

Career and Technical Education for Students with Emotional Disturbance

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Abstract

This policy proposal is for a demonstration of career and technical education (CTE) for students with emotional disturbance (ED) using guidance from the Translating Evidence to Support Transitions in Career and Technical Education program (TEST-CTE). Various federal agencies have mechanisms for supporting a TEST-CTE demonstration and an impact evaluation focused on diversion from employment and disability benefits. TEST-CTE would help states and districts satisfy their obligations under federal laws including the Strengthening Career and Technical Education for the 21st Century Act, the Workforce Innovation and Opportunity Act, and the Individuals with Disabilities Education Act.

Youth with ED lag other students with disabilities in their high school completion and postsecondary education and employment, and they rely heavily on disability benefits. CTE is federally supported, widely available, and associated with improved postsecondary outcomes for students with ED who take a concentration of CTE credits. Focusing on students with ED, the TEST-CTE guide directs special educators to assist students in (1) exploring careers, (2) formulating a postsecondary career goal in an in-demand industry, (3) developing an individualized education program (IEP) that identifies four credits of CTE aligned with that goal, (4) obtaining work-based learning experiences, and (5) addressing and mitigating challenges with acquiring CTE credits. These activities can occur either for special education students through their IEP or for general education students through the individualized learning plan process.

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I. Introduction

Career and technical education (CTE) offers students opportunities for career-oriented coursework and work experiences to prepare for employment in high-demand industries. A concentration of CTE courses along a career pathway is a strong predictor of postsecondary employment for students with disabilities, particularly those with emotional disturbance (ED). We propose to expand the proportion of students obtaining a concentration of CTE among students with ED. This proposal offers CTE as a way to improve employment outcomes using a new intervention developed for special educators who conduct the transition planning component of individualized education programs (IEPs) for students with ED. The Translating Evidence to Support Transitions in Career and Technical Education program (TEST-CTE) has a piloted practice guide titled *Incorporating Career and Technical Education for Students with Emotional Behavioral Disturbance* (Ellison and others 2018). The guide aims to improve employment outcomes of students with ED by explaining how to conduct the transition planning component of the IEP to incorporate CTE. The guide helps educators understand the special considerations needed for engaging these students in a concentration of CTE coursework. As we describe in more detail, widespread use of the guide and associated professional development training structured around it could form a low-cost, light-lift foundation for federal, state, or local efforts to increase CTE participation among students with ED, with adaptability for students with other disabilities or the general student population.

TEST-CTE was developed for students receiving special education services because of ED. Guidance offered in TEST-CTE can also pertain to students with ED who are not being served by special education, students living with serious mental health conditions (SMHCs), or special education students with other related disabilities. Students with ED comprise a subset of students with SMHCs. The terms *emotional disturbance* and *emotional behavioral disorder* are often used interchangeably, but they both refer to subsets of SMHCs. We refer to students with ED in this proposal to comport with the terminology of the Individuals with Disabilities Education Act (IDEA), which uses *emotional disturbance* to describe behavioral and emotional disorders.¹ These can include SMHCs. By a conservative estimate, 12 percent of children and adolescents ages 6 to 18 may have SMHCs; however, students with SMHCs are underidentified for special education (Forness and others 2012). SMHCs that are common among youth with ED include anxiety disorders, mood disorders (depression or bipolar disorder), conduct disorders, eating disorders, psychotic disorders, and obsessive-compulsive disorder. The relationship among these categories of students is displayed in Figure A.1. The primary population of interest comprises all these categories of students, though we refer to students with ED throughout this proposal. All of these categories of students comprise a population at risk for long-term reliance on Supplemental Security Income (SSI; Hemmeter, Kauff, and Wittenburg 2009; National Council on Disability 2000).

¹ IDEA defines ED as a condition that involves one or more of the following over a long period of time and adversely affects a child's educational performance: (1) an inability to learn that cannot be explained by intellectual, sensory, or health factors; (2) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (3) inappropriate types of behavior or feelings under normal circumstances; (4) a general pervasive mood of unhappiness or depression; and (5) a tendency to develop physical symptoms or fears associated with personal or school problems. The IDEA definition of ED includes some mental health conditions, such as schizophrenia.

The inspiration for TEST-CTE comes from significant, positive correlational research findings. Youth with ED in special education taking four or more credits of CTE courses were four times more likely than others to obtain competitive employment in their early post-high school years (Wagner, Newman, and Javitz 2015). Students with ED who took any general CTE courses were more than twice as likely as a matched group of students with ED who took no CTE courses in high school to obtain full-time employment at any time after leaving high school (Wagner and Newman 2014) and more than three times as likely if they had taken at least four credits in an occupationally specific CTE subject (Wagner, Newman, and Javitz 2017). These findings and the need for interventions to support this population motivated the development of the TEST-CTE guide.

These findings suggest that persistent SSI enrollment may be averted or lessened through CTE and the full-time employment it produces. The challenges for students with ED were first noted in the National Longitudinal Transition Study, which tracked a nationally representative sample of secondary school special education students as they transitioned out of school (Wagner 1995). Of all the students with disabilities in special education, those with ED had the worst high school completion rates, attendance, grades, and grade progression (Wagner 1995). Sixty-five percent of special education students with ED had paid employment within six years of completing school, compared with 79 percent of students with learning disabilities and 68 percent of students with other health impairments (Sanford and others 2011).

The findings about participation in CTE are striking in the context of these poor outcomes for students with ED. According to the Social Security Administration (SSA), in 2010, one-third of individuals receiving SSI under age 65 were young adults, and 24 percent of those young adults had SMHCs.² Rates of exit from SSI rolls are lowest among adults with SMHCs—that is, less than 1 percent (Drake and others 2009). Prolonged SSI receipt can result in a lifetime of low employment and poverty. SSI recipients and Social Security Disability Insurance participants had significantly lower income and higher poverty compared with nonparticipants in an analysis of the National Postsecondary Student Aid Survey (Berry and Jones 2000). Transition-age SSI participants may be less likely to be prepared for independent living and work compared with adults (Hemmeter, Kauff, and Wittenburg 2009). Employment rates among young adults with mental health conditions greatly lag behind those of the general working-age population (Ramsay, Stewart, and Compton 2012; Wagner and Newman 2012). These poor employment rates may increase the likelihood of living in poverty and reliance on disability benefits. Receipt of SSI may serve as a work disincentive for individuals with SMHCs (Bond, Xie, and Drake 2007; Tucker, Guillermo, and Corona 2019). In 2019, fewer than 5 percent of SSI recipients were employed, and over half had no income other than SSI payments (SSA 2019).

Our population of interest also has low rates of high school and college completion. Recent figures from the National Center for Education Statistics for the 2014–2015 academic year show a high school dropout rate of 35 percent for special education students with ED; moreover, fewer than half (45 percent) of special education students with ED attend any postsecondary education or training,

² Authors' calculation based on data from SSA (<https://www.ssa.gov/policy/docs/data/ssi-2010/>).

and only 8 percent ever attend four-year college.³ These data also show that only 41 percent of those with ED who attend higher education graduate.⁴ Students with ED were twice as likely to drop out of school compared with all students with disabilities served under IDEA in the 2017–2018 school year (Office of Special Education Programs 2020).

The number of students with disabilities served under IDEA who have been identified as having an ED also varies by race and ethnicity. Black or African American students were more likely to be identified with ED and Hispanic or Latino students were less likely to be identified with ED compared with all students with disabilities during the 2018–2019 academic year.

For many reasons, students with ED and other disabilities are not likely to access CTE. A recent project revealed barriers to high school CTE programming for some students with ED, such as inflexible attendance policies, inadequate disability training of CTE instructors, and stigma. These barriers make some students with disabilities less likely to be accepted into CTE instruction (Ellison and others 2018). TEST-CTE is designed to address these barriers to CTE access and improve outcomes of students with ED.

Thus, the primary population of interest for this policy proposal is youth who are receiving special education services because of ED. Overall, over 2 million young people, representing between 3 percent and 17 percent of all children and adolescents in the United States, have emotional or behavioral disabilities (Costello, Egger, and Angold 2005; Data Resource Center for Child and Adolescent Health 2007; Roberts, Roberts, and Chan 2009). This potential population also includes the youth with mental disorders who comprise 15.9 percent of 13- to 17-year-olds receiving SSI (SSA 2019).

TEST-CTE is a promising intervention for leading students with ED to develop a career goal and embark on a pathway that results in employment, continued education, and/or training after high school. This paper details the goals and outcomes associated with TEST-CTE, the supporting evidence for the intervention, and its fit within existing public policy. We also describe ways to implement and evaluate TEST-CTE and relevant funding authorities for these demonstrations. In addition, we offer suggestions about how educators can better respond to students' needs and how TEST-CTE could be expanded in the future to increase its scope and impact. We conclude with an overview of TEST-CTE's potential for replicability.

II. Background

In this section, we describe CTE and TEST-CTE, along with the theory behind TEST-CTE. We also describe relevant public policy legislation, the context for CTE and TEST-CTE, and

³ Authors' calculation based on data from the National Center for Education Statistics (https://nces.ed.gov/programs/digest/d17/tables/dt17_219.90.asp).

⁴ Authors' calculation based on data from the National Center for Education Statistics (https://nces.ed.gov/programs/digest/d16/tables/dt16_504.30.asp).

recommendations about relevant federal authorities for conducting demonstrations of TEST-CTE to address important concerns for students with ED.

A. Description of CTE and TEST-CTE

This proposal benefits from the widespread availability of CTE in secondary schools nationwide. The following section describes the CTE landscape and how TEST-CTE fits into existing systems.

1. CTE

CTE (formerly called *vocational education*) refers to schools, institutions, and educational programs that specialize in skilled trades, applied sciences, modern technologies, and career preparation. CTE programs offer academic and career-oriented courses and opportunities to gain work experience. CTE provides students with technical knowledge, academic and employability skills, and real-world experience for high-skill, high-wage, in-demand careers. CTE may be offered in middle schools and/or high schools or through community colleges and other postsecondary institutions, including those that primarily serve historically disadvantaged students, such as youth with disabilities or youth from minority populations. See Exhibit 1 for a list of activities included in CTE programs.

Exhibit 1. Activities included in CTE programs

- Integrated academic and vocational courses
 - In-school and community-based learning experiences through volunteer work, job shadowing, work-study, apprenticeships, or internships
 - Linkages to postsecondary education and/or employment
 - Opportunities to earn certificates in specific career areas
 - Partnerships with local businesses
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Source: Rowe and others (2013).

CTE participation helps predict post-school education and employment outcomes (Mazzotti and others 2020). CTE and TEST-CTE include several activities that are predictors of post-school success, including goal setting, career awareness, student support, occupational courses, work experience, program of study, and vocational education (Mazzotti and others 2016; Rowe and others 2021; Test and others 2009).

Some secondary schools have access to CTE through area CTE centers. Area CTE centers provide a co-located site for students from one or more local school districts. The most recent data from the National Center for Education Statistics (NCES) show that 54 percent of U.S. high schools were served by area CTE centers over the 2016–2017 academic year, and 98 percent of public high schools offered CTE (Gray and Lewis 2018). In 2013, 81 percent of high school graduates had taken at least one CTE course.⁵ Students may be considered CTE concentrators if they take two or more courses in sequence. The number of students in special populations, such as students with disabilities, who achieve the concentrator status within CTE must be reported by states offering

⁵ NCES Career and Technical Education Statistics, Table H186 (<https://nces.ed.gov/surveys/ctes/tables/h186.asp>).

CTE as part of the Strengthening Career and Technical Education for the 21st Century Act (Perkins V), the federal law governing CTE. The share of students participating and concentrating in CTE was similar in special education and non-special education populations in 2012 (73 percent vs. 76 percent participating, 35 percent vs. 37 percent concentrating, respectively; NCES 2013). In the 2014–2015 academic year, 54 percent of CTE students were from economically disadvantaged families. Fifty-two percent of CTE students were White, 24 percent were Hispanic or Latino, 16 percent were Black or African American, and 4 percent were Asian (Musu-Gillette and others 2016).

