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A Peer-Led High School Transition Program Increases Graduation Rates Among Latino Males

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Abstract

The present study investigated the impact of a manualized high school transition program, the Peer Group Connection (PGC) program, on the graduation rate at a low-income, Mid-Atlantic high school. The program utilized twelfth grade student peer leaders to create a supportive environment for incoming ninth grade students. Results of a randomized control trial demonstrated that male students who participated in the program during ninth grade were significantly more likely to graduate from high school within four years than male students in the control group (81% versus 63%). Findings suggest that peers can be effective in delivering a school-based, social emotional learning intervention and that it is possible to intervene in the ninth grade to influence the probability of high school graduation.

Keywords

high school transition; graduation rates

The transition to a new educational setting requires major adaptations that can be stressful. Research has demonstrated that the stress often accompanying the transition from middle school to high school is associated with lowered achievement and school attendance (Akos & Galassi, 2004; Mizelle & Irvin, 2000). It has been found that students who begin the process of transition to high school with higher levels of attachment to a prosocial norm environment may be protected from a variety of negative outcomes (Dedmond, 2006). By the time they reach freshman year, more than half of our high school students are “chronically disengaged” from school (Blum, 2005). Research consistently demonstrates that students are most vulnerable for dropping out of school during and immediately following their first year of high school (Cohen & Smerdon, 2009). By focusing on the transition into high school, this period of heightened vulnerability has the potential for being transformed into a window of opportunity to prevent the potentially devastating consequences of high school dropout. The present study investigated the impact of the Peer Group Connection (PGC), a manualized, high dosage, multifaceted school based program that supports and eases the ninth grade transition period on the high school graduation rate of students who participated in the program in the ninth grade.

The Face of Dropout in America

More students fail ninth grade than any other grade (Kennelly & Monrad, 2007) and promotion rates between ninth and tenth grade are much lower than rates between any other grades (Wheelock & Miao, 2005). A study of national public school enrollment patterns shows that there has been a sharp increase in the number of students enrolled in ninth grade over the last 30 years, indicating that an increasing number of students are being retained – a phenomenon known as the *ninth grade bulge*; and the rate at which students disappear between ninth and tenth grade has tripled over the same time period – contributing to the *tenth grade dip* (Haney et al., 2004).

For most students, dropping out of high school is not a sudden act, but a gradual process of disengagement with early warning signs that can be clearly identified for at least one to three years before students drop out (Bridgeland, DiIulio, & Morison, 2006). Warning signs include poor attendance, low grades, discipline and behavioral problems, lack of involvement in class and in school activities, pregnancy, being held back, transferring from another school, and experiencing difficulty with the transition year of ninth grade itself (Bridgeland et al., 2006).

High school dropout is a complex and multi-faceted problem and all of its associated issues are interrelated and indicative of significant negative consequences that collectively threaten our economy and public health. Individuals who drop out of high school are far more likely than their peers who graduate to be unemployed, living in poverty, receiving public assistance, in prison, unhealthy, divorced, single parents, and parents of children who drop out of high school themselves (Bridgeland et al., 2006). Individual communities and our nation as a whole suffer from the dropout epidemic due to the loss of productive workers and the higher costs associated with increased incarceration, health care, and social services (Bridgeland et al., 2006). Far too many students in far too many schools across the country fail to graduate on time each year. However, the “silent epidemic” of dropout disproportionately affects minority, low-income, and male students (Bonny, Britto, Klostermarm, Homung, & Slap, 2000; Bridgeland et al., 2006; Green & Winters, 2006).

Minority students

Great disparity exists between public high school graduation rates of white and minority students. According to a 2010 U.S. Department of Education report, African American and Latino students had the highest dropout rates of all racial/ethnic groups (Snyder & Dillow, 2010). While approximately 70 percent of all American high school students graduate in the expected four years, approximately 58 percent of Latino, 55 percent of African American, and 51 percent of Native American students graduate on time, compared to 78 percent of white students (Alliance for Excellent Education, 2007).

Balfanz and Legters’ groundbreaking report, *Locating the Dropout Crisis* (2004), attempted to determine the scale and scope of the dropout crisis by identifying the number of high schools with severe dropout problems; detailing the states, cities, and locales where they are concentrated; and establishing who attends them. According to this report, one in five high schools in the U.S. have weak promoting power (60 percent fewer seniors than freshmen),

indicating unacceptably low graduation rates and high dropout rates. Nearly half of our nation's African American students, more than a third of Latino students, and one out of ten white students attend high schools in which graduation is not the norm (Balfanz & Legters, 2004).

