, Cohodes, Dynarski, Pathak, & Walters 2013, p. 7). The National Center for Education Statistics (2017) reported that schools are experiencing an increase in student ethnic diversity and an increase in females enrolling in school. Now the question is how the curriculum could equally and positively impact all students enrolled at these charter schools regardless of their demographics. As charter schools become more diverse, some demographic subgroups might need more support than others in order to be convinced of their potential. This may be by means of boosting their self-efficacy as

well as by nurturing their academic potential in order to support the closing of the academic achievement gaps.

The present study investigated the potential effects of gender and ethnicity on self-efficacy and its relationship to college-going self-efficacy. Gender and ethnicity served as the independent variables for this study and perceived self-efficacy and college-going self-efficacy scores served as the dependent variables investigated in this study. Furthermore, with post-secondary goals and choices often made before students are upperclassmen in high school, middle school is the prime time for decisions and therefore this was the group of interest investigated (Hossler, Schmit, & Vesper 1999). To gain a better understanding of students' beliefs and confidence in their abilities to succeed, this study used both Bandura's Self-Efficacy Survey (2006) and Gibbons & Borders' College-Going Self-Efficacy Survey (2010).

Background Information

In the last three decades, evidence points to self-efficacy as an influential factor in students' lives, impacting academic achievement and other measures student success (Karaarslan & Sungur 2011; Merritt & Buboltz 2015). As an indicator of motivation and perseverance towards reaching a goal, self-efficacy has been a recurring predictor for students' academic success (Bandura, Barbaranelli, Caprara, & Pastorelli 2001). For example, in Turcios-Cotto and Milan's (2013) study, Latino students were found to be less likely than other minorities to endorse or picture themselves continuing their education in the future as indicated by their levels of self-efficacy.

Self-efficacy theory has roots in Bandura's social cognitive theory (1986) which defines self-efficacy as a person's belief in one's abilities to succeed or accomplish tasks and goals. Research suggested that self-efficacy directly affects motivation and persistence and therefore the type of goals and expectations individuals will set for themselves (Bandura 1997; Kim 2014). The degree of self-efficacy drives students' goal orientation, which translates into effort and academic performance and serves as a predictor for academic attainment. Although self-efficacy is influenced by several factors (Bandura et al. 2001), researchers have found that self-efficacy can be enhanced and regulated and follows students throughout their educational career (Caprara et al. 2008).

The belief that one can be successful or unsuccessful at any task is the result of the components that make up self-efficacy. Bandura (1997) described self-efficacy as coming from four major sources: mastery experiences, social modeling, social persuasion, and psychological responses. Research supports Bandura's theory about the importance of successful or mastery experiences which strengthen self-efficacy (Cantrell et al. 2013; Fong & Krause 2014; Lopez, Lent, Brown & Gore 1997). A student who successfully completes tasks will have a boost in self-efficacy. According to Bandura (1994), observing a peer relatively similar to oneself be successful in similar tasks also causes a boost in self-efficacy. Research further asserts Bandura's (1997) concept of social persuasion is a significant influence in self-efficacy through giving individuals a boost in helping them to believe they possess the skills and abilities necessary to be successful in accomplishing a specific task (Chin & Kameoka 2002; Wang & Pape 2007). Therefore, receiving encouragement from others whether it be from parents, friends, or teachers helps individuals strengthen their self-efficacy. Furthermore, an individual's attitude, if positive, can boost their degree of self-efficacy, while on the other hand, they may experience a decrease in self-efficacy in stressful situations (Bandura 1994).

Self-efficacy has been recognized to influence a person's engagement decisions, efforts exerted to successfully complete a task or goal, and persistence (Bandura 1986). Consequently, self-efficacy plays a pivotal role in an individual's goals and the approaches taken to accomplish these goals throughout their lifetime. As shown by their persistence to reach success, individuals with high levels of self-efficacy are more likely to engage in more challenging tasks and meaningful goals and to remain committed to attaining their goals (Bandura 1989; Schunk 1990; Zimmerman, Bandura, Martinez-Pons 1992). What is more concerning are the implications of low levels of self-efficacy in students given the links to achievement. The beliefs that feed one's self-efficacy form in childhood, beginning with parental influence (Bandura et al. 2001) and can be enhanced and

nurtured over time (Cantrell et al. 2013; Chin & Kameoka 2002; Fong & Krause 2014; Lopez et al. 1997; Wang & Pape 2007).