Under Perkins V, CTE is currently organized into 16 career clusters that apply to different high-demand careers. Within each cluster are pathways that correspond to a collection of courses and training opportunities to prepare students for careers in in-demand industries.⁶ The career clusters are recognizable in secondary and postsecondary schools and in the workforce. Forty-two states follow a CTE Common Career Technical Core. This core establishes standards for the career clusters and career pathways that define expectations for students who complete a concentration of CTE.

Every state has a labor market information office funded through the Workforce Innovation and Opportunity Act that is responsible for monitoring, analyzing, and reporting labor market information. Each state uses the labor market data to support its Perkins V planning, to conduct comprehensive local needs assessments, and to identify in-demand industries. Many states monitor real-time employment data as often as they can to identify trends in employment by industry as they are changing. The development of programs of study within the career clusters includes the analysis of current labor market information to determine which programs of study will result in high-demand jobs.

Research points to potential benefits of CTE for postsecondary education and employment (Figure A.2). Youth who participate in CTE have increased postsecondary success (Brand, Valent, and Browning 2013; Test and others 2009). High school CTE students are more likely to engage in postsecondary education (Baer and others 2003; Halpern and others 1995; Harvey 2002; Leonard, D'Allura, and Horowitz 1999), and those who take two or more CTE courses are more likely to graduate from high school on time than non-concentrators (Gewertz 2018). CTE students with disabilities may have better postsecondary employment outcomes. These students may also be more likely to find and keep competitive jobs and develop promising career trajectories.

Despite the prevalence of CTE in schools and these positive findings, access to CTE in secondary school remains limited for students with disabilities (Dougherty, Grindal, and Hehir 2018). Nationally, individuals with disabilities make up about 10 percent of students enrolled in CTE in secondary school, below their share of the overall population. During the 2018–2019 academic year, 7.1 million, or 14 percent, of public school students ages 3 to 21 received special education services under IDEA. The percentage of students who received special education services under IDEA was highest for American Indian and Alaska Native students (18 percent), followed by Black or African American students (16 percent), White students (14 percent), multiracial students (14 percent),

⁶ See Washington Office of Superintendent of Public Instruction (n.d.).

Hispanic or Latino students (13 percent), Pacific Islander students (11 percent), and Asian students (7 percent).

National data from the Perkins Collaborative Resource Network indicates that in the 2017–2018 academic year, approximately 10 percent of the 8.8 million youth enrolled in CTE at the secondary level had a disability status under IDEA or the Every Student Succeeds Act. Approximately 4 percent of the 2,919,106 students enrolled at the postsecondary level were considered individuals with disabilities under the Americans with Disabilities Act.⁷

Research is needed to examine how CTE can effectively serve youth with ED (Flannery and others 2007; Hart and others 2004; Oertle and Bragg 2014). Published findings and public data on the impact of CTE for students with ED, particularly from studies using rigorous designs, are limited (Harvey and others 2020). Performance indicators are not aligned across states, which makes it difficult to track outcomes within disability groups from state to state. Schools also do not systematically collect data on students' SSI receipt. This information would be helpful in identifying youth who could be linked to services such as vocational rehabilitation that could help them avoid reliance on benefits as adults. This policy proposal offers a solution for generating new causal evidence for the impact of CTE on outcomes for youth with ED.

2. TEST-CTE

TEST-CTE is a 34-page guide for special educators who conduct the transition planning component of IEPs for students with ED. Researchers at the Transitions to Adulthood Center for Research at the University of Massachusetts Medical School developed the guide with federal funding (National Institute on Disability, Independent Living, and Rehabilitation Research Grant A-90DP0063; Ellison and others 2018). It contains unique content relevant to students with ED to prepare them for successful careers in the workforce and reduce reliance on SSI and other public benefits. Lessons in the guide can also pertain to students with autism spectrum disorders or learning disabilities, those with health impairments, or any other student in special education who has a behavioral goal. The guide underwent extensive feasibility and usability testing and evaluation with educators in three states using an implementation science framework. The guide was formally piloted over two semesters with students who were identified as having ED, as well as students with autism or health impairments. Two additional guides developed along with TEST-CTE describe how students can lead their IEPs and how to involve community partners in IEP transition planning. We describe TEST-CTE in detail below, with Table 1 offering a summary of TEST-CTE and relevant information for stakeholders.

a. Goals and outcomes of TEST-CTE

The short-term goal of TEST-CTE is to encourage special education students with ED to acquire at least four credits of CTE that are in a career cluster and thus aligned along a pathway to an in-

⁷ Authors' calculation based on data from the Perkins Collaborative Resource Network (<https://cte.ed.gov/profiles/national-summary>), available at https://s3.amazonaws.com/PCRN/reports/ParticipantCustomReport_All2018.xlsx.

demand industry. These credits are identified on the transition component of an IEP. From there, students move to career-focused education and training to help secure employment in a high-demand career (Figure A.3). Success stories from TEST-CTE piloting provided evidence for this sequence. The mechanism of action is the hands-on learning experiences that CTE offers, which create self-efficacy and higher outcome expectations for students, as portrayed in the theoretical model in Figure A.4.

The long-term goal of TEST-CTE is to help students secure employment or access higher education after graduation. TEST-CTE goals are consistent with the Department of Labor's Office of Disability Employment Policy's priorities, including promoting and increasing high-demand career opportunities and employment among youth receiving SSI and their families to reduce reliance on SSI and public assistance, increase engagement in career preparation and postsecondary education, and improve the self-sufficiency of youth.

b. Core components and activities of TEST-CTE

The TEST-CTE guide describes five activities for students to complete while planning the transition component of their IEPs. The five activities are (1) conducting assessment and career exploration activities, (2) developing an individualized learning plan (ILP) and/or formulating postsecondary education/training and employment goals, (3) specifying a progression of CTE courses along a career pathway in high-demand industries and CTE clusters, (4) developing IEP supports and other activities to reinforce CTE learning, and (5) reassessing career goals and CTE course progression as needed. A "road map" of the TEST-CTE components is displayed in Figure A.5.

The TEST-CTE guide encourages educators to develop a SMART (specific, measurable, achievable, relevant, timely) career goal with students and to relate the goal to an in-demand industry. Perkins V stresses the importance of this alignment. TEST-CTE goal development activities include an assessment of the current labor market, and encourage students to select career goals accordingly. TEST-CTE's practice guide brings together existing tools and creates a mechanism for helping educators incorporate CTE into students' transition plans. Many of the tools and resources described in the guide are cross-disability in nature and may be familiar to transition educators. The TEST-CTE program also incorporates a web-based fidelity checklist and instruction on how to implement the guide in high schools. To implement TEST-CTE in a school, an initial training is provided on the guide and monthly coaching sessions are led by experienced trainers, coaches, and subject matter experts over the course of a semester to assist educators with implementation.

The unique content of the TEST-CTE guide is the special considerations relevant to the population of students with ED. These considerations derive from the authors' extensive experience with interventions that support the careers of youth with ED. The guide covers a range of topics, including historic discouragement of employment among people with SMHCs, challenges to forming a vocational identity among students with ED who may not have workers as family role models, and family dependence on disability benefits that can discourage careers. The guide includes practical suggestions for considering students' potential for higher education, ways to combat stigma or misperceptions surrounding CTE coursework, tips for managing students' anxiety, and

opportunities for training on social and other soft skills. The guide describes locating work-based learning experiences that are a good fit for students with ED and unique educational accommodations (for example, flexible attendance policies for CTE). Although these considerations were developed for students with ED, the larger components of TEST-CTE have direct applicability to other students with certain other disabilities or to students with ED who are not in special education.

A forthcoming update to the TEST-CTE guide provides more detail on how to engage students and families in the CTE process. It provides numerous tip sheets designed for students and families that encourage and explain how to choose, obtain, and keep a job and how to use educational and employment accommodations. A new tip sheet designed specifically for students encapsulates the CTE process in an engaging, student-friendly manner (Fowler and Rao 2020). Other products for families and students, such as YouTube videos, are in production. The incorporation of these products into TEST-CTE is designed to expand the target population of the guide.

B. Theory of change: Social cognitive career theory

TEST-CTE is rooted in *social cognitive career theory* (SCCT; Bandura 1986, 1991; Figure A.4), a richly researched theoretical framework for developing interventions to enhance early career development among students, including those with ED (Betz 2007; Ochs and Roessler 2004; Patrick, Care, and Ainley 2011). Accordingly, TEST-CTE posits short-term goals and indicators of success (Figure A.3) to evaluate the success of the proposed intervention for a given student. These indicators include (1) an ability to identify career interests and development of a worker identity; (2) an established SMART postsecondary career goal for an in-demand industry; (3) participation in work-based learning experiences and completion of four CTE credits aligned with a career pathway; (4) increased self-efficacy; and (5) increased career expectations and performance outcomes, such as employment or application to or enrollment in postsecondary education or training.

SCCT posits that having opportunities for positive learning experiences helps young people build career self-efficacy (Lent and others 2017) and positive outcome expectations with a focus on individual agency. In SCCT, these factors lead to postsecondary education, training, or employment (Lent, Brown, and Hackett 1994, 2002). Research supports this idea: youth who participate in career exploration and other transition services have higher self-confidence in selecting and preparing for a career (Solberg and others 2012), and career self-efficacy helps youth with ED to succeed in quality, sustainable jobs (Regenold, Sherman, and Fenzel 1999; Waghorn, Chant, and King 2007).

Figure A.4 shows the progression of student career development postulated by the TEST-CTE adaptation of SCCT. First, high school students with ED enter the career choice process with their unique personal characteristics. They then formally develop goals through career exploration activities, career aptitude assessments, development of a worker identity, and reduction of stigma for CTE. At the end of that process, students formulate a SMART postsecondary career goal in a high-demand industry and document it in their IEP. Having formulated a career goal, students accrue prescribed learning experiences to increase self-efficacy and outcome expectations and, ultimately, increase employment and earnings and reduce reliance on SSI and other disability benefits.

C. Supporting evidence for TEST-CTE

During development, the TEST-CTE intervention underwent an iterative design process and pilot testing with multiple groups of practitioners. The draft guide received regular feedback from members of the Transition Alliance of South Carolina during the 2016–2017 academic year. This feedback identified a need for content about navigating the competitive nature of CTE program enrollment, requesting attendance accommodations, and managing student anxiety, and the TEST-CTE developers revised the guide accordingly. The revised TEST-CTE guide was piloted in high schools in Maine and Connecticut during the spring and fall semesters of 2018. Special educators received an initial half-day, in-person training and then were coached by a development team that consisted of experienced trainers and subject matter experts during monthly sessions over one semester. These activities involved a community of practice that provided opportunities for educators to ask questions, obtain feedback and problem solve, and review effective strategies for implementing the guide and working with students with ED. Evaluation activities included fidelity checklists, reviews of de-identified IEPs of participating students, practice guide/coaching call evaluation surveys, and student evaluation surveys for each of the two semesters of the pilot. Additional follow-up feedback was obtained from the teachers in 2020.

Results of the feasibility pilot demonstrated that high schools can successfully deliver the TEST-CTE intervention. (The pilot did not assess the impact of TEST-CTE on CTE participation by students with ED.) Teachers can participate in training sessions and virtual coaching calls, and fidelity can be assessed by means of a web-based checklist. Teachers used the guide successfully, and students developed career goals. Anecdotal reports of students using this TEST-CTE approach suggest CTE and work-based learning experiences helped students secure employment.

D. TEST-CTE's fit within the existing policy and public program context

TEST-CTE builds on existing policies and programs to meet the needs of youth with ED. TEST-CTE satisfies federally mandated transition planning requirements for secondary school students in special education and helps make CTE more accessible to a population with disabilities, in keeping with access requirements in federal law. We describe key federal laws and agencies and their relevance to TEST-CTE and CTE for students with disabilities in Table A.2.