Low income students

A student between the ages of 16–24 who comes from the bottom 25 percent of the socioeconomic status distribution is about seven times more likely to have dropped out of high school than his/her counterpart who comes from the top 25 percent. Further, 48 percent of all students who dropout come from families in the lowest quartile of family income and 77 percent of students who dropout come from the lowest half of the socioeconomic status distribution (Laird, Kienzi, DeBell, & Chapman, 2007).

Gender differences

Male students appear to drop out at higher rates than female students (Snyder & Dillow, 2010). Nationally, only 65 percent of male students graduate compared to 72 percent of female students. The gender gap in graduation rates is particularly wide for minority students. Nationally, about 5 percent fewer white male students and 3 percent fewer Asian male students graduate than their respective female students. While 59 percent of African American females graduated, only 48 percent of African American males earned a diploma. Further, the graduation rate was 58 percent for Latino females, compared with 49 percent for Latino males (Green & Winters, 2006).

Other risk factors for school dropout

In their 2006 study, Bridgeland et al. conducted focus groups and interviews with ethnically and racially diverse students aged 16 through 25 who had dropped out of public high schools in 25 different locations in large cities, suburbs, and small towns in an effort to better understand the perspectives of the former students themselves. Most of the students who had dropped out listed a school-related (versus a family- or employment-related) reason for leaving school, including missing too many school days, thinking it would be easier to get a GED, getting poor grades, and not liking school. High school dropouts also felt that their classes were uninteresting, irrelevant, and not reflective of real-world challenges (Bridgeland et al., 2006).

From Vulnerability to Opportunity: Capitalizing on a Transition to Prevent Dropout

The present study investigated the impact on high school graduation rates of an evidence-based high school transition program, *Peer Group Connection*, that utilizes older students in the same school to create a supporting environment for incoming freshmen. The program was developed by a non-profit organization that works in partnership with schools to implement the program (Powell, 1993; <http://www.supportiveschools.org>). High school juniors and/or seniors become trained peer leaders who meet once a week with freshmen in outreach sessions designed to develop skills, promote a respectful school culture, nourish meaningful connections, and strengthen relationships among students across grades. Booster

sessions are provided during students' sophomore year to reinforce learning from the previous year. Part of the program's focus is to train selected school faculty advisors to prepare senior students to mentor and educate small groups of incoming students. The objective of the program is to bring together diverse groups of students with varying levels of risk for school related problems who collectively participate in group mentoring sessions. Youth are exposed to motivated and academically successful students in a structured setting, and thus benefit from observational learning and imitation of these peer role models.

The Program's Theoretical Framework

The PGC model is grounded in the theories of social and emotional learning (SEL) which "teaches the skills we all need to handle ourselves, our relationships, and our work, effectively and ethically" (Collaborative for Academic, Social, and Emotional Learning, 2007). A mounting body of evidence clearly indicates that, compared to students who do not participate in such programs, students who receive SEL programming academically outperform their peers, get better grades, and graduate at higher rates (Collaborative for Academic, Social, and Emotional Learning, 2007). SEL has been found to improve academic attitudes (motivation and commitment), behaviors (attendance, study habits, cooperative learning), and performance (grades, test scores and subject mastery) (Zins, Weissberg, Wang, & Walberg, 2004). Peer group interactions and school culture and climate have consistently been named among the most influential factors on student learning (Garringer & MacRae, 2008).

Best Practices

The peer group program integrates all of the best practice recommendations for SEL, high school transition, and peer mentoring programs. Research indicates that SEL programs with the best outcomes are multi-year in duration, use interactive, rather than purely knowledge-based instructional methods, and are integrated into the life of the school rather than being implemented as marginal add-ons (Zins et al., 2004). Effective high school transition programs guide students throughout the period of change, facilitate caring relationships, create a culture of support and sense of community, and provide students with mentoring, life skills, and opportunities to get to know and develop positive relationships (Feller, 2003; Mizelle & Irvin, 2000; Smith, 2006). Finally, effective peer mentoring programs carefully assess and select peer/cross-age leaders; allow for adult support and supervision for peer mentors in the structure of the program; make training materials developmentally appropriate and engaging; and set high expectations for peer leaders and provide them with the supports to reach them (Mentoring Resource Center, 2005).

