

# Going Beyond Free College Initial Findings on College Success with Supplemental Coaching and Grants

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February 2024

## Abstract

We examine the relationship between short-term success in college and student take-up of supplemental coaching and financial aid. These extra supports were made available to some students participating in Tennessee’s “free community college” program starting in fall 2018. We use residence, income, and other eligibility criteria to understand how coaching and additional grants are associated with persistence into a second year of college, or receipt of an early college credential in the first year. Results indicate that students who were more engaged with their coaches were significantly more likely to re-enroll in college for a second year or complete an early credential. Students who received supplemental grants, often for emergencies or unanticipated expenses, were not more or less likely than others to persist into a second year of college or earn an early postsecondary credential.

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\*Corresponding author: carruthers@utk.edu. We are grateful for comments, feedback, and institutional knowledge provided by Krissy DeAlejandro and Jackie Hartman of tnAchieves, to Ed Taylor for technical support, and to Diego Guerrero and Bill Fox for collaboration on earlier reports in this series. We are grateful to tnAchieves for data necessary to complete this research, and to the State Collaborative on Reforming Education (TN SCORE) for funding. All opinions and errors are our own.

# 1 Background

Tennessee Promise pledged tuition-free community college for all high school graduates in the state starting with the class of 2015. The publicly funded “last dollar” program covered any gap between a student’s community college tuition and their other sources of financial aid, and there were no need-based or merit-based eligibility criteria.

Tennessee Promise represented an expansion of nonprofit scholarship programs that had operated in the state for many years. One such program, tnAchieves, previously provided last-dollar scholarships to high school graduates in 27 of the state’s 95 counties. In 2015, tnAchieves shifted from distributing scholarships to acting as a liaison between the statewide Promise program and the vast majority of participating students. In that capacity, tnAchieves also piloted additional support services for Tennessee Promise students.

Two of those additional supports were college coaches, who connected with students multiple times each term by phone, email, text, or in virtual or in-person meetings. On average, eligible students connected with their coaches 2 - 4 times during their first year of college. In addition, some tnAchieves students could apply for supplemental completion grants to cover transportation, housing, or unexpected expenses. Depending on cohort and location, 4 - 8% of eligible students received completion grants averaging \$300 - 700.

Eligibility for coaching and completion grants grew unevenly over time and depended on funding. Table 1 describes eligibility criteria by service and cohort. Coaching was first available to the 2018 cohort of Tennessee Promise students who participated in summer bridge or developmental programs. Others in that cohort who had zero “expected family contribution” (EFC, a student’s federally determined ability to pay for college) were also eligible for coaching, depending on their ACT and where they graduated high school. tnAchieves introduced completion grants in 2019 for lower-income, Pell-eligible Knox County students. That cohort also saw an expansion of coaching eligibility to a random

two-thirds of statewide zero-EFC students enrolled in community colleges (Kim et al., 2023) as well as all Knox County students. The 2019 zero-EFC criteria did not extend to Promise students enrolled in TCATs or 4-year colleges, who accounted for 16% of all Tennessee Promise students at the time (Tennessee Higher Education Commission, 2023b). Coaching and grants for Knox County students in 2019 and later cohorts were part of the “Knox Promise” initiative to go beyond tuition guarantees for Tennessee Promise students in that county (Kast, 2019). Coaching expanded again in 2020 to cover all zero-EFC community college students, and grant eligibility broadened in 2021 to cover zero-EFC students throughout the state. Finally, tnAchieves expanded coaching and grant supports under the name COMPLETE to all Pell-eligible Tennessee Promise students in 2022 (WBIR, 2022), including those in TCATs and 4-year schools.

We draw on tnAchieves program data and these eligibility criteria to estimate the relationship between coaching or completion grant take-up and short-term college outcomes.

## **2 Related Research**

“Free college” programs like Tennessee Promise can increase the number of students deciding to go to college (Carruthers & Fox, 2016; Gurantz, 2020; Bartik et al., 2021). Aside from the response to aid itself, students value certainty in knowing the cost of college (Dynarski et al., 2021; Burland et al., 2023). Today, close to 30 states offer their own variations on tuition-free college (Dickler, 2022). Most provide last-dollar aid, like Tennessee. This keeps costs low because students are eligible for other sources of state and federal financial aid, oftentimes in excess of the value of college tuition and fees. The typical Tennessee Promise grant totaled just \$500 - 600 per semester in recent years (Tennessee Higher Education Commission, 2023b). Since federal Pell grants and other sources of need-based aid cut into last-dollar award amounts, Tennessee Promise allocates less financial support to lower-income students. In addition, aid limited to tuition does not address other student needs, such as living expenses or advising.

