

Beyond Traditional College Preparation: A Preliminary Evaluation of a College-Going Identity Learning Intervention on High-School Students' Growth Mindset

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Abstract

This paper summarizes a three-year quasi-experimental evaluation with school-level assignment of a social-emotional learning (SEL) program for high school students who are at-risk of dropping out before college graduation. The field-initiated program aimed to increase students' social and emotional skills, develop their character, and increase their college-going identities (CGI) with the long-run goal of strengthening students' growth mindset, resilience, and ability to persist to college graduation. There were four interventions that constituted "the treatment": 1) a 10-lesson student-facing CGI curriculum, 2) student-led "critical conversations" with recent alumni about their college experience 3) a research-based CGI coaching rubric for college counselors, and 4) CGI professional development for teachers and counselors. Treatment students were exposed to the curriculum, and both treatment and control students were exposed to business-as-usual college preparation activities, e.g., a curriculum that did not contain specific CGI lessons, but still developed college knowledge and academic readiness. Participating schools were located in suburban Texas (San Antonio, Austin, El Paso, and the Rio Grande Valley). The study sample consisted primarily of low-income and Hispanic students. There were varied levels of implementation fidelity across the treatment schools due to the Covid-19 pandemic. Using a cluster-level quasi-experimental design (QED), treatment effects on students'

growth mindset were estimated. The results confirmed the hypothesis that the CGI program led to positive effects on students' growth mindset after two and three years of exposure to the program. This research was funded by an early-phase Education, Innovation, and Research grant from the Department of Education (award number **U411C170162**).

I. Introduction and Purpose

The paper evaluates a college-going identity (CGI) program implemented in high school that has a short-run objective of closing gaps in students' psychological and social preparedness for college. The long-run objective of the CGI program is to increase the percentage of students who persist to college graduation.

The setting for the evaluation is a public charter school district that has strong college preparatory interventions and culture *in all schools*. For example, in addition to a college-preparation curriculum, graduation requirements included that all students complete at least three AP courses during high school, as well as to complete and submit a college application. The district has achieved exceptional college acceptance and matriculation rates through business-as-usual interventions (98 percent college matriculation rate across all district high schools for the past 10 years). However, despite being "college ready" by traditional metrics, only 51 percent of graduates earned a college degree within six years of high school graduation. For this reason, the district added the intervention described and evaluated in this paper to business-as-usual in order to address the gap in college completion. Specifically, the CGI intervention was created to close perceived gaps in non-cognitive skills that could influence student persistence.

In addition to understanding the impact of the intervention on students' growth mindset, this research effort represents one of the first efforts to formally measure a CGI intervention *in high*

school targeting low-income, first-generation college goers aimed at increasing students' ability to persist to college graduation (Relles and Duncheon, 2019). The results of this evaluation will be of value to other researchers who are invested in understanding social- emotional learning (SEL) for at-risk populations, school leaders looking to enhance the social-emotional preparedness of their students for college, and advocates for first-generation college students.

Background Literature

The factors that influence college persistence are complex, especially for low-income, first-generation college-students. These include traditional measures such as initial college application and acceptance, grade point averages, and standardized college admissions tests (Olson and Dweck, 2008; Bowman, 2022). Practitioners have expanded upon academic-centered models to include the social and psychological determinants of college success (Schreiner, 2010; Savitz-Romer et al., 2015). However, preparation for the social and emotional complexities of college are rarely a focus of college preparation programs *in high school* settings (Duncheon and Relles, 2019). In high school, students can develop non-cognitive competencies such as articulating aspirations and expectations, forming and maintaining strong peer and adult relationships, motivation, goal-setting, and self-regulatory skills in order to persist in college (Savitz-Romer, Rowan-Kenyon, & Fancsali., 2015). When students develop college going identity (CGI), they have the mindset and disposition to get the most out of the college experience (Conley, 2007).

Lower income, Hispanic, and first-generation college students are less likely than other high school students to develop these non-cognitive competencies at home (Savitz-Romer et al., 2015). Differences in competencies may partly explain persistent inequalities in higher education opportunities and outcomes across these groups (Duncheon and Relles, 2019). The challenge of

low-income, minority students struggling to matriculate and persist in college is well-documented and was further exacerbated by the Covid-19 pandemic, which disproportionately impacted students from low-income backgrounds, stalling their educational paths (NSC, 2023). This ongoing disparity has motivated practitioners to develop programs *in high school* that address specific non-cognitive skills that pertain to college success.