However, Bandura's (1986) construct of self-efficacy established that self-efficacy is domain specific, and therefore assessing students' beliefs about specific tasks should be evaluated separately from their perceived self-efficacy scales. In his guide for constructing self-efficacy scales, Bandura provided the guidelines for researchers to develop self-efficacy scales, a challenge taken up by a few researchers such as Gibbons and Borders (2010). In order to evaluate students' beliefs about attending college, Gibbons and Borders (2010) developed a scale used to measure students' self-efficacy related to completing college-going tasks, such as getting accepted into college, finding the means to pay for college tuition, and earning good grades. Self-efficacy is a concept that continues to be explored as new scales are developed and new links are found between self-efficacy and increased academic achievement (Buchannan & Selmon 2008).

Participants and Methods

The population from which the sample was drawn were all middle school students at a charter school located in a rural area of the Colorado Front Range Corridor. The sample consisted of 89 subjects of which 34 were in sixth grade, 28 in seventh grade, and 27 in eighth grade. Table 1 represents the distribution of subjects by grade level. The sample included 56 females and 28 males. Of the subjects, 27.38% indicated to be other than non-Hispanic white students.

Table 1. Distribution of Subjects by Grade Level

	N	%
6th grade	34	30.20
7th grade	28	31.46
8th grade	27	30.34
TOTAL	89	100

The Children's Self-Efficacy Scale created by Bandura was used to measure confidence based on students' belief in whether they possess the skills and abilities to carry on a task or activity (Bandura 1997). The scale is composed of 55 items which address self-efficacy in the areas of: a) enlisting social resources, b) academic achievement, c) self-regulated learning, d) leisure time skills and extracurricular activities, e) regulatory efficacy, f) meeting others' expectations, g) social self-efficacy, h) self-assertive efficacy, and i) enlisting parental and community support. For each item, the participants rated their degree of confidence in accomplishing each task. A scale from 0 to 100 with 0 indicating *cannot do at all* and 100 indicating *highly certain can do* was used to measure students' perceived ability to complete each of the tasks listed. An example of an item included in the scale questionnaire is the student's ability to "live up to what my parents expect from me" (Bandura 2006, p. 326). Multiple studies with various population samples and settings have demonstrated an acceptable consistency level of reliability and validity in items from the Children's Self-Efficacy Scale (Bandura et al. 1996, 2001).

The CGSES was used to measure students' self-efficacy when completing college-going tasks such as getting accepted into college, finding the means to pay for college tuition, and earning good grades in college. This instrument consists of 30 questions and includes two sections: 14 attendance questions and 16 persistence questions. All of the questions in the CGSES follow a 4-point Likert-

type scale ranging from 1 = *not sure* to 4 = *very sure*. The possible composite score ranges from 30 to 120 with higher scores indicating a higher self-efficacy for post-secondary success.

Research Findings

A Pearson Correlation was conducted to assess the relationship between general self-efficacy and their beliefs about college by using students' survey scores on the SES and college-going self-efficacy (CGSES). The data analysis came from students with both SES and CGSES scores ($N = 88$) and was analyzed using Microsoft Excel Analysis Toolpack. The correlation test revealed a positive correlation ($r = .38$) between the students' scores on the SES ($M = 4176.55$, $SD = 775.96$) and CGSES scores ($M = 110.24$, $SD = 9.85$). A correlation of 0 would have represented no relationship between the SES scores and the CGSES scores. In order to reject the null hypothesis a positive or negative r-value was needed to establish the strength of the relationship. The value produced by the Pearson Correlation was $r = .38$ with a $p < .001$; therefore, the null hypothesis was rejected. There was a relationship between the students' self-efficacy scores. See the Correlational Scatterplot in Figure 1.

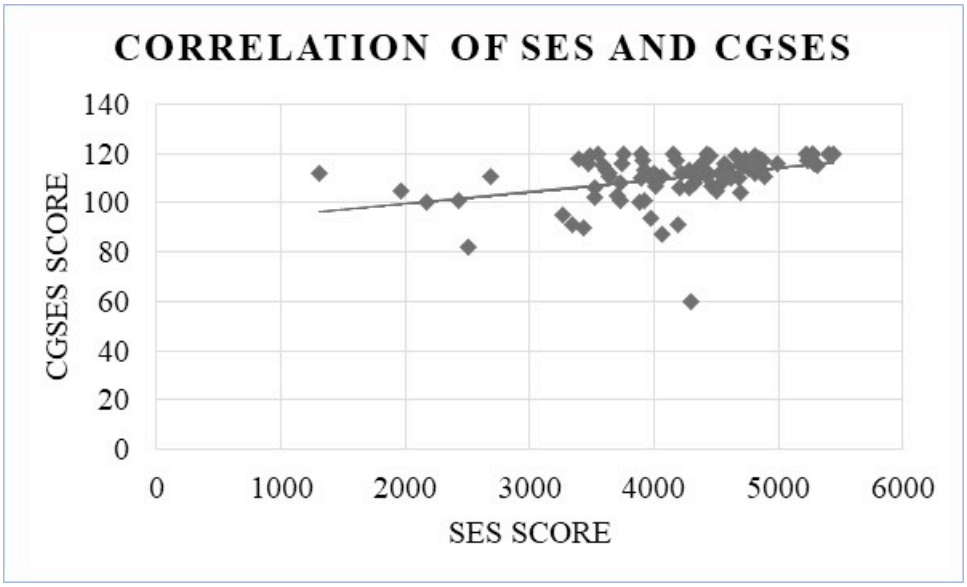

Figure 1. Correlation of scores on SES and CGSES. This figure illustrates the positive correlation between students' SES scores and CGSES scores.