Our findings join a small body of prior and ongoing research on initiatives that supplement Promise programs and go beyond last-dollar tuition aid. Our own descriptive reports on Knox Promise students show that Knox County students who register more connections with their coaches are more likely to persist in college or complete a credential (Carruthers et al., 2023; Carruthers & Pratt, 2023). This is in agreement with related work by Dickason et al. (2023), who interview students participating in Knox Promise and Nashville GRAD, a parallel effort in the state's capital city. Their mixed-methods analysis likewise finds that students who engage more with the program are more likely to persist in college from one year to the next. Our observational analysis also complements ongoing study of a randomized controlled trial of the effect of proactive versus reactive coaching in the tnAchieves 2019 cohort (Kim et al., 2023). We add to this line of research with a preliminary examination of coaching and grant aid statewide, and how student receipt of these supports relates to their postsecondary status one year after starting college.

We find that students received coaching and completion grants to varying degrees, and that greater take-up of either support was associated with varying degrees of increased persistence into a second year of college and/or completion of a college credential by that time. It is difficult, however, to extract the standalone effect of access to coaching from the effect of access to completion grants, or to isolate either from the effect of free-tuition guarantees, since these aspects of student aid were introduced and expanded together. In this respect, our inferences also fit in with a line of experimental research on various modes of student support services, including additional counselors (Scrivener & Weiss, 2009), student coaches (Bettinger & Baker, 2014), case management and emergency grants (Evans et al., 2019, 2020), as well as wraparound student services (Weiss et al., 2019). Results are mixed across these contexts and interventions and generally suggest that supplemental aid and advising work best as a cohesive system of financial and non-financial support, rather than standalone services.

### 3 Data, Methods, and Results

We obtained data from tnAchieves describing seven cohorts of first-time college students who enrolled in fall 2015 - fall 2021. Student data include enrollment and graduation indicators one year after each student started college (two-year outcomes are pending). tnAchieves largely collects these data from colleges and from the Tennessee Higher Education Commission. For students whose enrollment and completion status cannot be confirmed from those sources, they rely on the National Student Clearinghouse.

The program tracks all current and prior program participants until they complete a postsecondary certificate or degree. tnAchieves does not comprehensively collect data on enrollment after a student earns a postsecondary credential, so we do not see if a completer re-enrolls in pursuit of additional or higher credentials. This is an important limitation for our purposes here, since Tennessee's community and technical colleges offer a number of certificates that can be completed in less than one year, and students oftentimes stay enrolled to "stack" these certificates with other credentials. For these reasons, our analysis focuses on a single combined measure of postsecondary credential completion within one year of starting college, or persistence without a credential into a second year of college. This combined measure will include credential completers who re-enrolled, although we cannot differentiate them from completers who left college after their first year.

Not enough time has passed to assess persistence and completion for the 2022 cohort, who had the largest coverage of coaching and completion grant eligibility. In addition, persistence/completion data for the 2017 and 2020 cohorts is incomplete at this time, so we omit these students from the analysis. Results to follow focus on re-enrollment and/or early credential completion for students with coaching or completion grants in the 2018, 2019, and 2021 cohorts, relative to ineligible peers who enrolled in college at the same time, as well as students in the 2015 and 2016 cohorts who did not have access to these supports.

In addition to persistence and/or credential completion, for each student we observe their reported race, Hispanic ethnicity, ACT score, first-generation status, eligibility for need-based federal Pell grants, EFC, summer program participation, and home county. We merge program data with contemporaneous economic indicators for each county and cohort: total employment per capita, poverty rate, sales tax revenues per capita, property tax base per capita, and GDP per capita.