Non-Cognitive Competencies: Growth Mindset and College Going Identity

Growth mindset is a belief that intelligence and ability are not fixed and can be developed through effort, guidance, and strategy. It has occupied a central role in discussions of the college preparation of at-risk students (Yeager and Dweck, 2012; Claro, Paunesku, and Dweck, 2016; Broda et al., 2018). Several experiments show that growth mindsets influence student outcomes, including grades and major choice in the short- and medium-term (Claro, Paunesku, and Dweck, 2016; Broda et al., 2018; Kim et al., 2022). These empirical links provide suggestive evidence that non-cognitive interventions for high school students—aimed at improving college success—should foster growth mindsets.

A lesser-discussed competency that secondary students might develop in order to persist in college is *college-going identity (CGI)*. A CGI is a state of mind in which youth believe college is right for them, perceive themselves as potential college students and aspire to obtain a college degree (Savitz-Romer et al., 2015). CGI can be defined as the self-perception, beliefs, and behaviors a student possesses that align with the aspiration and preparedness to attend college (Savitz-Romer et al., 2015). This identity is shaped by a web of personal experiences, academic preparedness, socio-cultural influences, and systemic structures (Oyserman & Destin, 2010; Oyserman, 2013; Miller-Cotto & Lewis, 2020). Researchers and practitioners agree that CGI is not static, but rather continually shaped and reshaped by the student's experiences,

knowledge, social interactions, and environmental factors (Savitz-Romer et al., 2015; Oyserman, 2013; Nakkula & Toshalis, 2020).

Few studies have identified the impact of CGI interventions empirically. Duncheon and Relles (2019) explored how first-generation, low-income students of color interpreted and negotiated local discourses and artifacts to explore college-going identities—that is, who they should become and how they should behave to earn a college degree (Duncheon and Relles, 2019). They found that CGI interventions without the academic rigor can result in students *who believe they are ready* for college, but lack readiness according to traditional metrics (Duncheon and Relles, 2019). Thus, CGI is a non-cognitive element of college-readiness that complements rather than substitutes for traditional preparation.

Growth mindset and CGI are related concepts. For example, forming CGI plausibly requires students to adopt a growth mindset. High school programs that target social-emotional learning and CGI skills have potential to increase college completion rates for students who are at-risk of dropping out, potentially leading to higher earnings and improved health.

II. The Intervention: Treatment vs. Control Conditions

The CGI program included four components: a CGI curriculum for students, four hours of teacher training related to CGI,¹ a certification process for college counselors in CGI, and a series of “chats” led by district alumni for current seniors in treatment schools where alumni discussed their experiences transitioning to college. The four core components were implemented as follows:

¹ Direct CGI lessons were taught during class time in “Road to and Through College”, the period of the day that the school district dedicated to developing college readiness for all high schoolers. For a complete list of learning objectives in the CGI curriculum by grade, see Appendix B.

Table 1. Delivery of the CGI Program

Core Component	When/Where/Who Received Component	Who Led Component and Level of Preparation/Education
1. Foundational Coach Training for College Counselors	Beginning-of-year introductory training; Observation sessions throughout the year (Virtual)	Experienced consultant specializing in college mentorship and first-generation college persistence
2. CGI Curriculum Training for College Prep Teachers	Beginning-of-year introductory training; Quarterly follow-up training sessions; Monthly touchpoints (Virtual)	CGI Curriculum Manager, a district employee with extensive teaching experience and in-depth knowledge of SEL and CGI theory & practice
3. 10-Lesson CGI Curriculum	College prep Classes ~1 lesson per month; Approximately 60 minutes per lesson	Developed by CGI Curriculum Manager, district employee with a background in curriculum development
4. Alumni “Chats”	College prep Classes Seniors participated in 1-3 Chats during Semester 2 of 12 th Grade; Approximately 60 minutes per chat (Virtual)	Cohort of Alumni Interns trained by the CGI Program Director and CGI Curriculum Manager

The CGI program was implemented during the traditional school day and school year. To measure implementation, fidelity measures were created for the four components mentioned above (Appendix A). The thresholds for fidelity were partially achieved, and the extent to which the program was implemented varied considerably across years and components, primarily due to the COVID-19 pandemic.

The public-school district's business-as-usual college readiness curriculum was comparable to a college readiness program like AVID.² The business-as-usual condition aimed to increase college knowledge, which is knowledge of college options, application procedures, and financial aid. Additionally, the business-as-usual condition sought to improve academic preparedness through tutoring in specific subjects and courses, and college-admissions exams. Both treatment and control students continued to receive these college preparation interventions.