E. Evaluation of TEST-CTE: Relevant federal authorities and goals

Increasing take-up of CTE will require efforts to promote awareness of the value and availability of CTE among special educators and state and local education leaders. The specificity of the TEST-CTE guide also allows for a more rigorous demonstration and efficacy trial, which would increase the evidence base for the effectiveness of CTE in general and allow for a full accounting of the costs and long-term benefits of TEST-CTE, plus its potential for replicability, scalability, and sustainability. This section will briefly describe potential evaluation and development efforts for TEST-CTE. We describe various federal authorities and their potential to fund research and examine the impact of TEST-CTE in Table A.3.

Modeling after previous national demonstration programs, a randomized controlled trial of the TEST-CTE intervention could be established in the following way. A centralized research hub would be responsible for all formal research activities (such as selection of measures, recruitment of states or districts, local and central data collection, technical assistance, housing a centralized data repository, training and coaching on the guide, fidelity assessments, and cross-site data analysis). Districts and/or states could be invited to submit proposals to participate in the trial. Randomization would be conducted at the school level, with high schools matched on selected criteria, including their size, location (urban or rural), access to CTE, number of students with disabilities, and spending per pupil. Participating schools would receive training and coaching on the content of the TEST-CTE guide, and students would be enrolled to complete survey measures to examine the impact of the intervention.

The additional research we are proposing would build an evidence base for TEST-CTE and for interventions for students with ED in CTE. Active implementation science methods can be used to implement, examine, and scale up TEST-CTE. Implementation science includes an iterative process that allows for the collection and examination of data for feedback and improvement. This process would provide mechanisms to ensure that TEST-CTE is implemented as intended and that issues (such as nonparticipation in training and/or brief coaching sessions) are corrected as needed. Implementation studies typically incorporate coaching or modeling with individualized follow-up to clearly communicate relevance and fit, how to implement the intervention, performance feedback to reinforce good practice and correct mistakes, and accountability efforts to ensure educators implement the intervention in everyday practice. Implementation science methods could also be used to determine the most effective ways to incorporate TEST-CTE into existing professional development systems for CTE and/or special education. Feedback from educators and assessments of content knowledge and skills could be used to determine best fit and delivery of professional development activities (for example, pre-service vs. in-service) related to TEST-CTE to ensure that training and coaching is effective and replicable.

We propose using a hybrid model of implementation research that incorporates examination of person-level outcomes while also examining implementation drivers and best practices. Thus, the research activities would include a power analysis to ensure that we conduct a fully powered clinical trial and that subpopulations are well represented. We could conduct a multistage study that draws on active implementation science. The initial stage would involve a small trial to examine the implementation of TEST-CTE by using one local education agency (LEA) as an example. Activities conducted in the initial stage would inform implementation efforts and cost estimates and gather the information needed to develop a formal implementation guide. The implementation guide would be developed through collaboration with educators and other stakeholders in special education and CTE to ensure relevance, fit, and practicality and to address issues of implementation and fidelity. The trial conducted in the initial stage would generate preliminary outcome data for students and educators involved with TEST-CTE, which would then inform and refine a larger multisite trial conducted in a second stage. The findings from the first stage with the small trial and the newly developed implementation guide could then be used to scale up TEST-CTE to a region through a partnership with a state education agency to conduct a larger, multisite trial in a second stage to prepare for national implementation. The larger trial could be used to examine implementation and

student-level outcomes of TEST-CTE in different types of delivery systems, including comprehensive high schools that deliver CTE, area CTE schools, and CTE centers. We could draw on our relationships with the Association for Career and Technical Education and Advance CTE to partner with some of the leading institutions and systems to implement and examine the impact of TEST-CTE regionally.

These activities could also include an estimate of the costs associated with implementing this guide and the professional development required to implement TEST-CTE with fidelity. For example, determining the estimated cost of conducting professional development and implementing training and coaching for the module at an LEA with a certain number of schools in the first stage could inform the larger trial.

Data collected through student IEPs, transcripts, and other school records would indicate completion of TEST-CTE interim goals (for example, career exploration activities or a SMART postsecondary career goal) as well as TEST-CTE outcomes (such as the specification on the IEP of four credits of CTE programming that are aligned with a career pathway and can lead to an industry-recognized credential). This study would allow for a test of the SCCT theory of change (Figure A.4) through data collection on mediators (including learning experiences, increased self-efficacy, vocational identity, and positive outcome expectations) and longitudinal postgraduation outcomes. Data that include measures of educator and student performance would provide mechanisms to evaluate the impact of the guide on student outcomes and the effectiveness of training and coaching to ensure delivery of TEST-CTE with fidelity.

A third demonstration opportunity is to conduct new research that widens the applicability of principles and practices of TEST-CTE. This research could include applying TEST-CTE to other disability groups or special populations or across diverse communities. Initial testing has yielded evidence that TEST-CTE can be used to serve students with autism, neurological or sensory disabilities, or other health impairments. Initial steps would be discovery studies that examine best practices in the application of CTE for youth receiving SSI or other disability groups. Research could also examine how TEST-CTE might be tailored for youth and families of color.

There are several potential avenues for expanding TEST-CTE and evaluating the impact of new modules or content in addition to the demonstrations described above. New content and/or modules could broaden the population the guide is intended to serve and inform stakeholders. We describe each of these avenues in the following section.

F. Future avenues for developing and expanding the scope of TEST-CTE

Future development of TEST-CTE could respond to the racial and ethnic disparities among special education students with ED. Research demonstrates that children of color are disproportionately identified as having ED, especially those living in largely White, affluent communities. American Indian and Alaska Native students are also more likely to be identified, whereas females with ED are consistently less commonly identified for special education (Coutinho and Oswald 2000; Forness and others 2012). Racial gaps in employment for youth can continue into adulthood. TEST-CTE

educators could be trained in cultural sensitivity and in how to encourage students of color to consider careers that may seem to be White-dominated or otherwise out of reach. As part of career exploration, educators can seek potential mentors of color in STEM (science, technology, engineering, and mathematics) or other in-demand industries who can provide guidance to students. Connections with local minority-owned businesses can also increase outcome expectations among students.

TEST-CTE also has the potential to expand beyond the current guide. Adaptation to a general education population could involve developing ILPs (distinct from IEPs in special education) that can follow the prescribed TEST-CTE steps. Modules for other stakeholders, such as students, family members, and employers, could extend the applicability of the intervention. Effective practices for the transition out of high school could be incorporated into new modules for students and parents, including student involvement in the IEP, teaching self-determination skills, person-centered planning, and parent knowledge of transition services and supports.

These new modules could be developed with input from stakeholders to address additional topics and to consider sociodemographic disparities. Possible topics include providing an understanding of SSA work incentives and supports; addressing barriers; identifying strategies for success; addressing diversity issues; increasing social, cultural, and human capital to bridge these gaps and engage youth with disabilities in CTE; and reducing barriers to engagement in CTE or employment. The modules could also address disparities around where youth live. Youth living in rural areas may be less likely to receive treatment for a SMHC or may encounter additional challenges, including a lack of services or transportation. Disadvantaged neighborhoods may have fewer employment opportunities. Student-centered funding can offer districts and schools flexibility and may be an option for students interested in specific CTE pathways that are not available within their school or district.

Data on changes in students' attitudes, self-perceptions, self-efficacy, and motivation and readiness to work would also contribute to the knowledge base and inform services and interventions for students with disabilities. Measures that gather information on teachers' and students' perceptions over time could inform new modules or other interventions designed to support students with disabilities. Short of a rigorous evaluation or special data collection, even a policy change as simple as disaggregating existing CTE participation data by disability type would allow a focus to be placed on those with ED who require nuanced CTE programming. Additionally, projects that gather data from national CTE leaders could be conducted to understand how policies have been implemented, how the Department of Education's Methods of Administration process has been used to address inequities, where data sharing has been effective, or what areas would benefit from further development.

III. Detailed description of the policy proposal

A. Population of interest

As described in the introduction and in Figure A.1, TEST-CTE seeks to engage high school students with ED receiving special education, along with other students with emotional behavioral

disorders. The IEP process for special education students provides a timely, convenient opportunity to identify students who may benefit from TEST-CTE.

However, CTE and the principles of the TEST-CTE guide may also be valuable for students with other disabilities, such as those with autism, or the 90 percent of students with SMHCs who are not in special education. Many of these students may be at risk of long-term reliance on SSI benefits. This adaptation to a general education population would involve developing ILPs that can follow the steps of career goal exploration, goal setting, the development of a plan for four CTE credits along a career pathway, and follow-up to provide supports and accommodations to ensure success.⁸

These students would benefit from TEST-CTE but may be harder to identify because they do not qualify for special education (Forness and Kavale 2001; Gresham 2005, 2007; Merrell and Walker 2004). The identification of such students would most likely occur through teacher observation of student behaviors (Quinn and others 2000) and the student evaluation process. Student evaluations help determine eligibility for special education and related services, and under IDEA, they are offered for students free of charge in public schools, providing an infrastructure through which the population of interest can be identified.

B. TEST-CTE recommendations for accommodating students with ED

The TEST-CTE guide includes an array of discrete, actionable steps to successfully integrate students with ED into CTE courses. The TEST-CTE guide describes accommodations for students with ED that are not found in the usual lists of available accommodations. For example, accommodations for testing may include working with the CTE instructor to allow students to have an aide or their special education instructor present to alleviate anxiety. Behavioral accommodations could include working with the CTE instructor to be able to identify triggers and de-escalation strategies. Accommodations for absences due to mental health hospitalizations could include opportunities to make up class time.

Some examples of best practices, accommodations, and other valuable supports for students with ED that are not specific to CTE are described in Exhibit 2 below.

⁸ Office of Disability Employment Policy. n.d. "Individualized Learning Plan." U.S. Department of Labor (website). Accessed September 25, 2020. www.dol.gov/agencies/odep/topics/individualized-learning-plan.

Exhibit 2. Examples of accommodations and supports for students with ED

Accommodations for students with ED

- Isolated test taking
- Preferential seating
- Having questions read aloud
- Opportunities to take breaks, including leaving the classroom to manage anxiety
- Flexible attendance policies
- Not being penalized for nonparticipation
- Having opportunities to preview and review the curriculum with teachers or student aides
- Special instruction in executive functioning skills, such as attention skills, conversational attention, thinking ahead, task sequencing, meeting due dates, prioritization, short- and long-term memory strategies, time and task management, and problem solving
- Assistance with scheduling appointments, setting up reminders, and brainstorming accountability mechanisms
- Mindfulness or relaxation training

Assistive efforts by teachers and counselors

- Learning about students' specific disorders and how they can be managed
- Focusing on students' strengths to provide opportunities for success
- Offering a structured learning environment with set expectations for the entire class, including how inappropriate behavior will be addressed
- Coordinating with or participating in a student's IEP team. IEPs should include the following:
 - Supportive accommodations and appropriate classroom adaptations
 - Postsecondary goals based on age-appropriate transition assessments
 - Necessary transition services and courses of study
- Providing classroom guidance to teach basic social skills, problem solving, and conflict resolution
- Offering structured peer interactions such as tutoring or cooperative learning

Sources: Center (2006); DiGalbo and others (2017); Ellison and others (2018); Gilman and Chard (2015); Gulliver, Griffiths, and Christensen (2010); Henley and Long (2003); Miller and Rainey (2008); Mizrahi (2018); Orton (2011); Rickwood and others (2005); Ryan, Reid, and Epstein (2004); Spencer (2006); Thomson, Rudolph, and Henderson (2004).

C. Implementing TEST-CTE

Fundamentally, TEST-CTE is a guide for educators. Within an LEA or school, implementing this proposal requires training and monthly coaching for transition professionals and CTE educators so that they can adopt new practices in IEP meetings with students and families and in their classrooms. Section II, Subsection C above describes how these trainings were carried out in jurisdictions that piloted early versions of the guide. The ease of applying this guide, combined with the widespread availability of CTE coursework in secondary schools (and mandatory IEP provision for students with disabilities), makes TEST-CTE a low-cost, light-lift intervention. Brief coaching sessions can be an effective mechanism for advancing implementation fidelity (Brock and Carter 2013). The trainings and monthly coaching sessions are critical, given that educators are not routinely trained in supporting youth with ED (Harvey and others 2020) or engaging them in CTE. Findings from a study of CTE instructors' expectations for students have highlighted the need for

additional education and training in special needs for CTE among both pre-service and in-service educators (Harvey and others 2007).

