

Boosting Transfer Student Success:

An Evaluation of the
Common General Education Core



THEC

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BOOSTING TRANSFER STUDENT SUCCESS:

An Evaluation of the Common General Education Core

ABSTRACT

A 2012 study by the Tennessee Higher Education Commission, called *The Effects of General Education Completion on Transfer Student Success: A Transcript Study of Tennessee Transfer Students*, examined the effects of completing the TBR-approved common general education requirements prior to transferring on transfer student college success. Five TBR universities provided data on 18.5 thousand students from three cohorts of transfers; the study period spanned fall 2006 through spring 2011. Comparing students who are similar in terms of their background and educational experiences, analysts find that pre-transfer completion of the general education requirements has a large and statistically significant effect on college success. Specifically, completion of the entire general education core, or its individual components, increases the probability of graduation, reduces time to degree, and increases college GPA. The effects differ by component, with the mathematics and communications clusters having the largest impact on the outcomes. The study concludes that the common general education core effectively serves the goal of facilitating transfer student success and recommends early and full completion of the general education requirements.

Background and motivation for the study

The Tennessee college student population is quite mobile: 7.7 percent of all undergraduate enrollees are new transfers and more than half of all public baccalaureate graduates change schools at least once during their academic career. Although transfer students are similar to non-transfer students in terms of most demographic



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and academic characteristics, the former generally accumulate more extra credits before earning a degree and take longer to graduate than the latter. Lower degree efficiency of transfer students has prompted

Tennessee to implement several articulation and transfer policies to help these students succeed in college.

As a key component of this reform effort, in 2004 the Tennessee Board of Regents (TBR) introduced a fully transferable 41-hour common general education core, consisting of six subject areas (clusters or components). This core could be transferred, in whole or in part, from one state public institution to any TBR university

and count toward a bachelor's degree. The key idea was to allow students to complete the general education requirements in the originating institution without having to repeat these courses in the transfer university. The purpose of this initiative was to facilitate transfer from community colleges to baccalaureate degree programs in the system's universities and increase the likelihood of timely graduation.

In 2010, the Complete College Tennessee Act (CCTA) mandated the development of a fully transferable

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It required establishing various transfer pathways among the state's community colleges and public universities. At present,

there are 49 transfer pathways across 28 disciplines. Despite these accomplishments, there was little empirical evidence about how effective the general education core was in ensuring college success of transfer students. Therefore, TBR's experience with the general education core is critical for CCTA implementation. The need to conduct an assessment of the TBR-approved general education core in order to make relevant policy recommendations was the general motivation for this research project.

Hypothesis and research question

Prior analyses showed that Tennessee transfer students, on average, are less efficient in degree completion than non-transfer students: they accumulate many extra credit hours at transfer without earning a degree and take longer to graduate. One potential explanation for this observation is failing to complete the general education requirements prior to transferring. In contrast, one may expect that pre-transfer completion of the general education courses provides for better college performance and more efficient graduation. In other words, completing more general education requirements prior to transferring is expected to enhance the college success of transfer students. The study used the following measures of college success: the probability of graduation with a bachelor's degree, time to degree measured in semesters and attempted credits, and college GPA in the final semester of observation.



Does completion of the general education core increase the probability of graduation, decrease time and credits to degree, and improve college GPA?

The study hypothesis is as follows: pre-transfer completion of the general education core, in whole or in part, will increase the probability of graduation, decrease time to getting a bachelor's degree, and improve academic performance of transfer students.

The research question of the study is: Does completion of the general education core, or any of its components, prior to transferring into a university increase the probability of graduation, decrease time and credits to a bachelor’s degree, and improve college GPA?

Study design

The investigation examined academic outcomes of 18,527 transfer students from three cohorts (academic years 2006-07, 2007-08, and 2008-09) as of spring 2011. During the study period, 7,621 of these students (41 percent) graduated.

Five TBR universities volunteered to provide data on students who transferred into their institution during this period: East Tennessee State University, Middle Tennessee State University, Tennessee Technological University, the University of Memphis, and Tennessee State University. The universities’ data were matched with students’ records in the Student Information System to allow for longitudinal analyses of outcomes.

The key challenge was a reasonable expectation that, in general, students who complete the general education requirements by the time of transfer are likely to

be quite different from students who do not complete these requirements in terms of their background and educational experiences. Due to this difference, the estimated impacts of general education completion are likely to

General Education Core Requirements	
• Communications.....	9 Hours
• Humanities.....	9 Hours
• Natural Sciences	8 Hours
• Social Sciences.....	6 Hours
• History	6 Hours
• Mathematics.....	3 Hours



be biased. In other words, the result of the estimation will include both the effect of completing the general education core and some factors of the systematic difference among general education completers and non-completers.

To address this concern, the study focused on comparing students who are similar in terms of their background and educational experiences. A matching technique allowed estimating the effects of general education completion among similar students, with the only observable difference between them being general education completion (or completion of individual clusters of the core). Statistical analyses proved the validity of this concern but also showed a significant bias reduction as a result of student matching.