Figure 1 plots estimated eligibility shares, by cohort. Coaching was available to as many as 21% of tnAchieves students in 2018, before growing to include a random two-thirds of all zero-EFC students as well as all Knox County students. The Figure 1 jump in access to coaching in 2019 over-estimates growth in actual eligibility, since we do not observe which zero-EFC students were selected at random.<sup>1</sup> Completion grants were introduced for the 2019 cohort as well, through Knox Promise, but were only available to Pell-eligible students in Knox County (4% of all tnAchieves students statewide). Grant eligibility grew to cover 26% of the 2021 cohort with the addition of all zero-EFC students. The percent of students who were eligible for coaching decreased from 32% in 2019 to 27% in 2021, although the coaching eligibility criteria either expanded or did not change over that time. Students were somewhat less likely to meet those criteria in the midst of pandemic precautions, online learning, and large declines in college going overall (Tennessee Higher Education Commission, 2023a). Students were less likely to participate in summer programs in 2020, and in 2021, college-going students were less likely to have zero EFC.

Table 2 lists summary statistics for the 2019 and 2021 cohorts of tnAchieves students, by their eligibility for coaching or completion grants. Looking first to the number of students working with tnAchieves in those cohorts (31,927 statewide), we note that this represents the large majority of all 36,708 first-time, full-time freshmen who enrolled in Tennessee community colleges in 2019 or 2021 (THEC and TSAC, 2020, 2022). Column 1 describes 2019 and 2021 tnAchieves students who did not meet one of the Table 1

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<sup>1</sup>Since random selection into coaching will be statistically unrelated to other eligibility criteria, this should have little bearing on regression results.

eligibility criteria for coaching or completion grants, i.e., who had EFC greater than zero and who did not graduate from a Knox County high school or attend a summer program. Column 2 describes students who met either the income or summer program criteria, and who were from outside of Knox County. Finally, column 3 describes all Knox County tnAchieves students, who were eligible for coaching or completion grants through Knox Promise.

Table 2 shows that 67% of tnAchieves students from Knox County were still enrolled in college after one year and/or had completed a college credential by that time, which was similar to 69% for ineligible students elsewhere in the state, and higher than the 57% persistence/completion rate for eligible students from outside of Knox. Knox Promise students connected with their coaches more often than other coach-eligible students, and they received more in completion grants. Relatively few students completed a college credential within one year of enrolling: 5 - 10% in the 2019 and 2021 cohorts. Another 51 - 63% of tnAchieves students re-enrolled in the fall term one year after they started college.

Looking next to coaching and grant take-up statistics in Table 2, we find that our estimated measures of coaching and grant eligibility are strong but imperfect predictors of actual coach connections and grant receipt. In column 1, we observe a very small number of students with coaching or grant receipt through undetermined eligibility criteria. Students who were eligible for coaching through their residence, income, or summer program participation connected with coaches 2 - 4 times in their first year, on average, or 4 - 5 times if they had any coach connections (columns 2 - 3). A small percent of grant-eligible students received completion grants: 8.3% of eligible Knox County students received \$724 in completion grants, on average, and 4.0% of eligible students outside of Knox County received \$339, on average.

The bottom half of Table 2 summarizes student demographics, ACT achievement, income, first-generation status, and county poverty rate, by eligibility for supplemental coaching and completion grants. Students with place-based eligibility through Knox

Promise were similar to ineligible students elsewhere in the state (columns 1 and 3). Both groups of students were just over three-quarters white non-Hispanic. They had 20-point average ACT scores, were 29 - 33% first generation college students, and were living in counties with 13% of the population in poverty. Ineligible students were, by definition, higher income and less likely to be eligible for need-based Pell grants. By comparison, students who gained eligibility by having low income or participating in summer programs were 56% white, non-Hispanic, had lower ACT scores, were 52% likely to be first generation students, and were 91% likely to be eligible for the maximum Pell grant (column 2).

Focusing on eligible students, Figure 2 plots the average first-year persistence/completion rate by student engagement with coaching (Panel A) and receipt of completion grants (Panel B). Students who had access to tnAchieves coaching and connected with a coach at least one time in their first year of college were 63% likely to persist into a second year and/or earn a postsecondary credential by that time. This compares favorably with 50% persistence/completion among eligible students who did not connect with their coaches. Among students who were eligible for completion grants, grant recipients were 64% likely to persist through at least one year of college or complete an early credential, versus 57% of non-recipients.

As discussed in earlier reports on Knox Promise (Carruthers et al., 2023; Carruthers & Pratt, 2023), we are careful not to interpret gaps like the ones we see in Figure 2 as causal effects of coaching or grants on student success in college. It is possible that students who sought out additional help through tnAchieves coaching or who applied for aid to offset unanticipated expenses might have done so because they were more determined to complete college than other students, and that determination may have led them to have higher persistence/completion rates without these supports. On the other hand, it is possible that coaches and grant aid reached students who would have otherwise faltered and left college without a credential, and that Figure 2 understates the net effect of supports that go beyond tuition.