III. Evaluation Framework

The impact study of the CGI program used a school-level quasi-experimental design (QED).³ All schools were part of the charter school district. Since all schools were managed by one operator, schools were similar in terms of their staffing models, curricula, program offerings, and schedules. However, students in treatment schools received the CGI program. The impact evaluation began in SY2020-2021, with implementation of the CGI program in treatment schools for three years (SY2020-2021 to SY2022-23).⁴

² [What AVID Is / College & Career Readiness - Explore AVID Students by Grade Level](#) (accessed 9/10/23).

³ This impact evaluation was designed and executed independent of the program designers and those who implemented CGI program. IRB approval for all study protocols and procedures September 18, 2018. The study design was pre-registered in a nationally recognized registry for research studies prior to the initial outcome data collection.

⁴ SY2018-2019 and SY2019-2020 were an implementation/ pilot study of four, and then eight schools, respectively, in limited grade levels.

School Sample

School selection for participation in the CGI program occurred in the spring of 2019. School assignment was within strata for region and academic program, e.g. international baccalaureate (IB) status. Starting in SY2020-2021, the CGI program was implemented as a whole-school intervention, offered to all students in grades 9 - 12. In total, 29 schools are included in the evaluation.

Table 2. School Assignment Strata for Analytic Samples (School Counts)

Strata	Treatment	Control
	Region	
San Antonio/Austin	6	6
Rio Grande Valley	9	8
	IB Program	
San Antonio/Austin	1	0
Rio Grande Valley	2	2
Total Sample	15	14

Within the resulting strata defined by region, and IB program, half the schools were assigned to T and half were assigned to C. The research team randomly selected the treatment schools. However, in two instances the district requested to change treatment schools to control schools due to competing priorities. Thus, the sample was non-random.

Student Sample

The student sample for the impact analysis was defined as:

- Two-year sample: Students enrolled in the treatment and control schools in 9th grade in 2020-21 who remained in the same school at the end of 10th grade, and students enrolled in the T and C schools in 11th grade in 2020-21 who remained in the same school at the end of 12th grade.

- Three year-sample: Students enrolled in the T and C schools in 9th grade in 2020-21 who remained in the same school at the end of 11th grade.

Research Questions

The following questions guided the measurement of the SEL-CGI program.

- 1) What is the impact of the CGI program on the social-emotional skills, specifically growth mindset, of 9th and 11th grade high school students for two cohorts of students in treatment schools progressing for two years (9th & 10th grades and 11th & 12th grades) compared to students in the business-as-usual schools in the same grades?
- 2) What is the impact of the CGI program on the social-emotional skills, specifically Growth Mindset, of 9th grade students in treatment schools implementing the SEL-CGI program for three years (9th, 10th & 11th grades) compared to students in the business-as-usual schools progressing in the same three grades?

Study Measures

Assessment of students' growth mindset was based on responses on the Panorama Social-Emotional Learning Survey construct growth mindset.⁵ The Panorama construct was selected for its sound psychometric properties. Also, Panorama was a trusted district partner. Validity and reliability information is shown in Table 3.⁶ Students responded to the same survey questions pre-and post-intervention.

⁵ This construct is expected to be reviewed by the What Works Clearinghouse (WWC) in the Academic Dispositions domain within Social, Emotional, Behavioral, and Mental Health Outcomes

⁶ Additional information about Panorama's SEL survey can be found on the Panorama website: [Social-Emotional Learning Measures \(panoramaed.com\)](https://panoramaed.com) (accessed 9/10/23).

Table 3. Psychometric Properties of Panorama’s Growth Mindset Construct

SEL Construct	Validity/ Reliability	No. of Items	Response Format	Sample Question
Growth Mindset (from Panorama Education)	$\alpha=.79$; CFI= .96	6	5-point Likert scale ranging from “Not at all possible to change” to “Completely possible to change”	In school how possible is it for you to change the following: Your level of intelligence.

Data Collection and Analytic Samples

The timing of baseline and post-program data collection are shown in Table 4. Timing of data collection did not vary across treatment and control conditions or grade, and each data collection period was three weeks in length.