The Present Study

The present study utilizes a randomized control trial to examine the effect of participation in the PGC program on four-year graduation rates. Our primary research question was, "Are students who participate in peer group during ninth grade more likely to graduate from high school on-time (i.e., in four years) than students who do not?"

Implementation of the PGC High School Transition Program

Students who were randomly assigned to the program group participated in the program through their entire ninth grade year. The faculty advisors instructed upper class students to facilitate groups of approximately 12 ninth grade students throughout their freshman year of high school in weekly sessions. In these sessions, freshmen participated in hands-on activities and simulations in environments that enable them to practice essential academic, social, and emotional skills, critical thinking, goal setting, decision-making, time management, teamwork, and communication. The curriculum is designed to address mediating factors which have been shown through research to influence risk reduction behaviors and produce positive student outcomes, including student persistence (enrollment in school from year-to-year) in school (see Appendix A).

Stakeholders

Prior to program implementation, a group of school stakeholders were assembled to prepare and plan for program implementation. Stakeholders included the principal, the vice principal responsible for student scheduling, other administrators and faculty representatives. The program developers and research team continued to meet regularly with the school stakeholders prior to and throughout program implementation. Topics covered during these meetings included reviewing the research protocol, integrating the program into the school day, securing building-wide faculty and staff support for the program, ensuring that students who were randomly selected to participate in the program were scheduled into the program, selecting teachers to implement the program, integrating the peer leadership curricula with other existing programs in the school, and ensuring the long-term growth and sustainability.

Faculty advisors

Three teachers were selected from the faculty of the school to become faculty advisors. They participated in an intensive, 11-day training regimen that prior to program start-up included a one (1)-day training conference and a four (4)-day residential training conference. During the program's first 15 months of implementation, faculty advisors participated in a three (3)-day residential training conference and three (3) additional one (1)-day training conferences. Training focused on the process for recruiting and selecting future peer leaders; the program's theoretical basis; team-teaching and organizing the daily leadership course; conducting a three-day, two-night leadership training retreat for peer leaders; utilizing the curriculum; preparing the peer leaders to effectively conduct freshman outreach sessions; enhancing facilitation skills; preparing for out of school events; and preparing for sophomore year booster sessions.

Peer leaders

The three faculty advisors team-taught a daily, year-long leadership course in which students who were in their senior year of high school were trained to become peer leaders for freshmen. Each student who was interested in becoming a peer leader completed a written application and participated in a group interview. Peer leaders were chosen based on various leadership qualities and the degree to which they were on track to graduate. They earned course credit toward their graduation requirements for their participation in the program.

During the daily leadership course, peer leaders rehearsed how to work in teams as group discussion leaders and positive role models for freshmen. They also practiced decision-making, problem-solving, goal setting, teamwork, negotiation, refusal, group facilitation, giving and receiving feedback, active listening, time management, and self assessment skills. Peer leaders earned a grade based on mastery of leadership skills, role modeling behaviors, class participation, and self assessments.

Program activities during freshman year

Each week throughout the school year, three class sessions of the daily leadership course for peer leaders were used as interactive practice sessions, the fourth class period was used by the peer leaders to conduct the outreach sessions with freshmen, and the final class was used to debrief the outreach session that had been conducted with the freshmen on the previous day. In the 40-minute first year outreach sessions that took place once per week during the ninth grade, each two-person team of peer leaders facilitated activities for a group of approximately 12 new students. During these weekly sessions, peer leaders co-facilitated hands-on activities and simulations that enabled freshmen to practice essential academic, social, and emotional skills. See Appendix A for an overview of the conceptual program components and their scheduling. In mid-winter, a Family Night event was held for parents and other caregivers of the senior peer leaders and freshman program participants. This event provided opportunities for all participants to participate in curricula related to improving parent-student communication and exploring family attitudes.

Program activities during sophomore year

During the following school year, three 2.5 hour booster sessions were conducted with the sophomore students who participated in the program as freshmen. Booster sessions were designed to reinforce academic self-efficacy, resistance to peer pressure, communication skills, goal-setting skills, and decision-making skills. Another Family Night event was held during the students' sophomore year.