National CTE organizations could disseminate and promote TEST-CTE to state and local CTE systems. They could further promote TEST-CTE through their national conferences and by hosting webinars, developing blog posts, and distributing infographics. We could also engage these organizations to identify national conferences and events that offer professional development for teachers of students with disabilities or where special education practitioners attend and network, held by groups such as the Council for Exceptional Children or the National Association of Special Education Teachers. These professional development activities vary by the decisions by state and local school districts and rely on the educators who attend these conferences and webinars. In future work, modules on CTE can be developed and incorporated into special education transition curricula.

As with adoption of any innovation, implementation of TEST-CTE will depend on the buy-in of educational leadership. This buy-in can start at the state or county/district level and should permeate to principals and special education or transition coordinators. Buy-in can be encouraged by ensuring that leadership understands the need for TEST-CTE, the research that backs it, and the benefits for both youth and schools. Districts and schools must also be ready for TEST-CTE. Questions to consider include the following: Are area or school CTE available? Are CTE courses available in career pathways that are aligned with local in-demand industries? Do students have access to transportation to CTE? Can data systems be adjusted to evaluate CTE for different disability groups? Does CTE or TEST-CTE need to be modified for youth and families of color? Do eligibility or competitive applications for CTE effectively discriminate against students with ED? Are there established paths to connect youth to services such as vocational rehabilitation? Do the schools document whether students receive SSI and whether they have IEPs that can help them access vocational rehabilitation or transition services? Federal demonstration programs around TEST-CTE would help foster this state and local buy-in and challenge LEAs to address these types of important implementation considerations.

IV. Conclusion and recommendations

TEST-CTE has the potential to improve the outcomes of students with disabilities and reduce their dependence on SSI. Educators and policymakers can implement this intervention so that students with ED can obtain needed supports to successfully embark on career paths, prepare for in-demand jobs, and meet workforce needs. CTE has shown promise for this population, but students with ED remain underserved. TEST-CTE can help these stakeholders ensure that students with disabilities have access to appropriate accommodations and supports for success in CTE and employment after graduation.

In general, some basic changes to the disability and transition landscape to increase collaborative efforts as part of standard practice would complement TEST-CTE. Similarly, additional data collection could ensure equity and access in CTE for students with disabilities. Many states do not require school systems to provide a detailed breakdown of students in different disability

populations who participate in CTE. The lack of common indicators presents challenges and barriers for research and for quality-improvement efforts. A set of common indicators of outcomes of students participating in CTE could include Perkins V placement indicators, IDEA post-school indicators, and participation in postsecondary education and employment by disability groups (Harvey and others 2020). Although these reforms are not necessary for promoting TEST-CTE, they would help establish a baseline for understanding CTE participation and outcomes among students with disabilities and provide needed context for interpreting the results of TEST-CTE demonstrations.

Additional research on CTE participation for students with disabilities is needed to show both its effectiveness and its replicability (Harvey and others 2020). Few experimental studies have examined the effects of CTE on student outcomes (Test and others 2009). Additional studies of equity and access in CTE for students with disabilities would help reveal how CTE can better serve these populations and reduce reliance on SSI. This proposal, and the expanded take-up of CTE by students with disabilities it would engender, would help meet this research need.

TEST-CTE capitalizes on the power of CTE to improve the postsecondary outcomes of students with ED. It can be readily embedded within the existing federally mandated IEP transition planning process, provides feasible steps to encourage CTE concentration, and meets the unique needs of students with ED. The TEST-CTE guide is well positioned for easy adoption and use in today's public high schools to demonstrate the long-term positive impacts of CTE for this group of youth who face multiple challenges.

References

- Advance CTE. 2017. "The Every Student Succeeds Act (ESSA): Intersections and Opportunities for Career Technical Education." Advance CTE (website). Accessed September 5, 2020. https://cte.careertech.org/sites/default/files/files/resources/ESSA_CTE_Cheat_Sheet_2017.pdf.
- Advance CTE. 2018. "Coordinating across Perkins V and the Workforce Innovation and Opportunity Act." Advance CTE (website). Accessed September 5, 2020. https://cte.careertech.org/sites/default/files/CoordinatingAcrossPerkinsV%26WIOA_102218.pdf.
- Baer, Robert M., Robert W. Flexer, Suzanne Beck, Nangy Amstutz, Lynn Hoffman, Judy Brothers, Donna Stelzer, and Christine Zechman. 2003. "A Collaborative Follow-up Study on Transition Service Utilization and Post-School Outcomes." *Career Development for Exceptional Individuals* 26, no. 1: 7–25.
- Bandura, Albert. 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, Albert. 1991. "Social Cognitive Theory of Self-Regulation." *Organizational Behavior and Human Decision Processes* 50, no. 2: 248–287.
- Berry, Hugh, and Megan A. Jones. 2001. "Social Security Disability Insurance and Supplemental Security Income for Undergraduates with Disabilities: An Analysis of the National Postsecondary Student Aid Survey (NPSAS)." White paper, Rehabilitation Research and Training Center at the University of Hawai'i at Manoa, Honolulu, HI. <http://www.rrtc.hawaii.edu/products/phases/phase3.html>.
- Betz, Nancy E. 2007. "Career Self-Efficacy: Exemplary Recent Research and Emerging Directions." *Journal of Career Assessment* 15, no. 4: 403–422.
- Bond, Gary, Haiyi Xie, and Robert Drake. 2007. "Can SSDI and SSI Beneficiaries with Mental Illness Benefit from Evidence-based Supported Employment?" *Psychiatric Services* 58, no. 11: 1412–1420.
- Brand, Betsy, Andrew Valent, and Andrea Browning. 2013. *How Career and Technical Education Can Help Students Be College and Career Ready: A Primer*. Washington, DC: College and Career Readiness and Success Center.
- Brock, Matthew E., and Erik W. Carter. 2015. "Effects of a Professional Development Package to Prepare Special Education Paraprofessionals to Implement Evidence-Based Practice." *Journal of Special Education* 49, no. 1: 39–51.
- Center, David. 2006. "Emotional Disturbance." In *Encyclopedia of Educational Leadership and Administration*, edited by F. English. Thousand Oaks, CA: SAGE Publications.
- Costello, E. Jane, Helen Egger, and Adrian Angold. 2005. "10-Year Research Update Review: The Epidemiology of Child and Adolescent Psychiatric Disorders: I. Methods and Public Health Burden." *Journal of the American Academy of Child and Adolescent Psychiatry* 44, no. 10: 972–986.

- Coutinho, Martha J., and Donald P. Oswald. 2000. "Disproportionate Representation in Special Education: A Synthesis and Recommendations." *Journal of Child and Family Studies*, 9, no. 2, 135–156.
- Data Resource Center for Child and Adolescent Health. 2007. *The National Survey for Children with Special Health Care Needs, 2005–2006. The Child and Adolescent Health Measurement Initiative*. Washington, DC: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau.
- Dalton, Benjamin, and Robert Bozick. 2012. "Adding College-Ready Coursework to a Career-Ready Pathway: Implications for Dropping Out of High School." In *Pressing Forward: Increasing and Expanding Rigor and Relevance in America's High School*, edited by Becky Smerdon and Kathryn M. Borman, 83–109. Charlotte, NC: Information Age Publishing.
- DiGalbo, Laura, D. Logan, T. Duperoy, and T. Smith. 2017. *Outside-the-Box: College Accommodations: Real Support for Real Students, Tools for School II*. Transitions RTC Tip Sheet no. 11 (March). Worcester, MA: University of Massachusetts Medical School, Department of Psychiatry, Systems and Psychosocial Advances Research Center (SPARC), Transitions Research and Training Center.
- Dougherty, Shaun M., Todd Grindal, and Thomas Hehir. 2018. "The Impact of Career and Technical Education on Students with Disabilities." *Journal of Disability Policy Studies* 29, no. 2 : 108–118. <https://doi.org/10.1177/1044207318771673>.
- Drake, Robert E., Johnathan S. Skinner, Gary R. Bond, and Howard H. Goldman. 2009. "Social Security and Mental Illness: Reducing Disability with Supported Employment." *Health Affairs* 28, no. 3: 761–770. <https://doi.org/10.1377/hlthaff.28.3.761>.
- Ellison, Marsha L., Sloan Huckabee, Laura Golden, and Kathleen Biebel. 2018. *Incorporating Career and Technical Education for Students with Emotional Behavioral Disturbance*. Worcester, MA: University of Massachusetts Medical School, Department of Psychiatry, Implementation Science and Practice Advances Research Center (iSPARC), Transitions to Adulthood Center for Research.
- Fichten, Catherine S., Shirley Jorgensen, Alice Havel, Maria Barile, Vittoria Ferraro, Marie-Eve Landry, Daniel Fiset, Jean-Charles Juhel, Caroline Chwojka, and Mai N. Nguyen. 2012. "What Happens after Graduation? Outcomes, Employment, and Recommendations of Recent Junior/Community College Graduates with and without Disabilities." *Disability and Rehabilitation* 34, no. 11: 917–924.
- Flannery, K. Brigid, Roz Slovic, Michael R. Benz, and Ellen Levine. 2007. "Priorities and Changing Practices: Vocational Rehabilitation and Community Colleges Improving Workforce Development Programs for People with Disabilities." *Journal of Vocational Rehabilitation* 27, no. 3: 141–151.
- Forness, Steven R., Stephanny F. N. Freeman, Tanya Paparella, James M. Kauffman, and Hill M. Walker. 2012. "Special Education Implications of Point and Cumulative Prevalence for Children with Emotional or Behavioral Disorders." *Journal of Emotional and Behavioral Disorders* 20, no. 1: 4–18.

- Forness, Steven R., and Kenneth A. Kavale. 2001. "Reflections on the Future of Prevention." *Preventing School Failure: Alternative Education for Children and Youth* 45, no. 2: 75–81. <https://doi.org/10.1080/10459880109603320>.
- Fowler, Catherine H., and Morgan Rao. 2020. *School that Makes Sense Cent\$ Taking CTE Courses. Translating Evidence to Support Transitions*. University of Massachusetts Medical School, Department of Psychiatry, Implementation Science and Practice Advances Research Center (iSPARC), Transitions to Adulthood Center for Research: Worcester, MA. <https://escholarship.umassmed.edu/cgi/viewcontent.cgi?article=1156&context=pib>.
- Gewertz, Catherine. 2018. "What Is Career and Technical Education, Anyway?" *Education Week*, July 31. <https://www.edweek.org/ew/issues/career-technical-education/index.html>.
- Gilman, Rich, and Kathleen Chard. 2015. "Cognitive-Behavioral and Behavioral Approaches." In *Counseling and Psychotherapy with Children and Adolescents: Theory and Practice for School and Clinical Settings*, 5th ed., edited by H. Thompson Prout and Alicia L. Fedewa, 115–153. Hoboken, NJ: John Wiley & Sons.
- Gresham, Frank M. 2005. "Response to Intervention: An Alternative Means of Identifying Students as Emotionally Disturbed." *Education and Treatment of Children* 28, no. 4: 328–344.
- Gresham, Frank M. 2007. "Evolution of the Response-to-Intervention Concept: Empirical Foundations and Recent Developments." In *Handbook of Response to Intervention: The Science and Practice of Assessment and Intervention*, edited by Shane R. Jimerson, Matthew K. Burns, and Amanda M. VanDerHeyden, 10–24. Boston, MA: Springer.
- Gulliver, Amelia, Kathleen M. Griffiths, and Helen Christensen. 2010. "Perceived Barriers and Facilitators to Mental Health Help-Seeking in Young People: A Systematic Review." *BMC Psychiatry* 10, no. 1, article 113. <https://doi.org/10.1186/1471-244X-10-113>.
- Gray, Lucinda and Laurie Lewis. 2018. *Career and Technical Education Programs in Public School Districts: 2016–17: First Look* NCES 2018-028. Washington, DC: National Center for Education Statistics.
- Halpern, Andrew S., Paul Yovanoff, Bonnie Doren, and Michael R. Benz. 1995. "Predicting Participation in Postsecondary Education for School Leavers with Disabilities." *Exceptional Children* 62, no. 2: 151–164.
- Hanushek, Eric, Ludger Woessmann, and Lei Zhang. 2011. *General Education, Vocational Education, and Labor-Market Outcomes over the Life-Cycle*. Discussion Paper no. 6083. Bonn, Germany: IZA.
- Hart, Debra, Joan Mele-McCarthy, Robert H. Pasternack, Karen Zimbrich, and David R. Parker. 2004. "Community College: A Pathway to Success for Youth with Learning, Cognitive, and Intellectual Disabilities in Secondary Settings." *Education and Training in Developmental Disabilities* 39, no. 1: 54–66.
- Harvey, Michael W. 2002. "Comparison of Postsecondary Transitional Outcomes between Students with and without Disabilities by Secondary Vocational Education Participation: Findings from the National Education Longitudinal Study." *Career Development for Exceptional Individuals* 25, no. 2: 99–122.