Table 4. Timing of Data Collection

Analytic Sample	Baseline Measurement	Outcome Measurement	Grade Levels
2-year treatment effect	September 2020	May 2022	Baseline: 9th and 11th graders Outcomes: Same students in 10th and 12th grade, respectively
3-year treatment effect	September 2020	May 2023	Baseline: 9th graders Outcomes: Same students in 11th grade, respectively

Baseline Equivalence on Growth Mindset

The baseline mean difference between the intervention and comparison students in the two-year and the three-year samples was calculated using Hedges' g . As shown in Table 5, the difference between the T and C students was less than .08 for both samples. For completeness, the baseline measure of the pre-test is included in both quantitative models.

Table 5. Baseline Equivalence on Pre-Test

Baseline Equivalence on Pre-Test of Growth Mindset by Condition and Sample							
Analytic Sample	Treat Count	Treatment Mean	Treatment Std Dev.	Comparison Count	Comparison Mean	Comparison Std Dev.	Standardized Effect Size T-C (Baseline Equivalence)
2-Year Exposure	1413	3.44	0.91	1262	3.40	0.90	0.04
3- Year Exposure	889	3.34	0.92	715	3.28	0.90	0.07

Statistical Model

For each analytic sample, a two-level hierarchical linear model (HLM), students nested in schools, was used to assess effects:

$$Posttest_{ij} = \beta_{00} + \beta_{10}pretest_{ij} + \beta_{20}treatment_j + \beta_k k_{ij} + r_{ij} + u_j$$

Where subscripts ij represent students in schools; the β 's are the parameters; posttest and pretest represent average responses to the growth mindset survey described previously; treatment represents the intervention indicator (1 for treatment, 0 for control); k represents a vector of covariates such as free and reduced-price lunch (FRL), gender, race, English language learner (ELL) status, and special education (SPED) status. Additionally, the list of covariates contains dummy variables for the strata within which schools were selected for treatment or control, i.e.,

region and a school's IB status.⁷ β_{20} is the parameter of interest and represents the treatment effect. Within this model, student-level baseline measures for growth mindset are included, as well as individual-level covariates and a control for grade level and selection strata.

Missing Data

Only students with complete pre/post survey and demographic data were considered in the analysis, i.e., complete case analysis. No imputations or weighting occurred. Survey completion varied across years and samples. The percentage of complete pre/post matched survey responses in each year varied between 49 percent and 51 percent (Table 6).

Table 6. Sample Sizes for Impact Analyses

Sample Sizes and Missing Data							
	Total Students Treatment Grades	Pre- Treatment Survey Responses	Pre- Control Survey Responses	Outcome- Treatment Survey Responses	Outcome- Control Survey Responses	Total Sample	Percent Complete
2-year effect	5228	2196	1941	1663	1452	2,675	51.2%
3-year effect	3289	1334	1137	1080	845	1,604	48.8%

IV. Program Effects

Results for Growth Mindset are included below. Full regression results are included in Appendix D.

⁷ The district does not offer partial-school IB programs. The IB variable is binary.

Table 7. Regression Results for Treatment versus Control

	Comparison Group				Treatment Group							
	Sample Size				Sample Size							
Analytic Sample	# Clusters	# Students	Mean	StDev	# Clusters	# Students	Model Adj Mean	StDev	Treatment-Control Difference	Standard Error	Standardized Difference	p value
2 year effect	14	1262	3.56	0.94	16	1413	3.673	0.97	0.113	0.034	0.113	<=.001
3 year effect	14	715	3.4	0.93	15	889	3.514	0.97	0.114	0.045	0.114	<=.05

In both analytic samples, the treatment was found to have statistically significant impact on Growth Mindset ($p < .05$). The magnitude of the effect was relatively small (.11-.12) of a point on the survey score.

V. Discussion

Overall, the analysis confirmed the hypothesis that a curriculum dedicated to improving students' interpersonal skills can change their beliefs that people's capacity and abilities can be developed through dedication and hard work. In both analytic samples, the CGI program showed statistically significant differences in growth mindset among students in treatment schools compared to students in control schools.

Although the intervention appears to have positive results for students' growth mindset, this analysis does not distinguish among the program interventions. In other words, which aspects of the program were most impactful cannot be determined. The reader should bear in mind that the two-year pilot period allowed for iteration and improvement of the intervention. During the pilot period, formative, qualitative interviews and focus groups revealed that students and teachers viewed all intervention components as being impactful. Thus, practitioners should be cautious when implementing part, but not all, of the CGI program.

