Annenberg Institute
BROWN UNIVERSITY

EdWorkingPaper No. 26-1546

Translating Policy into Opportunity: School Counselors and the Implementation of CTE-Focused Dual Enrollment Pathways

Nicole Mader
Vanderbilt University

Stone Dawson
Vanderbilt University

JoHanna Sestito
Vanderbilt University

Raven Powell
Vanderbilt University

Kaitlyn Dodgen
University of Michigan

Victoria Harpool
Tennessee Higher Education Commission

Dual enrollment programs have expanded rapidly in the United States as a mechanism to improve college readiness, accelerate time to credential, and support postsecondary transitions. Yet empirical research on dual enrollment has largely centered on academic coursework offered through community colleges or four-year institutions. Considerably less is known about career-oriented dual enrollment offered through technical colleges, particularly from the perspectives of students and the school counselors responsible for implementing these opportunities. Drawing on Pressman and Wildavsky's (1973) theory of policy implementation and Lipsky's (1980) theory of street-level bureaucracy, this study examines how state efforts to expand access to technical college dual enrollment are enacted in local educational contexts. We analyze survey data from 1,382 students enrolled in Tennessee Colleges of Applied Technology (TCATs) and 510 high school counselors who responded to the Tennessee Educator Survey, as well as focus group data from 44 high school counselors across Tennessee. Tennessee provides a unique policy context in which recent state investments have substantially expanded dual enrollment opportunities at technical colleges. Findings illustrate four major themes: (1) high schools vary widely in recruitment models and partnership structures with TCATs, shaping who enrolls in CTE-focused dual enrollment and when; (2) while counselors value TCAT dual enrollment as a viable pathway, access is unevenly distributed due to assumptions about student fit, structural barriers, and program capacity; (3) counselors serve as key frontline implementers, providing intensive advising and administrative support that often exceeds that required for academic dual enrollment; and (4) students and counselors report positive effects on student self-efficacy, postsecondary identity, and college-going behaviors. Findings suggest that access to and success in TCAT dual enrollment are shaped not only by state policy design but also by local implementation conditions, organizational capacity, and counselor discretion. Implications address how policymakers and institutions can strengthen partnerships, reduce administrative burden, and support equitable pathway-oriented advising so that students of all backgrounds can benefit from CTE-focused dual enrollment.

VERSION: August 2026

Suggested citation: Mader, Nicole, Stone Dawson, JoHanna Sestito, Raven Powell, Kaitlyn Dodgen, and Victoria Harpool. (2026). Translating Policy into Opportunity: School Counselors and the Implementation of CTE-Focused Dual Enrollment Pathways. (EdWorkingPaper: 26-1546). Retrieved from Annenberg Institute at Brown University: https://doi.org/10.26300/9mcj-7635

Translating Policy into Opportunity: School Counselors and the Implementation of CTE-Focused Dual Enrollment Pathways

Nicole Mader, Stone Dawson, JoHanna Sestito, Raven Powell,[1] Kaitlyn Dodgen,[2] Victoria Harpool[3]

Abstract

Dual enrollment programs have expanded rapidly in the United States as a mechanism to improve college readiness, accelerate time to credential, and support postsecondary transitions. Yet empirical research on dual enrollment has largely centered on academic coursework offered through community colleges or four-year institutions. Considerably less is known about career-oriented dual enrollment offered through technical colleges, particularly from the perspectives of students and the school counselors responsible for implementing these opportunities. Drawing on Pressman and Wildavsky's (1973) theory of policy implementation and Lipsky's (1980) theory of street-level bureaucracy, this study examines how state efforts to expand access to technical college dual enrollment are enacted in local educational contexts. We analyze survey data from 1,382 students enrolled in Tennessee Colleges of Applied Technology (TCATs) and 510 high school counselors who responded to the Tennessee Educator Survey, as well as focus group data from 44 high school counselors across Tennessee. Tennessee provides a unique policy context in which recent state investments have substantially expanded dual enrollment opportunities at technical colleges. Findings illustrate four major themes: (1) high schools vary widely in recruitment models and partnership structures with TCATs, shaping who enrolls in CTE-focused dual enrollment and when; (2) while counselors value TCAT dual enrollment as a viable pathway, access is unevenly distributed due to assumptions about student fit, structural barriers, and program capacity; (3) counselors serve as key frontline implementers, providing intensive advising and administrative support that often exceeds that required for academic dual enrollment; and (4) students and counselors report positive effects on student self-efficacy, postsecondary identity, and college-going behaviors. Findings suggest that access to and success in TCAT dual enrollment are shaped not only by state policy design but also by local implementation conditions, organizational capacity, and counselor discretion. Implications address how policymakers and institutions can strengthen partnerships, reduce administrative burden, and support equitable pathway-oriented advising so that students of all backgrounds can benefit from CTE-focused dual enrollment.

Keywords

dual enrollment; technical colleges; postsecondary transitions; advising; career and technical education (CTE)

[1] Vanderbilt University
[2] University of Michigan
[3] Tennessee Higher Education Commission

Acknowledgements

This work was supported by the Bill & Melinda Gates Foundation [Grant No. INV-075127]. The views expressed in this article are those of the authors and do not necessarily reflect the views of the Foundation.

This study was reviewed and approved by the Vanderbilt University Institutional Review Board (IRB #241531). All participants provided informed consent prior to participation.

Notwithstanding any Tennessee Department of Education (TDOE) and Tennessee Higher Education Commission (THEC) data or involvement in the creation of this research product, TDOE or THEC do not guarantee the accuracy of this work or endorse the findings. All errors and omissions are our own, and the opinions and findings presented do not represent the opinions of these agencies or our employers.

Introduction

Dual enrollment has emerged as one of the most prominent strategies for strengthening postsecondary readiness and expanding college participation among high school students in the United States. By allowing students to earn college credit while still enrolled in high school, dual enrollment offers accelerated coursework, exposure to college expectations, and potential time- and cost-savings toward postsecondary credentials. Over the past two decades, participation has increased nationally and across demographic subgroups, driven by state-level investments, policy incentives, and growing research evidence linking dual enrollment participation to improved college outcomes.

However, the dual enrollment landscape is not monolithic. Most empirical research examines dual enrollment as it is commonly implemented through community colleges and four-year institutions, focusing on academic general education courses such as English Composition or College Algebra. Considerably less attention has been paid to dual enrollment offered through technical colleges, which often emphasize competency-based programs aligned to high-wage, high-demand occupations. These forms of dual enrollment often operate with different curricular structures, calendar systems, advising requirements, credit-transfer rules, and financial aid pathways—and may attract students with different interests, identities, and postsecondary goals.

Tennessee presents a salient policy context for examining CTE-focused dual enrollment. Over the last decade, the state has invested heavily in Early Postsecondary Opportunities (EPSOs), including dual enrollment. State initiatives such as the Dual Enrollment Grant and Tennessee Promise have expanded access to college coursework, while targeted investments in career and technical education (CTE) have increased capacity within Tennessee Colleges of Applied Technology (TCATs). As a result, dual enrollment participation at TCATs has grown

substantially, creating a need to understand how students learn about these opportunities, how counselors advise them, which barriers may limit equitable participation, and what, if any, effects TCAT dual enrollment has on students' self-efficacy and postsecondary identities.

High school counselors play a critical role in this system as gatekeepers, interpreters, and navigators of dual enrollment opportunities. Yet little research explores counseling practices in the context of CTE-focused dual enrollment, particularly how counselors conceptualize suitable students, identify barriers, and support marginalized groups. The expansion of CTE-focused dual enrollment at TCATs presents an important but understudied opportunity to examine how workforce-aligned postsecondary pathways are introduced and accessed by high school students.

This paper is guided by an overarching research question: How do students' identities and backgrounds interface with access, outcomes, and student experiences in TCAT dual enrollment courses and programs? Specifically, we address the following sub-questions and organize our findings section to answer each one in turn:

1. What practices are programs using to recruit, enroll, and support students in dual enrollment? What strategies are being used to encourage equitable student participation in dual enrollment for all students, particularly marginalized students?
2. What challenges do students, particularly marginalized students, face in enrolling and completing these courses?
3. What advising models work best for TCAT dual enrollment students and specifically for underrepresented students (e.g., students with IEPs, economically disadvantaged students, 9th grade students), and how can they be scaled? Is TCAT dual enrollment changing how high school counselors advise students for participation in dual enrollment?
4. What is the relationship between enrollment and intensity of TCAT dual enrollment and student experience, including curriculum engagement and belief in the ability to succeed in postsecondary education?

Literature Review

Career and Technical Education (CTE) dual enrollment is a relatively recent policy innovation through which high school students can earn postsecondary credits for courses related to career pathways. These credits can then be applied to career certifications, two-year associate's degrees, or, in some cases, four-year bachelor's degrees. CTE-focused dual enrollment programs differ from past programs in that, historically, CTE programs or "vocational" education did not lead to students gaining transferable postsecondary credits, while traditional dual enrollment programs focused on providing early credit-earning opportunities to high-performing students in core academic subjects such as mathematics or English language arts.