Monitoring dosage and implementation fidelity

Program attendance was recorded at the freshman outreach classes and booster sessions. On average, students in the program group participated in approximately 18 freshman outreach sessions ($SD = 5$) during their freshman year. During their sophomore year, program students participated in an average of two booster sessions ($SD = 1.23$).

To provide support to faculty advisors and to help ensure implementation fidelity, advisors received on-site technical assistance and consultation from the program developers. Developers observed advisors while they team-taught the daily leadership course with peer leaders and provided specific feedback to the advisors about strengths and areas in need of improvement. In addition, program developers observed the peer leaders conducting outreach sessions with the freshman students and coached the faculty advisors on how to provide effective feedback on the peer leaders' performance as leaders and facilitators. Rating scales which assessed teaching effectiveness were completed during all technical assistance visits.

In addition, trained research observers conducted observations of the faculty advisors co-leading instructional classes with the peer leaders and the peer leaders conducting the freshman outreach sessions. Observers completed rating scales to capture the degree to which the faculty advisors and peer leaders were implementing the program with fidelity and high-quality instruction. Analyses of fidelity data indicated that ratings of the overall effectiveness of the faculty advisors were “excellent” or “good” in 87% (13 of 15) of the observations. Observer ratings of the overall effectiveness of the peer leaders in the outreach sessions indicated that 89% rated as satisfactory or above.

Ongoing feedback from faculty advisors, peer leaders, and freshmen students

Throughout the school year, monthly meetings were held with faculty advisors to obtain their feedback on the interventions and to discuss any need for modifications to the program model and/or activities. In addition, weekly written feedback was obtained from peer leaders and freshmen. Based upon the information gathered, the program developers assisted advisors in making some adaptations of vignettes used in activities and inclusion of some high-energy, five-minute activities to increase student engagement.

Method

Participants and Research Design

Study participants were 268 ninth grade students (135 males and 133 females) from a low-income (ranked by the Brookings Institute as one of the top 100 most economically depressed localities in the United States), Mid-Atlantic, urban high school. At the beginning of the 2005–06 school year, the total high school enrollment of ninth through twelfth grade students was approximately 1,440. The majority of the participants were Hispanic/Latino (92%), followed by “other” (6%), and African American (2%). The high school graduation rate for the county in which the high school is located has been reported as 79%. Note that there were 190 of the 268 students reported to have graduated from the class under study (71%), which is in line with other public high schools in the county and has been historically such. Unfortunately, the specific date when each of the drop-outs left school is not available in the data base.

In September 2005, the school committed three teachers to serve as program instructors and designated 16 senior students to be trained as peer leaders. This allowed for a total of 8 program groupings (two peer leaders conducting each group), with 12 first-year students included per group. Incoming ninth grade students were randomly assigned to the program group ($n = 94$). The remaining 174 students were designated as part of the control group. There were approximately equal proportions of females and males in the program and control groups.

Data Collection

All 268 participants completed a baseline survey during the orientation day, in small group administrations, prior to the start of their freshman year. Students were instructed that the purpose of the survey was to learn about their opinions and experiences in order to improve curriculum. The survey administration was completed with paper and pencil answers, and

overseen by study staff with human subject certifications and Institutional Research Board approval. In order to maximize the accuracy of student reports, they were assigned unique identifiers and names appeared nowhere on the survey. The survey took between 40–80 minutes to complete. Surveys were translated into Spanish and were available, if necessary, along with the assistance of bi-lingual survey administrators.

Measures

The survey instrument was comprised of a battery of questions about the student's behaviors and attitudes. The items collected were those believed to be both important for determining risk for school completion and to be impacted by components of the intervention program itself. Questionnaire items included non-malleable demographic variables such as gender and race, but also measures postulated to be strong predictors of high school completion, including: discipline and absentee history, personality measures such as sensation seeking, academic achievement, motivation, decision making, goal setting, and attitudes toward school and peer groups (see Appendix B for a description of these variables included in this analysis).