- Harvey, Michael W., Samuel E. Cotton, and Kourtland R. Kochl. 2007. "Indiana Secondary CTE Instructors' Perceptions of Program Expectations, Modifications, Accommodations, and Postsecondary Outcomes for Students with Disabilities." *Journal for Vocational Special Needs Education* 29, no 2: 16–32.
- Harvey, Michael W., Dawn A. Rowe, David W. Test, Catherine Imperatore, Allison Lombardi, Michelle Conrad, Amy Szymanski, and Kristy Barnett. 2020. "Partnering to Improve Career and Technical Education for Students With Disabilities: A Position Paper of the Division on Career Development and Transition." *Career Development and Transition for Exceptional Individuals* 43, no. 2: 67–77. <https://doi.org/10.1177/2165143419887839>.
- Hemmeter, Jeffrey, Jacqueline Kauff, and David Wittenburg. 2009. "Changing Circumstances: Experiences of Child SSI Recipients Before and After Their Age-18 Redetermination for Adult Benefits." *Journal of Vocational Rehabilitation* 30, no. 3: 201–221.
- Henley, Martin, and Nicholas Long. 2003. "Helping Students with Emotional Problems Succeed." *Classroom Leadership* 7, no. 3.
- Keily, Tom. 2019. *Policy Snapshot: Career and Technical Education*. Denver, CO: Education Commission of the States.
- Lee, Heok, Jay W. Rojewski, and Noel Gregg. 2016. "Causal Effects of Career-Technical Education on Postsecondary Work Outcomes of Individuals with High-Incidence Disabilities." *Exceptionality* 24, no. 2: 79–92. <https://doi.org/10.1080/09362835.2014.986608>.
- Lent, Robert W., Steven D. Brown, and Gail Hackett. 1994. "Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance." *Journal of Vocational Behavior* 45, no. 1: 79–122.
- Lent, Robert W., Steven D. Brown, and Gail Hackett. 2002. "Social Cognitive Career Theory." In *Career Choice and Development*, 4th ed., edited by Duane Brown and associates, 255–311. San Francisco, CA: Jossey-Bass.
- Lent, Robert W., Glenn W. Ireland, Lee T. Penn, Taylor R. Morris, and Ryan Sappington. 2017. "Sources of Self-Efficacy and Outcome Expectations for Career Exploration and Decision-Making: A Test of the Social Cognitive Model of Career Self-Management." *Journal of Vocational Behavior* 99: 107–117.
- Leonard, Robin, Tana D'Allura, and Amy Horowitz. 1999. "Factors Associated with Employment among Persons Who Have a Vision Impairment: A Follow-up of Vocational Placement Referrals." *Journal of Vocational Rehabilitation* 12, no. 1: 33–43.
- Mazzotti, Valerie L., Dawn A. Rowe, James Sinclair, Marcus Poppen, William E. Woods, and Mackenzie L. Shearer. 2016. "Predictors of Post-School Success: A Systematic Review of NLTS2 Secondary Analyses." *Career Development and Transition for Exceptional Individuals* 39, no. 4: 196–215. <https://doi.org/10.1177/2165143415588047>.

- Mazzotti, Valerie L., Dawn A. Rowe, Stephen Kwiatek, Ashley Voggt, Wen-Hsuan Chang, Catherine H. Fowler, Marcus Poppen, James Sinclair, and David W. Test. 2021. "Secondary Transition Predictors of Postschool Success: An Update to the Research Base." *Career Development and Transition for Exceptional Individuals* 44, no. 1: 47-64. <https://doi.org/10.1177/2165143420959793>.
- Merrell, Kenneth W., and Hill M. Walker. 2004. "Deconstructing a Definition: Social Maladjustment versus Emotional Disturbance and Moving the EBD Field Forward." *Psychology in the Schools* 41, no. 8: 899–910. <https://doi.org/10.1002/pits.20046>.
- Miller, Lynne Guillot, and John S. Rainey. 2008. "Students with Emotional Disturbances: How Can School Counselors Serve?" *Journal of School Counseling* 6, no. 3: 40.
- Mizrahi, Raphael. 2018. What Were You Thinking?: Brain Development in Young Adults. *Psychiatry Information in Brief* 15, no. 9: 1129.
- Musu-Gillette, Lauren, Jennifer Robinson, Joel McFarland, Angelina KewalRamani, Anlan Zhang, and Sidney Wilkinson-Flicker. 2016. *Status and Trends in the Education of Racial and Ethnic Groups 2016*. NCES 2016-007. Washington, DC: National Center for Education Statistics.
- National Council on Disability. 2000. *Transition and Post-School Outcomes for Youth with Disabilities: Closing the Gaps to Post-Secondary Education And Employment*. Washington, DC: National Council on Disability. https://ncd.gov/rawmedia_repository/c19e795f_e7da_4628_a673_86e2d0c6f951.pdf.
- NCES (National Center for Education Statistics). 2013. "High School Longitudinal Study of 2009 (HSLs:09) 2013 Update and High School Transcript Study Restricted-Use Data File, 2013." <https://www2.ed.gov/datastory/cte/index.html>.
- Ochs, Lisa A., and Richard T. Roessler. 2004. "Predictors of Career Exploration Intentions: A Social Cognitive Career Theory Perspective." *Rehabilitation Counseling Bulletin* 47, no. 4: 224–233.
- ODEP (U.S. Department of Labor, Office of Disability Employment Policy). n.d. "Guideposts for Success: What All Youth Need to Successfully Transition into Adulthood." U.S. Department of Labor (website). Accessed July 3, 2020. <https://www.dol.gov/agencies/odep/topics/youth/guide>.
- Oertle, Kathleen Marie, and Debra D. Bragg. 2014. "Transitioning Students with Disabilities: Community College Policies and Practices." *Journal of Disability Policy Studies* 25, no. 1: 59–67.
- Office of Special Education Programs. 2020. "OSEP Fast Facts: Children Identified with Emotional Disturbance." U.S. Department of Education (website). Accessed November 27, 2020. <https://sites.ed.gov/idea/osep-fast-facts-children-IDed-Emotional-Disturbance-20>.
- Orton, Melanie. 2011. "Class-wide Respect and Social Support Skill Training to Increase Peer Interactions of Students with Autism Spectrum Disorders." Master of Education thesis, Utah State University.
- Patrick, Lyn, Esther Care, and Mary Ainley. 2011. "The Relationship Between Vocational Interests, Self-Efficacy, and Achievement in the Prediction of Educational Pathways." *Journal of Career Assessment* 19, no. 1: 61–74.

- Quinn, Mary M., David Osher, Cynthia Warger, Thomas Hanley, Beth D. Bader, Robert Tate, and Catherine Hoffman. 2000. *Educational Strategies for Children with Emotional and Behavior Problems*. Washington, DC: Center for Effective Collaboration and Practice.
- Ramsay, Claire E., Tarianna Stewart, and Michael T. Compton. 2012. "Unemployment among Patients with Newly Diagnosed First-Episode Psychosis: Prevalence and Clinical Correlates in a U.S. Sample." *Social Psychiatry and Psychiatric Epidemiology* 47, no. 5: 797–803.
- Regenold, Michael, Martin F. Sherman, and Mickey Fenzel. 1999. "Getting Back to Work: Self-Efficacy as a Predictor of Employment Outcome." *Psychiatric Rehabilitation Journal* 22, no. 4: 361–367.
- Rickwood, Debra, Frank P. Deane, Coralie J. Wilson, and Joseph Ciarrochi. 2005. "Young People's Help-Seeking for Mental Health Problems." *Australian e-Journal for the Advancement of Mental Health* 4, no. 3: 218–251.
- Roberts, Robert E., Catherine R. Roberts, and Wenyaw Chan. 2009. "One-Year Incidence of Psychiatric Disorders and Associated Risk Factors among Adolescents in the Community." *Journal of Child Psychology and Psychiatry* 50, no. 4: 405–415.
- Rowe, Dawn A., Charlotte Y. Alverson, Deanne Unruh, Catherine H. Fowler, Ryan Kellems, and David W. Test. 2013. *Predictor Implementation School/District Self-Assessment*. National Technical Assistance Center on Transition.
https://www.transitionta.org/system/files/resources/Predictor_Self-Assessment2.0.pdf.
- Rowe, Dawn A., Valerie L. Mazzotti, Catherine H. Fowler, David W. Test, Vickie J. Mitchell, Kelly A. Clark, Debra Holzberg, et al. 2021. "Updating the Secondary Transition Research Base: Evidence- and Research-Based Practices in Functional Skills." *Career Development and Transition for Exceptional Individuals* 44, no. 1: 28–46. <https://doi.org/10.1177/2165143420958674>.
- Ryan, Joseph B., Robert Reid, and Michael H. Epstein. 2004. "Peer-Mediated Intervention Studies on Academic Achievement for Students with EBD: A Review." *Remedial and Special Education* 25, no. 6: 330–341. <https://doi.org/10.1177/07419325040250060101>.
- Sabella, Kathryn. 2018. "Navigating Young Adulthood with a Serious Mental Health Condition: Influential Factors on School, Training, and Work Activities." PhD Diss., University of Massachusetts Boston.
- Sanford, Christopher, Lynn Newman, Mary Wagner, Renée Cameto, Anne-Marie Knokey, and Debra Shaver. (2011). *The Post-High School Outcomes of Young Adults with Disabilities Up to 6 Years after High School: Key Findings from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.
- Scott, John L., and Michelle Sarkees-Wircenski. 2008. *Overview of Career and Technical Education*. 4th ed. Orland Park, IL: American Technical Publishers.
- SSA (Social Security Administration). 2019. *SSI Annual Statistical Report 2019*.
https://www.ssa.gov/policy/docs/statcomps/ssi_asr/2019/ssi_asr19.pdf.