We leave the causal effects of supplemental coaching and completion grants to future research, including later reports in this series. In the meantime, we can quantify Figure 2 divergence in persistence/completion outcomes by student take-up, and control for additional factors that may influence those outcomes. Specifically, we estimate the following:

$$y_{it} = COACHING_{it}\gamma_1 + GRANTREC_{it}\gamma_2 + COACH\_ELIG_{it}\gamma_3 + GRANT\_ELIG_{it}\gamma_4 + \mathbf{X}_{it}\beta + \alpha_c + \alpha_t + \varepsilon_{it}, \quad (1)$$

where  $y_{it}$  represents one of three binary outcomes for student  $i$  in cohort  $t$ : re-enrolling one year after starting college (without a credential), earning a postsecondary credential within one year of starting college, or the union of those two outcomes. The variable  $COACHING_{it}$  is equal to the total number of first-year connections student  $i$  had with their coach, and  $COACH\_ELIG_{it}$  is equal to a binary indicator equal to one if they were eligible for coaching according to Table 1 criteria. Similarly,  $GRANTREC_{it}$  is equal to the amount of completion grant aid received in  $i$ 's first year, and  $GRANT\_ELIG_{it}$  is an indicator for grant eligibility.

Our coefficients of interest in Equation 1 are  $\gamma_1$  and  $\gamma_2$ . Estimates for  $\gamma_1$  represent the correlation between a coach-eligible student's engagement with coaching and their status one year after starting college. Similarly,  $\gamma_2$  estimates represent the correlation between the amount of a grant-eligible student's completion grant and their status one year after starting college. Controls in  $\mathbf{X}_{it}$  include student race and Hispanic ethnicity indicators, ACT score, Pell eligibility, first-generation status, and county economic conditions. We additionally control for county and cohort fixed effects, represented by  $\alpha_c$  and  $\alpha_t$ . We infer statistical significance about  $\gamma_1$  and  $\gamma_2$  from standard errors that allow for clustering within students' home counties. As with Figure 2, we view results as descriptive and advise against interpreting results as causal program effects.

Table 3 lists Equation 1 results. Results from our preferred specification are in column 3, which controls for student race, Hispanic ethnicity, ACT score, income, first-generation

status, zero-EFC status, and county economic conditions. This specification also omits students who were ineligible for tnAchieves coaching or grants according to Table 1 criteria but nonetheless received coaching and/or completion grants. By omitting students with unexplained take-up, we can interpret  $\hat{\gamma}_1$  and  $\hat{\gamma}_2$  estimates as the conditional correlation between persistence/completion and the intensity of take-up among eligible students.

Among coach-eligible students, each additional connection with coaches is associated with a 2 - 3 percentage-point higher likelihood of persisting into a second year of college and/or completing a credential by that time (columns 1 - 3). Combined with the typical 4 - 5 connections among students with any coaching (Table 2), regression results suggest that students who engaged with tnAchieves coaching had 10 - 15 percentage-points higher rates of persistence/completion than eligible students who did not connect with coaching. This 10 - 15 point difference represents a large share of average persistence/completion (15 - 23%) and indicates that student and county control variables in Equation 1 explain very little of the simple 12.6-point gap in means shown in Figure 2 Panel A. In contrast, control variables completely close the gap between grant recipients and non-recipients. Among grant-eligible students, those who received completion grants were not more or less likely to persist into a second year of college or earn an early credential.

Columns 4 - 5 of Table 3 deconstruct the combined persistence/completion outcome into its component parts. Coaching is associated with significantly higher rates of first-year credential completion as well as persistence into a second year of college. Grant receipt is linked to a higher rate of early credential completion and a lower rate of second-year persistence, although both estimates are fairly small and imprecise. A \$724 completion grant (equal to the Table 2 average for Knox Promise grant recipients) corresponds with a weakly significant 1.8 percentage-point lower rate of persistence, or just 3% of the mean. We cannot determine from the available data if grant recipients were more likely to stack their early credentials with additional certificates or degrees, or when coached students

ultimately attained credentials. Future reports in this series will help to shed light on these questions, as well as other longer-term outcomes like transfer and employment after college.