The study also faced other issues that were related to the time-dependent nature of the data; different outcomes of interest; student attrition from the study due to transferring out of the Tennessee public sector; and dropping out or stopping out. These challenges were successfully addressed by employing relevant statistical techniques and running multiple models for individual general education course sequences and each cohort of transfer students . Running estimates by cohort was similar to conducting three independent analyses; this adds validity to consistent findings across cohorts.

Study results

The descriptive analysis showed that enrollment characteristics of transfer students reflected the overall Tennessee student population in terms of demographic and academic characteristics. About 47 percent of the study sample transferred into TBR universities from the state's community colleges. Female, adult, and Caucasian students showed faster time to degree and attempted fewer credits than their counterparts.

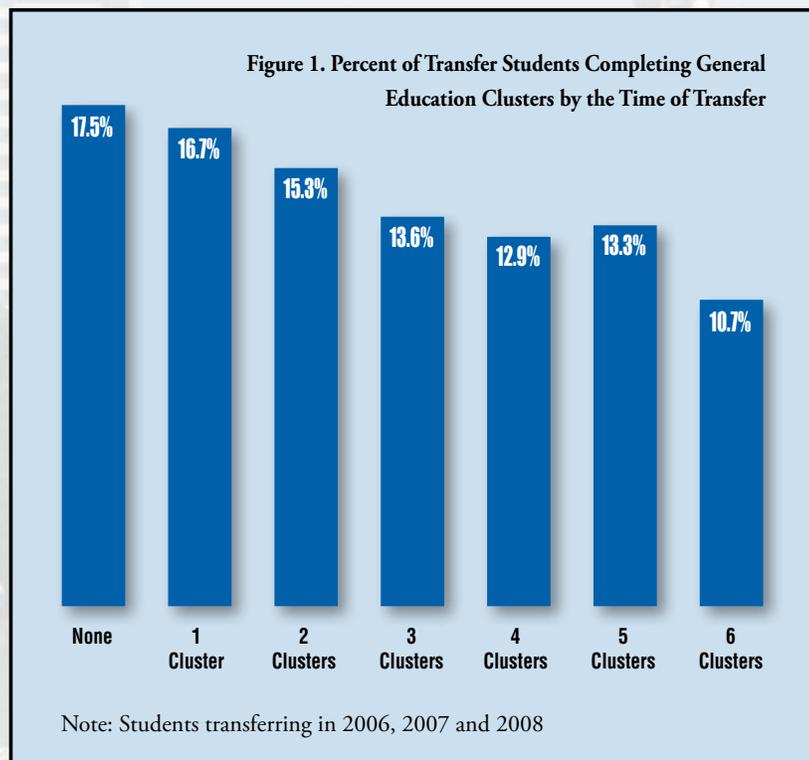
Students from the least and most affluent backgrounds demonstrated the longest time to graduation (6.3 semesters) among all income groups.

Among those students who graduated during the observation period, the average time to a bachelor's degree was six semesters, or 78 attempted credit hours. Almost 11 percent of transfer students completed the entire general education core prior to transferring, and 17 percent of all students transferred without any general education clusters completed. About 45 percent of students transferred between one and three clusters; however, almost 37 percent of students came in with four or more clusters

completed by the time of transfer (**Figure 1**). The most popular clusters among transfer students were Mathematics and Social Sciences, the least popular Humanities and History.

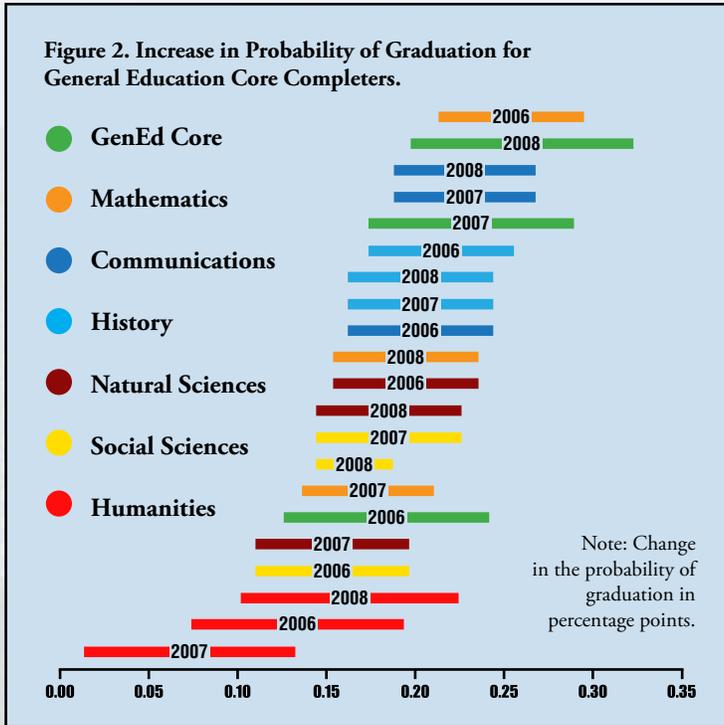
The results of the statistical analyses confirmed the study hypothesis. When comparing students who are similar in terms of their background and educational experiences, the analysts found that pre-transfer completion of the common general education requirements, in whole or in part, has a large statistically significant

effect on the probability of graduation, time to a bachelor's degree, and college GPA. Specifically, completion of the entire general education core prior to transferring has the following effects on the outcomes of interest:



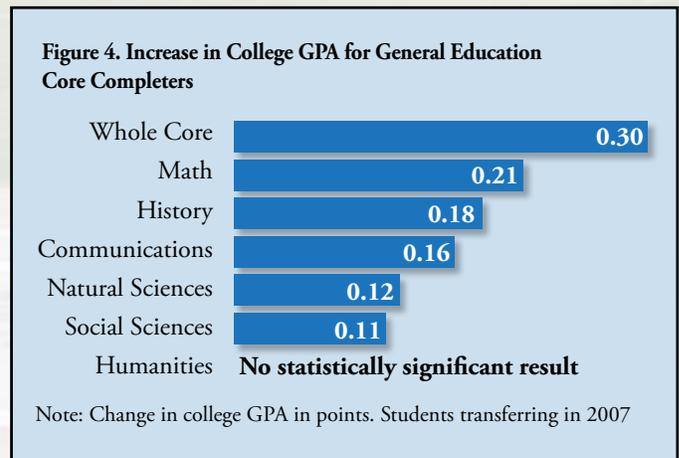
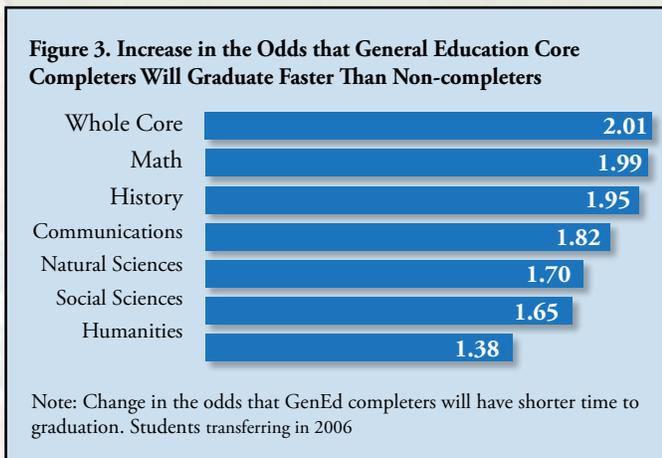
When comparing students who are similar in terms of their background and educational experiences, pre-transfer completion of the common general education requirements has a large statistically significant effect on the probability of graduation, time to a bachelor's degree, and college GPA.





- It increases the probability of graduation by about 25 percentage points (**Figure 2**);
- It shortens time to degree for the core completers, making it more likely that these students will graduate on time (**Figure 3**). To illustrate, 70 percent of the core completers are predicted to have graduated within six semesters, while only 40 percent of non-completers are predicted to have graduated in the same time period;
- It increases the cumulative college GPA by about 0.3 points (**Figure 4**).

Completion of individual general education clusters (components of the core) also has a statistically significant effect on the outcomes of interest. The clusters' effects vary considerably, with the Mathematics and Communications components exerting the greatest impact and the Humanities cluster having the lowest impact on the outcomes. To illustrate, for students transferring into the TBR universities in 2006, completion of the Mathematics cluster is predicted to increase the probability of graduation by 25 percentage points, the odds of having shorter time to degree by 1.99 times (in other words, to reduce time to degree), and GPA by 0.23 points in comparison to similar students who did not complete that cluster or the entire core prior to transferring. In contrast, pre-transfer completion of the Humanities component increases the probability of graduation by 13 percentage points, increases the odds of having shorter time to degree by 1.38 times, and increases college GPA by 0.13 points.



Implications



The clusters' effects vary considerably, with the Mathematics and Communications components exerting the greatest impact and the Humanities cluster having the lowest impact on the outcomes.

The study found that the TBR-approved common general education core is serving its purpose effectively. The policy helps transfer students succeed in college by increasing their likelihood of graduation, decreasing time to degree, and increasing college GPA.

In other words, the fully transferable general education core allows transfer students to graduate with greater efficiency and improve their academic performance in the transfer institution. These results are large and statistically significant, meaning that they were not observed by chance. Because the study was not an experiment, no causality can be claimed.

The study findings have the following implications for Tennessee public higher education and individual institutions:



Students should be encouraged to complete the general education requirements early in their academic careers.

- In order to raise the likelihood of graduation, students should be encouraged to **complete the general education requirements early** in their academic careers;
- Students should be also encouraged to **complete the clusters with the largest effect as early as possible** (such as Mathematics and Communications); and
- This study arms finance policymakers in Tennessee with data that may enable them to **focus on credit accumulation benchmarks that are truly indicative of degree momentum** and later academic success. The findings of the study may have implications for the academic progress metrics utilized in the new outcome-based funding formula for Tennessee public higher education.

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