This literature review begins with research evidence about traditional CTE and dual enrollment programs, focusing on documented outcomes for participants in recent years. Then we explore the emerging literature around CTE-focused dual enrollment programs, which are relatively understudied but show promise as a mechanism for providing early postsecondary opportunities to a new population of students. We conclude with evidence about the role high school counselors play in helping students navigate their dual enrollment experiences.

Career and Technical Education

CTE programs have a long history in the US, with federal policy concerning "vocational education" dating back over a century and formal incorporation into the broader education system occurring more than 50 years ago (Dougherty, 2016). By 2013, 88% of public high school graduates had earned some CTE credits (Liu & Burns, 2020), and sectors like public services and healthcare were seeing an increase in the average number of credits earned. In the 2016-17 school year, 98 percent of districts had CTE offerings, but funding, staffing, and facilities limitations have resulted in a wide range in the quality of programming and the breadth of course offerings (Gray & Lewis, 2018).

Although CTE programs are widely available, participation varies across several student factors including sex, race and ethnicity, socioeconomic status, and urbanicity, with male students, white students, and students attending urban schools all more likely to participate in CTE programming than their counterparts (U.S. Department of Education, 2017). These patterns are likely related to the historic practice of tracking less academically oriented students into vocational education programs (Hodge et al., 2020); however, recent research suggests that modern CTE programs may be making progress on this front (Giani, 2019).

Participation in CTE programming has been shown to improve both academic and career outcomes for students. Several studies have shown that CTE increases the likelihood of high school graduation, particularly for male students, and that this effect is likely mediated by increased attendance and improved academic performance (Brunner et al., 2023; Dougherty, 2018; Gottfried & Plasman, 2018; Hemelt et al., 2019). Longer-term positive outcomes attributed to CTE include increased college-going (Hemelt et al., 2019) and earnings (Brunner et al., 2023). However, the magnitude of the impact and whether academic or career outcomes are affected appears to be at least partially dependent on program structure (Passarella, 2018) and alignment with local labor markets (Carruthers et al., 2024).

Research that incorporates student perspectives to understand the mechanisms by which CTE programs produce these positive outcomes is less robust. In one of the few studies that interviewed CTE students, Gentry et al. (2007) identified four positive themes in students' descriptions of their CTE experience: increased student autonomy, effective/caring teachers, students with similar interests, and learning relevant content. Regarding postsecondary outcomes, Castellano et al. (2014) found that graduating students who participated in CTE

programs of study had clearer plans for approaching the transition to postsecondary studies than non-participating students.

Dual Enrollment

Boswell (2001) describes several motivations for the growing interest among policymakers in dual enrollment (sometimes referred to as dual credit or concurrent enrollment) programs in the late 1990s and early 2000s. Among these motivations are reducing the cost of college, accelerating the time to completion, providing more challenging courses to advanced students, providing more opportunities to disadvantaged students, and promoting collaboration between high schools, local colleges, and their broader communities. Recent decades have seen an expansion of dual enrollment offerings with 82 percent of public high schools offering dual enrollment opportunities in 2017-18 (Taie & Lewis, 2020), though schools with more economically disadvantaged students are less likely to report offering dual enrollment than schools with more affluent student bodies (Taie & Lewis, 2020).

Shivji and Wilson (2019), using data from the High School Longitudinal Study of 2009 (HSLS:09), found that roughly a third of students took dual enrollment courses for postsecondary credit while in high school. They also found that 80 percent of those students took their dual enrollment classes on high school campuses and were taught by high school faculty (some of whom may have also been employed by the partner college, depending on state policy contexts), and only 17 percent of students took their dual enrollment courses on a college campus.

As with CTE, variation in dual enrollment participation is associated with several student characteristics. Higher levels of parental education and being White or Asian were associated with more dual enrollment course-taking than being Black, Hispanic, or another race or ethnicity (Shivji and Wilson, 2019). Rivera and colleagues (2019), also analyzing the HSLS:09 data, find that individual academic achievement and geographic factors are also significant predictors of dual enrollment course-taking.

Dual enrollment participation has been linked to a variety of positive student outcomes including increased postsecondary enrollment (Kim et al., 2025; Moreno et al., 2021; Schaller et al., 2025), increased application and admission to more selective postsecondary institutions (Liu et al., 2025), and better experiences transitioning to and persisting in college (Liu et al., 2020; Schaller et al. 2025). Many of these same studies also examine whether dual enrollment participation has different impacts on students who come from traditionally disadvantaged groups and generally find that dual enrollment participation is beneficial across demographic and socioeconomic groups but that disadvantaged groups may be particularly likely to benefit from dual enrollment programs. Qualitative evidence suggests that many of these positive outcomes are the result of improved understanding of postsecondary systems, better academic preparation, and changes in students' perceptions regarding the postsecondary options available to them (Johnson et al., 2024; Lile et al., 2018).

CTE-Focused Dual Enrollment

CTE-focused dual enrollment programs build on the success of both CTE and dual enrollment programs of recent decades while acknowledging and addressing concerns that such programs were further advantaging students who were already academically successful and tracking other students into pathways with few postsecondary options (Fink & Jenkins, 2023; Karp et al., 2007; Zinth, 2014). By providing high school students the opportunity to earn postsecondary credit through programs in traditional CTE subject areas, CTE-focused dual enrollment programs increase accessibility for students who may have lower initial levels of academic preparation or who may come from historically disadvantaged backgrounds. Additionally, such programs are believed to raise the rigor of the high school experience for participating students and to foster collaboration and communication between local high schools, postsecondary institutions, and industry stakeholders (Brand et al., 2013).

Research on participation in and outcomes of CTE dual enrollment programs is limited but growing. Ryu and colleagues (2024) directly compare participation rates and outcomes for students who participated in academic vs. CTE-focused dual enrollment in Texas. They find large differences in participation rates across the two dual enrollment types along lines of race, gender, and SES with White, female, and relatively affluent students more likely to take academic dual enrollment courses, while CTE-focused dual enrollment students were primarily Hispanic, low-income, and male. They also find that students who take CTE-focused dual enrollment courses often take them earlier in high school than students who take academic dual enrollment courses, suggesting early sorting of students into academic vs. CTE pathways. While this demographic sorting is on its face concerning, historically, these CTE students would not have received any postsecondary credit for these courses. Thus, by transforming these CTE courses into dual enrollment courses, students have increased opportunities to earn more rigorous credits. In other studies, students who participate in CTE-focused dual enrollment programs have been shown to graduate high school at higher rates (Edmunds et al., 2024; Rodriguez et al., 2012) and be more likely to enroll and persist in postsecondary institutions (Edmunds et al., 2024; Rodriguez et al., 2012; Ross & Hemelt, 2023).

The Role of High School Counselors

School counselors are central to understanding both participation in and outcomes of CTE and dual enrollment programs. The counseling literature highlights the role of counselors as brokers of information, influencers of student expectations, and contributors to student attainment (Luby, 2026; Mulhern, 2023; Sciarra & Ambrosino, 2011). As interpreters of policy, gatekeepers of information, and advisors who help students navigate academic, social, and financial choices, counselors play a pivotal role in the processes around enrolling in CTE and dual enrollment programs during high school as well as students' transition from these programs to postsecondary education and careers. While the counseling literature documents the influence of school counselors on college access broadly (Bryan et al., 2015), little research examines advising within CTE-focused dual enrollment contexts.

Prior research suggests multiple mechanisms by which counselors may affect the implementation of CTE-focused dual enrollment programs. Counselors often manage large caseloads and competing demands, which can constrain their ability to adequately advise their students about available postsecondary pathways (Brookover, 2021; Woods & Domina, 2014). Additionally, scholars have documented how advising can reproduce educational stratification when counselors make assumptions about student 'fit' for particular pathways (Francis et al., 2019; Linnehan, et al., 2011; Vannest et al., 2023). Applying these insights to CTE-focused dual enrollment is essential for understanding how access to career-oriented early postsecondary opportunities is distributed. Understanding how counselors perceive and facilitate CTE-focused dual enrollment is essential to understanding how students access these pathways and which students may be systematically left out.

CTE-Focused Dual Enrollment in Tennessee

High school students represent the fastest growing group of students at community and technical colleges in Tennessee. Dual enrollment at Tennessee Colleges of Applied Technology (TCATs) alone tripled from 2,554 in 2015 to 9,298 in 2022, comprising more than half of all enrollments at TCATs (Locker, 2023). This expansion stems from several state-level policies and investments that have helped to integrate the K-12, higher education, industry, and workforce development sectors around a broader vision of postsecondary readiness.

