



College-Going Culture and College Readiness Outcomes: Are Early College High Schools Bridging the Gap?

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Abstract

In this study, I used campus performance data, high school websites, and an independently designed College-Going Culture Index to evaluate the relationship between college-going culture (CGC) and college readiness outcomes, namely average total SAT scores and rates of enrollment in Texas institutions of higher education (IHE). Additionally, I focused on early college (EC) high schools as one model of a high CGC school and investigated whether EC high schools demonstrated better college readiness outcomes than non-EC high schools, particularly for student populations generally underrepresented in college, such as African American, Hispanic, and economically disadvantaged students. I found that there is no discernable relationship between college-going culture or EC high school status and average SAT scores, a measure of key cognitive strategies and content knowledge. However, strong college-going culture is moderately positively correlated with enrollment in Texas IHEs, and EC high school students enroll in Texas IHEs at significantly higher rates than non-EC high school peers. This relationship was strongest for economically disadvantaged students. The results suggest that the EC high school model improves college readiness in the dimension of transition knowledge and skills and helps students to overcome certain economic barriers to college entrance.

Methods

Inquiry Design

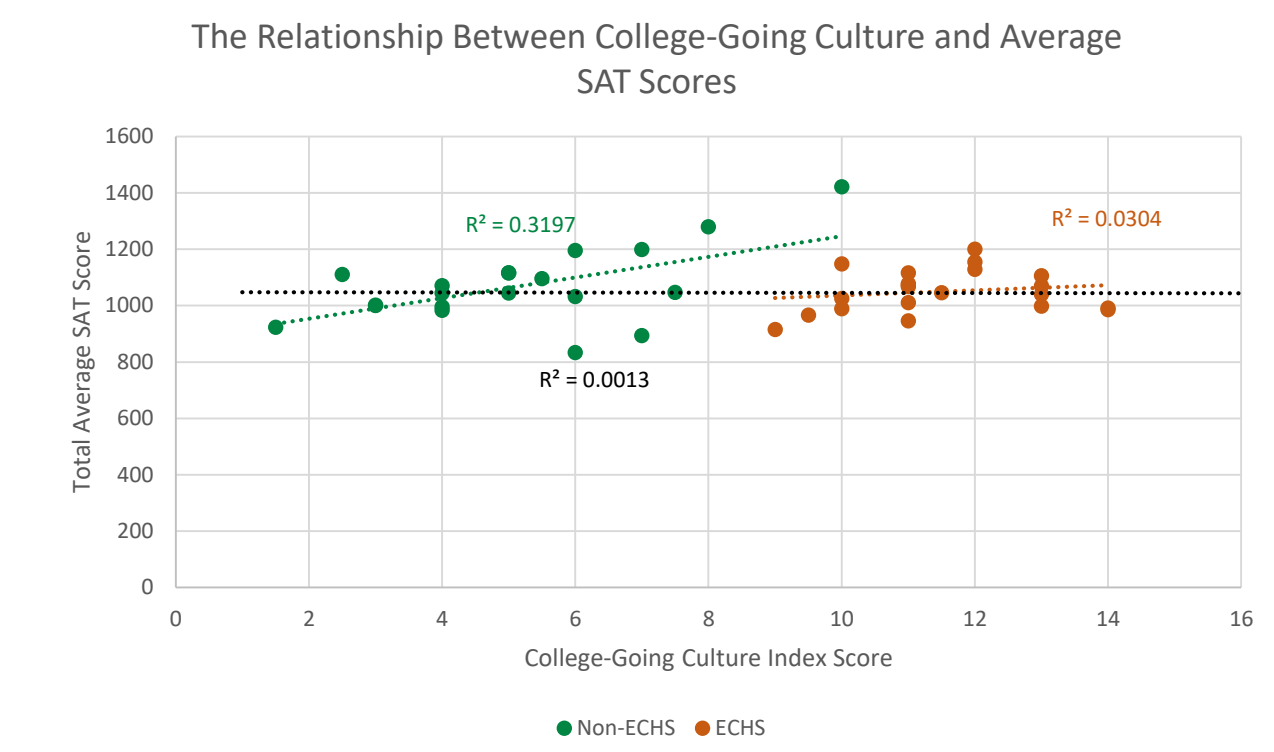
In order to assess a given school's degree of college-going culture, or CGC, I designed a CGC index. McClafferty et al. identify nine traits which contribute to a college-going culture (2002); the College-Going Culture Index items are aligned to five of these traits which are readily assessable through published school performance data and school websites. SAT score data was taken from the Texas Education Agency's Texas Academic Performance Reports for 2017-2018; enrollment data was taken from the same reports but reflects the enrollment of the 2016-2017 graduating class. 20 early college (EC) high schools and 20 non-early college high schools were randomly selected for comparison.