- Solberg, V. Scott, Kimberly Howard, Stephen Gresham, and Erik Carter. 2012. "Quality Learning Experiences, Self-Determination, and Academic Success: A Path Analytic Study among Youth with Disabilities." *Career Development and Transition for Exceptional Individuals* 35, no. 2: 85–96.
- Spencer, Vicky G. 2006. "Peer Tutoring and Students with Emotional or Behavioral Disorders: A Review of the Literature." *Behavioral Disorders* 31, no. 2: 204–222. <https://doi.org/10.1177/019874290603100206>.
- Test, David W., Valerie L. Mazzotti, April L. Mustian, Catherine H. Fowler, Larry Kortering, and Paula Kohler. 2009. "Evidence-Based Secondary Transition Predictors for Improving Postschool Outcomes for Students with Disabilities." *Career Development for Exceptional Individuals* 32, no. 3: 160–181. <https://doi.org/10.1177/0885728809346960>.
- Theobald, Roddy, Dan Goldhaber, Trevor Gratz, and Kristian L. Holden. 2017. *Career and Technical Education, Inclusion, and Postsecondary Outcomes for Students with Disabilities*. CALDER Working Paper No. 177. Washington, DC: National Center for Analysis of Longitudinal Data in Education Research.
- Thomson, Charles L., Linda B. Rudolph, and Donna A. Henderson. 2004. *Counseling Children*. 6th ed. Belmont, CA: Brooks/Cole Thompson.
- Tucker, Mark S., Mari S. Guillermo, and Vanessa C. Corona. 2019. "Career and Work-based Learning Interventions for Young Recipients of Supplemental Security Income." *Journal of Vocational Rehabilitation* 51, no. 2: 145–157.
- Waghorn, Geoffrey R., David C. Chant, and Robert King. 2007. "Work-Related Subjective Experiences, Work-Related Self-Efficacy, and Career Learning among People with Psychiatric Disabilities." *American Journal of Psychiatric Rehabilitation* 10, no. 4: 275–300.
- Wagner, Mary. 1991. *The Benefits of Secondary Vocational Education for Young People with Disabilities. Findings from the National Longitudinal Transition Study of Special Education Students. Annual Meeting of the American Educational Research Association*. Menlo Park, California: SRI International. 69.
- Wagner, Mary M. 1995. "Outcomes for Youths with Serious Emotional Disturbance in Secondary School and Early Adulthood." *The Future of Children* 5, no. 2: 90–112.
- Wagner, Mary, and Lynn Newman. 2012. "Longitudinal Transition Outcomes of Youth with Emotional Disturbances." *Psychiatric Rehabilitation Journal* 35, no. 3: 199–208.
- Wagner, Mary, and Lynn Newman. 2014. "Promoting Successful Transitions for Youth with Serious Mental Health Conditions: Findings from the National Longitudinal Transition Study-2." Webinar (October 9). Worcester, MA: Transitions Research and Training Center, University of Massachusetts Medical School.
- Wagner, Mary, Lynn Newman, and Harold S. Javitz. 2015. "The Benefits of High School Career and Technical Education (CTE) for Youth with Learning Disabilities." *Journal of Learning Disabilities* 49, no. 6: 658–670. <https://doi.org/10.1177/0022219415574774>.

Wagner, Mary M., Lynn A. Newman, & Harold S. Javitz, J. 2017. "Vocational education course taking and post-high school employment of youth with emotional disturbances." *Career Development and Transition for Exceptional Individuals* 40, no. 3: 132–143.

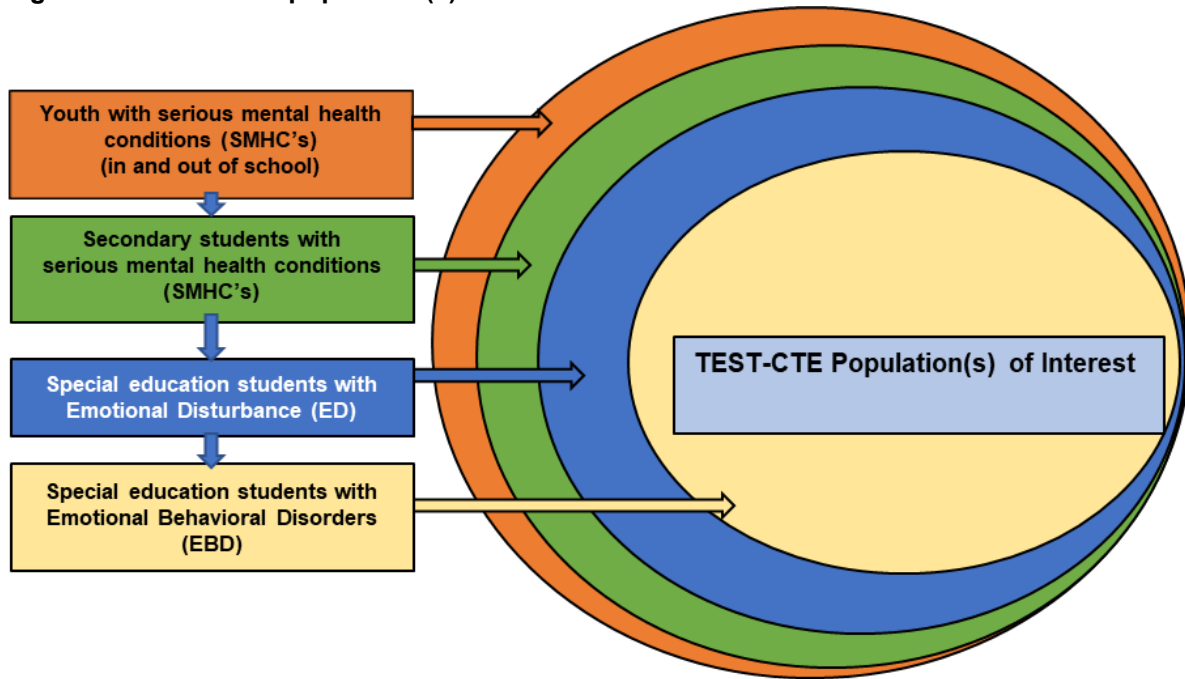
Washington Office of Superintendent of Public Instruction. n.d. "Find Your Pathway." Accessed September 25, 2020.
<https://www.k12.wa.us/sites/default/files/public/careerteched/pubdocs/FindYourPathway-April2020.pdf>.

Wonacott, Michael E. 2001. *Adult Students: Recruitment and Retention*. Practice Application Brief no. 18. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education.

Appendix A

Figures and Tables

Figure A.1. TEST-CTE population(s) of interest



TEST-CTE = Translating Evidence to Support Transitions-Career and Technical Education.

Figure A.2. The value of career and technical education

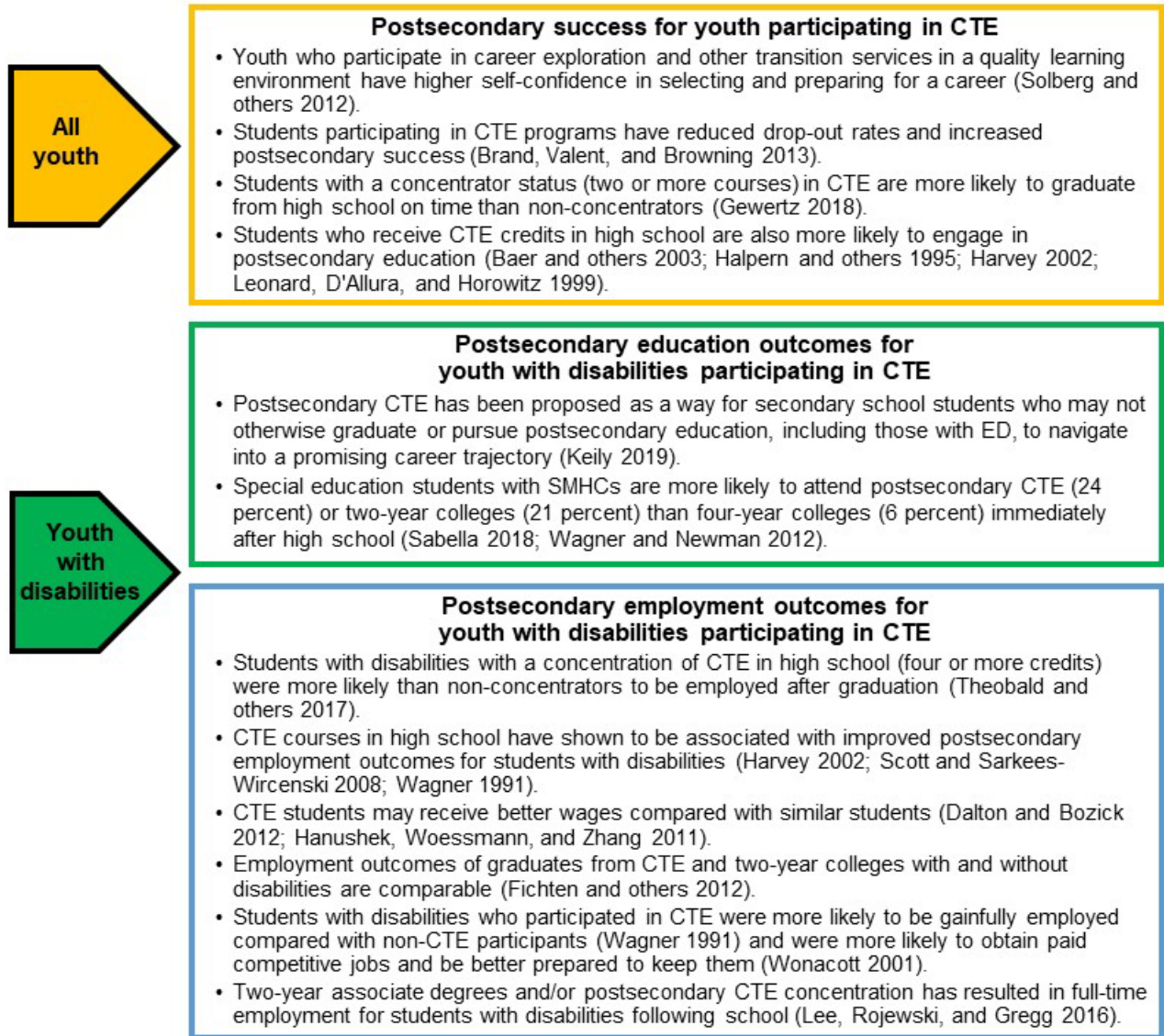
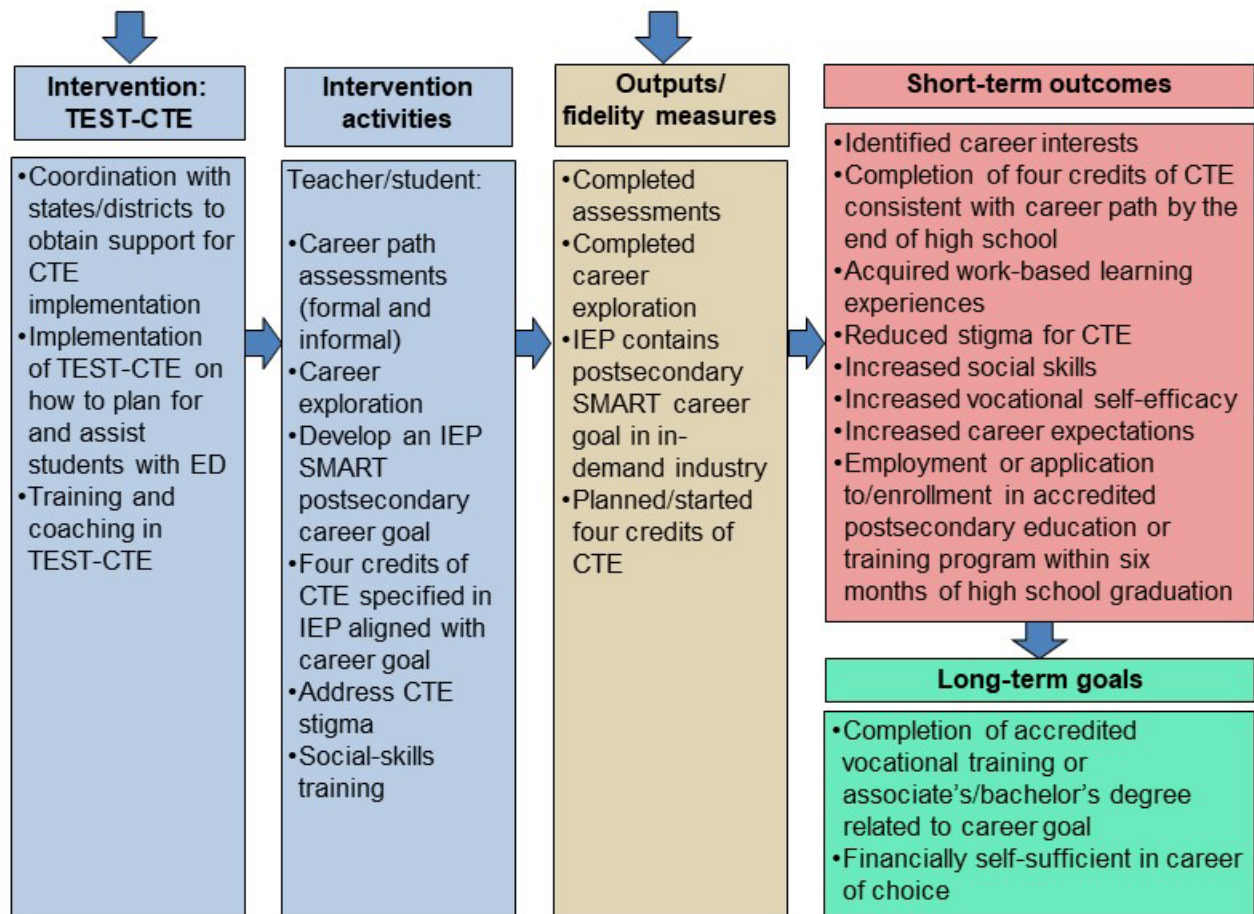
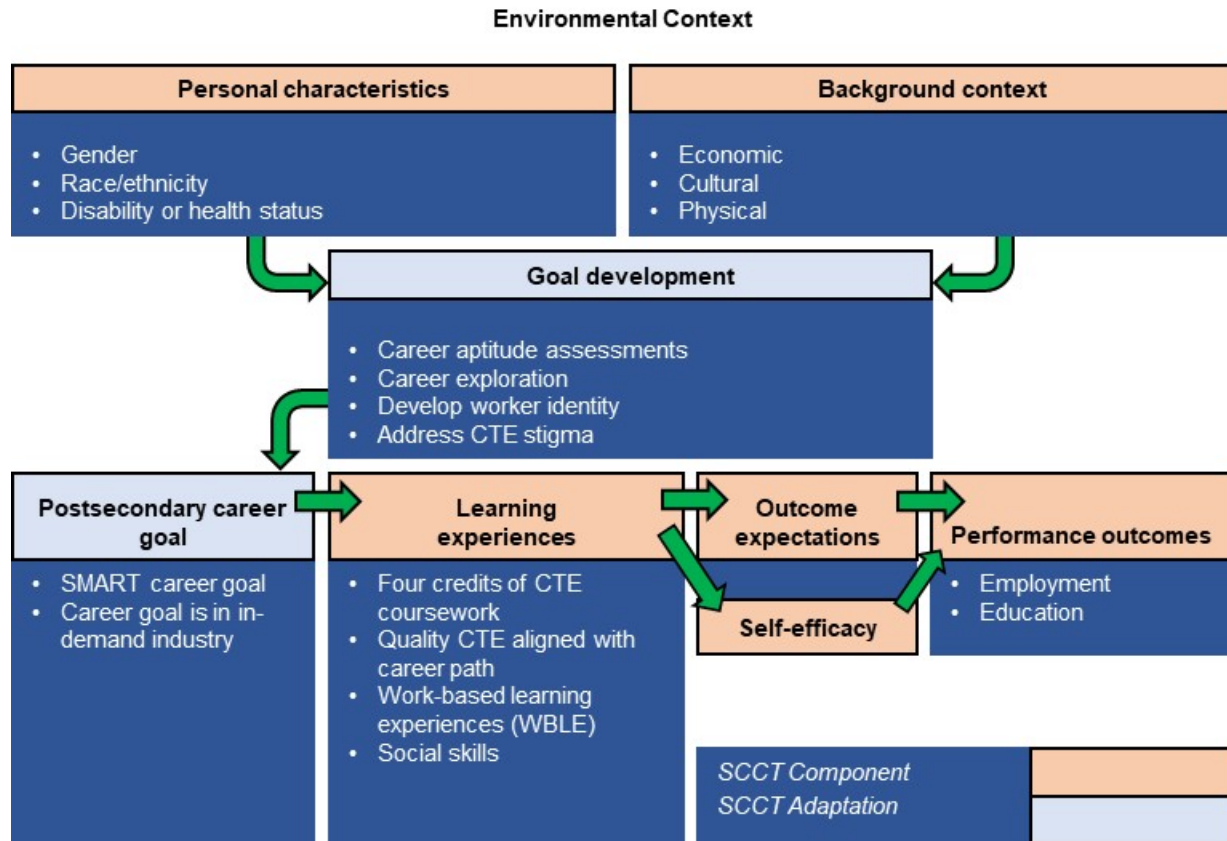