Eligible high school students in Tennessee can cover the cost of dual enrollment tuition through the lottery-funded Dual Enrollment Grant administered by the Tennessee Student Assistance Corporation (TSAC). Beginning in fall 2022, students in all high school grades can qualify for the grant at a TCAT (in contrast to 2-year and 4-year institutions, where students must be at least a high school junior to dual enroll), and may receive the grant for up to 1,296 clock hours in any TCAT program of study. Many TCAT diploma programs such as practical nursing, welding, and administrative office technology are designed to be exactly 1,296 clock hours (typically three trimesters of 432 hours each), which means the grant is designed to potentially cover the entire tuition for a full TCAT diploma program before high school graduation.

In addition, the Governor's Investment in Vocational Education (GIVE) Grants have invested $50 million in state grants since 2019 to communities to expand high school and TCAT partnerships for CTE-focused dual enrollment (Office of the Governor, 2024). Many of these partnerships have expanded TCAT faculty rosters and learning spaces at high schools, thereby greatly expanding the number of TCAT seats available to high school students.

In the K-12 policy area, the Tennessee Department of Education (TDOE) has long emphasized the value of Early Postsecondary Opportunities (EPSOs), including Advanced Placement (AP), International Baccalaureate (IB), and dual enrollment, through its ReadyGrad accountability metrics. More recently, TDOE has expanded this framework to emphasize workforce readiness by increasing student access to and awareness of industry-recognized credentials of value, work-based learning, and individualized advising as part of their FutureReadyTN Four Pillars Strategy.

TCAT dual enrollment is a key part of this initiative, and TDOE is working to collaborate with local industry to better align high school CTE coursework with TCAT dual enrollment programs to allow for seamless transitions into high-demand, high-wage careers.

Theoretical Framework and Methods

This study draws on theories of policy implementation to examine how school counselors and local conditions mediate students' TCAT dual enrollment opportunities and experiences. Specifically, we employ Lipsky's (1980) theory of street-level bureaucracy and Pressman and Wildavsky's (1973) implementation framework to understand how state-level policy goals are translated into local practice. Pressman and Wildavsky argue that policy outcomes are shaped not only by policy design but also by a complex chain of actors, decisions, and conditions. Building on this perspective, Lipsky argues that frontline practitioners exercise discretion when interpreting and enacting policy in the context of limited resources, competing priorities, and organizational constraints.

Together these frameworks help us view students' access to, enrollment in, and experiences with TCAT dual enrollment as not simply a function of state policy, but as the product of implementation processes through which their educational opportunities are interpreted, mediated, and enacted. To better understand these implementation processes, we conducted statewide surveys of both TCAT students and high school counselors. We leveraged the counselor branch of the Tennessee Educator Survey (TES), a confidential (but not anonymous) survey administered to all educators across the state each year. In 2025, 510 respondents identified themselves as high school counselors and responded to a series of questions on TCAT dual enrollment. We analyzed these responses based on school locale, self-reported caseload, and school size.

To incorporate students' perspectives, we developed a student survey in collaboration with an advisory board of TCAT presidents who volunteered to support survey design and recruitment. Respondents were required to be at least 18 years old and were recruited by TCAT staff or faculty using a variety of methods, including emails, flyers, and announcements during class or schoolwide events. Age requirements for survey eligibility limited our ability to gain the perspectives of any younger students currently dual-enrolled at TCATs, though 25% of respondents said they had taken TCAT dual enrollment during their freshmen or sophomore years of high school.

Anonymous survey responses were collected and managed using REDCap electronic data capture tools hosted at Vanderbilt University.[i] We received 1,382 responses from December 2025 through February 2026 that met our inclusion criteria of completing the initial screening questions. Because recruitment sites were based at TCATs, not high schools, 64% of these respondents had never taken TCAT dual enrollment; these students were asked a brief set of

questions about why they had not participated. The remaining respondents were given the full 5-minute survey that asked about their motivation, barriers, experiences, and outcomes related to their TCAT dual enrollment experiences. Responses were analyzed in the aggregate and by sub-groups like program of study.

We also conducted in-depth focus groups of high school counselors to understand how they serve as key street-level actors whose advising practices, perceptions of student fit, and responses to local logistical challenges shape how students learn about, access, and participate in CTE-focused dual enrollment pathways. We recruited focus group participants by directly emailing all high school counselors in the state using email addresses provided by THEC as well as posting on a statewide counselor newsletter. Forty-four high school counselors, many of whom also served as CTE coordinators or career coaches, participated in eight virtual focus groups in the spring of 2025. Participants represented urban, rural, and suburban settings, and all advised students participating in TCAT dual enrollment. While our sample may have overrepresented schools with more established TCAT partnerships or experience working with dual enrollment due to the focus of recruitment, there were several participants from schools with new and growing TCAT dual enrollment programs. Table 1 below demonstrates counselor and school characteristics for our focus group participants.[ii]

Table 1: Experience and School Characteristics of Counselor Focus Group Participants

	n	**%**
Counselor Characteristics		
Years of Experience		
First Year	4	9%
1-3 Years	9	20%
3 or More Years	31	70%
School Characteristics		
Locale		
Rural	18	43%
Town	8	19%
Suburban	3	7%
Urban	13	31%
School Size		
Small (<500 students)	9	22%
Medium (500-749 students)	6	15%
Large (750-1,249 students)	14	34%
Very Large (1,250+ students)	12	29%
Economically Disadvantaged Makeup		
Less than 15%	6	15%

15-40%	30	75%
More than 40%	4	10%

Focus groups lasted 60-90 minutes and followed a semi-structured protocol designed to elicit narratives about recruitment, advising, equity, barriers, and student experiences. Discussions were recorded and transcribed verbatim, and analytic memos supported theme development. Transcripts were analyzed through multi-cycle coding: first-cycle descriptive coding mapped responses to research questions and organized data into broad categories based on the protocol, and second-cycle pattern coding identified emergent themes within and across focus group discussions (Miles et al., 2018; Saldaña, 2021). Two researchers independently coded each transcript, resolving discrepancies through discussion.

Findings

This section organizes findings by research question and integrates findings from the focus groups and both the high school counselor and TCAT student surveys.

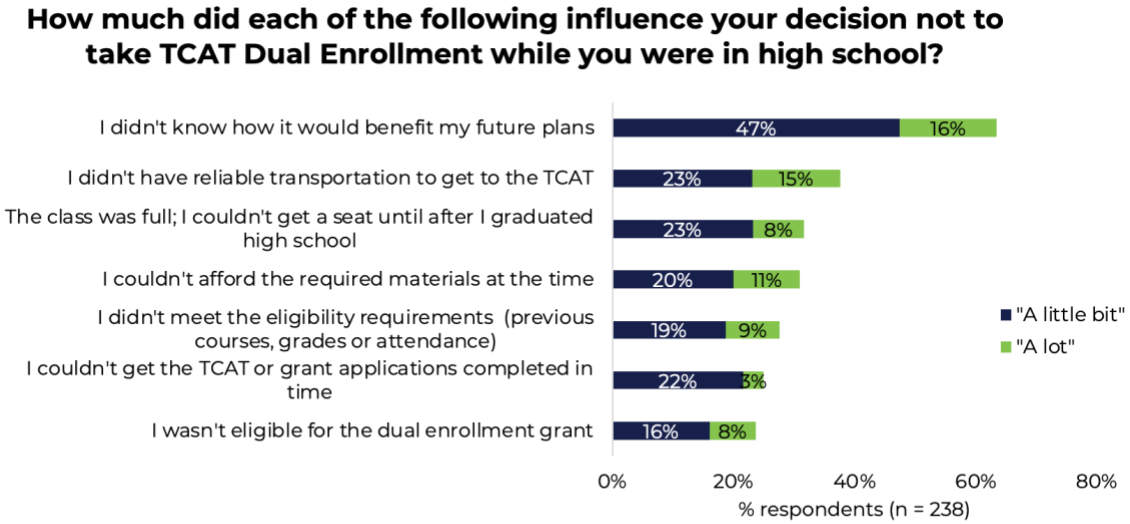
RQ 1: What practices are programs using to recruit, enroll, and support students in TCAT dual enrollment? What strategies are being used to encourage equitable student participation in TCAT dual enrollment for all students, particularly marginalized students?

TCAT dual enrollment recruitment, enrollment, and support practices varied based on each school's geography and strength of partnership with their local TCAT. Counselor survey respondents working in rural and town schools were far more likely to report that their school offered TCAT dual enrollment (91%) than schools in urban areas (66%). This may be influenced by proximity to TCAT campuses as well as the perception that technical trades are more highly valued in rural communities. As one counselor focus group participant put it, "I think we're really at an advantage that we have it so close here in town, and we do have those instructors here on campus. I think that's phenomenal" (Focus group A, Participant 2). About 90% of counselor survey respondents in rural areas agreed or strongly agreed that their students were aware of both TCAT dual enrollment programs of study and grant funding, compared to only around 70% of respondents in urban areas.