Data Analysis

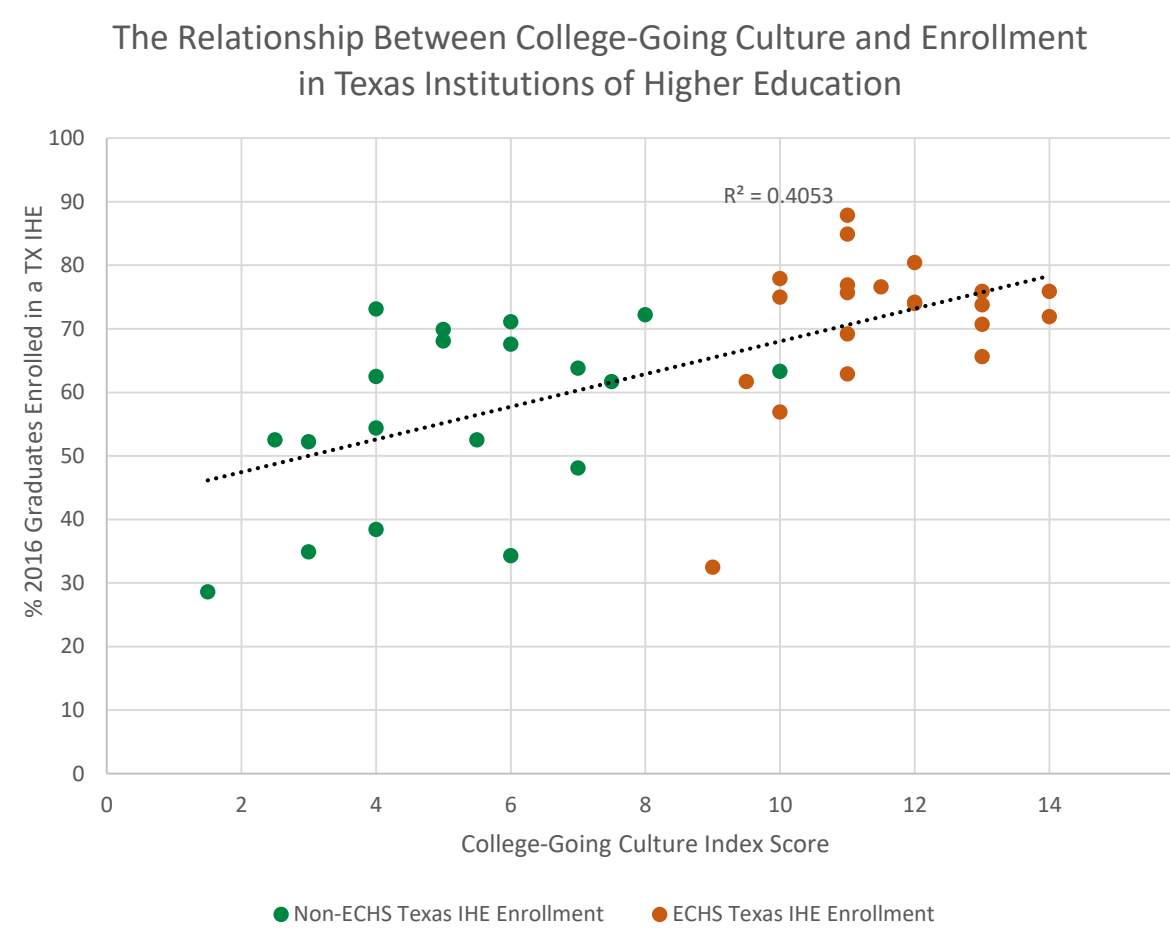
A student's t-test was used to determine whether there were significant differences between the college readiness metrics for EC and non-EC high schools, as a whole and broken down by key demographics. Effect sizes were also calculated to determine how influential early college status was on college readiness. CGC index scores were plotted against college readiness metrics and linear regression analysis was applied to determine whether there was a relationship between CGC and college readiness.

Findings & Discussion

- There does not appear to be a relationship between college-going culture and SAT scores ($r^2 = .0013$), which can be considered metrics of key cognitive skills and content knowledge. However, there was a moderate positive relationship between college-going culture and enrollment in Texas IHEs ($r^2 = .4053$); this indicates that CGC may increase students' key transition knowledge and skills.
- The effect size of attending an early college high school is most pronounced for economically disadvantaged students ($g = 1.54$); this indicates that the money early college high schools invest in free dual-enrollment courses, free SAT testing, etc. plays a significant role in bridging the college enrollment gap.
- Early college high schools ($M = 1050.2$, $SD = 74.6$) did not do any better or worse than non-early college high schools ($M = 1070.1$, $SD = 134$) on the SAT based on the results of a students' t-test ($t(20) = .59$, $p = .56$), but students enrolled in Texas IHEs at significantly higher rates; this relationship held across all demographics.