Returning to the combined persistence/completion outcome and the Table 3 column 3 specification, Figure 3 plots  $\hat{\gamma}_1$  coefficient estimates and 95% confidence intervals for coach connections from Equation 1, for all students in the sample as well as six subgroups. We find that Table 3 results for coaching are similar by race, ethnicity, first-generation status, and income. For most subgroups, each additional coach connection is associated with about a 3 percentage-point increase in the likelihood of persistence/completion. The  $\hat{\gamma}_1$  estimate for Hispanic students is somewhat lower, at 2.1 percentage points, but with a wide confidence interval that overlaps with that of other subgroups.

Finally, Figure 4 plots  $\hat{\gamma}_2$  estimates and confidence intervals for the association between completion grant receipt and persistence/completion rates. The leftmost point corresponds with the small and statistically insignificant full-sample result shown in Table 3 column 3. Subgroup estimates to the right of that point indicate that Black, Hispanic, first-generation, and Pell eligible grant recipients are also not more or less likely than non-recipients to persist into a second year of college and/or complete a credential by that time. The correlation is significantly less than zero for white students, however, who were 3.8 percentage points less likely to persist/complete if they received a typical \$724 completion grant (equivalent to 6% of the mean).

## 4 Preliminary Conclusions and Ongoing Work

tnAchieves coaching and completion grants supplement last-dollar financial aid from Tennessee Promise. These additional supports have been available to all Knox County Tennessee Promise students since 2019, through Knox Promise, as well as a growing number of students elsewhere in the state who have low income or who participate

in summer programs between high school and college. In prior descriptive work, we found that Knox Promise students who engaged more with their coaches were more likely to stay in college and/or complete credentials (Carruthers et al., 2023; Carruthers & Pratt, 2023). Our findings here show that this relationship extends to a statewide analysis, and is robust to additional controls for student demographics, income, ACT, first-generation status, and more. Another new finding is that the positive correlation between persistence/completion and coaching is similar across Black, Hispanic, white, low-income, and first-generation students. Also consistent with our earlier work, we find no relationship between completion grant receipt and short-term college outcomes.

Our findings are limited in a few respects, most notably by unavailable data on college enrollment after credential receipt and the type of credentials that students earn. And again, we emphasize that results are descriptive and do not pinpoint the causal effect of tnAchieves coaching and completion grants on student outcomes. There is also more to learn from more recent cohorts and from the program's statewide expansion in 2022. In ongoing work, we are exploring these later effects of coaching and completion grants in Tennessee, drawing again from tnAchieves program data as well as more detailed state administrative data. These combined data will allow us to study the effects of supplemental coaching and financial aid on college credits, grades, types of credential completion, transfer between higher education institutions, and transitions to the workforce.

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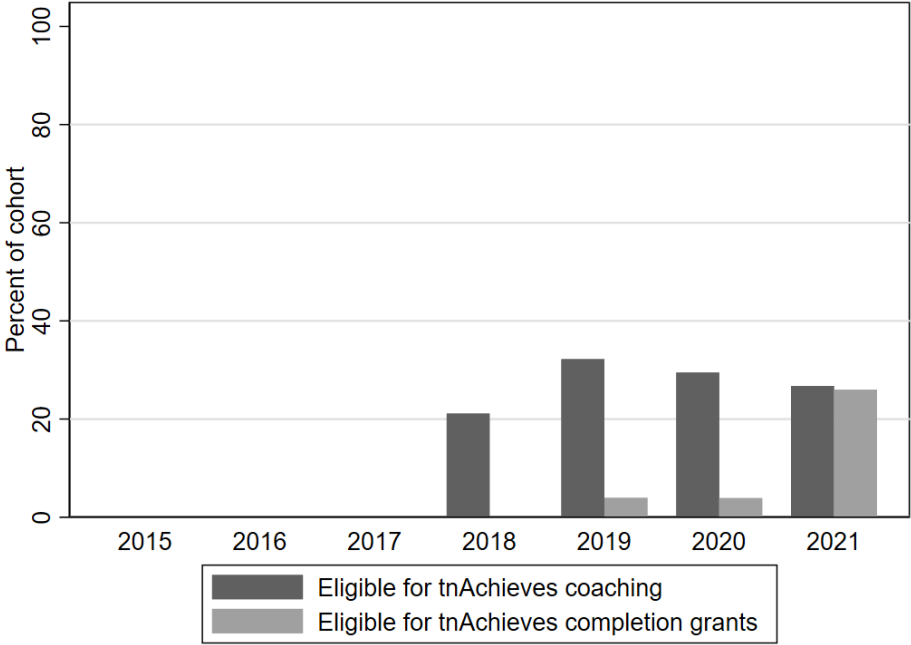
Table 1: Eligibility criteria for tnAchieves coaching and completion grants