Because we limited student survey recruitment to students in current TCAT courses who were age 18 or older, the majority of survey respondents (64%) reported that they had never taken TCAT dual enrollment. Of these, 35% responded that TCAT dual enrollment was not available at their high school and an additional 34% responded that they did not know whether it was offered or not, indicating that students are less aware of TCAT dual enrollment offerings than counselors believe they are or awareness has increased in just the last couple of years since current TCAT students graduated from high school. The remaining 29% were asked a short series of questions

about why they did not take TCAT dual enrollment even though it was offered at their high school. **Figure 1** shows that the most frequently reported reason was that they did not know how it would benefit their future plans, followed by other practical barriers we address in the next section.

Figure 1: Reported Barriers to Taking TCAT Dual Enrollment



Counselors at schools with less TCAT familiarity described needing to "sell" the program to students through career fairs, parent nights, classroom visits, or middle school outreach because "they've not been exposed. They don't see the value" (Focus group A, Participant 1). Inviting TCAT staff representatives to speak to the high school students or scheduling visits for high school students to tour the TCAT campus was a powerful recruitment technique for these schools. "If I can get you in here [on a TCAT campus]," one counselor at a very small school described, "I can lure you in... because you get to talk to the professors. They tell you what the job is. They tell you what you're going to be doing. They tell you about students that have just graduated and how much money they're making, and that's a really big buy for them" (Focus group C, Participant 12).

Some schools automatically enroll students who are in CTE pathways into TCAT dual enrollment programs during their junior or senior years. At these schools, counselors will give priority to seniors to ensure they've completed the full pathway requirements necessary to graduate, and TCAT recruitment is often built into the registration process for the following academic year. At other schools, student interest is the primary driver for enrolling a student in TCAT courses or even adding a new program of study. One rural counselor explained that at his school, "no one is specifically targeted. They'll express an interest and we'll like kind of nudge them in that direction and say, this would be a great opportunity for you" (Focus group A, Participant 1). This approach builds in flexibility for students who may want to explore multiple

pathways; however, it also risks limiting access to students without familial exposure to trades or those who may not know to express their interest.

A common sentiment among focus group participants was that counselors know which students will be interested in and benefit from TCAT dual enrollment prior to engaging them with the program. Several counselors described TCAT participation as concentrated among students deemed "not academic," or "from working-class families." For these students, counselors "try to dangle the carrot of" TCAT dual enrollment programs for students who "hate school" or want to pursue their own interests (Focus group B, Participant 5). Student survey respondents confirmed that their most influential motivations for taking TCAT dual enrollment were the subject matter and the "hands-on" teaching style, followed closely by the skills they would learn and the chance to earn a good salary in that career path.

Counselors often spoke of the benefits of TCAT dual enrollment for academically underperforming and/or economically disadvantaged students, while also expressing awareness that this focus potentially reinforced tracking dynamics documented in CTE research. One counselor in a very small school admitted, "I can let you know which middle schools we don't need to go talk to, because that population of students are not looking for what we have here. Now there may be 3 or 4 or 5 [interested students], and they're certainly worth the effort. Don't get me wrong. But in your more affluent areas it is not," implying clear patterns of stratified participation by class and geography that some counselors felt powerless to overcome (Focus group C, Participant 12).

Counselors who sought to avoid such tracking based on academic ability, geography, or socioeconomic status expressed the importance of individualized advising to get to know their students' interests and goals rather than make assumptions about best fit. They also emphasized the importance of exposure to CTE and TCAT dual enrollment for all students, including students who are planning on pursuing 4-year college degrees. Because freshmen and sophomores are only eligible to use the Dual Enrollment Grant for TCAT courses and not other forms of postsecondary education, some schools see TCATs as an opportunity to get a head start on EPSO credits that qualify students for the ReadyGraduate accountability indicator. As one rural counselor explained, "Our 9th and 10th graders are highly encouraged to choose a TCAT path and take at least one high school course in that area" (Focus group C, Participant 10).

RQ2: What challenges do students, particularly marginalized students, face in enrolling and completing these courses?

Counselors identified several challenges that limited participation, including high demand for limited seats; costs for items such as transportation, tools, and equipment; and the administrative burden of complex application processes. Consistent with Lipsky's (1980) theory of street-level bureaucracy, these barriers were rarely experienced as isolated obstacles. Rather, counselors described continually interpreting, adapting, and mediating policy requirements on behalf of

students, particularly those from students previously underrepresented in dual enrollment, including younger students and academically underprepared students. Students themselves were less likely to report significant barriers during their dual enrollment experiences on our student survey, indicating the counselors may be succeeding in mitigating such barriers on their behalf.

Challenges to Enrollment

Competition for a limited number of TCAT dual enrollment seats was a predominant theme in all our counselor focus groups. From a street-level bureaucracy perspective, scarcity creates conditions under which frontline actors must make decisions about who receives access to opportunities and how those opportunities are allocated. Although counselors rarely described explicitly selecting which students should participate, they frequently found themselves navigating capacity constraints that limited access regardless of student interest.

As policy shifts have emphasized the importance of industry credentials and extended eligibility to 9th and 10th grade students, counselors reflected that demand for TCAT dual enrollment has surged in their schools. As one counselor noted, "they have not caught up with this explosion of the need that's out there. They're not prepared. And I know they're working. They're building new facilities. I know it's happening. But it's just not happening quick enough" (Focus group F, Participant 36). To meet this demand, many high schools are relying on their CTE faculty to become certified to teach a TCAT program on the high school campus. Fifty-five percent of students surveyed reported that they took their TCAT dual enrollment class(es) on their high school campus. While this arrangement can quickly scale the number of seats available to high school students, it is limited by the availability of qualified teachers working at the high school. Some counselors noted that even when qualified teachers are available, it is hard to pay them enough to take on the extra work of logging attendance, grades, and competency assessments through the TCAT system. As one counselor in an urban high school explained, "I've just heard that the compensation for doing that is sometimes not worth it" (Focus group A, Participant 2). Lack of space or proper facilities is another constraint that high schools face in offering TCAT dual enrollment on their campuses. "So far our biggest hurdle has been access to equipment and space and instructors that meet the criteria just at this time," another counselor in an urban area noted, "so that's kind of guided our choice to have programs that don't require a lot of equipment at this time definitely, something we're looking to change" (Focus group D, Participant 17).

TCAT campuses are equipped with more space, equipment, and faculty to offer a wider range of programs, but dual enrollment students there are often competing for seats with adult learners as well as high school students from multiple schools. This can vary by program and the strength of the partnership between the high school and TCAT. As one counselor in a rural area noted, "There's a big interest in welding with our students, but also in our community, so that there continues to be a wait list for that program....And we've talked to leadership at TCAT, and going forward, they're going to try to guarantee a certain number of seats for high school students. So that will be beneficial, for sure" (Focus group F, Participant 34). Another counselor said she faced reluctance to admit any dual enrollment student at her local TCAT, saying "they're really

hesitant or just flat out tell us, 'No', for sending kids there for almost any program" (Focus group H, Participant 44). Counselors noted that the scarcity of seats is not typically the case with academic dual enrollment: "If you want to do a dual enrollment with a community college, you can do it. Whereas with TCAT, you know, you can spend all this time applying, and then they don't have a seat and then you can't do it. So sometimes it is disheartening for the students" (Focus group F, Participant 34).

Another enrollment challenge counselors emphasized were the costs above and beyond the tuition covered by the Dual Enrollment Grant. Transportation was one barrier that counselors commonly cited if the classes were held on a TCAT campus, and 19.2% of student survey respondents marked transportation as somewhat or very difficult. Schools with several students making the same commute may provide buses, but counselors noted that this still required a lot of travel and waiting time for these students. At schools that could not provide busing, dual enrollment on TCAT campuses was limited to students who were old enough to drive and could afford the vehicle and the extra gas to travel there. Several counselors expressed a sentiment that this was a reasonable expectation to make of students preparing to enter the workforce. As one put it, "Transportation is definitely an issue. You know, we have addressed that to some degree. But there comes a point where that student's going to have to have transportation for a job, or to do some type of work experience, internship, or something like that" (Focus group C, Participant 8). Others recognized that such an expectation made TCAT dual enrollment less feasible for the economically disadvantaged students that they perceived were the most interested and most likely to benefit from the opportunity.