When interpreting the results, it is important to bear in mind that the intervention occurred at the height of the Covid-19 pandemic, which hindered implementation. Although it is unknown what the magnitude of the intervention would be if implemented with *high* fidelity, it is possible that the effect size would increase. The CGI program is an opportunity to take traditional college preparation programs a step further by investing time in students' social-readiness and college-identity before they enter college.

The sample in this study—primarily low income, Hispanic students, represents a group of students who often fail to persist in college. This program also has a unique opportunity to help low-income and minority students persist in college. With lower rates of matriculation and persistence in college, providing resources for these students can ensure their preparedness for college is not only academic in nature.

Additionally, it is worth noting that there were specific lessons pertaining to growth mindset in the CGI program (Appendix B). Other studies have shown the impact of growth mindset on student achievement (Broda et al., 2018; Kim et al., 2022). While it is unlikely that these specific lessons were the only impactful components of the program, teacher training on growth mindset and lessons on growth mindset could have been particularly influential for teachers and students alike. Further research is required to determine the relative impact of the components of the curriculum.

The results should be viewed as context dependent (Yeager and Walton, 2011). The student body in which the experiment occurred was largely Hispanic and low income. The schools had strong college-going cultures with an elaborate college preparation program already in place. The intervention was seen as a missing piece in a complex puzzle that helps develop

student resilience to persist in college; it was not a standalone intervention. Without the business-as-usual interventions, it is possible that the CGI intervention would be ineffective.

The intention of the program was to change students' attitudes and beliefs that will in turn increase students' persistence and success in post-secondary education, and this preliminary analysis did not include measurement of college persistence among treatment and comparison students, which is the long-term outcome that practitioners wish to influence. The next step in establishing a causal link between college-going identity, growth mindset, and college persistence is to incorporate measurements that allow for comparisons of college persistence of treatment and control students while controlling for covariates. While the positive effects of non-cognitive competencies like growth mindset on achievement are emerging in the literature, none have yet to establish a causal link with student persistence (Kim et al., 2022). In this case, the author has requested follow-on data from the National Student Clearinghouse (NSC) to test this hypothesis. A follow up study will be published as college persistence data become available.

Citations

Bowman, Nicholas A., and Nida Denson. "Institutional racial representation and equity gaps in college graduation." *The Journal of Higher Education* 93.3 (2022): 399-423.

Broda, Michael, et al. "Reducing inequality in academic success for incoming college students: A randomized trial of growth mindset and belonging interventions." *Journal of Research on Educational Effectiveness* 11.3 (2018): 317-338.

Claro, Susana, David Paunesku, and Carol S. Dweck. "Growth mindset tempers the effects of poverty on academic achievement." *Proceedings of the National Academy of Sciences* 113.31 (2016): 8664-8668.

Conley, D. T. (2007). Redefining college readiness. *Educational Policy Improvement Center (NJI)*.

Duncheon, Julia C., and Stefani R. Relles. "'A ditcher and a scholar': Figuring college-going identities in an urban magnet high school." *Teachers College Record* 121.1 (2019): 1-36.

Kim, Soobin, et al. "The effects of growth mindset on college persistence and completion." *Journal of Economic Behavior & Organization* 195 (2022): 219-235.

Miller-Cotto, Dana, and Neil Lewis Jr. "Am I a 'math person'? How classroom cultures shape math identity among Black and Latinx students." (2020).

Nakkula, Michael J., and Eric Toshalis. *Understanding youth: Adolescent development for educators*. Harvard Education Press, 2020.

Olson, Kristina R., and Carol S. Dweck. "A blueprint for social cognitive development." *Perspectives on Psychological Science* 3.3 (2008): 193-202.

Oyserman, D., & Destin, M. (2010). Identity-based motivation: Implications for intervention. *The Counseling psychologist*, 38(7), 1001–1043. <https://doi.org/10.1177/0011000010374775>

Oyserman, Daphna. "Not just any path: Implications of identity-based motivation for disparities in school outcomes." *Economics of Education Review* 33 (2013): 179-190.

Savitz-Romer, Mandy, and Suzanne Bouffard. *Ready, willing, and able: A developmental approach to college access and success*. Harvard Education Press, 2012.

Savitz-Romer, Mandy, Heather T. Rowan-Kenyon, and Cheri Fancsali. "Social, emotional, and affective skills for college and career success." *Change: The Magazine of Higher Learning* 47.5 (2015): 18-27.

Schreiner, Laurie A. "The 'thriving quotient' A new vision for student success." *About Campus* 15.2 (2010): 2-10.

