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Student Success Skills: A Promising Program to Close the
Academic Achievement Gap between African American and Latino, and White Students

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Abstract

This article presents the results of an empirical study we designed to examine the efficacy of the Student Success Skills Program (Brigman & Goodman, 2001) to narrow the gap in academic achievement between White, and Latino and African American students. We used objective indices, derived from the Florida Comprehensive Achievement Test Norm Referenced Test (FCAT NRT), to test the hypothesis that Reading and Mathematics scores improved independent of students' ethnicity. We enlisted 1,123 5th, 6th, 8th and 9th graders to test the efficacy of the Student Success Skills Program. The results of a Multivariate Analysis of Covariance (MANCOVA) revealed a significant effect for group indicating that the post-test scores in either one or both of the dependent variables were significantly different than the control group's post-test scores [Wilks' $\lambda = .975$, $F(2, 1,114) = 14.13$, $p < .001$, $\eta^2 = 0.25$, $d = .999$]. A follow-up Analysis of Covariance (ANCOVA) showed that when pre-test scores were controlled, the post-test scores for the experimental group were significantly higher than the control group in Mathematics, independent of ethnicity [$F(1, 991) = 27.61$, $p < .001$, $\eta^2 = 0.24$, $d = .999$]. Similarly, there was a significant difference between the experimental and control groups' post-test Reading scores [$F(1, 991) = 5.75$, $p < .01$, $\eta^2 = .005$, $d = .669$]. We found no statistically significant differences for ethnicity [Wilks' $\lambda = .992$, $F(4, 2228) = 2.36$, $p > .05$, $\eta^2 = 0.004$, $d = .687$]. Also, the interaction between the group and ethnicity was not statistically significant [Wilks' $\lambda = .999$, $F(4, 2228) = .258$, $p > .05$, $\eta^2 = 0.01$, $d = .107$], suggesting that regardless of ethnicity, students' scores improved following participation in the Student Success Skills Program. We propose further research given the study's importance to close the academic achievement gap between White, and Latino and African American students.

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Obed, Charles and Bentz (2001) indicated that the “perennial challenge for urban education in the United States is finding effective ways to address the academic achievement gap between African American and White students” (p. 1). Today, their sentiments resonate louder in light of the continued presence of the achievement gap among African American and White children, and a demographic shift that shows Latinos close to surpassing African Americans in numbers (Bok, 2003; United States Census, 2001).

African American and Latino children continue to lag behind their White counter parts in nearly every academic subject (Haskins, 2004; Roach, 2004). This unfavorable reality has researchers and policy makers asking questions about the immunity of the academic achievement gap, and the existence of effective methods to counteract it (Morgan, & Mehta, 2004).

Several efforts have been successful in increasing academic achievement and several interventions have proven effective in closing the academic achievement gap. Notably, the Report of the National Study Group for Affirmative Development and Academic Ability (Bennett, Bridglall, Cauce, Everson, Gordon, Lee, Mendoza-Denton, Renzulli, & Stewart, 2004) indicated that the most effective approaches to arrest the academic achievement gap may be those that represent a comprehensive and multifaceted tactic. We contend that the Student Success Skills Program (SSS) is an effective intervention to close the academic achievement gap that exists between White, and African American and Latino students. In previous studies, the SSS proved effective in improving academic performance of low achieving students, some where African Americans or Latinos. The studies we refer to (later addressed in this article) compelled rigorous reviews of the SSS Program. For example, Sink (2005) named the SSS

Program as one of the few that met rigorous research criteria to prove its effectiveness.

Additionally, Sink (2005) encouraged the use of the SSS Program given its “useful research-based criteria” (p. 14).

In this study we refer to the academic achievement gap as differences in academic achievement that are partly explained by race and/or ethnicity. Also, we define children as African Americans when they are Americans of African descent, but are not Latino or Caucasian. Latino children are “... of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race” (Office of Management and Budget, United States Government, p. 17).