Similarly, counselors reported that certain TCAT programs require a significant investment in equipment (e.g., steel-toed boots), textbooks, or tools that can be an insurmountable barrier for some students. Thirty-one percent of student survey respondents reported that "getting the necessary tools and equipment" was a somewhat or very difficult aspect of their TCAT dual enrollment experience. The same percentage of students indicated this challenge was a contributing factor to why they never took TCAT dual enrollment even though it was offered at their school. One counselor in a very large high school reflected that "for some families, $500 for a kit to get started, like, 'Oh, sure.' But for 90% of the kids in that program, that is a lot of money. And so we're constantly like looking for donations, trying to connect with our CTE department to see if they can cover the cost of any of the tools and equipment. So that consistently has been a really big obstacle for our kids" (Focus group G, Participant 40). This was reported as a larger barrier for counselors at schools that are growing their TCAT dual enrollment offerings and have had less time to collect shared resources or develop a protocol to support students in this way. At schools with long-standing partnerships with TCATs, counselors were more likely to place the onus of obtaining equipment on the school than the individual student: "If our seniors are going to TCAT, they have everything that they need. If they don't, they can come and tell us, and we will find it for them, we will figure out a way to get it for them," one counselor explained (Focus group B, Participant 3). Consequently, access to TCAT

dual enrollment depended in part on the resources available within local implementation contexts rather than solely on student interest or eligibility.

There is also a significant administrative burden to completing the Dual Enrollment Grant application and TCAT admission application. Counselors described the process as labor-intensive, requiring each student to submit applications on two different online portals, including a parent signature and the student's social security number. Although only about one-third of student survey respondents said that the Dual Enrollment Grant application (38%) or the TCAT admissions application (34%) were "very" or "somewhat" difficult, 63% reported that their high school counselor or CTE coordinator helped them enroll, indicating that these school support staff are taking up a large share of the administrative burden. Lipsky (1980) contends that frontline workers often absorb the practical burdens associated with implementing public policy. In this case, counselors functioned as intermediaries between students, families, high schools, TCATs, and state systems, assuming responsibility for navigating application procedures that many students would struggle to complete independently.

Counselors reported that the complexity of this process especially felt "daunting" to students with limited digital literacy, English learners, and students with IEPs. These issues have compounded as more 9th and 10th grade students sign up for TCAT dual enrollment. As one counselor put it, "They're little. They don't know their social security numbers. They don't know their parents' emails" (Focus group B, Participant 3). In addition, undocumented students, who typically do not have a social security number, are ineligible for the Dual Enrollment Grant. While we did not ask for immigration status explicitly in our survey, 24% of respondents said being ineligible for the Dual Enrollment Grant factored a "little bit" (16%) or "a lot" (8%) into their decision not to take TCAT dual enrollment even though it was offered in their high school (Figure 1), and immigration status may have been a reason for ineligibility.

Further, completing the applications is only the first step: "We do a lot of clean-up throughout the semester to make sure these kids are able to officially get the credit," according to one counselor (Focus group D, Participant 19). For many counselors in the focus groups, this burden felt almost untenable: "The paperwork is, like everyone is saying, it's ridiculous. Like, there's so much paperwork, and it has to be perfect or else people get bills and people get upset. And then well, I don't even want to do this anymore, because it's just too much" (Focus group D, Participant 18). Several counselors reported that this administrative work to support TCAT dual enrollment often supplants the other counseling tasks they are expected to do throughout the year. These accounts illustrate a central insight of street-level bureaucracy theory: frontline workers frequently face competing demands that exceed available time and resources. As counselors assumed responsibility for complex enrollment procedures, they described making difficult decisions about how to allocate their limited attention across competing student needs.

The timing of these activities varied by school: some counselors reported being able to enroll students in TCAT dual enrollment the semester prior, others were told by their TCAT partners

that they had to wait until the TCAT trimester began. This left a hole in students' schedules that had to be filled with a placeholder course and a teacher of record while students and counselors waited for each step in the registration process to "roll over." One participant in our focus group detailed the process extensively, from entering students into the roster, putting them into the system, completing the applications, confirming and attributing the application, and finally registering them for the class. She explained, "So if your students are not doing their ticket application until the beginning of the semester, then it's going to take at least 3 days to get them in the system, and that's if you don't have a hundred other fires to put out at the same time" (Focus group E, Participant 25). Such comments underscore how policy implementation depends not only on formal procedures but also on the organizational capacity of those charged with carrying them out. Counselors consistently described balancing TCAT dual enrollment responsibilities alongside numerous other obligations, suggesting that students' access to opportunities may be influenced by implementation capacity as much as by policy intent.

Challenges to Program Completion

While enrollment barriers limited students' initial access to TCAT dual enrollment, counselors emphasized that implementation challenges did not end once students entered a program. Instead, many of the same factors identified by Lipsky (1980)—resource constraints, competing demands, and the need for ongoing mediation by frontline staff—continued to shape students' ability to persist and complete their programs of study. Counselors highlighted a tension between the perception that TCAT dual enrollment is a good EPSO option for less academically prepared students—students with IEPs, English learners, students who are falling behind, or younger students—and the actual rigor of the coursework, attendance and exam requirements, and sustained effort needed to complete a program of study.

Attendance requirements are stricter at TCATs than at the high school level. Due to the hands-on nature of instruction, TCAT policy allows very few absences per trimester, and missing more than a specific, low number of days or hours (which varies by program) can lead to failing grades or automatic termination from the program. For many high school students, especially students who struggle in traditional academic settings or students providing their own transportation to class, the expectation for near-perfect attendance is hard to meet. Eighteen percent of student survey respondents said "attending class enough to meet TCAT requirements" was somewhat or very difficult. Counselors reported seeing students "kicked out because of attendance without even realizing the policy or that they were close to the allowed limit" (Focus group C, Participant 8). Several expressed frustration with a lack of communication about attendance when their students were enrolled on a TCAT campus, saying they did not learn about the issue until it was too late.

Some students are also challenged by the early academic benchmarks that many TCAT programs of study require, such as OSHA safety certification. Getting through that certification point requires more traditional instruction and assessment, which some students did not expect from a TCAT course and struggled to overcome. One counselor explained, "Now I've seen this a lot

with our automotive class that they think they can just jump in and start working. But you have to do like safety test, and then some of them don't want to do that. And if you don't pass the safety test, or they refuse to take the safety test, they have to come out of that class because they won't be able to go in the shop and do the work. A lot of them don't understand that they have to get these certifications first before they can start doing it" (Focus group D, Participant 15). Forty percent of student survey respondents said passing required exams was "somewhat" difficult and 3% said it was "very difficult," far higher than any other potential barrier to completion we asked about.

Even for students who are able to pass these benchmarks and maintain good attendance, many find it difficult to complete the number of clock hours toward a TCAT certificate or diploma before high school graduation. Despite a recent change that made 9th and 10th grade students eligible for the Dual Enrollment Grant at TCATs, limited course capacity and prerequisites often prevent student from starting early enough to maximize the grant offering or finish a program. In contrast to dual enrollment at 2- or 4-year colleges, TCAT dual enrollment is less commonly used as a substitution for high school graduation requirements such as English or math.[iii] Several counselors reported, therefore, that students at their schools are expected to complete other graduation requirements before they can build room in their schedule for the longer course blocks or travel time required by TCAT dual enrollment.

Counselors noted that for students who do not complete a full program, their dual enrollment clock hours do not always transition seamlessly to a TCAT after high school. One counselor explained, "Our TCAT has said that it doesn't align enough for them to warrant us giving hours, even though our kids are getting certifications here and all kinds of stuff. So there's just certain programs where it doesn't seem to align as well...They still get dual enrollment, of course, for the year, but if they wanted to go to TCAT they've barely knocked anything off the hours of the program for TCAT" (Focus group H, Participant 43). Other counselors expressed this more in terms of the need for students to demonstrate basic competency in the skills they learned while in high school: "So even if that [clock hours] crosswalk isn't exact, if they can still show proficiency, they can basically test out....And if when they get there they're not proficient, they're still having to backtrack....So we're just real clear with our students up front that when you go to that program you do have to show proficiency, even if you have X number of hours" (Focus group H, Participant 42). These variations suggest that policy implementation is shaped not only by formal rules but also by the discretion of local actors and institutions responsible for interpreting and applying them. As a result, students' ability to translate dual enrollment coursework into progress toward a TCAT credential may depend as much on local implementation practices or TCAT-high school relationships as on statewide policy design.

RQ3: What advising models work best for TCAT dual enrollment students and specifically for underrepresented students (e.g., students with IEPs, economically disadvantaged students, 9th grade students), and how can they be scaled? Is TCAT dual enrollment changing how high school counselors advise students for participation in dual enrollment?

As policymakers in Tennessee have increasingly emphasized the importance of EPSOs and seamless postsecondary transitions for all high school students, counselors have responded by adopting more individualized, pathway-oriented advising models. To counselors in our focus groups, this shift felt especially salient for TCAT dual enrollment students, who need to start early if they want a chance to earn an industry certificate or credential before graduating high school. This requires more intentional planning, according to counselors, rather than selecting courses at random with no clear connection to career.