Cohort	Eligible for coaching	Eligible for grants
2018	All summer program participants; Students with EFC = 0 and ACT < 19 in the Western half of Tennessee; Students with EFC = 0 and ACT ≥ 19 in the Eastern half of Tennessee	
2019	All summer program participants; Random 65% of all community college students with EFC = 0; All Knox County students	All Pell-eligible Knox County students
2020	All summer program participants; All community college students with EFC = 0; All Knox County students	All Pell-eligible Knox County students
2021	All summer program participants; All community college students with EFC = 0; All Knox County students	All Pell-eligible Knox County students; All students with EFC = 0
2022	All summer program participants; All Pell-eligible students; All Knox County students	All Pell-eligible students

Notes: From tnAchieves correspondence. The table lists eligibility criteria for coaching and completion grants by cohort and service. Coach and/or grant eligibility also required participation in Tennessee Promise. EFC is a student’s “expected family contribution,” or their ability to pay for college as determined by federal formulas and FAFSA processing. Students with zero EFC are eligible for the maximum amount of the federal Pell grant. Summer programs refer to multiple summer bridge programs and summer institutes operated by tnAchieves and state community colleges.



Figure 1: tnAchieves coaching and completion grant eligibility grew unevenly between the 2018 and 2021 cohorts



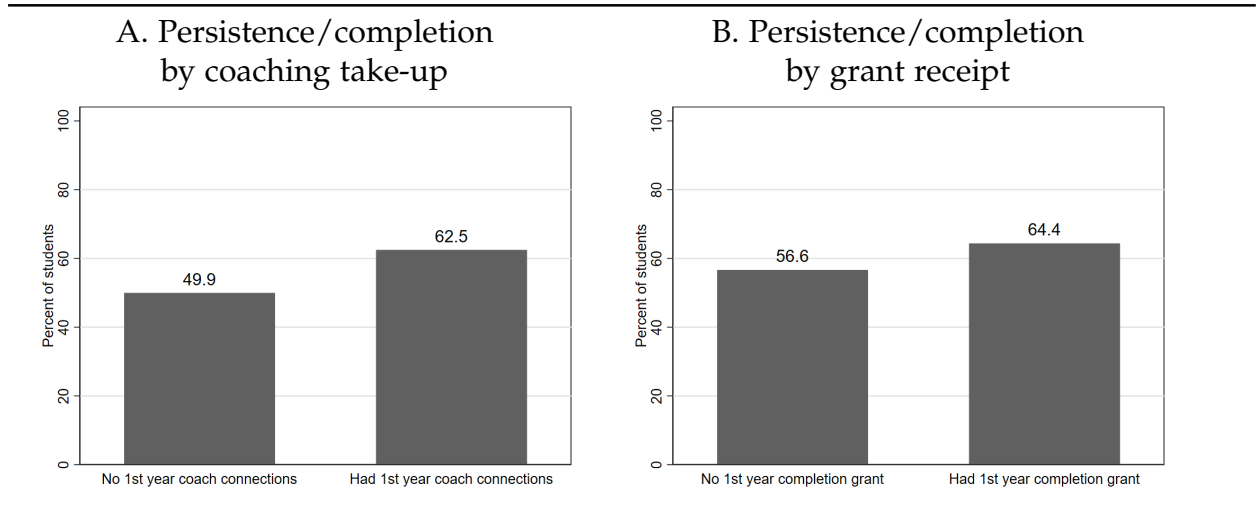
Notes: Authors' calculations based on eligibility criteria from tnAchieves correspondence. The figure plots the percent of tnAchieves students who were potentially eligible for coaching or completion grants, by cohort.

