

PIPEline to Career Success for Students with Disabilities

ROOT CAUSES & STRATEGIES



NAPE
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Authors: Carol Burbank, PhD and George Tilson, EdD

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CTE/STEM PIPEline Support for Students with Disabilities

ROOT CAUSES & STRATEGIES



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PIPEline to Career Success for Students with Disabilities: Root Causes and Strategies is a comprehensive literature review of root causes or barriers that students with disabilities face to accessing high quality education, including career and technical education, experiences. The review also includes aligned strategies and resources that educators, parents and communities can use to remove these root causes and create equitable learning environments for students with disabilities. This work was developed based on the National Alliance for Partnerships in Equity (NAPE) Education Foundation's Program Improvement Process for Equity™ (PIPE) .

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National Alliance for Partnerships in Equity
91 Newport Pike Suite 302 Gap, PA 17527
717-407-5118 phone | 717-407-5166 fax
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PART I

The goal of *CTE/STEM PIPELINE SUPPORT FOR STUDENTS WITH DISABILITIES* is to assist you in recruiting and retaining more students with disabilities into transition pathways to CTE/STEM careers. The document begins with a list of useful acronyms, and the opening chart summarizes the literature review that follows in Part II, providing a “quick find” tool for the detailed research and strategies.

ACRONYMS

AT Assistive Technology
BIPs Behavior Intervention Plans
CCR College and Career Ready Standards
CTE Career and Technical Education
EL or ELL English (Language) Learners
ELO Expanded Learning Opportunity
ESSA Every Student Succeeds Act
FBAs Functional Behavior Assessments
FVE Functional Vocational Evaluation
IDEA Individuals with Disabilities Education Act
IDEIA Individuals with Disabilities Education Improvement Act
IEP Individualized Education Program
LD Learning Differences
LEP Limited English Proficiency
MTSS Multi-Tiered System of Supports
NASMHPD National Association of State Mental Health Program Directors
ODEP Office of Disability Employment Policy
PBS Positive Behavioral Support
PCP Person-Centered Planning
PWD People with Disabilities
RTI Response to Intervention
SEL Social and Emotional Learning
SOP Summary of Performance
STEAM Science, Technology, Engineering, Art, and Mathematics
STEM Science, Technology, Engineering, and Mathematics
SWD Students with Disabilities
TA Transition Assessment
UDL Universal Design for Learning
WBL Work Based Learning

ACRONYMS NOT USED IN TEXT (but might prove useful in your research)

AA-AAS Alternate Assessment aligned with Alternate Academic Achievement Standards
ADA Americans with Disabilities Act
COPAA Council of Parent Attorneys and Advocates
CRA Congressional Review Act
EIR Education Innovation and Research
ESEA Elementary and Secondary Education Act
FOCUS Furthering Options for Children to Unlock Success
NCLB No Child Left Behind
RRTF Regulatory Reform Task Force
SSIP State Systemic Improvement Plan

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This graphic visually represents the categories in the Root Cause document. In the center, the five key issues that affect SWD take their place at the core of the literature review's themes. Around that core, the other Root Causes circle, all influenced by the key issues. Although each of the root causes reflects activities and initiatives in specific contexts, stakeholders and programs generally overlap in arenas of career, family, individual experience, and school settings. Teams of stakeholders from each area are needed to build effective responses to challenges. Inclusion for diverse SWD in CTE/STEM programs and classes depends on awareness of the connections in these four arenas, where ever interventions and issues are focused. This graphic, with the Root Cause chart and literature review that follow, offer summaries of evidence-based research to support effective problem solving and assessment for effective design and implementation of inclusive CTE/STEM practices for SWD.