The present study reexamines data from three previous studies in which the SSS Program was the treatment intervention aimed at closing the academic achievement gap for low achieving students (Brigman & Campbell, 2003; Campbell & Brigman, 2005; Webb & Brigman, 2005). Uncharacteristically in the school counseling research, the aforementioned studies used experimental designs with randomly assignment of students to the SSS Program and a control condition. Supportive of the efficacy of the SSS Program, students who participated in the SSS Program showed significant positive academic outcomes when compared to students in the control group. However, in the original SSS Program studies, the authors did not consider ethnicity as a factor. Hence, in the present study, we reexamine the data to identify emerging trends related to academic gains achieved by African American and Latino students who participated in the SSS Program. Also, we are interested in ascertaining whether or not there are differences attributed to ethnicity between students who participated in the SSS Program and those who did not. Specifically, the present study is guided by one research question: Do Latino and African American students perform as well or better than their White counterparts in

Reading and Mathematics following participation in the SSS Program? An elemental assumption of this study is that the SSS Program is effective in closing the academic achievement gap that exists between White, and African American and Latino students. Therefore, we hypothesized that students' ethnicity will not be a differentiating factor on indices of academic achievement following participation in the SSS Program. In other words, we believe that the SSS Program is equally effective for all students independent of ethnicity.

We begin with a description of the SSS Program used in previous studies to close the academic achievement gap for low achieving students. This is followed by a brief explanation of the research design and method used in each of the original studies. For the interested reader, the SSS Program original studies offer a thorough explanation of the theoretical and empirical basis for the SSS Program (see Brigman & Campbell, 2003; Campbell & Brigman, 2005; Webb & Brigman, 2005). Next, we discuss the results of the analyses we used to address the study's hypothesis. Finally, we suggest the direction for future studies and the potential applications of the SSS Program to close the academic achievement gap that exist between White, African American and Latino students.

Student Success Skills

The authors of the original SSS Program studies built their research on a strong empirical and theoretical basis with regard to content, delivery, and research design. The SSS Program is based on three skill sets consistently identified in extensive reviews of research as contributors to improved academic and social outcomes (Hattie, Biggs, & Purdie, 1996; Masten & Coatsworth, 1998; Wang, Haertel, & Walberg, 1994). These skills sets include: (a) cognitive and meta cognitive skills such as goal setting, progress monitoring and memory skills; (b) social skills such as interpersonal skills, social problem solving, listening, and team-work skills; and (c) self

management skills managing attention, motivation, and anger. Further support for these skill sets have been reported by researchers who have linked social and emotional competence to achievement outcomes, including that of students at risk for academic failure (Elias et al. 2003; Marzano, Pickering, & Pollack, 2001; Zins, Weissberg, Wang, & Walberg, 2004).

The Original Student Success Skills Studies

Brigman and Campbell (2003), Webb and Brigman (2005), and Campbell and Brigman (2005) used randomized comparison group methodologies repeated across multiple settings to evaluate student outcomes as a result of participating in the SSS Program. Nine hundred forty eight students in 5th, 6th, 8th, and 9th grades, from two Florida school districts, participated in the original studies.

The authors measured academic achievement gains using a standardized, objective, state-wide assessment instrument, the Florida Comprehensive Assessment Test (FCAT). The FCAT-Norm Referenced Test (NRT) is a standardized, objective, paper-and-pencil assessment instrument used to assess academic achievement. The FCAT NRT results in indices of Mathematics and Reading.

Customarily, all 3rd to 12th graders take the FCAT NRT during the spring of each year. The FCAT has been normed based on the scores obtained by 5,171 students who represent Florida's ethnic groups by including 60.8 % White, 20.6% African American, 15.1% Latino, 1.8% Asian American, .18% Native American, and .83% multicultural children. The FCAT NRT has been noted for its psychometric properties. The FCAT technical manual reports Cronbach's alpha coefficients, indices of reliability, between .86 and .88 for Reading, and .91 to .92 for Mathematics. Also, solid coefficients have been reported for the FCAT NRT's measures of criterion and construct validity.