Analysis

Overall, 99.16% of the values in the data set were complete and there was no variable with more than 5% of the cases missing. Missing data at baseline were imputed using the Expectation-Maximization (EM) algorithm approach to imputation in SAS version 9.1 under the assumption that missing data occurred at random. For this study, it was our intention to first create a stratification variable at baseline to help predict those who could be impacted by a program in terms of their graduation likelihood (Agresti, 2012). In order to determine whether PGC had an effect for students who vary in their baseline risk for school dropout, we used logistic regression analysis with graduation status (yes or no) as the binary outcome and the 35 participant characteristics at baseline as predictors to obtain an output score we named "Propensity to Graduate Score (PGS)". This score is an analytic output from the propensity score (matching) analysis (Rosenbaum & Rubin, 1984).

The results of this first analysis provided a single summary score (range .05–.98) that estimates the probability of graduation (PGS) for each participant based on the baseline characteristics of the participant. A list of students who graduated from the high school in June 2009, four years after the study participants began high school, was obtained from the school and "graduated/not graduated" serves as the outcome measure.

Results

After obtaining a PGS, the distribution of scores was examined by gender and experimental groups. There was no significant difference in propensity scores by either gender (male mean score = .69 and female mean score = .72) nor by program assignment (program group mean score = .72 and control group mean score = .70). This latter finding was to be expected given the nature of the random assignment. As we wished to create a stratification variable (instead of aggregating the measures across the entire range), for remaining analyses, students were dichotomized into low probability of graduating (PGS less than or equal to .6)

and high probability of graduating (PGS greater than .6). This level of .6 or higher probability represented approximately 70% of the sample. This level was believed appropriate as to reflect the area's typical graduation rate. The remaining 30% were deemed at greatest risk for drop out due to their baseline measures.

First, chi-square analyses were conducted to determine the overall effect of program participation on overall high school graduation. Results are presented in Table 1. It appears that while the program group *overall* graduated at a higher rate than the control group (77% vs. 68%), this finding was significant only at $p < .10$. Female control and program subjects graduated at essentially the same rate and differences in graduation rates between experimental group was significant for males only ($p < .05$).

Given that female students in both study groups graduated at the same rate (72%), we continued our analyses with male subjects in order to ascertain possible program group differences. In examining baseline PGS by experimental group (for male students), it was found that there were no significant differences in baseline probability score by study group. Again, this is to be expected given random assignment.

In examining the graduation outcome measure for male students, it was found that males who exhibited a low PGS for graduating, but became part of the peer group program, had a better chance of graduating (60%), compared to their control group counterparts (30%). (See Table 2). Chi square analysis of program group by graduation outcome for *low* PGS males was significant (Chi sq=3.23, $p = .07$). Among males who were deemed *high* PGS, chi square analyses were not statistically significant; however, those males who scored a high probability at baseline to graduate, but were not fortunate to get the program, exhibited higher proportions of those who failed to graduate (22%), compared to 9% of the program group who failed to graduate.

Discussion

The Peer Group Connection program utilizes older peers in a structured curriculum to help students with the transition from middle to high school. The results of the present study show that PGC can be an effective program for improving graduation rates among Latino males, especially those identified as at risk for school drop-out prior to entering 9th grade. Across the United States, fewer than half of the Latino males who enter ninth grade will graduate from high school (Green & Winters, 2006). However, male students who participated in the program in this study had a graduation rate of 81%. These results suggest that PGC can be instrumental in providing resources to enable Latino males to succeed in high school.

While the results are preliminary due to the small sample size, they suggest that the program is improving graduation rates for males at higher risk for drop-out. Moreover, PGC was effective in helping those with a baseline potential for finishing high school obtain that goal. Only about 1 out of 10 of PGC program participants who started 9th grade "with promise" eventually dropped out, compared to almost a quarter of the control group counterparts. These findings suggest that there are distinct benefits to providing high school transition

support to all incoming ninth grade students, not just those who are seemingly most at-risk for dropping out of school.

The finding that the program had little effect on the female population graduation rate was somewhat surprising. However, as noted earlier in the paper, male students generally appear to drop out at higher rates than female students (Snyder & Dillow, 2010). Nationally, only 65 percent of male students graduate high school compared to 72 percent of female students. Green and Winters (2006) documented a graduation rate of 58 percent for Latino females, and 49 percent for Latino males. It could be speculated that the PGC program mission of “spreading” the peer group message and “infecting” the school culture with that message was more successful among the female students overall.