PIPEline to Career Success for Students with Disabilities

ROOT CAUSES & STRATEGIES



KEY ROOT CAUSES FOR SWD INCLUSION

ROOT CAUSE	THEORY	STRATEGIES
<p>Key Issue: IEP Process <i>The IEP is too often organized as a mechanism for documenting interventions instead of a tool for student-centered exploration of needs, strengths, and interests.</i></p> <p>The IEP serves as a touchpoint for parent–student engagement and school/ community team building to nurture high expectations and create specific accommodations to support student career goals and to document shared decisions. It is an important shift point for academic planning, TA and support, self-determination, goal-setting and achievement, and both informal and formal assessment of individual gifts and challenges.</p>		<ul style="list-style-type: none"> Emphasize academic access to CTE/STEM programs and attention to postsecondary transition preparation in the IEP process. Create sustainable age-appropriate transition plans with PCP, which include parents and professionals to support the individual needs of the student. Keep strengths-based assessments at the heart of conversations about academic progress and student goals, even when addressing needs for accommodation. (Avoid making deficits central in discussions.) Promote self-determination assessment data for transition planning. Balance objective medical diagnoses that identify most needed accommodations with a whole-person approach that integrates accommodations, strengths, and personal goals for the learner’s plan.
<p>Key Issue: Community-Based Support <i>Without community relationships and collaboration, SWD and their families feel hopeless and trapped in the isolation of a medicalized diagnosis.</i></p> <p>Community networks can maximize the strengths, support goals, and transition plans in all of the environments in which SWD interact with peers and adults. Collaboration and partnerships are critical to ensuring that SWD have the comprehensive and wraparound supports needed to make the transition to college, careers, and independent living.</p>		<ul style="list-style-type: none"> Increase trust and involvement by addressing needs such as transportation and technology accommodations in school, home, work experience/training, and community events. Identify community partners to support families and SWD in working together to meet student goals.
<p>Key Issue: Self-Determination Self-Efficacy and Self-Advocacy <i>Like every student, and no matter how severe their disabilities, SWD can create goals and pursue their dreams.</i></p> <p>Promoting and enhancing the self-determination of SWD means putting their agency at the center of their experiences and decisions and helping them act in a purposeful and planful manner based on their own assessment of potential actions and results, with the support of their TA team. Self-determination, which includes both self-advocacy and self-efficacy, is a specific challenge for PWD because the systemic supports that respond to their diagnosis often impose low expectations and implicitly or explicitly teach them that they are impaired and therefore not capable of self-assessment, self-regulation, or independent ambitions.</p> <p><i>Self-advocacy is a skill, and can be taught.</i></p>		<ul style="list-style-type: none"> See the student as an individual, rather than a disability or diagnosis. Understanding the challenges and accommodations required to build meaningful transitions to work and adulthood is a part of a larger relationship with the student, who should be an active part of the transition process. Balance peer interaction in small and large groups to build job and leadership skills and to increase SWD comfort with risk, self-expression, and community engagement. Challenges and supported stretching Integrate opportunities for choice, self-expression, and self-determination into IEP, classroom, extracurricular, and other transition-related experiences. Create opportunities for meaningful self-assessment experiences as well as to assess and affect programming and curriculum to prepare SWD for success in the workforce. Encourage SWD to accurately and honestly share their experiences without shame.
<p>Key Issue: Early Intervention <i>If we wait too long to offer support, SWD will confirm low expectations and limit success.</i></p> <p>SWD benefit from information and training with skills-based assessments and interest in CTE/STEM from elementary school on, but it is particularly important to begin transition planning in middle school, even though it is mandated by IDEA (2004) to begin at age 16. Policy and program development that emphasizes prevention of negative learning and employment impacts increases the chance of positive life choices, and early intervention in transition is important for all at-risk youth, not just SWD.</p>		<ul style="list-style-type: none"> Integrate assessment of math, problem-solving, and CTE-/STEM-associated skills into the IEP from middle school on. This strategy builds a foundation for success in secondary and postsecondary CTE/STEM career development. Offer ongoing hands-on CTE/STEM learning opportunities outside of the classroom to build interest in science and technology starting in elementary school and increasing through middle school. Integrate adaptive coping and emotional regulation patterns in classes during elementary school and throughout adolescent development to build positive emotional associations with learning and school. Build regular and meaningful assessments into the transition process, using elementary school supports and assessments and focusing on accurate integration of student needs with school and inter-agency programs. Provide numerous opportunities, beginning in the earliest school years, to expose SWD to the wide range of career possibilities.

Key Issue: Legal Mandates for Inclusion and Accommodation

IDEA mandates not only support SWD and their parents but also are intended to be used to support educator training, assessment tools, and best practices in schools.

The evolving landscape of IDEA and IDEIA is complex. The range of mandated interventions, accommodations, and programming depends not only on the disabilities of participating students, but also on the procedures, staffing, and opportunities in local schools and districts. Developing theories in the field about the needs and rights of SWD have impact on interpretation, policy developments, legal developments, and school implementations around these mandates. On the ground, this means that administrators and teachers on an IEP team must be both responsive and thorough, often stretching resources and connecting with additional collaborations to support self-efficacy, transition, and inclusion in specific ways for each SWD.