Figure A.3. TEST-CTE logic model



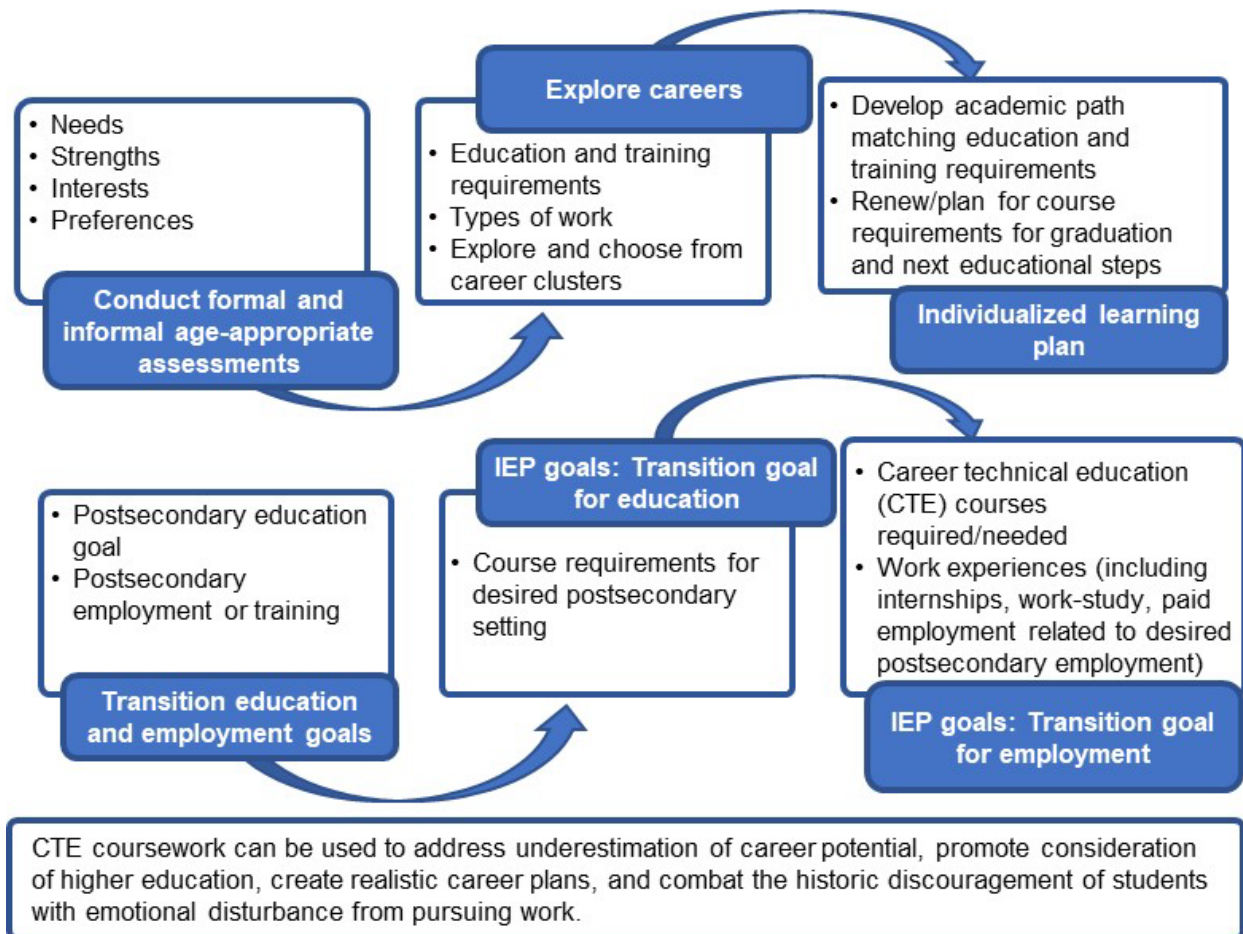
CTE = career and technical education; ED = emotional disturbance; SMART = specific, measurable, achievable, relevant, timely; TEST-CTE = Translating Evidence to Support Transitions-Career and Technical Education.

Figure A.4. Social cognitive career theory of change as adapted for TEST-CTE



CTE = career and technical education; ED = emotional disturbance; SCCT = Social Cognitive Career Theory; SMART = specific, measurable, achievable, relevant, timely; TEST-CTE = Translating Evidence to Support Transitions-Career and Technical Education.

Figure A.5. TEST-CTE road map



CTE = career and technical education; IEP = individualized education program; TEST-CTE = Translating Evidence to Support Transitions-Career and Technical Education.

Table A.1. Characteristics of TEST-CTE and relevance to policy and public programs

Intervention characteristics	Questions for stakeholders	TEST CTE
Goals	<i>Does TEST-CTE fit within existing public program context?</i>	<p>Builds on existing policies and programs including Perkins V, the Individuals with Disabilities Education Act, the Every Student Succeeds Act, the Workforce Innovation and Opportunity Act, the Social Security Administration (SSA), and the Department of Labor's Office of Disability Employment Policy (ODEP).</p> <hr/> <p>Sits within the federally mandated transition components of special education in secondary schools.</p>
Outcomes	<i>How can information generated by TEST-CTE improve outcomes for students with emotional disturbance (ED) or other disabilities?</i>	<p>Helps educators support special education students with ED in acquiring at least four credits of career and technical education (CTE) in a career cluster, aligned in a career pathway within an in-demand industry, to improve employment outcomes and reduce reliance on disability benefits.</p> <hr/> <p>Trains educators to develop a SMART (specific, measurable, achievable, relevant, timely) career goal and relate the goal to an in-demand industry.</p> <hr/> <p>Designed to address barriers to high school CTE programming to help students with disabilities prepare for successful careers and reduce reliance on SSI and other disability benefits.</p> <hr/> <p>A longitudinal study would examine postsecondary outcomes (participation in employment and higher education and enrollment in disability benefits) through regular data-collection efforts.</p>
Impact of implementation	<i>How can information generated from TEST-CTE be used to improve the outcomes of students with ED or other disability populations?</i>	<p>Data collection on mediators (such as learning experiences, increased self-efficacy, vocational identity, and positive outcome expectations) would allow for further testing of the underlying theory of change and changes in career self-efficacy and positive outcome expectations.</p>
Evidence	<p><i>How does TEST-CTE address current gaps in interventions or services?</i></p> <hr/> <p><i>What are relevant federal authorities for conducting demonstrations?</i></p>	<p>TEST-CTE is designed to address barriers to high school CTE programming for some students with ED.</p> <hr/> <p>TEST-CTE addresses the issue of a lack of resources for students and teachers.</p> <hr/> <p>The Department of Labor and ODEP; the Department of Education; the National Institute on Disability, Independent Living, and Rehabilitation Research; SSA; and/ or the Substance Abuse and Mental Health Services Administration</p> <hr/> <p>Applicable agencies within the Department of Education include the Institute of Education Sciences, the Office of Special Education and Rehabilitative Services, and the Rehabilitation Services Administration.</p>

Intervention characteristics	Questions for stakeholders	TEST CTE
<p>Potential for replicability, scalability, and sustainability</p>	<p><i>What are the costs associated with TEST-CTE?</i></p>	<p>A formal cost evaluation has not been conducted on TEST-CTE. We propose assessing the potential cost of implementing TEST-CTE from three perspectives: (1) broadly training educators on the importance of CTE for this population, (2) running a TEST-CTE efficacy trial, and (3) conducting a full cost-benefit assessment.</p>
	<p><i>What is required for adoption and use of TEST-CTE?</i></p>	<p>Collaboration of state and local educational agencies, vocational rehabilitation, and workforce centers.</p> <p>State special education coordinators can encourage CTE programming for students with disabilities within districts and schools.</p> <p>TEST-CTE will be most effective when high schools are well aligned with Department of Labor and/or vocational rehabilitation programs and industry needs.</p>
	<p><i>How could TEST-CTE be expanded?</i></p>	<p>Modules for educators, students, employers, service providers (such as vocational rehabilitation), and family members could be developed and tested. These modules could be informed by stakeholder groups to ensure they are culturally sensitive and address racial and ethnic disparities.</p> <p>Data on changes in student’s attitudes, self-perceptions, self-efficacy, work motivation, and work readiness would contribute to the knowledge base and inform services and interventions for students with disabilities.</p>

TEST-CTE = Translating Evidence to Support Transitions-Career and Technical Education.