Almost all the counselors in the focus groups reported that they rely on career and aptitude testing from 8th grade, as well as tools like each student's High School and Beyond Plan.[iv] As one explained, "we're trying to get them to look at what their aptitudes are and use their aptitudes to steer them toward career clusters that they would be interested in" (Focus group B, Participant 7). Counselors and career coaches will use this early information to map out a structured pathway for each student, including any required prerequisites for advanced courses, in alignment with their long-term goals. Often, the counselors repeat this process multiple times with each student: "So I'll sit down with each one of my individual students from 9th through 12th grade. We look at their graduation checklist and we talk about, 'What are you wanting to do in your future? What are your goals?'" (Focus group B, Participant 7).

Periodic check-ins with students over time allowed counselors to balance intentional pathway-mapping with some flexibility around changing student preferences. Several had stories about the importance of trying out a career in a low-stakes way, like one counselor who said, "I've had several students come back to me and say, I'm so glad I did dual enrollment in welding, because I realize that's not what I want to do for the rest of my life. But I want to do computers, or I want to do nursing or something else" (Focus group C, Participant 8).

Other advising models that came up, though less frequently, in our focus groups were near-peer mentoring and team-based approaches. Near-peer models rely on upperclassmen or alumni to mentor or assist younger participants through application processes, academic expectations, and time management strategies. Counselors in our focus groups were most likely to report using near-peers for recruitment into TCAT dual enrollment, such as during events like CTE fairs: "When we have that CTE fair, we take our upper-level juniors and seniors and set up tables and displays. And then our 8th graders get to walk through. So you've got students talking to students about programs. That's a huge selling point, I think, for a lot of students. It gains a lot of interest that way" (Focus group B, Participant 7).

Team-based advising models employ specialized career coaches, CTE coordinators, and college liaisons to help counselors with dual enrollment eligibility and logistics, tracking credit and credential outcomes, and postsecondary transitions. Only some counselors we spoke to had access to such teams and often shared them with other schools in their district. One particular moment during a focus group highlighted the value such team members can play: when a participant who was serving as the career coach for her district mentioned that she has helped TCAT dual enrollment students articulate[v] their clock hours into community college credits after high school graduation, no other participants in the group had heard that was possible. We continued to ask all the remaining focus groups about this new, but publicly available, information, but no other participants were familiar with it, highlighting the importance of the specialized knowledge that additional team members such as career coaches can bring to the table.

Counselors with strong TCAT partnerships or TCAT liaisons as part of their team spoke highly of the role that TCAT staff played in facilitating enrollment logistics. One counselor, comparing herself to other participants in the focus group, said, “I guess we are lucky. Our TCAT has someone who comes to the school and guides the students in completing the grant and paperwork. But we are a small school” (Focus group C, Participant 10). Among the TCAT students we surveyed, 36% percent reported that a TCAT staff member helped them complete the necessary applications, which indicates that investing in additional TCAT supports could reduce the administrative burden for both counselors and students.

Effective advising models for TCAT dual enrollment therefore go beyond course placement and instead emphasize intentional alignment with career pathways, proactive planning, near-peer relationships, and cross-institutional coordination. These techniques are especially important for underrepresented students, who face additional barriers enrolling in and completing a program of study.

RQ4: What is the relationship between enrollment and intensity of TCAT dual enrollment and student experience, including curriculum engagement and belief in the ability to succeed in postsecondary education?

Counselor focus groups and student survey responses illuminated several benefits of TCAT dual enrollment in terms of student motivation, identity, and postsecondary self-efficacy. These benefits accrue to high school students while they are dual enrolled as well as after they have graduated from high school and transitioned to their chosen postsecondary path.

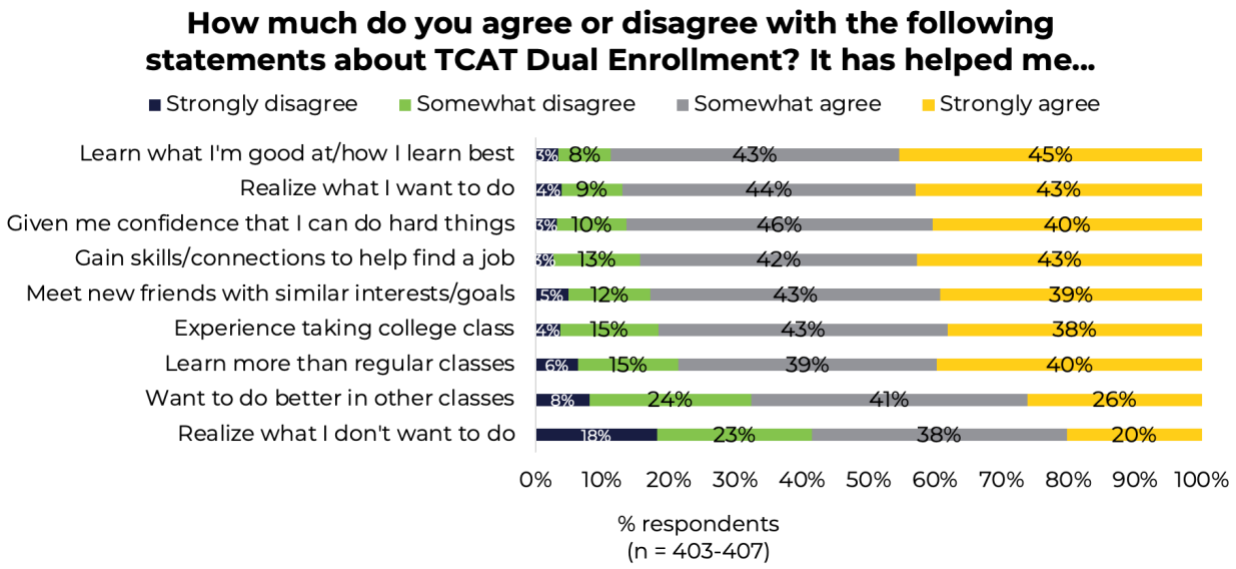
A common theme among the counselor focus groups was the benefit of the hands-on learning style inherent to TCAT dual enrollment coursework. Several counselors expressed the sentiment that this served as a "carrot" that helped students stay engaged in their required high school classes. As one counselor in a rural area expressed, “I think it saves some of those kids. I mean,

it's a deal breaker for some of them to actually make it through high school, just knowing that they have these fun classes. You know things that they're actually interested in, and to occupy their hands, not just their mind" (Focus group B, Participant 5).

Many counselors observed that hands-on instruction was not just valuable to struggling students but students of all academic abilities as a different way to develop skills and build rigor. One participant described a recent graduate who credited his machinist TCAT dual enrollment coursework as a reason he got accepted into an elite university's engineering program. Another counselor observed that TCAT dual enrollment students at her school were more likely to subsequently enroll in academic dual enrollment and pursue college-bound pathways. Nine percent of student survey respondents said they were planning to enroll in a 4-year college or university after completing their current TCAT course. For students like this, TCAT clock hours may not transfer to their chosen institutions, but the skills and exposure are invaluable. As one focus group participant put it, "Now, credits are great, and if you decide to go down that path, then that can certainly help and be beneficial. And if it transfers somewhere, then that's awesome. But really, it's exposure" (Focus group F, Participant 34).

More than 85% of student survey respondents agreed or strongly agreed that TCAT dual enrollment helped them learn what they are good at or how they learn best, realize what they want to do, and gain confidence they can do hard things (see Figure 2). In responding to the open-ended question, "How has your TCAT Dual Enrollment experience changed your college and/or career goals?" about 70% responded positively and another 20% indicated it did not significantly change their goals, often because they had already decided on a career pathway prior to enrollment. For example, as one student articulated, "My TCAT dual enrollment experience has helped me see a clear path toward a hands-on career instead of just guessing what I want to do after high school. It showed me that I learn best by doing, and it gave me real skills that apply directly to the workforce. Because of this experience, my college and career goals are more focused on gaining practical training and certifications that lead to a stable, long-term career."

Figure 2.



Counselors in focus groups echoed this finding that TCAT dual enrollment boosted students' self-efficacy and sense of accomplishment. This confidence often builds over time: “They’re a little intimidated at first, but then once they get going, they start thriving, and then they gain so much confidence from it, because they finally kind of realized, ‘Oh, I am smart! I am capable of doing this!’” (Focus group E, Participant 25). One counselor described how TCAT dual enrollment often became students’ “thing” like sports, but instead of varsity jackets, students will proudly wear their scrubs or welding jackets to school.

This sense of accomplishment and belonging extends to their postsecondary ambitions as well. As one counselor pointed out, “I think the confidence they gain from taking college-level courses in high school is really beneficial for them to say, ‘I’m gonna graduate from TCAT, you know, probably pretty quickly...and I’m going to go straight into the workforce with a credential and a certificate that is going to make me capable of supporting a family someday’” (Focus group C, Participant 11). Further, the exposure to the enrollment and financial aid applications required for TCAT dual enrollment, as well as the exposure to a TCAT campus for those who take dual enrollment off-campus, can make that transition less intimidating during and after their senior year.