- Identify clear and effective information resources to maximize knowledge and update information as legislation and trends shift.
- Support SWD with complete and frequent assessment.
- Establish and document behavior and discipline practices in order to support students and protect teams from legal intervention.
- Address deficiencies in available services and document and evaluate the relief accommodations.
- For an IEP to be fully legally adequate, address abilities and strengths as well as weaknesses to integrate the idea mandates in individualized programs.
- Follow idea’s original and evolving mandate for mainstream inclusion with multiple supports.
- Build student leadership in IEP and transition meetings.
- Implement best practices for teacher and IEP team training in effective assessment and programming.

Academic Proficiency

Underachievement is only inevitable if teachers don’t have the tools to support SWD.

SWD often underachieve academically because of their assumed weaknesses and unmet needs for accommodation. SWD have a variety of skills and gifts, some of which are obscured by their disability, and some of which are part of their particular style of intellectual and social processing (related to, but not easily categorized as, a disability). Building the academic proficiency to succeed in CTE/STEM fields requires effective assessment and accommodation.

- Teach students that abilities can be expanded.
- Intervene to revise underestimation.
- Assess strengths as well as needs for accommodation or training.
- Build proficiency and interest in CTE/STEM to motivate participation and persistence.

Access to and Participation in CTE/STEM

Gaps in knowledge quickly become sinkholes that deepen exponentially over time for students with disabilities.

The path to CTE/STEM inclusion moves first through math proficiency and continues with inclusion in science and STEM-interdisciplinary coursework and activities. Whether SWD are enrolled in college-prep, occupational certification programs, or CTE, appropriately high academic standards in math and reading, with consistent and equitable CCRS, lay the foundation for future success.

- Utilize real-world teaching strategies within authentic settings, building math and problem-solving skills in work-related contexts, including WBL.
- Make math and science a requirement (explicitly ensure prerequisites and fundamental knowledge for SWD) and raise expectations within those requirements.
- Strongly advocate for access to advanced and AP courses, and create incentives while building and ensuring effective and appropriate accommodations, modifications, and support.
- Ensure that SWD have access to science fairs and other school CTE-/STEM-related special events.
- Address math/science deficits and potential in the IEP from elementary school through high school.
- Increase meaningful training opportunities for teachers of CTE/STEM and Special Education to support effective interventions and inclusion as well as building foundational math/science skills.
- Intervene with and include SWD early in STEM curriculum to lay the groundwork for coping and learning skills needed for academic success and career readiness.

Curriculum/Instruction

Curriculum supports for students with disabilities create better learning opportunities for every student in the classroom.

Inclusive curriculum and differentiated, strengths-based instructional strategies support student interest and career readiness. It is important for schools looking to innovate with inclusion of SWD in CTE/STEM to rethink tiered systems of interventions to accommodate implementation of the Common Core and to provide appropriate professional development to teachers to implement tiered systems with fidelity and responsiveness to the real learning characteristics of the individual students in those systems.

- Use multiple creative technologies of teaching and learning to engage and accommodate SWD.
- Integrate SEL strategies and PBS into all curricular strategies and each classroom expectation.
- Incorporate interdisciplinary collaboration with hybrid visual/verbal and hands-on assignments (including STEAM).
- Embed interventions within general education instruction and activities.
- Implement UDL practices.
- Identify and correct bias in curricular and instructional materials.
- Stress models of team teaching in curriculum that include SWD support personnel (para-professionals, teacher aides, and special education co-teachers) and content teachers.
- Build in instructional apps and technology with effective teaching strategies (scaffolding, performance feedback, repetition, reinforcement, attention to individual learning rates).
- Integrate self-determination development within academic content strategies (self-instruction, self-monitoring, and self-evaluation) to support student engagement while building academic success and self-concept.

Classroom Climate

A healthy classroom nurtures diversity in learning and respect for risk.

Healthy classroom ecology supports community involvement, engaged learning, and a diverse curriculum to develop a healthy academic self-concept for achievement through and beyond school years.