Table 2: Summary Statistics by coaching and grant eligibility, 2019 and 2021 cohorts

	(1) Ineligible	(2) Eligible, outside of Knox	(3) Eligible, in Knox
<u>Second-year status</u>			
Enrolled and/or completed credential (%)	68.6	56.9	67.4
Completed credential (%)	9.5	5.5	4.8
Enrolled w/o credential (%)	59.1	51.3	62.6
<u>Coaching and grant take-up</u>			
Any 1st year coach connections	2.8	56.7	84.8
Total 1st year coach connections	0.1	2.3	4.4
Total 1st year coach connections, if any	2.8	4.1	5.2
Any 1st year completion grants (%)	0.3	4.0	8.3
Total 1st year completion grants (\$)	1.0	13.4	60.1
Total 1st year completion grants, if any (\$)	374.9	338.9	723.6
<u>Race and ethnicity</u>			
Black (%)	9.9	23.9	9.0
Hispanic (%)	5.4	10.6	6.1
White (%)	76.6	55.7	76.2
<u>Achievement, income, and first-generation status</u>			
Act score	19.7	17.8	20.1
Pell eligible (%)	38.6	94.3	43.4
Zero EFC (%)	5.1	91.1	21.4
First generation (%)	32.7	51.8	28.8
County poverty rate (%)	13.3	14.3	12.8
Number of students	21,477	7,716	2,735

Notes: Authors' calculations. The table lists average student characteristics for tnAchieves students starting college in 2019 or 2021. Column 1 describes students who were ineligible for supplemental coaching or completion grants, column 2 describes students who were eligible outside of Knox County, and column 3 describes Knox County students.

Figure 2: Students who engaged with coaches or received supplemental grants were more likely to persist in college or complete an early credential.



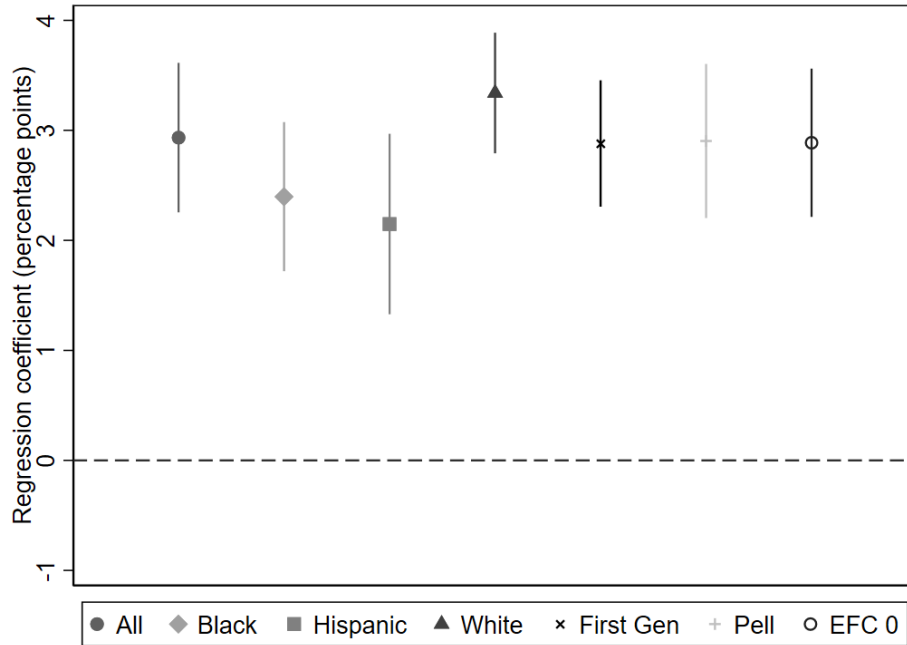
*Notes.* Authors' calculations. Panel A plots the percent of coach-eligible tnAchieves students who re-enrolled for a second year in college or who had completed a credential by that time, by whether or not they connected with their coaches. Panel B plots the percent of grant-eligible students who re-enrolled or completed a credential, by whether or not they received a completion grant.

Table 3: Students who connected with coaches 4 - 5 times in their first year were 15 - 23% more likely to persist into their second year or complete a credential before then. Completion grant recipients were not significantly more or less likely to persist into a second year of college or complete an early credential.