Undergraduate Degree Earners. National Student Clearinghouse Research Center. (2023, March 16). <https://nscresearchcenter.org/undergraduate-degree-earners/>

Yeager, David Scott, and Carol S. Dweck. "Mindsets that promote resilience: When students believe that personal characteristics can be developed." *Educational psychologist* 47.4 (2012): 302-314.

Yeager, David S., and Gregory M. Walton. "Social-psychological interventions in education: They're not magic." *Review of educational Research* 81.2 (2011): 267-301.

Appendix A: Fidelity Measurement

The CGI program involved several different components. The program included 1:1 counseling, classroom instruction, alumni conversations, and teacher training. Over the course of study, fidelity varied due to many unforeseen circumstances created by the Covid-19 pandemic. All administrators, teachers, students, and families faced tremendous uncertainty in 2020 and 2021 due to Covid 19. For example, prior to the first year of implementation, on March 13, 2020, the school district followed state orders and extended spring break. The district offered distance learning the remainder of the 2019-20 school year. Throughout the remaining months of the pandemic, the number of students in schools and in virtual instruction varied greatly between schools and between regions. Thus, the CGI program was implemented to the extent possible given other constraints and did not meet the implementation thresholds set-forth for the program prior to the pandemic. (Note: the school district added new schools and grade levels during the course of the study, which explains why there are more schools in year 3 compared to year 1.)

Fidelity Scoring System

Core Component 1 Counselor Trainings

Indicator	Definition	Threshold	Met Threshold: Year 1	Met Threshold: Year 2	Met Threshold: Year 3
1	Complete 3- day/ 21 hours; Foundation al Coach Training	14/21 hours or 2/3 trainings = 1 (adequate fidelity); 1= More than 50 percent of counselors	Yes; All schools met threshold	Yes; All schools met threshold	No; Foundational training did not occur. However, 31/51 counselors

		meet criteria at school level; 90 percent of schools meet threshold			attended foundational coach training in the previous year
3	Complete 6 1:1 feedback sessions per year including being scored on coaching rubric	0 = does not receive score of 7 or higher on coaching rubric 3 times in a row 1 = receives score of 7 or higher on coaching rubric 3 times in a row; More than 50 percent of counselors meet criteria at the school level; 90 percent of schools meet threshold	Yes, 93 percent of schools met the threshold	No, All counselors received the training. However, of the 21 counselors involved in the grant, only 3 counselors met the criteria of being scored 7 or higher on the coaching rubric. All three were at different schools. Thus, three counselors (and schools) met this indicator	No. Observation debrief (feedback) sessions did not occur. However, 19/51 percent of counselors earned their coach certifications in previous years
All		2 of 3 indicators are met at the school level	Yes	No. 1/3 indicators were met	N/A

Core Component 2 In-Class Curriculum and Out-Of-School Learning

Indicator	Definition	Threshold	Met Threshold: Year 1	Met Threshold: Year 2	Met Threshold: Year 3
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1	RTTC teacher addresses the 10 expected “lessons” or objectives of the CGI curriculum	0 is less than 75 percent of lessons instructed, 1 is more than 75 percent of lessons instructed; 80 percent of RTTC teachers meet the threshold; Yes, if 90 percent of schools meet the threshold	No; 5 of 16 or 31 percent of schools met the threshold; remaining 11 campuses had an average of 51 percent completion	No; 5 of 20 or 25 percent of schools met the threshold; 4 of 20 schools implemented more than 50 percent of lessons; the remaining schools implemented fewer than 50 percent of lessons	No; 9/22 or 41 percent of schools met the threshold, and on average, the remaining 13 schools completed an average of 55 percent of the curriculum, or 5.5 lessons per grade level
2	RTTC teacher attends professional development for the grade level (8 hrs of HS)	0 if the teacher does not attend 8 hours of PD; 80 percent of teachers in the grade level meet threshold; 90 percent of schools meet threshold by grade	No; All RTTC teachers attended all 4 trainings in 11/16 schools, 70 percent of schools met the threshold and the indicator was not met; Of the 5 that did not meet the threshold, one school had 70 percent completion and four schools had 30 percent completion	No; 11 schools met the threshold; 6 schools had 50 percent of RTTC teachers meet the threshold; 2 schools had no RTTC teachers attend the training; Indicator 2 was not met	No; one of 22 schools met the threshold. On average, each of the remaining 21 schools completed 40 percent of training or three hours