Limitations and Contributions

This study has several limitations. First, measures to create the propensity to graduate score (PGS) were assessed using self-report questionnaires administered during the orientation period prior to the start of high school. Data based on multiple sources, including 8th grade report cards or teacher evaluations, might have improved the power of the constructs used in this study. Second, because the current study focused on interventions within the school setting, it was not possible to assess the contributions of parents, family, or activities that might have taken place in other important contexts. Third, the current study did not track any alternative programming that may have been experienced by students. Given that the results of this study are drawn from a relatively small sample in a geographically limited area, the findings from this study should be replicated in another Latino/a population.

Despite these limitations, this study contributes to the literature in a number of ways. It developed a sophisticated measure of “propensity to graduate,” using a wide range of measures found to be factors associated with high school student graduation rates. In addition, the study tested the ability of a school-based program to increase the probability of graduation among students, in general, and at-risk males, in particular. Latino youth have exhibited a very high dropout rate, and as this population begins to make up a larger percentage of the youth serviced by the United States public school system, it will become increasingly important to understand the factors that contribute to their success in the classroom and identify potential targets for intervention. It was found that PGC represents an approach to addressing the challenges that students encounter as they make the transition into high school, including:

1. *Peer mentoring.* Research indicates that peers play a critical role in the lives of youth serving as support for each other, models of behaviors, and as trusted sources of information (Maxwell, 2002; Whitaker & Miller, 2000). Peer mentoring programs positively impact students’ connectedness to school and parents, improvement in social skills and self-esteem, and academic achievement, and both mentors and mentees benefit from participation in the programs (Mentoring Resource Center, 2005).

2. *Train-the-trainer approach.* The program developer trains faculty members in an intensive 11-day train-the-trainer course over a one-and-a-half-year period to run the program effectively and prepare students for their roles.
3. *Stakeholder team development.* A stakeholder team of administrators, faculty, parents, and community members who receive the training, tools, and resources necessary to implement and sustain the model is essential. Stakeholders meet regularly to plan for implementation, troubleshoot obstacles, and ensure the long-term growth.
4. *Integration into the school day.* A cornerstone of the program is that it is integrated into the school day, and not administered as an after-school or before-school program. This approach increases the likelihood that participants become a visible component of the school's culture, institutionalized into the school itself, and sustained over time.
5. *Intensity.* Senior peer leaders are trained in a daily leadership development class as part of their regular school schedule (i.e., 40 minutes five times per week) and contact with younger students includes weekly, 40-minute discussion sessions.
6. *Duration.* Each pair of peer leaders meets with the same group of freshmen regularly throughout the entire ninth grade year. Booster sessions are provided the following year.
7. *User-friendly curricula.* A structured curriculum in which students participate in hands-on activities or simulations that enable them to practice essential skills.

Overall, the study results demonstrate that graduation rates among male students improved when they participated in the peer led program. By intervening during the period of entry into high school with a high-dosage, multi-faceted program, the probability of a high school diploma was shown to be improved by those most in need. Further research is warranted to examine the components and mechanisms of the program that most heavily influence this outcome. Nonetheless, these results demonstrate that a comprehensive, peer-based model is an essential resource to provide to students throughout the transition from middle to high school.

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Appendix A. Program Modules Delivered to Address Risk Factors Associated with School Dropout

Week/Session	Factors Addressed
1	SA, SC
2	SA, PA, SC
3	SA, PA, SC
4	SA, AO, DM, PS
5	SA, PA, SC
6	SA, PA, SC
7	SA, PA, SC
8	SA, SC, CS, EX
9	SS
10	SA, PS
11	SC, CS, DM
12	SC, CS, EX, DM
13	AO, SC, CS, EX, DM
14	SA, PA, SC
15	AO, SM, SC, CS, DM, GS
16	SC, CS, DM
17	AO, SC, CS, EX, SS, DM

Week/Session	Factors Addressed
18	AO, CS, EX, PS
19	PG
20	SC, CS, DM
21	SA
22	SA, SC, PS
23	SC, CS, DM
24	SC, CS, DM
25	SA, AO, PA, SC, CS, DM
26	SA, EX
27	SA, PA, SC, CS, EX, AH, DM, PG
28	SA, PA, SC, CS, EX, AH, DM, PG
29	SA, PS
30	SA, PS
31	SA, PA, SC, PG
32	SA
33	SA, SC, PS
34	SA, SC