- Pay attention to equity in participation.
- Acknowledge educator as well as peers as role models, regardless of ability.
- Build self-advocacy and self-efficacy in learning experiences by acknowledging and honoring difference.
- Provide opportunities for collaboration to create respectful relationships.
- Set a tone that honors every student's need for some level of individualized support and technical help. Reduce stigma of accommodations.
- Configure the room physically to support access to teaching and learning activities for all students, considering the particular social, behavioral, and accessibility needs for full participation by SWD.
- Keep expectations both high and realistic for all students, including SWD.

Inclusive Classrooms

Teachers in inclusive classrooms thrive with support and teamwork and feel as successful as their students

Inclusive learning practices are important for all students, not just SWD. However, for SWD, inclusion is fundamental for achieving academic, career, and social goals, because there has been a history of exclusion based on stereotypes and separation. Students with categorical disabilities and LEP may need specialized programming, and their teachers should be prepared to help these students have an equal chance of succeeding in CTE/STEM education classrooms and future careers.

- Differentiate instruction to build self-efficacy and achievement.
- Provide training and pair teacher mentors with SWD experience with teachers new to inclusive classroom work.
- Create person-to-environment fit for activities for SWD (and all others) to model adaptive learning.
- Integrate CTE/STEM concept-oriented instruction to support and motivate SWD to build sustainable math/technology/science interest and career goals.
- Increase technology assists in the classroom for mastery of reading and writing, and in other areas that will improve comprehension, skills development, and goal-setting.
- Build MTSSs for all students to support self-regulated, goal-directed learning.
- Consider physical needs such as transportation and comfortable inclusion in the classroom environment as part of support for academic success.
- Address behavioral and academic needs.
- Frame needed support as goal-related through strengths-based classroom and IEP assessment.
- Integrate support team and accommodations without stigma to decrease isolation and bullying and to build self-mastery, community skills, and career opportunities.

Activities/Networks

Inclusive learning should not be limited to classroom experiences.

Without access to extracurricular activities, some SWD may give up on CTE/STEM careers. For SWD, learning social and academic skills should occur with specialized teachers and among peers with similar needs, in multiple contexts during and beyond school hours. In addition, recruitment to STEM extracurricular activities reduces barriers to career participation and planning.

- Create camp and science fair experiences to build confidence, community, and skills.
- Offer academic support opportunities that do not prevent SWD from participating in inclusive school activities.
- Provide opportunities for SWD to learn about leadership styles and strategies, identify their personal styles, and apply them within diverse activities and environments.

Role Models/Mentoring

When SWD ask, "Who will I become?" they need to know success is possible.

Role models and mentoring by successful PWD in career and classroom contexts support SWD in building self-esteem and high expectations. Include diverse role models (in curriculum and in support teams) for all marginalized learners.

- Integrate examples of notable PWD in CTE/STEM careers into the curriculum, and emphasize these success stories as "normal" rather than exceptional.
- Invite and include PWD as part of the team of diverse successful community of leaders in CTE/STEM fields who speak to your class or participate in after-school experiences/camps. Consider inviting alumni to speak as well.
- Provide opportunities in the classroom and other school activities for all students, including SWD, to be mentors and role models preparing them for leadership in their future careers, and building confidence and engagement in transition activities

Career Preparation in School Teams

Without creative and sustained career support, SWD will be economically crippled by career hurdles.

Because SWD have a variety of communication preferences and challenges in identifying, assessing, and achieving work goals, the SWD team (including the career counselors in the school) should be certain that career materials and transition-to-work practices emphasize multiple types of communication, assessments, and connection to employment and training opportunities, built on clear understandings of legal and practical strategies for career success for PWD.

- Build career counseling partnerships into classes, camps, and after-school activities to support interest in CTE/STEM careers and programs.
- Educate school/career counselors about transition needs of SWD, and general successes and accommodations for PWD in the workforce, so that they can provide the resources and training in assessment tools appropriate for SWD.
- Bring community and business leaders from CTE/STEM fields into schools, and share internship and training opportunities with SWD.
- Educate school/career counselors and transition support professionals about the job-seeker's rights in general, and the rights of PWD in the workplace specifically, so that they can offer support for related issues in resume writing, negotiating, and employment accommodation and eligibility.
- Train all staff in the concepts of Customized Employment, as defined by the U.S. Department of Labor's Office of Disability Employment Policy, to demonstrate that students with the most significant disabilities can acquire modified skills sets that will match specific employer needs.
- Build self-determination assessment data into program evaluation and PCP.