Table A.2. Relevant public policy and context for career and technical education and TEST-CTE

Federal legislation and description	Relevance to CTE and TEST CTE
<p>Perkins V Act: Provides almost \$1.3 billion annually in funding for CTE; funds local education agencies' (LEAs') provision of CTE</p>	<ul style="list-style-type: none"> • Requires states and LEAs to develop services and activities that integrate academic, career, and technical instruction, including career development and quality improvement for CTE educators. • Encourages partnerships between educational institutions (such as area CTE centers and community colleges), workforce investment boards, and business and industry to increase employment opportunities for special populations, including students with disabilities. • Requires LEAs to analyze equity gaps in CTE enrollment for special populations. • Requires states to recruit special populations, including students with disabilities, into CTE. • Requires local funding recipients and states to report performance data disaggregated by gender, race and ethnicity, and special population status for federal accountability purposes. Requires states to submit plans that include strategies to promote accessibility of CTE for disability groups. TEST-CTE provides a mechanism for addressing the accessibility of CTE for students with emotional disturbance. • Requires states to identify achievement gaps and address racial inequities in access and participation through the comprehensive needs assessment, in which local recipients must identify and address equity gaps, including those linked to race and ethnicity. • TEST-CTE could provide a mechanism to engage underrepresented minorities. • Includes a formal definition of a CTE concentrator and encourages schools to structure CTE courses to help students meet the course threshold for concentrator status. • Includes funding for CTE demonstration programs available to state governments. • Promotes multiple entry and exit points within CTE programs of study and progression from a career cluster to occupation-specific instruction that leads to recognized credentials. TEST-CTE provides guidance on how to achieve this through the transition component of the individualized education program (IEP).

Federal legislation and description	Relevance to CTE and TEST CTE
<p>Individuals with Disabilities Education Act: Governs how states and public agencies provide early intervention, special education, and related services</p>	<ul style="list-style-type: none"> • Provides mechanisms for (a) assessing students to determine their education needs and appropriate educational placements that include the least restrictive environments, (b) developing plans for students with disabilities that include accommodations and services as needed, and (c) helping prepare students for success. • An IEP must be developed for each student who needs special education. The IEP must be developed by a team that includes the student’s family, teachers, counselors, and the student when appropriate. • Secondary students with disabilities must have transition services in their IEPs specifying postsecondary goals that include education, training, and employment (Harvey and others 2020).¹ • Suggests services should be based on peer-reviewed research when feasible. • Provides a mechanism to connect students with disabilities to vocational rehabilitation agencies through transition services offered by their schools. • TEST-CTE provides educators with steps and activities to develop the transition plan of the IEP in a way that encourages and supports a concentration of CTE credits and postsecondary goals along a career pathway.
<p>Every Student Succeeds Act: Upholds critical protections for disadvantaged and high-need students</p>	<ul style="list-style-type: none"> • Mandates that states develop challenging academic standards and indicators of student successes (Advance CTE 2017). • Focuses on accountability by requiring that all students are taught to high academic standards to prepare them to succeed in college and careers. • Ensures that states conduct annual assessments that measure students’ progress toward these high standards and provide that critical information for educators, families, and students. • Provides a mechanism to implement innovative interventions, such as TEST-CTE, to help students with disabilities meet these high standards. • Supports need for evidence-based practices. • Refers to regional education labs, which can provide assessments of research on promising interventions such as TEST-CTE that are not included in national research clearinghouses.
<p>Workforce Innovation and Opportunity Act (WIOA): Designed to strengthen the public workforce system and help Americans, including youth with disabilities, obtain high-quality jobs and careers</p>	<ul style="list-style-type: none"> • Provides skill development, employment, and training services through grants to states to assist eligible individuals with disabilities in obtaining employment. • Focuses on in-demand jobs, skill training, and completion of high school. Specific pre-employment transition services include job exploration, work-based learning experiences, counseling on postsecondary education, workplace readiness training, and self-advocacy skill training. • Collaboration between agencies for secondary students with disabilities and CTE is a key part of WIOA (Advance CTE 2018). • Authorizes education and vocational training programs for vulnerable populations that are administered by the Department of Labor. • WIOA priorities overlap TEST-CTE priorities (for example, the focus on skill training for in-demand jobs).

Federal legislation and description	Relevance to CTE and TEST CTE
<p>Social Security Administration (SSA): Offers employment support programs for youth with disabilities</p>	<ul style="list-style-type: none"> • SSA work incentives can be used to help youth to become employed and earn wages without automatically disqualifying them from receiving SSI or SSDI cash benefits or from eligibility for Medicaid or Medicare. • Youth age 15 or older can develop a Plan to Achieve Self-Support (PASS) to save money for education or employment needs. Educators and counselors who work with students with ED can refer them to vocational rehabilitation services to help them develop a PASS to further their education and careers. A PASS could be used to help youth obtain postsecondary CTE or obtain credentials or certifications needed to be successful in obtaining employment. • The Ticket to Work program provides opportunities for people who receive SSI benefits and want to work. Individuals, including youth with ED, may be eligible to receive free employment services through the Ticket to Work program to help them achieve their employment goals. • The Student Earned Income Exclusion may provide youth with disabilities who are participating in CTE or other educational opportunities with a way to have some of their earnings not counted against their SSI benefits. • The Section 301 provision may allow some youth ages 18 to 21 in special education or those who receive services through their IEP to retain SSI benefits while in training. • SSA can fund longitudinal demonstration programs to determine whether interventions such as TEST-CTE promote positive outcomes for youth receiving SSI and divert students at risk for SSI enrollment.
<p>Department of Labor’s Office of Disability Employment Policy (ODEP): Promotes policies and coordinates with government and employers to increase employment and workplace success for people with disabilities, including youth transitioning from school to work</p>	<ul style="list-style-type: none"> • ODEP develops and disseminates policy strategies and practices and provides technical assistance to government agencies, service providers, and employers to increase workplace integration and success for people with disabilities. • TEST-CTE is well aligned with ODEP’s Guideposts for Success (ODEP n.d.). The guideposts represent key educational and workforce development practices for youth, including those with disabilities. Targeted guideposts have been identified for special populations, including youth with mental health needs.
<p>Department of Education’s Office for Civil Rights: Ensures equal access to CTE through the Methods of Administration program</p>	<ul style="list-style-type: none"> • Can help hold school systems accountable for addressing inequalities in CTE. • Provides a mechanism for outreach and technical assistance to CTE programs to improve equal access to CTE. • Continues efforts to ensure that all students have equal access and opportunities to succeed in CTE regardless of their disability, gender, race, color, or national origin.

CTE = career and technical education; TEST-CTE = Translating Evidence to Support Transitions-Career and Technical Education.

Table A.3. Relevant federal authorities for conducting demonstrations

Federal authority	Description	Demonstration funding mechanisms
Department of Labor’s Office of Disability Employment Policy (ODEP)	<p>ODEP conducts and oversees a wide variety of research and evaluation activities. These efforts include identifying and evaluating potential solutions to improve employment outcomes for youth and young adults ages 14 to 24 with disabilities. Additional initiatives that focus on the impact of interventions or approaches intended to increase labor force participation and the economic success of youth with disabilities are needed to address gaps in services and research.</p>	<p>ODEP is well situated to fund a demonstration program on the value of CTE and/or TEST-CTE for diverting SSI enrollment among students with disabilities, including students with emotional disturbance (ED). Sufficient funds can be awarded by ODEP to assess both the short- and the long-term impacts of CTE on employment and financial self-sufficiency.</p>
Institute of Education Sciences (IES)	<p>The research and evaluation arm of the Department of Education. Provides scientific evidence to ground education practice and policy and disseminate this information to educators, parents, policymakers, researchers, and other stakeholders. Supports the advancement of statistics and research through specialized training and development of methods and measures. Provides resources to increase use of data and research in education decision making through the What Works Clearinghouse. IES has the authority to conduct studies and evaluations of special education programs authorized by the Individuals with Disabilities Education Act.</p>	<p>Sponsors research to understand where and how education can be improved. IES funds the development and rigorous testing of new approaches or interventions designed to improve education outcomes for all students through pilot studies and large-scale evaluations of education programs and policies. IES is equipped to fund an evaluation of CTE and TEST-CTE.</p>
Office of Special Education and Rehabilitative Services	<p>An agency within the Department of Education. Provides a wide array of supports to parents, students, school districts, and states through special education, vocational rehabilitation, and research. Ensures equal opportunity, access to, and excellence in education, employment, and community living for people with disabilities.</p>	<p>Provides grants and other funding opportunities through the Rehabilitation Services Administration and the Office of Special Education Programs. These efforts are designed to help integrate individuals with disabilities into the community and the competitive labor market. Partnerships among state education agencies, vocational rehabilitation agencies, and workforce centers through WIOA can be leveraged to conduct a demonstration of the efficacy of CTE and TEST-CTE on the postsecondary and employment outcomes of students with ED.</p>

Federal authority	Description	Demonstration funding mechanisms
<p>National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)</p>	<p>Housed within the Administration for Community Living. Generates new knowledge and promotes improvements in the lives and functioning of individuals with disabilities in their community. NIDILRR funds research, demonstration projects, training, technical assistance, and other activities to maximize integration in employment, independent living, and family supports. NIDILRR invests in rehabilitation research related to long-term outcomes and community participation.</p>	<p>NIDILRR can develop priorities for its various funding mechanisms (for example, Disability and Rehabilitation Research Project and Rehabilitation Research and Training Center programs) to examine CTE and TEST-CTE for students with ED.</p>
<p>Substance Abuse and Mental Health Services Administration (SAMHSA)</p>	<p>Within the Department of Health and Human Services. Leads public health efforts to reduce the impact of substance abuse and mental illness. SAMHSA funds innovative services and awards grants and contracts to states and local organizations through four centers. SAMHSA funds numerous innovative services for youth and young adults with mental health conditions.</p>	<p>SAMHSA centers could be involved in supporting CTE ancillary services and working collaboratively with special education departments for students with ED.</p>

CTE = career and technical education; TEST-CTE = Translating Evidence to Support Transitions-Career and Technical Education.

Table A.4. Commonly used acronyms

CTE	Career and technical education
ED	Emotional disturbance
ESSA	Every Student Succeeds Act
IEP	Individualized education program
ILP	Individualized learning plan
IDEA	Individuals with Disabilities Education Act
IES	Institute for Education Sciences
LEA	Local education agency
NIDILRR	National Institute on Disability, Independent Living, and Rehabilitation Research
ODEP	Office of Disability Employment Policy
SMHC	Serious mental health condition
SCCT	Social cognitive career theory
SSA	Social Security Administration
SMART	Specific, measurable, achievable, relevant, timely
Perkins V	Strengthening Career and Technical Education for the 21st Century Act
SAMHSA	Substance Abuse and Mental Health Services Administration
SSI	Supplemental Security Income
TEST-CTE	Translating Evidence to Support Transitions-Career and Technical Education
WIOA	Workforce Innovation and Opportunity Act