Although most counselors acknowledged that their school did not systematically track students’ progress after graduation, they perceived smoother transitions into TCATs after graduation for students who began through dual enrollment. As one counselor put it, “in my experience, I feel like the ones who start as dual enrollment students have a 99.9% chance of completion, because TCAT knows them. They know how to contact them. The wheels have been greased” (Focus group F, Participant 29).

For these students, TCAT dual enrollment saves time and money they would otherwise need to invest in their chosen career path. Even for students who do not finish a program of study, many have earned clock hours and basic certifications like OSHA 10, which can boost a resume and show employers that the student is “acclimated to go straight to work” (Focus group C,

Participant 13). Additionally, many TCAT dual enrollment students become connected to high-demand, high-wage employers in their communities through their TCAT professors, internships, and industry partnerships. At one very large high school, a counselor explained: “A number of our advanced kids here at [our school], we line them up for work-based learning programs their senior year with local employers. So those local employers may get them and give them a job and train them, and they may never go to a TCAT school because of that, but because they took the dual enrollment through TCAT that enabled them to get into the workforce faster” (Focus group D, Participant 19).

Fifty-one percent of student survey respondents said they will pursue full-time employment after completing the TCAT course they are currently enrolled in, while 24% said they would continue to finish the program of study at the TCAT. These findings indicate that regardless of a student’s chosen postsecondary pathway—continuing at a TCAT, transferring to a 2- or 4-year institution, or directly entering the workforce—TCAT dual enrollment provides clear benefits for students’ self-efficacy, readiness, and exposure to the next phase of their life. As one counselor summarized, “I mean, it changes lives. Especially if you can graduate at the same time with that certificate or diploma, and not have any debt to pay back, and you’ve made them instantly employable out in the job market....I mean, it’s unmatched what can be offered” (Focus group C, Participant 12).

Discussion

These findings, elicited from 48 counselor focus group participants, 510 counselor survey respondents, and 1,382 student survey respondents, reveal both the promise of TCAT dual enrollment and opportunities for improvement. The clear findings of improved self-efficacy and postsecondary identity development seen from both counselors’ and students' perspectives contributes new evidence about the non-academic benefits of CTE-focused dual enrollment, including forms of rigor, skills development, and engagement that are not captured in traditional college readiness metrics.

We also clarified the many ways TCAT dual enrollment operates differently from academic dual enrollment, and thus requires strategic, intentional advising models to ensure equitable access. For example, TCAT dual enrollment students face more limited seat capacity, stricter attendance requirements, and higher non-tuition expenses than academic dual enrollment. To overcome these structural barriers, all students, but especially those in marginalized groups, need advising teams of counselors, CTE coordinators, and career coaches that can help them start early to explore and define their postsecondary pathway, navigate admissions and credit transfer processes, and meet any additional needs such as equipment or transportation.

Applying street-level bureaucracy theory, our findings suggest that these advisors function as critical intermediaries in the implementation of TCAT dual enrollment policy. Their work extends far beyond providing information about available programs. Counselors actively interpret eligibility requirements, help students navigate administrative systems, identify

resources to offset financial barriers, coordinate with TCAT partners, and monitor student progress. Consequently, access to and success in TCAT dual enrollment are shaped not only by state policy but also by local implementation capacity and the discretionary actions of frontline educators.

High school staff need not stand as the only frontline workers in this advising framework: they must have a strong partnership with their TCAT for their dual enrollment students to be properly supported. This includes making accommodations for the different schedules, constraints, and needs of dual enrollment students that may run counter to typical TCAT policies for adult learners. For example, some strong high school-TCAT partnerships reserve seats for dual enrollment students and register them far in advance, so high school schedules can be set the semester prior. Another example is when TCAT staff come to high school campuses for recruitment and application support, so the administrative burden is not borne entirely by the high school counselor or the students themselves. Lastly, better communication from TCAT faculty or staff about student progress and attendance throughout the trimester can help high school staff scaffold supports for TCAT dual enrollment students, especially students who are younger or less academically prepared.

Policymakers and practitioners can also help reduce structural barriers for TCAT dual enrollment students. At the local level, policymakers should consider allowing students to begin on a TCAT dual enrollment pathway as early as 9th grade, as long as they are concurrently making adequate progress on core graduation requirements. Districts should also continue to fund dedicated career advising positions that can help liaise with TCATs, other postsecondary institutions, and local industry. State policymakers can help to simplify the Dual Enrollment Grant application and continue to expand the number of seats for high school students in high-demand TCAT programs.

In conclusion, CTE-focused dual enrollment represents a promising but understudied pathway that expands postsecondary options beyond traditional academic routes. In Tennessee, TCAT dual enrollment offers opportunities for credential attainment, workforce preparation, and increased postsecondary self-efficacy. Ensuring equitable access will require addressing structural barriers, strengthening advising infrastructure, and integrating CTE-focused dual enrollment into broader higher education research and policy.

Endnotes

i. REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for data integration and interoperability with external sources (Harris, P.A., *et al.*, 2009; 2019).

ii. School size categories were created based on classifications by the Tennessee Secondary School Athletic Association. Small schools enroll less than 500 students. Medium schools have between 500 and 749 students. Large schools have between 750 and 1,249 students. Very large schools enroll 1,250 or more students.

iii. State Board of Education (SBE) Graduation Substitutions Policy (3.103) allows Local Education Agencies (LEAs) and postsecondary institutions to determine if postsecondary standards are appropriate to award high school general education credit. In most instances, high schools have awarded high school credit for TCAT dual enrollment as fulfillment of an elective credit or credit issued as part of a CTE pathway. For state guidance on course substitutions for TCAT dual enrollment, click here.

iv. Tennessee State Board of Education rules began requiring all students to complete a High School and Beyond Plan in the 2023-24 school year. More information on HSBPs can be found here.

v. Articulation refers to the process of converting TCAT clock hours into college credit in an aligned program at a community college upon successfully completing a qualified program at a TCAT and/or earning recognized industry certification(s). For more guidance from TBR, click here.

References

Brand, B., Valant, A., & Browning, A. (2013). *How Career and Technical Education Can Help Students Be College and Career Ready: A Primer.* College & Career Readiness & Success Center at American Institutes for Research. Retrieved from: https://files.eric.ed.gov/fulltext/ED555696.pdf.

Brookover, D. L. (2021). Access to school counseling and the connection to postsecondary STEM outcomes. *The Professional Counselor, 11*(4), 383-399.

Brunner, E. J., Dougherty, S. M., & Ross, S. L. (2023). The effects of career and technical education: evidence from the Connecticut Technical High School System. The Review of Economics and Statistics, 105(4), 867-882. https://doi.org/10.1162/rest_a_01098

Bryan, J., Young, A., Griffin, D. C., & Henry, L. (2015). Preparing students for higher education: How school counselors can foster college readiness and access. In J. L. DeVitis & P. Sasso (Eds.). *Higher Education and Society.* New York, NT: Peter Lang.

Carruthers, C. K., Dougherty, S., Goldring, T., Kreisman, D., Theobald, R., Urban, C., & Villero, Jesús. (2024). Careers and technical education alignment across five states. *AERA Open, 10*(1), 1-19. https://doi.org/10.1177/23328584241276504

Castellano, M., Sundell, K. E., Overman, L. T., Richardson, G. B., & Stone III, J. R. (2014). *Rigorous Tests of Student Outcomes in CTE Programs of Study: Final Report.* National Research Center for Career and Technical Education. Retrieved from: https://files.eric.ed.gov/fulltext/ED574506.pdf

Dougherty, S. M. (2018). The effect of career and technical education on human capital accumulation: causal evidence from Massachusetts. Education Finance and Policy, 13(2), 119-148. https://doi.org/10.1162/edfp_a_00224

Dougherty, S. M. (2016). Career and Technical Education in High School: Does It Improve Student Outcomes? Thomas B. Fordham Institute, Washington, DC.

Edmunds, J. A., Unlu, F., Phillips, B., Mulhern, C., & Hutchins, B. C. (2024). CTE-Focused Dual Enrollment: Participation and Outcomes. Education Finance and Policy, 19(4), 612–633. https://doi.org/10.1162/edfp_a_00414

Fink, J. & Jenkins, D. (2023). Rethinking Dual Enrollment as an Equitable On-Ramp to a Career-Path College Degree Program After High School. Community College Research Center, Columbia University.

Francis, D. V., de Oliveira, A. C. M., & Dimmitt, C. (2019). Do school counselors exhibit bias in recommending students for advanced coursework? *The B.E. Journal of Economic Analysis & Policy, 19*(4). DOI: 10.1515/bejeap-2018-0189.

Gentry, M., Peters, S. J., & Mann, R. L. (2007). Differences between general and talented students' perceptions of their career and technical education experiences compared to their traditional high school experiences. *Journal of Advanced Academics, 18*(3), 372-401.