Employment Partnerships

Local supports are safety nets that ambitious students can turn into trampolines.

SWD benefit from work/school partnerships with local businesses and advanced educational opportunities that are prepared to train and support SWD and are committed to accommodating and hiring PWD.

- Increase partnerships with community colleges and other local colleges/universities for inclusive certificate and training opportunities for SWD in secondary school to prepare for CTE/STEM and other opportunities.
- Collaborate with local employers in secondary school programs to create internship and other WBL opportunities.
- Connect with community mentors who are successful in several fields to advise as students' career goals are set and pursued.
- Identify national professional organizations as a resource for employer training.
- Enlist Department of Vocation Rehabilitation and community rehabilitation providers to partner with CTE/STEM educators.

Work/Life Balance

Programs prepare SWD for work transition, but rarely for sustainable life balance.

The families of SWD need support in developing quality work-life-family balance, partly because they must manage disability in addition to standard childrearing issues. This community-based support will help parents and their children have a healthier life, in the present and in the future. Improving family dynamics and creating opportunities for SWD to learn skills that will help them balance leisure and work will help them navigate the specific social/employment dynamic of building a healthy life at work and outside of work.

- Support employed parents of SWD, working with employers and school to manage work-life-family balance for greater family psychological and physical health.
- Increase SWD ability to build social networks and social capital to support them to achieve their future goals.
- Build awareness in SWD that work is only a part of a successful life, and reduce tension around shame and the need to pass as "normal" in community/social contexts as well as at work.

CTE/STEM Awareness

Parental gaps in knowledge can contribute to lower expectations for SWD.

Parental support is foundational for SWD to aspire to and achieve high expectations for career placement in their chosen careers. To that end, it is crucial that parents have as much access as possible to information about career development, resources, and success stories of professionals with disabilities.

- Design activities to promote family roles in strengths-based CTE/STEM development.
- Make CTE/STEM planning a part of the IEP process.
- Invite, involve, and educate parents.
- Reduce self-blame through parent education for both parents and SWD to improve parent-child relationships, reducing barriers to career success.
- Educate parents as equal to professionals on the team to support higher expectations of achievement and career success.
- Encourage high expectations from parents for CTE/STEM involvement, with attention to key challenges that their children face, coupled with awareness of programs that might address their needs.

School Engagement

Parents and their children need to feel welcome in the school community.

Healthy family CTE/STEM systems aligned with school programs support higher expectations, academic achievement, and student success.

- Provide opportunities beyond the IEP for families to challenge low expectations for SWD in CTE/STEM.
- Activate family resources and engagement to increase predictors of success in educational goals for SWD.
- Invite and educate families to support content and assignment standards for homework and other education goals.
- Identify intersecting issues affecting a student's success, including disability but not excluding family issues that might require additional support services.

Stereotype and Stigma Threat

What we think we know about SWD can make or break them. (Remember, there is no such thing as normal...)

Academic achievement and individual development in terms of social skills and self-determination are positively influenced by the reduction in stereotype threat and stigmatization. No matter what their learning challenges might be, SWD also experience social disability, often intensified by intersecting marginalized identities, including gender and race. SWD grapple with their identity group legacies, their own understanding of these identities, as well as how others interpret and express those identities. This complicated and necessary process is key to making sense of their life experiences, challenges, and successes.

- Train administrators/staff/teachers to be aware of assumptions of inadequacy projected onto SWD that limit assessment and programming.
- Educate teachers to resist the stigmatization of LD designations in math and other CTE-/STEM-related classes, emphasizing the fact that real causes of LDs might come from disparities in earlier placements, previous teachers' negative attributions and expectations, or lack of access.
- Assist teachers in understanding bullying and stigmatization issues, identify intervention strategies, and teach students to recognize and solve bullying situations.
- Teach critical thinking about the ways in which media portray or exclude PWD.
- Reframe disability as an identity within multiple identities (some marginalized, others privileged or "normal") as a way of learning about every student beyond the label of their diagnosis.