	(1)	(2)	(3)	(4)	(5)
Second-year status	Enrolled and/or completed credential	Enrolled and/or completed credential	Enrolled and/or completed credential	Completed credential	Enrolled w/o credential
Student and county controls		✓	✓	✓	✓
Excludes students with unexplained take-up			✓	✓	✓
Total 1st-year connections	2.439*** (0.409)	2.770*** (0.293)	2.934*** (0.342)	0.302*** (0.0456)	2.632*** (0.313)
Total 1st-year grants (in 100\$)	0.273 (0.178)	0.0131 (0.166)	-0.0627 (0.178)	0.181 (0.163)	-0.244 <sup>+</sup> (0.144)
Outcome average	66.8	66.8	66.8	5.0	61.8
Number of students	79,331	79,331	78,259	78,259	78,259

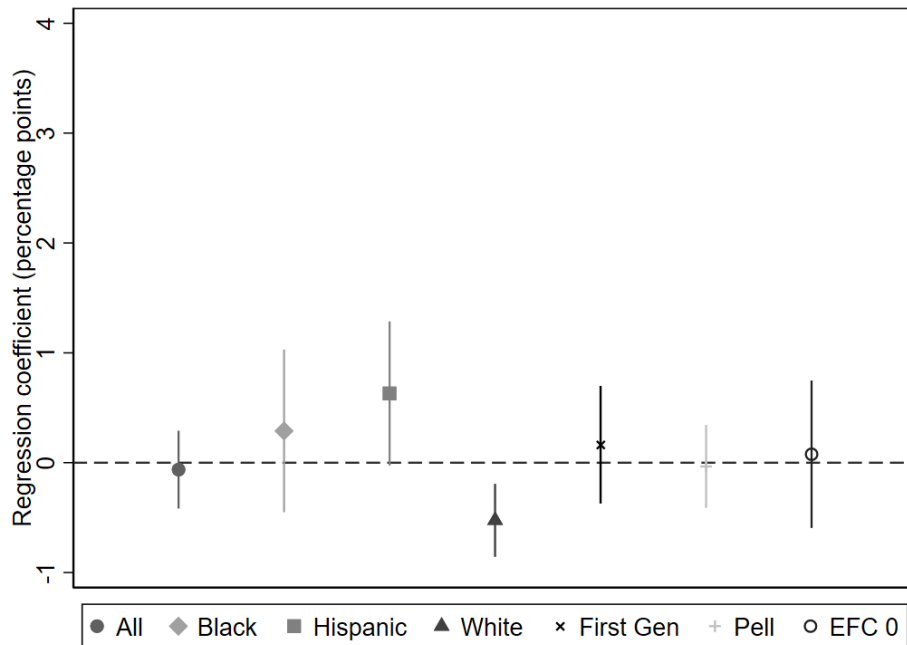
Notes: Authors' calculations from Equation 1. The sample includes all tnAchieves students who enrolled in college fall 2015, 2016, 2018, 2019, or 2021. Column 3 - 5 samples exclude students who did not meet Table 1 eligibility criteria but nonetheless received coaching or completion grants. Column headings indicate the dependent variable in each specification: a binary variable equal to one for students who persisted into a second year of college and/or completed a credential by that time (columns 1 - 3), a binary variable equal to one for students who completed a credential in their first year of college (column 4), or a binary variable equal to one for students who persisted into a second year of college without a credential (column 5). All regressions control for coaching and grant eligibility, and column 2 - 5 regression models include additional controls for student demographics, ACT score, income, first-generation status, and county economic characteristics. Standard errors, in parentheses, allow for clustering within counties. <sup>+</sup>  $p < 0.10$ ,  $** p < 0.05$ ,  $*** p < 0.01$

Figure 3: Across student populations, tnAchieves coaching is associated with higher rates of second-year persistence or early credential completion.



Notes: The figure plots Equation 1 results for  $\hat{\gamma}_1$ , the estimated correlation between persistence/completion and total 1st-year coach connections, controlling for coaching eligibility, grant receipt and eligibility, and other variables represented in Equation 1. The leftmost point represents the correlation for all students, also seen in Table 3 column 3, and each subsequent point represents the correlation for subgroups of students. Vertical lines represent 95% confidence intervals.

Figure 4: Across student populations, completion grant receipt is not consistently associated with higher or lower rates of second-year persistence or early credential completion.



Notes: The figure plots Equation 1 results for  $\hat{\gamma}_2$ , the estimated correlation between persistence/completion and total 1st-year completion grants (in \$100s), controlling for grant eligibility, coach connections and coaching eligibility, and other variables represented in Equation 1. The leftmost point represents the correlation for all students, also seen in Table 3 column 3, and each subsequent point represents the correlation for subgroups of students. Vertical lines represent 95% confidence intervals.