Giani, M. S. (2019). Does vocational still imply tracking? Examining the evolution of career and technical education curricular policy in Texas. *Educational Policy, 33*(7), 1002-1046. https://doi.org/10.1177.0895904817745375.

Gottfried, M. A. & Plasman, J. S. (2018). Linking the timing of career and technical education coursetaking with high school dropout and college-going behavior. American Educational Research Journal, 55(2), 325-361. DOI: 10.3102/0002831217734805

Gray, L. & Lewis, L. (2018). Career and Technical Education Programs in Public School Districts: 2016-17: First Look (NCES 2018-028). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved 12/2/25 from https://nces.ed.gov/pubsearch

Harris, P.A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., Conde, J.G. (2009). Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research informatics support, J Biomed Inform, 42(2): 377-81.

Harris, P.A., Taylor, R., Minor, B.L., Elliott, V., Fernandez, M., O'Neal, L., McLeod, L., Delacqua, G., Delacqua, F., Kirby, J., Duda, S.N. (2009) The REDCap consortium: Building an international community of software partners, J Biomed Inform. 2019 May 9 [doi: 10.1016/j.jbi.2019.103208]

Hemelt, S. W., Lenard, M. A., & Paeplow, C. G. (2019). Building bridges to life after high school: Contemporary career academies and student outcomes. Economics of Education Review, 68, 161-178. DOI: 10.1016/j.econedurev.2018.08.005

Hemelt, S. W., Schwartz, N. L., & Dynarski, S. M. (2020). Dual-credit courses and the road to college: Experimental evidence from Tennessee. Journal of Policy Analysis and Manageument, 39(3), 686-719. DOI: 10.1002/pam.22180

Hemelt, S. W. & Swiderski, T. (2022). College comes to high school: Participation and performance in Tennessee's innovative wave of dual-credit courses. Educational Evaluation and Policy Analysis, 44(2), 313-341. DOI: 10.3102/01623737211052310

Hodge, E., Dougherty, S., & Burris, C. (2020). *Tracking and the Future of Career and Technical Education: How Efforts to Connect School and Work Can Avoid the Past Mistakes of Vocational Education.* Boulder, CO: National Education Policy Center. Retrieved March 30, 2026 from http://nepc.colorado.edu/publication/cte.

Johnson, J. M., Paris, J. H., Curci, J. D., & Horchos, S. (2024). Beyond college access: An exploration of the short-term impact of a dual enrollment program. *Journal of College Student Retention: Research, Theory, & Practice, 26*(1), 41-63.

Karp, M. M., Calcagno, J. C., Hughes, K. L., Jeong, D. W., & Bailey, T. R. (2007). The postsecondary achievement of participants in dual enrollment: an analysis of student outcomes in two states. Community College Research Center, Teachers College, Columbia University.

Kim, Y., Biswas, S., Creed, B., & Malete, L. (2025). Navigating the path to college: The impacts of dual enrollment on postsecondary access. Research in Higher Education, 66(45), 1-22. https://doi.org/10.1007/s11162-025-09865-3

Lile, J. R., Ottusch, T. M., Jones, T., & Richards, L. N. (2018). Understanding college-student roles: Perspectives of participants in a high school/community college dual-enrollment program. *Community College Journal of Research and Practice, 42*(2), 95-111.

Linnehan, F., Weer, C. H., & Stonely, P. (2011). High school guidance counselor recommendations: The role of student race, socioeconomic status, and academic performance. *Journal of Applied Social Psychology, 41*(3), 536-558.

Lipsky, M. (1980). Street-level bureaucracy: Dilemmas of the individual in public services. Russell Sage Foundation.

Liu, A. Y. & Burns, L. (2020). Public High School Students' Career and Technical Education Coursetaking: 1992 to 2013, NCES 2020-010. Institute of Education Sciences, U.S. Department of Education.

Liu, V. Y. T., Minaya, V., Zhang, Q., & Xu, D. (2020). High School Dual Enrollment in Florida: Effects on College Outcomes by Race/Ethnicity and Course Modality – Summary Research Report. Community College Research Center, Columbia University.

Liu, V. Y. T., Minaya, V. & Xu, D. (2025). The impact of dual enrollment on college application choice and admission success. The Journal of Higher Education, DOI: 10.1080/00221546.2025.2521198

Locker, R. (2023). "Dual enrollment of high school students in Tennessee's community & technical colleges increased 68 percent since 2015" Tennessee Board of Regents press release, 03/30/2023. Retrieved from https://www.tbr.edu/news/dual-enrollment-high-school-students-tennessee%E2%80%99s-community-technical-colleges-increased-68 on 2/10/26.

Luby, S. (2026). College vs. career school counseling: How role differentiation shapes student postsecondary expecations and outcomes. *Journal of College Access, 11*(2). Retrieved from: https://scholarworks.wmich.edu/jca/vol11/iss2/5

Miles, M. B., Huberman, A. M., & Saldaña, J. (2018). Qualitative data analysis: A methods sourcebook. SAGE Publications.

Moreno, M., McKinney, L., Burridge, A., Rangel, V. S., & Carales, V. D. (2021). Access for whom? The impact of dual enrollment on college matriculation among underserved student populations in Texas. Community College Journal of Research and Practice, 45(4), 255-272. DOI: 10.1080/10668926.2019.1688734

Mulhern, C. (2023). Beyond teachers: Estimating individual school counselors' effects on educational attainment. *American Economic Review, 113*(11), 2846-2893. https://doi.org/10.1257/aer.20200847

Office of the Governor (2024, August 28). Gov. Lee Awards GIVE Grants to Further Strengthen Rural Workforce Development [press release]. https://www.tn.gov/governor/news/2024/8/28/-gov--lee-awards-give-grants-to-further-strengthen-rural-workforce-development-.html

Passarella, A. (2018). Policy Brief: The Necessary Components of an Effective Career and Technical Education (CTE) Program. Johns Hopkins School of Education, Institute for Education Policy.

Pressman, J. L., & Wildavsky, A. B. (1973). Implementation: How great expectations in Washington are dashed in Oakland; or, Why it's amazing that federal programs work at all. University of California Press.

Rivera, L. E., Kotok, S., & Ashby, N. (2019). Access to dual enrollment in the United States: Implications for equity and stratification.Texas Education Review, 7(2), 14-29. http://dx.doi.org/10.26153/tsw/2282

Rodríguez, O., Hughes, K. L., & Belfield, C. (2012). Bridging College and Careers: Using Dual Enrollment to Enhance Career and Technical Education Pathways. (NCPR Working Paper). National Center for Postsecondary Research.

Ross, N. M. V. & Hemelt, S. W. (2023). Banking on dual credit: Broadening opportunities to earn college credit in high school and the transition to college. Educational Researcher, 53(1), 36-45. DOI: 10.3102/0013189X231195345

Ryu, W., Schudde, L., & Pack-Cosme, K. (2024). Dually noted: Examining the implications of dual enrollment course structure for students' course and college enrollment outcomes. American Education Research Journal, 61(4), 803-841. DOI: 10.3102/00028312241257453

Saldaña, J. (2021). The coding manual for qualitative researchers. SAGE Publications.

Schaller, T. K., Routon, P. W.., Partridge, M. A., & Berry, R. (2025). A systematic review and meta-analysis of dual enrollment research. Journal of College Student Retention: Research, Theory & Practice, 27(1), 263-289. https://doi.org/10.1177/15210251231170331

Sciarra, D. T. & Ambrosino, K. E. (2011). Post-secondary expectations and educational attainment. *Professional School Counseling, 14*(3).

Shivji, A. & Wilson, S. (2019). Dual enrollment: Participation and characteristics (NCES 2019-176, Data Point). National Center for Education Statistics. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2019176

Stevens, A. H., Kurlaender, M., & Grosz, M. (2019). Career technical education and labor market outcomes: Evidence from California community colleges. The Journal of Human Resources, 54(4), 986-1036. DOI: 10.3368/jhr.54.4.1015.7449R2

Taie, S. & Lewis, L. (2020). Dual or concurrent enrollment in public schools in the United States (NCES 2020-125, Data Point). National Center for Education Statistics. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020125

U.S. Department of Education. (2017). Secondary Career and Technical Education: Differences in Access, Participation, and Outcomes in Two National Studies. Office of Career, Technical, and Adult Education, Washington, D.C.

Vannest, R. J., Grey, L. D., Vannest, J. L., & Smith, J. B. (2023). Systemic racism and implicit bias influencing US school counseling. *International Journal for the Advancement of Counseling, 45,* 594-612. DOI: 10.1007/s10447-023-09527-y

Woods, C. S. & Domina, T. (2014). The school counselor caseload and the high school-to-college pipeline. *Teachers College Record, 116*(10).

Zinth, J. D. (2014). CTE Dual Enrollment: A Strategy for College Completion and Workforce Investment. Education Commission of the States.