3	Critical conversations led by charter school network alumni with 12 th grade students (two, 60-minute alumni sessions); [Only treatment schools with 12 th grade expected to participate]	RTTC teachers in grade 12 implemented two 60 minute “chats” with students; Score of 1 if two were implemented; At least 75 percent of classrooms in each school had two sessions; 90 percent of schools met the threshold	Did not occur for 2020-2021; Will occur for 12 th graders 2021-2022	Yes; 10/11 possible schools implemented two chats with 12 th graders. 3 One school only implemented one chat. Indicator 3 was met	No; 8 of 14 senior campuses participated in one chat
All		80 percent of treatment schools meet indicators 1, 2, 3	No	No	No

Appendix B: CGI Program Curriculum Overview

Lesson Objective	9th Grade	10th Grade	11th Grade	12th Grade
Lesson 1	<p>Goal Setting SWBAT reflect on where they are currently at on the CGI Student Rubric and articulate strengths and areas for growth.</p> <p>SWBAT set goals for the 22-23 school year and explained how the CGI Student Rubric can help them reach those goals.</p>	<p>Goal Setting SWBAT reflect on where they are currently at on the CGI Student Rubric and articulate strengths and areas for growth.</p>	<p>Goal Setting SWBAT reflect on where they are currently at on the CGI Student Rubric and articulate strengths and areas for growth.</p>	<p>College Degree Impact SWBAT describe how earning their college degree can positively benefit them, their family, and their community.</p>
Lesson 2	<p>Personal Exploration SWBAT identifies which aspects of their identities feel very central to who they are no matter what and others that depend on the situation.</p>	<p>Character Traits SWBAT identify their character strengths.</p>	<p>Character Traits SWBAT identify their character strengths. SWBAT reflects on how they can use their strengths this year and how their strengths make them unique.</p>	<p>Character Traits SWBAT identify their character strengths.</p>
Lesson 3	<p>Character Traits SWBAT identify their character strengths.</p>	<p>Core Values SWBAT identify their core values and describe the role those values play in their lives.</p>	<p>Personal Exploration SWBAT identifies social factors that have shaped their identity and reflect on whether those labels are authentic and wanted.</p>	<p>Personal Exploration SWBAT expresses how their rich cultural history and family background can be an asset to them in college and in life.</p>

Lesson 4	Perseverance SWBAT describes different methods for coping with stress and explains how those coping strategies could be applicable to their lives.	Trust/Braving SWBAT explains the elements of trust.	Purpose Statement/WOO P SWBAT write a personal purpose statement that describes in detail at least 5 things they want to be true about their life AFTER college, how they can accomplish those things, and explains why those outcomes are important to them.	Positive Self Talk /Growth Mindset SWBAT reflect on their own personal “thinking traps” that support a fixed mindset rather than a growth mindset and develop methods for avoiding those traps.
Lesson 5	Proactivity & Growth Mindset SWBAT explain the benefits of being proactive and how it can help strengthen their growth mindset.	Positive Self Talk SWBAT explains how they can use positive self-talk to persevere through challenges.	Ownership & Locus of Control SWBAT defines locus of control and differentiate between things that are in and out of their control.	College Challenges SWBAT categorize common college challenges and explain which campus resources could help them work through them.
Lesson 6	Envisioning your Future-GPA SWBAT analyzes future opportunities based on their current Semester 1 GPA.	Expert Practice/ Growth Mindset SWBAT explain how they can use Expert Practice to continuously improve over time.	Coaching Growth Mindset SWBAT how to coach themselves to develop a stronger growth mindset.	College Emotions SWBAT identifies common college emotions and synthesizes methods for working through challenging emotions.
Lesson 7	Ownership of Actions SWBAT defines	Envisioning the Future SWBAT writes	Backwards Planning/Ownership SWBAT	CGI Alumni Chats