We used the FCAT NRT scale scores from tests administered in April, pre and post random assignment to the experimental or the control condition. We considered results to be statistically significant when they met α at at least the .05 level.

A pre and post intervention rating of student behavior was used to measure behavior changes of treatment group students. The School Social Behavior Scales (SSBS) measures skills considered essential to school success (Merrell, 1993). In the original SSS studies, teacher rated behaviors on the SSBS included academic, social, and self management skills.

The Student Success Skills Program as an Intervention

In each original SSS Program studies, trained school counselors delivered the SSS Program's classroom and group interventions using a structured format. Attention was given to fidelity of treatment through extensive training, coaching, the development of a manual for counselor use and tracking attendance of counselors at training and coaching sessions. In the fall, students participated in classroom guidance lessons implemented to introduce fundamental SSS Program concepts, and eight 45-minute weekly group sessions. These were followed by four booster sessions beginning in January, spaced about a month apart and preceding the state scheduled FCAT NRT administration.

Embedded in the classroom and group interventions were 16 tools and strategies aimed at helping students succeed (Figure 1). These tools and strategies were delivered in a structured format. The beginning of each session focused on goal setting, progress monitoring and success shared based on life skills such as nutrition, rest, exercise, fun, and social support. The end of each session focused on goal setting, progress monitoring and success, based on cognitive, social, and self management skills tied to academic success. Students shared successes with peers, monitored individual progress towards previously set goals, and developed plans for new

goals aimed at continued improvement. These strategies were introduced at the beginning of the school year in classroom lessons. At the conclusion of the classroom lessons, students who needed additional support continued in group sessions which provided additional opportunities for practice and feedback.

The middle of each classroom session was used to introduce new concepts, skills, and strategies that aimed at the improvement of academic and social functioning. The middle of each group session focused on a social problem-solving model framed to reflect students' needs, interests, and goals. Each student explored his or her own experience managing anger and problem solving while peers helped conceptualize and try out potential solutions. This approach allowed for the use of culturally relevant contexts thus validating the background and value of students. Also, the approach allowed for social integration which further supports academic achievement (Dentler & Hafner, 1997; Rong & Brown, 2002).

Original SSS Program Studies: Results and Findings

In the original SSS Program studies, rigorous methodologies and statistical procedures to control for the unwanted influence of certain variables resulted in significant differences between treatment and comparison group means. Students who participated in the SSS Program, the experimental condition, academically outperformed students in the control group. For example, in Mathematics, 82%, 87%, and 85% of students who participated in the SSS Program showed average scale scores gains of 30, 31 and 27 points on the FCAT NRT. In reading, 64%, 78% and 75% of students who participated in the SSS Program showed average scale score gains of 26, 23 and 26 points. In addition, students who participated in the SSS Program showed improvements in behaviors with 69%, 69% and 72% of the participants improving an average of 22, 18 and 19 points on a measure of behavior.

Present Study

Methodology

We used data from 1,123 5th, 6th, 8th and 9th grade students who originally participated in the SSS Program studies. The participants enrolled in schools from two school districts. The majority of the students (76%) originated from a school located in an urban setting. The remaining students (24%) originated from schools in a rural setting.

The students were divided by gender in nearly equal numbers, 371 (38.9%) females and 348 (36.5%) males. The rest of the students neglected to indicate gender. The ethnic composition of the participants included 718 Whites, 279 African Americans, and 126 Latinos.

The study's methodology and hypotheses required a division of participants into treatment and comparison groups. Of the participants, 540 were randomly assigned to the treatment group and 583 were part of the comparison group. Table 1 shows the characteristics of treatment and comparison groups.