Key

SA = School Attachment (sense of belonging/school bonding)

AO = Achievement Orientation/Motivation (academic self-concept, value of education, plans to stay in school)

PA = Peer Acceptance (understanding and tolerance of differences)

SM = Stress Management

SC = Social Competence (competence in interpersonal relationships)

CS = Coping Skills

EX = Expectancies (to the consequences of negative behaviors)

SS = Sensation Seeking & Impulsivity

AH = Anger/Hostility

DM = Decision Making

PS = Involvement in pro-social/extracurricular activities

GS=Goal Setting Strategies

PG = Peer Group (behaviors of friends and attitude toward friends' behaviors)

Appendix B. Description of Measures Used to Develop Propensity to Graduate Score (PGS)

	Description
Measure	
Gender	Self-reported gender; responses were coded such that 0 = male and 1 = female
Age	Self-reported age at baseline assessment

	Description
Measure	
Race	Self-reported race; responses were coded such that 1 = Black, 2 = White, 3 = Latino, 4 = Asian, and 5 = Other
Cigarette use	Self-reported lifetime cigarette use at baseline; responses were coded such that 0 = has not tried cigarettes, 1 = has tried cigarettes
Alcohol use	Self-reported lifetime alcohol use at baseline; responses were coded such that 0 = has not tried alcohol, 1 = has tried alcohol
Marijuana use	Self-reported lifetime marijuana use at baseline; responses were coded such that 0 = has not tried marijuana, 1 = has tried marijuana
Cut class	One item asked students if they had cut class over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
Cut school	One item asked students if they had cut school for the entire day over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
Late for class	One item asked students if they had been late to school (unexcused) over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
Sent out of class	One item asked students if they had been sent out of class for misbehaving over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
School warnings	One item asked students if their parents had been warned about their attendance, grades, or behavior over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
Fighting	One item asked participants if they had gotten into a physical fight with another student over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
In-school suspension	One item asked participants if they had been placed on in-school suspension over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
Out-of-school suspension	One item asked participants if they had been placed on out-of-school suspension over the past school year; responses were rated such that 1 = never, 2 = once or twice, and 3 = more than twice
Peer achievement	One item asked students how many of their peers do well in school; responses were coded using a Likert scale such that 1 = none and 5 = all
Sensation seeking	Sub-scale summarizes nine items that asked participants how often they sought particular experiences, such as, "look for a new experience" or "go for thrills in life." Items were scored from 1 = never to 5 = always (Schafer, Blanchard, & Fals-Stewart, 1994; $\alpha = .80$)
Academic self-efficacy	Summarizes seven items from the "Self-Efficacy for Self-Regulated Learning" subscale of the Multidimensional Scales of Perceived Self-efficacy, which assessed students' perceived ability to engage in academic behaviors such finishing homework on time and finding a quiet place to study; items were scored using a Likert scale ranging from 1 = not very well at all to 4 = very well (Bandura, 1990; $\alpha = .83$)
Self-efficacy for expression	Scale included three items that examine students' perceived ability to express their opinions, be firm when faced with situations, and stand up for themselves; items were scored using a Likert scale ranging from 1 = not very well at all to 4 = very well (Bandura, 1990; $\alpha = .67$)
Self-efficacy for enlisting social resources	Four items assessed students' perceived ability to solicit assistance from parents, relatives, friends, or teachers; items were scored using a Likert scale ranging from 1 = not very well at all to 4 = very well (Bandura, 1990; $\alpha = .69$)
Self-efficacy to resist peer pressure	Six items assessed participant's perceived ability to resist peer pressure to engage in deviant behaviors, sexual activity, or substance use; items were scored using a Likert scale ranging from 1 = not very well at all to 4 = very well (Bandura, 1990; $\alpha = .89$)
Classmate acceptance	Six items assessed students' perceived acceptance among classroom peers using the social support subscale of the School Success Profile; items were rated using a Likert