	locus of control and differentiate between things that are in and out of their control.	a personal purpose statement that describes in detail at least 5 things they want to be true when they graduate from college and how they can accomplish those things.	defines backwards planning and describes an example of how backwards planning can be used to reach a goal.	SWBAT discuss stories about the ways in which college is different from high school, including discussions of imposter syndrome and reframing. This chat is specifically focused on the academic part of the college journey.
Lesson 8	Positive Emotions SWBAT describe the impacts of positive emotions.	Positive Emotions SWBAT describe the impacts of positive emotions.	Perspective/Pers everance SWBAT describes the impacts of positive emotions.	SWBAT discuss transition to college,
Lesson 9	Envisioning the Future SWBAT writes a personal purpose statement that describes in detail at least 5 things they want to be true when they graduate from high school and how they can accomplish those things.	College & Personal Exploration SWBAT envision being a student at different types of colleges and universities and explain which best suits them.	Social Belonging SWBAT identifies the types of diversity that exist in society and articulate the benefits of diversity.	specifically findings a sense of belonging on campus. SWBAT discuss key terms such as homesickness, loneliness, nostalgia, and culture shock.
Lesson 10	EOY Reflection SWBAT reflect on where they are currently at on the CGI Student Rubric and articulate the progress they have made from the beginning to the end of the school year.	EOY Reflection SWBAT reflect on where they are currently at on the CGI Student Rubric and articulate the progress they have made from the beginning to the end of the	EOY Reflection SWBAT reflect on where they are currently at on the CGI Student Rubric and articulate the progress they have made from the beginning to the end of the school year.	SWBAT reflect on strengths, values, motivations, and understand how these can be used to persevere. SWBAT develop a college-mission statement.

		school year.		
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Appendix C: Baseline Equivalence on Demographic Variables

The baseline mean difference between the intervention and comparison group was calculated using Hedges' g for continuous variables and Cox's Index for binary variables. It is noteworthy that the characteristics of the students in the treatment and control conditions were roughly equivalent ($\leq .25$), with the exception of the number of students who identify as Asian or Other race/ethnicities, which is a small proportion of students.

2 Year Effect- Treatment/Control Baseline Equivalence							
Covariate	Treatment Count	Treatment Mean	Treatment Std Dev.	Comparison Count	Comparison Mean	Comparison Std Dev.	Baseline Equivalence
PreGrowthMindset	1413	3.44	0.91	1262	3.40	0.90	0.04
Female	1413	0.53	0.50	1262	0.55	0.50	-0.04
White	1413	0.03	0.17	1262	0.04	0.19	-0.17
Black	1413	0.02	0.14	1262	0.02	0.14	0.00
Asian	1413	0.01	0.08	1262	0.00	0.06	0.35
Hispanic	1413	0.94	0.24	1262	0.94	0.25	0.05
Other	1413	0.00	0.05	1262	0.00	0.05	0.11
Sped	1413	0.06	0.24	1262	0.05	0.21	0.17
FRL	1413	0.88	0.32	1262	0.89	0.31	-0.07
ELL	1413	0.36	0.48	1262	0.31	0.46	0.12

3 Year Effect- Baseline Equivalence							
Covariate	Treatment Count	Treatment Mean	Treatment Std Dev.	Comparison Count	Comparison Mean	Comparison Std Dev.	Baseline Equivalence
PreGrowthMindset	889	3.34	0.92	715	3.28	0.90	0.07
Female	889	0.51	0.50	715	0.55	0.55	-0.10
White	889	0.04	0.19	715	0.04	0.04	0.01
Black	889	0.03	0.16	715	0.03	0.03	0.02
Asian	889	0.01	0.09	715	0.00	0.00	0.38
Hispanic	889	0.92	0.26	715	0.93	0.93	-0.08
Other	889	0.00	0.06	715	0.00	0.00	0.53
Sped	889	0.06	0.25	715	0.05	0.05	0.16
FRL	889	0.87	0.34	715	0.89	0.89	-0.12
ELL	889	0.39	0.49	715	0.38	0.38	0.01

Appendix D: Full Regression Output

	2-Year Effect	3-Year Effect
	(1)	(2)
FRL	-0.159*** (-2.88)	-0.204** (-2.96)
ELL	-0.193*** (-5.12)	-0.192*** (-4.07)
Sped	-0.262*** (-3.45)	-0.234* (-2.46)
Black	0.150 0.99	0.224 1.24
Hispanic	0.116 1.21	0.139 1.19
Asian	0.286 1.16	0.326 1.08
Other	0.128 0.37	0.785 1.72
Treatment	0.113** 3.29	0.114* 2.57
Pre-Growth-Mindset	0.353*** 18.18	0.322*** 13.21
Constant	2.375*** 18.87	2.432*** 15.56
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Insig_e Constant	-0.125*** (-9.14)	-0.124*** (-7.02)
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N	2675	1604
<i>t statistics in parentheses</i>		
<i>* p<0.05, ** p<0.01, *** p<0.001</i>		
<i>Control for strata (IB status and region), and grade level suppressed for brevity</i>		