Results

Before we report the results of the statistical analyses to address the study's hypothesis, we present the FCAT NRT means and standard deviations for the groups in Reading (see Table 2). Table 3 shows the means and standard deviations for the groups in FCAT NRT Mathematics.

We elected to calculate a Multiple Analysis of Covariance (MANCOVA) to test the study's hypothesis. The MANCOVA allowed us to compare Mathematics and Reading post-test scores by holding constant the pre-test scores of the same variables. As predicted, the multivariate statistics revealed a significant effect for group (Wilks' $\lambda = .975$, $F(2, 1114) = 14.13$, $p < .001$, $\eta^2 = 0.25$, $d = .999$), which suggested that post-test scores in either one (or both) of the experimental conditions were significantly different than the post test scores of the control

group. Figure 2 and Figure 3 show the pre-test and post-test means for the control and experimental groups.

A follow-up Analysis of Covariance (ANCOVA) revealed that when pre-test scores were held constant, the post-test scores for the Reading groups were significantly higher for the experimental condition than the control condition [$F(1, 991) = 5.75, p < .01, \eta^2 = .005, d = .669$]. Similarly, post-test scores for the Mathematics group were significantly higher for the experimental condition than the control condition [$F(1, 991) = 27.61, p < .001, \eta^2 = .24, d = .999$]. These findings indicate that the FCAT NRT scores for the experimental and control groups, in Mathematics and Reading, were significantly different. That is, students' scores for those who participated in the Student Success Skills Program improved at post-test in Mathematics and in Reading.

We found no statistically significant differences for ethnicity [Wilks' $\lambda = .992, F(4, 2228) = 2.36, p > .05, \eta^2 = 0.004, d = .687$]. Also, the interaction between the group and ethnicity was not statistically significant [Wilks' $\lambda = .999, F(4, 2228) = .258, p > .05, \eta^2 = 0.01, d = .107$], suggesting that regardless of ethnicity, students' scores improved following participation in the Student Success Skills Program.

Discussion

Several experimental studies have shown the SSS Program to be effective at increasing and sustaining the academic achievement of low to mid-range performing students (Brigman & Campbell, 2003; Campbell & Brigman, 2005; and Webb & Brigman, 2005). The aim of the present study was to evaluate the SSS Program's effectiveness in closing the academic achievement gap between White, and Latino and African Americans students. The results show that the SSS Program is effective in increasing Mathematics and Reading scores (FCAT NRT)

independent of the students' ethnicity. Specifically, following SSS Program participation, achievement scores in Mathematics and Reading improved at similar levels without ethnicity being a differentiating factor.

Study design is important in light of the current educational climate of accountability that focuses on student academic achievement outcomes. The United States Department of Education (USDOE, 2003) has recently released guidelines to help educators identify and implement educational practices supported by rigorous evidence of effectiveness. These guidelines include the use of experimental designs studies that are repeated across multiple settings. The present study design meets DOE guidelines, suggesting that the SSS Program, as an intervention, is supported by strong evidence of effectiveness. Additionally, it is worth mention that the methodology employed in the present study was independently reviewed at The Center for School Counseling Outcome Research (Cary, 2004) and described as a rigorous design.

Legislative policy, including the federal No Child Left Behind Act of 2001 (United States Department of Education), focuses on improved achievement outcomes and the enhancement of educational opportunities for all students. Schools are charged with showing that all students make adequate yearly progress. This has led schools, educators, and policy makers to examine the effectiveness of interventions directed at students, in an effort to increase academic achievement. This study documents the efficacy of a program implemented by school counselors, designed based on theoretical and empirical support for the inclusion of cognitive, social, and self-management skills in attempts to increase academic outcomes.