After establishing that a relationship existed between SES and CGSES, [$r = .379$, $N = 88$, $p < .001$], the r-value was used to calculate Cohen's standardized effect size to indicate the magnitude of the effect of SES and CGSES on each other. The value produced by the standardized mean difference calculation was $d = .8216$. According to Cohen's standard a value of .80 or higher indicates a strong or a high association between the two variables investigated. The effect size for this analysis ($d = .8216$) was found to exceed Cohen's convention for a large effect ($d = .80$) thus suggesting that a strong positive relationship exists between SES ($M = 4176.55$, $SD = 775.96$) and CGSES ($M = 110.24$, $SD = 9.85$).

Therefore, the Pearson Correlation and Cohen's standard value revealed a strong positive correlation between the SES and the CGSES scores [r (87)] = .38, $p < .001$. This showed that students' current self-efficacy level was correlated with their beliefs for their future in college. Therefore, students who showed to be more confident engaging in middle school-related tasks in general had more confident beliefs in their ability to succeed in college.

Conclusions

Educators and those in school decision-making positions, as well as educators, need to better understand students' education beliefs and the factors influencing these beliefs in order to design lessons and

intervention programs around students' needs. The data collected using the scores from the SES and CGSES suggested that there is a correlation between self-efficacy scores and college-going self-efficacy. The findings hold potential in helping more students improve their self-efficacy scores. With higher self-efficacy scores, students may be able to view obstacles as challenges they can overcome rather than a stop to their goals (Bashant 2016). Hossler, Schmit, and Vesper's (1999) research indicated that post-secondary goals and choices are often made before students are upperclassman in high school. Therefore, middle school is the prime time in helping students' general self-efficacy beliefs as well as self-efficacy beliefs about college. If students believe in their ability to succeed in educational goals, they may be more likely to pursue a post-secondary education.

The self-efficacy surveys also revealed how students view the factors that contribute to their education. An individual analysis of all survey statements showed that students' academic achievement portion of the self-efficacy which assesses students' belief in their ability to learn multiple disciplines such as algebra, science, and social studies was higher than their belief in obtaining academic and social support. Because family involvement, social persuasions, and psychological and affective states have been linked to self-efficacy scores and achievement, these are areas that need to be addressed to help students as they face challenges with the appropriate resources to overcome these challenges (Carlton & Krause 2014; Kim 2014). Educators perhaps may assume that students view their abilities to accomplish a task or a goal in a certain way, but students need the opportunity to express their true beliefs so that educators can better understand students.

Another area of concern was that the Leisure Time Skills and Extracurricular Self-Efficacy was among the lowest scoring categories among all subjects. According to the universities nearby the charter school where data collection took place, the office of admissions emphasized that extracurricular activities play a part in college admissions and scholarships because these reveal qualities about the applicants in ways that a transcript cannot (Northridge Counseling Department, personal communication, January 10, 2018). Therefore, if organizations, colleges, and universities are looking at students' engagement in extracurricular activities to make decisions regarding scholarships and acceptance, then these students are less competitive candidates than those who are actively engaged. Administrators and teachers can use the data from assessing self-efficacy to design interventions that cater to students' individual needs such as offering and promoting extracurricular activities that benefit and are of interest to the students based on their background.

Limitations and Areas of Future Research

The findings of the present study suggest several directions for future self-efficacy and college-going self-efficacy research. While a positive correlation was found between self-efficacy scores and college-going self-efficacy scores, the generalization is limited to charter schools in rural areas of the Colorado Front Range with similar demographics; therefore, further research is needed about students in other schools of choice as well as public schools to see if findings can be generalized to a larger group of students. In addition, if students in this study had a difference in self-efficacy level as middle schoolers, it would be beneficial to conduct a longitudinal study in which students are tracked throughout middle school and high school to assess changes in both self-efficacy and college-going self-efficacy. Further studies that collect longitudinal data could help account for the differences in self-efficacy among students of various ethnic groups as well as an understanding of the changes that contribute to the differences in self-efficacy scores.

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