	Description
Measure	
	scale with scores ranging from 1 = disagree to 4 = agree (Bowen & Richman, 1997; $\alpha = .79$)
Social competence	Six items from the Social and Life Skills Scale assessed students' perceived ability to make friends; items were rated using a Likert scale with scores ranging from 1 = disagree to 4 = agree (McNeal & Hansen, 1999; $\alpha = .63$)
School-related positive attitudes and behaviors	Five items asked students about the extent to which they try to get the best grade, pay attention, do what is asked, put a lot of energy into school, and take part in school activities; items were scored from 1 = never to 5 = always (Libbey, 2004; $\alpha = .82$)
School-related negative attitudes and behaviors	Seven items asked students to indicate how often they find school uninteresting, fail to complete assignments, or have negative interactions with persons at school; items were scored from 1=never to 5 = always (Libbey, 2004; $\alpha = .75$)
Quality of relationship with caregiver	Three items assessed how often students felt that they could communicate with their parents and felt understood and respected by their parents; items were scored from 1=never to 5 = always (Paulson, Hill, & Holmbeck, 1990; $\alpha = .78$)
Negative coping	Five items asked participants how often they coped with stress, problems, or anger by blaming other people, yelling, throwing, or breaking things, and smoking or drinking; items were scored from 1=never to 5 = always (Pandina, Labouvie, & White, 1984; $\alpha = .55$)
Positive coping	Eight items asked participants how often they coped with stress, problems, or anger by engaging in behaviors such as talking with someone about the issue, engaging in problem solving, and reframing the situation in their minds; items were scored from 1=never to 5 = always (Pandina, Labouvie, & White, 1984; $\alpha = .84$)
Academic motivation	Participants' academic motivation was assessed with four items from the Amotivation subscale of the Academic Motivation Scale - High School Version. In response to the prompt "Why do you go to school?," students indicated the extent to which they agreed to statements such as "I once had good reasons for going to school; but now I wonder if I should continue;" responses were coded using a Likert scale such that 1 = disagree and 4 = agree (Vallerand et al., 1993; $\alpha = .52$)
School bonding	Thirteen items from the Psychological Sense of School Membership Scale (PSSM) assessed participants' feelings of connectedness to school. Specifically, this measure captured the extent to which students reported feeling included, respected, and encouraged by persons in the school; items were scored using a Likert scale wherein 1 = really false and 4 = really true (Goodenow, 1993; $\alpha = .82$)
Decision making	Three items assessed the extent to which students examined alternative actions and the potential consequences of their actions when making decisions; items were rated using a Likert scale where 1 = never and 5 = always (McNeal & Hansen, 1999; $\alpha = .76$)
Goal setting	Five items assessed students' future orientation, tendency to set goals, and perseverance in working toward goals; items were rated using a Likert scale where 1 = never and 5 = always (McNeal & Hansen, 1999; $\alpha = .74$)
Peer deviance	Using a three-item scale, students indicated how many of their peers engaged in negative behaviors such as substance use and violence; items were rated using a Likert scale where 1 = none and 5 = all (Pandina, Labouvie, & White, 1984; $\alpha = .82$)
Tolerance of peer deviance	Eight items asked participants to what extent they would approve or disapprove if their peers engaged in negative behaviors such as theft, using or selling illegal substances, and violence; items were rated using a Likert scale, such that 1 = strongly disapprove and 5 = strongly approve (Pandina, Labouvie, & White, 1984; $\alpha = .94$)
Time spent in prosocial activities	Eight times asked students to rate the extent to which they participate in activities such as academic clubs, services activities, religions activities, sports, performance activities, recreational activities and community service activities; items were rated using a four-point Likert scale, wherein 1 = not at all and 4 = a lot (Borden, Donnemeyer, & Scheer, 2001; $\alpha = .74$)
Speaking English	Three items examined the extent to which students spoke another language (other than English) at home, at school, or with friends; items were rated using a five-point Likert scale, wherein 1 = never and 5 = always (Tsai, Ying, & Lee, 2000; $\alpha = .87$)

Table 1

Percentage of Students in Each Experimental Group Graduating from High School

	Program	Control
Gender	%	%
Males&Females *	77	68
Males **	81	63
Females	72	72

*
p<.10**
p<.05

Table 2

Graduation Outcome for Male Students by Baseline Probability Score

	Program		Control		Total
	N	Col%	N	Col%	
High Probability/Graduated	29	63	48	54	77
Low Probability/Graduated	8	17*	8	9*	16
High Probability/Not Graduate	3	7	13	15	16
Low Probability/Not Graduate	6	13 [#]	20	22 [#]	26
	46		89		135

*[#], significant program vs. control group differences