Based on the results, we argue that interventions, such as SSS Program, that focus on meta-cognitive, social and self-management skills, are effective in increasing academic

achievement scores in at least two important areas, reading and mathematics. More importantly, the increases in academic achievement occur across ethnic lines, hence nullifying the academic achievement gap between Latino and African American, and White students. Therefore, the academic achievement gap across ethnic lines is susceptible to erosion by a program that does not focus on academic content but on skills central to all learning. This is supportive of the belief that before students learn, they must develop certain skills central to learning.

We encourage further studies that focus on the academic achievement gap. Particularly beneficial to the understanding of academic achievement may be longitudinal studies of students who made considerable academic gains, especially those who moved into the “proficient” range on standardized achievement tests such as the FCAT NRT, following multifaceted interventions. Attending to factors that improve academic achievement are relevant for the refinement of programs such the SSS Program; more importantly, however, longitudinal studies may uncover factors external to academic issues that further narrow the achievement gap for Latino and African American students. For example, the study of Latino acculturation is proven relevant to academic achievement given that cultural transitions influence family functioning. In turn, family dynamics are relevant to students’ academic achievement.

We recommend studies with ethnic minority students given that the academic achievement gap seems influenced by numerous factors not addressed in our study. For example, future studies must address personal, familial, and ecological factors’ influence on academic achievement. Hence, we suggest studies that examine the relationship of aforementioned factors so that interventions may address them within a holistic and comprehensive research paradigm. Also, schools may benefit from those studies to frame multifaceted interventions that include parents and the community.

Last, we are advocates for the positive influence that school counselors have on academic achievement. It appears misguided to support school-based interventions that exclude school counselors. This and other studies lend support to the idea that school guidance counselors are influential in increasing the academic achievement of students, independent of the students' ethnicity and the school setting. Future studies may consider the synergistic effect of content instruction, reading for example, in combination with the SSS Program.

The limitations of the study do not abrogate the relevance of the results. However, certain considerations are in order when evaluating what the results show. For example, this study's dependent variables may not adequately and fully represent the entire spectrum of academic achievement. We used two indices from a standardized, objective, state-mandated test to evaluate academic achievement in mathematics and reading.

The selection of participants poses another limitation to this study's findings. The participants were restricted to an achievement range between the 25th and the 50th percentile of the FCAT NRT. We consider possible that inclusion of a wider range of academic achievement scores may alter the results. It may be important in the development of interventions such as the SSS Program to see if students differ in social, meta-cognitive and self-management skills in relation to their academic achievement levels.

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Table 1

Demographic Characteristics of the Control and Experimental Groups

<u>Characteristic</u>	<u>Groups*</u>	
	<u>Experimental (n=430)</u>	<u>Control (n=569)</u>
Gender		
Female	185	186
Male	164	184
District Location		
Urban	97	125
Rural	362	370
Grade		
5 th	277	241
6 th	130	179
8 th	15	25
9 th	37	50
Ethnicity		
African American	115	85
Latino	30	56
White	312	341

Note. *totals may not equal 100% due to missing data.

Table 2

Means and Standard Deviations on FCAT NRT Reading Scores for the Experimental and Control Groups by Ethnicity

Ethnicity	<u>Experimental</u>		<u>Control</u>	
	Pre-test	Post-test	Pre-test	Post-test
African American	642.5 (27.3)	651.9 (29.1)	50.9 (34.6)	655.5 (29.8)
Latino	645.9 (26.4)	658.1 (29.4)	640.4 (23.5)	652.2 (27.0)
White	634.8 (29.7)	650.6 (32.5)	639.1 (24.4)	649.3 (28.5)

Note: Standard deviations in parentheses

Table 3

Means and Standard Deviations on FCAT NRT Mathematics Scores for the Experimental and Control Groups by Ethnicity

Ethnicity	<u>Experimental</u>		<u>Control</u>	
	Pre-test	Post-test	Pre-test	Post-test
African American	631.5 (25.0)	655.5 (28.4)	646.7 (28.0)	658.5 (30.2)
Latino	634.0 (27.4)	658.2 (32.6)	640.5 (24.1)	650.5 (25.2)
White	628.0 (29.7)	650.5 (31.2)	639.5 (28.2)	650.6 (27.4)

Note: Standard deviations in parentheses

Figure 1: SSS Concepts, Tools & Strategies Introduced & Practiced in Classrooms

Creating a caring, supportive and encouraging classroom

Participants learn skills for listening and attending, ways to frame positive self talk, including noticing small improvements towards goals and ways to encourage peers. These skills are practiced, encouraged, and reinforced throughout the program as participants work to improve academic and social outcomes.