PART II

“The 21st century economy in the United States demands that labor market entrants possess the knowledge and skills necessary to advance the nation’s economy on a global scale.”
Achieve, 2013, p. 1

The inclusion of students with disabilities in career and technical education (CTE) and science, technology, engineering, and mathematics (STEM) career paths are built on a foundation of increasing support for meaningful education initiatives in U.S. schools to prepare students for the demands of the 21st century workplace. The 2015 [Every Student Succeeds Act](#) (ESSA) was proposed to provide all children, including students with disabilities (SWD), significant opportunities to receive a fair, equitable, and high-quality education, and to close educational achievement gaps. ESSA requires states to establish standards, assessments, and accountability systems, expanding the [2004 Individuals with Disabilities Act](#) (IDEA) mandate to ensure that eligible students with disabilities are provided individualized services and supports to ensure their access to general education opportunities.

A [2018 report by the National Council for Disability](#) noted that ESSA requires challenging academic standards for reading, mathematics, and science in all public schools. “AAS [alternate achievement standards] must be aligned to the state’s challenging academic content state standards, promote access to the general education curriculum, and reflect professional judgment of the highest possible standards achievable” (National Council for Disability, 2018, p. 19). In terms of CTE/STEM access, SWD need equitable access to new initiatives, including “developing facility with and mastery of core content knowledge, the future measures of learning, as envisioned by project contributors, also value the enduring skills and personal qualities that demonstrate academic tenacity and competence, and other lifelong learning skills that will remain relevant in 10 to 20 years” (Tannenbaum, 2016, p. 21).

The chronic inequities and stereotypes that limit achievement and access for CTE/STEM success can be addressed in many ways. In this literature review, we present root causes specifically related to forming sustainable pathways to success in CTE/STEM for SWD, in particular the key strategy of strengths-based assessment to support self-advocacy, effective career planning, accommodation, and appropriate inclusion. We also present other theories, resources, and strategies to support SWD in educational, family, career, and individual development contexts.

This literature review builds on the foundation of significant work supporting equity and inclusion for marginalized students in CTE/STEM work, including NAPE’S 2009 Nontraditional Career Preparation: Root Causes and Strategies literature review. There is no one prescribed solution to support SWD because of the diversity of learning styles and disabilities in student populations. Nonetheless, an ample body of research supports effective interventions that respond to root causes of exclusion and under-assessment/under-achievement for all SWD.

Whatever relationships, settings, and opportunities bring us into contact with SWD, we have daily opportunities to transform student experiences by recognizing and acknowledging structures and systems that marginalize SWD by challenging assumptions about SWD, and in turn establishing equitable connections and curricula. This approach is based on the work of Wehmeyer (2007, 2011), Siebers (2011), and Shogren with multiple research partners, including Wehmeyer (Shogren et

al., 2012, 2015a, 2015b, 2016a, 2016b), who place strengths-based assessment, self-efficacy, and identity management at the heart of effective accommodations and opportunities for SWD. We discuss Wehmeyer and Shogren in detail in the literature review below.

Central to transforming systemic marginalization of SWD and expanding access to CTE/STEM careers is understanding the difference between the challenge of thriving despite disability and the challenge of overcoming cultural stereotypes. Disability is a category that refers both to actual physical, emotional, and intellectual challenges and to projected stereotypes that limit access to opportunity (Siebers, 2011). Furthermore, stereotypes about disability have been embedded in stereotypes of race and gender inferiority, which makes disability both an unstable and complex category of identity. “That disability may take so many forms increases both its impact on individuals and its significance in society” (Siebers, 2011, p. 71).

No matter how arbitrary they may seem to people who understand principles and practices of equity, stereotypes have practical manifestations in the experiences of marginalized people and communities, particularly for at-risk youth (Liang, Spencer, West, & Rappaport., 2013). Whatever marginalized identities SWD carry are layered into their daily experiences with whatever disability shapes their school and transition-to-work experiences. Most SWD therefore face multiple overlapping marginalization. These layered identities can double and even triple the impact of exclusion. They can mask needs for accommodation or complicate the impact of the real physical, emotional, or intellectual challenges that SWD face (Siebers, 2011).

Established equity interventions that support women and girls and other marginalized students who would otherwise have limited opportunities to pursue CTE/STEM careers can also be used to support SWD. Therefore, inclusive CTE/STEM programming in schools, families, workplaces, and communities must build on best practices for establishing equity for all students, with additional attention paid to the accommodations and best practices for inclusion for the diverse and complex challenges of SWD. We recommend that you use not only this root cause tool as a primary resource but also NAPE’s other equity root cause practice tools as supplemental support for building effective interventions, curriculum, and partnerships for successful transitions. NAPE’s root cause resources can be found at www.napequity.org/root.