College-going culture index scores plotted against total average SAT scores for early college and non-early college high schools



College-going culture index scores plotted against rates of enrollment in Texas institutions of higher education for early college and non-early college high schools

Introduction

- I pursued two research questions:
 1. Is there a relationship between college-going culture and college readiness outcomes?
 2. Do early college high schools in Texas help student populations traditionally underrepresented in colleges to perform better on college readiness metrics? In other words, are early college high schools bridging the college enrollment gap?
- The college enrollment/completion gap is a term which describes the phenomenon in which certain demographic groups enroll in college and/or complete college at lower rates than their peers. Some of these demographic groups include African American, Hispanic, and economically disadvantaged students (Ryan & Bauman, 2016; National Center for Education Statistics, 2015).
- College-going culture is "a school culture that encourages all students to consider college as an option after high school and prepares all students to make informed decisions about available post-secondary options" (McClafferty, McDonough & Nunez, 2002). Schools that have strong college-going culture prioritize academic rigor in curriculum, make connections with local postsecondary institutions, continuously educate students on the college planning process, provide comprehensive support services throughout the planning process, and keep college readiness central to the school's mission (McClafferty et al., 2002; Corwin & Tierney, 2007).
- Early college (EC) high schools are defined by the Texas Education Agency as high schools which serve students who are traditionally less likely to attend college and provide them the opportunity to graduate with both a high school diploma and up to 60 college credits (Early College High School, 2019). They are one model of a high college-going culture institution.
- College readiness is defined as being able to "qualify for and succeed in entry-level, credit-bearing college courses leading to baccalaureate or certificate... without the need for remedial or developmental coursework" (Conley, 2012). It has four key dimensions: key cognitive strategies, key content knowledge, key transition knowledge and skills, and key learning skills and techniques (Conley 2007; Conley 2012).

Table 1: Total Average SAT Scores by Demographic

| | Non-ECHS | ECHS | Non-ECHS African American | ECHS African American | Non-ECHS Hispanic | ECHS Hispanic | Non-ECHS Economically Disadvantaged | ECHS Economically Disadvantaged |
|-------------------------|----------|--------|---------------------------|-----------------------|-------------------|---------------|-------------------------------------|---------------------------------|
| Sample Size (n) | 20 | 20 | 12 | 8 | 17 | 20 | 16 | 20 |
| Mean | 1070.1 | 1050.2 | 1006.3 | 1030.3 | 1034.3 | 1037.7 | 1025.1 | 1040.4 |
| Standard Deviation | 134 | 74.6 | 155.3 | 91.8 | 133.2 | 58.6 | 150.6 | 70.2 |
| Effect Size (Hedges' G) | -- | 0.18 | -- | 0.18 | -- | 0.03 | -- | 0.14 |

* Indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$.

Table 2: Enrollment Rates in Texas Institutions of Higher Education by Demographic

| | Non-ECHS | ECHS | Non-ECHS African American | ECHS African American | Non-ECHS Hispanic | ECHS Hispanic | Non-ECHS Economically Disadvantaged | ECHS Economically Disadvantaged |
|-------------------------|----------|----------|---------------------------|-----------------------|-------------------|---------------|-------------------------------------|---------------------------------|
| Sample Size (n) | 19 | 20 | 12 | 7 | 19 | 20 | 18 | 20 |
| Mean | 56.3% | 71.5%*** | 53.7% | 77.3%* | 56.2% | 70.3%** | 49.5% | 72.2%*** |
| Standard Deviation | 14% | 11.5% | 18% | 16.3% | 16.5% | 14.6% | 16.6% | 12.8% |
| Effect Size (Hedges' G) | -- | 1.19 | -- | 1.35 | -- | 0.91 | -- | 1.54 |

* Indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$.

Conclusion

- EC high schools appear to be a powerful tool for bridging the achievement gap in vulnerable populations such as African American, Hispanic, and economically disadvantaged students when it comes to pursuing a college education.
- The success of EC high schools in getting students enrolled in college, particularly those students most at risk of not attending, indicates that there is great potential value in investing school resources in helping students and families through the logistics of applying to college and in subsidizing the cost of dual-credit and AP courses for economically disadvantaged students.
- The data from this study demonstrates that "at-risk" students can get into college if given the necessary supports. This evidence challenges the appropriateness of encouraging at-risk students to participate in career and technical education (CTE) and pursue trades in place of a college education. CTE has long been touted as a drop-out intervention, but in practice yields somewhat meager results (Brown, 2000; Gottfried & Plasman, 2017). A college-going culture challenges the persistent barriers to social and economic mobility that minority and economically disadvantaged students experience, while CTE inadvertently reinforces them.

Contact and Acknowledgments

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