Goal setting, progress monitoring and success story sharing

Participants are introduced to the Seven Keys to Course Mastery, the Looking Good/Feeling Good Life Skills tools and grade monitoring strategies and learn to use the tools to identify successes, patterns, areas in need of improvement and how to develop plans for improvement.

Cognitive & memory skills

Counselors work collaboratively with teachers to introduce important study related tasks including how to pick out important information and how to organize/chunk information so it can be more easily studied and remembered. Story structure is introduced as an academic and social/emotional tool.

Performing under pressure: Managing test anxiety

Students create their own safe place and learn to use breathing and positive self talk to improve test performance. Mental practice is introduced as one way to improve performance. Students learn to use test taking strategies, positive self talk and music as additional strategies to help improve performance.

Figure 1 (continued)

Building Healthy Optimism

Strategies for developing healthy optimism are realized through positive student story telling, the sharing of success stories shared around goals that have been set and by learning the language of optimism.

Figure 2: Experimental and Control Groups Pre-test and Post-test Scores, Reading

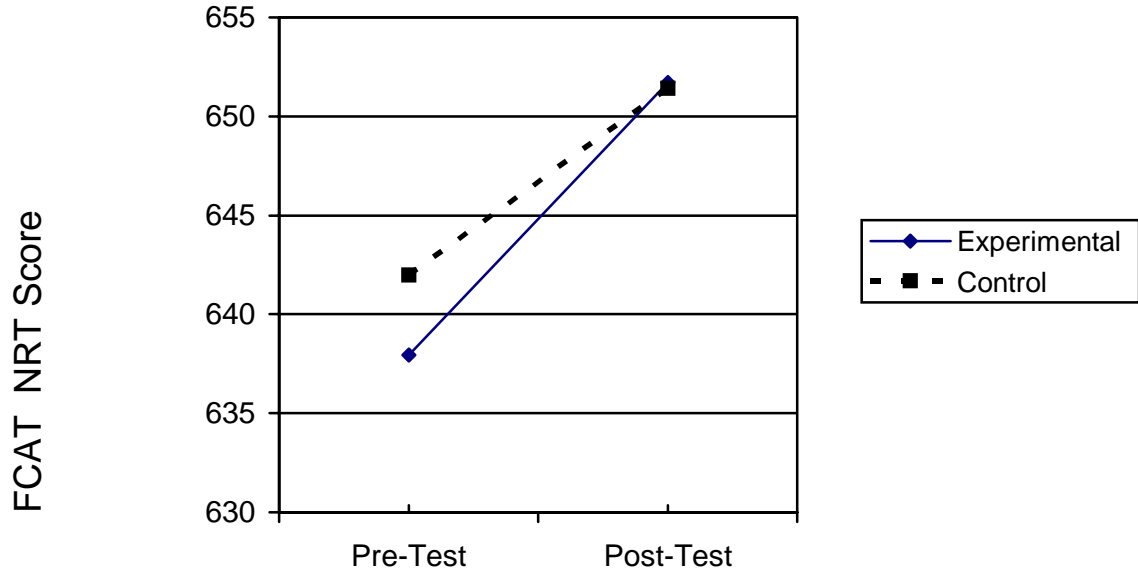


Figure 3: Experimental and Control Groups Pre-test and Post-test Scores, Mathematics