KEY ROOT CAUSES FOR SWD INCLUSION

SWD have a unique and diverse set of needs that make their inclusion in general education a complex proposition. These sections include references to the broader literature about SWD as well as links and resources for CTE/STEM inclusion. The following root causes are specific to SWD and should be considered in combination with each of the more general root causes that follow:

- IEP Process
- Community-Based Support
- Self-Determination
- Early Intervention
- Legal Mandates for Inclusion and Accommodation

ROOT CAUSE: IEP PROCESS

WHAT THE LITERATURE SAYS: THEORY

The Individualized Education Program (IEP) serves as a touchpoint for parent–student engagement and school/community team building to nurture high expectations and create specific accommodations to support student career goals and to document shared decisions. It is an important shift for academic planning, transition assessment (TA) and support, self-determination, goal-setting and achievement, and both informal and formal assessment of individual gifts and challenges.

WHAT THE LITERATURE SAYS: EVIDENCE

TA is an ongoing process that requires the student, family, IEP team, and personnel outside the school system to plan and deliver age-appropriate TA methods and to collect, compile, and use the data at least on an annual basis in the IEP process. “Once a youth’s needs, strengths, preferences, and interests are identified by age 14 or 16, along with their desired post-school outcomes, ongoing assessment includes

- monitoring to collect data on the youth’s progress toward his or her post-school outcomes, transition services, and academic and functional achievement;
- planning to address the youth’s changing needs, strengths, preferences, and interests related to post-secondary education, independent living, and employment outcomes; and
- instructing the youth and family on how to use the results of TA in the IEP and the SOP [Summary of Performance] as new information becomes available on the youth and additional environments” (Neubert & Leconte, 2013, p. 4).

Students who participated actively in IEPs, met with school personnel to prepare for IEPs, and participated in a person-centered planning (PCP) process reported more positive post-school outcomes than those who did not (Antosh et al., 2013, p. 6). Teacher-led approaches to IEP procedure can result in limited and passive participation in transition preparation and planning. Models that support self-determination for SWD are more successful, “resulting in IEP documents that were more comprehensive in terms of their preferences, interests, and vision statements

concerning postsecondary employment and adult living outcomes compared to teacher-directed IEP” (Woods, Sylvester, & Martin, 2010, p. 106).

IEP team members include special and general educators, school administrators, parents, the student, and others who become involved in the planning meeting, depending on the student’s needs and the planning stage. Additional participants with expertise in CTE/STEM and teachers from inclusive classrooms may be productively included or kept informed about assessments, progress, and changes in accommodations.

RECOMMENDATIONS AND STRATEGIES

EMPHASIZE ACADEMIC ACCESS TO CTE/STEM PROGRAMS AND ATTENTION TO POSTSECONDARY TRANSITION PREPARATION IN THE IEP PROCESS.

Identification of CTE aptitudes and interests, with appropriate academic and career paths, should be integrated into the IEP evaluation or done in collaboration with a student’s IEP team, and all stakeholders should have access to a student’s IEP report. “The best way to ensure that a CTE program is enrolling qualified students is to insist that the CTE teacher or a program representative is involved in some way during the placement decision process” (Haber & Sutherland, 2008, p. 4).

Integrated holistic inclusion of CTE/STEM opportunities, assessment, and goal-setting magnifies the effectiveness of IEP transition planning. According to IDEA 2004 (Section 300.302), the IEP must include “appropriate measurable postsecondary goals based on age-appropriate assessments—related training, education, employment, and, where appropriate, independent living skills, and the transition services (including courses of study) needed to assist the youth in reaching those goals” (Neubert & Leconte, 2013, p. 2).

CREATE SUSTAINABLE AGE-APPROPRIATE TRANSITION PLANS WITH PCP, WHICH INCLUDE PARENTS AND PROFESSIONALS TO SUPPORT THE INDIVIDUAL NEEDS OF THE STUDENT.

The IEP can offer a tool for PCP that ideally identifies individual goals and includes youth in an individualized transition plan. Because many SWD have dual or multiple diagnoses, PCP through the IEP process can activate effective teams to support transition-to-career goals (Davis, Jivanjee, & Kroloff, 2010, p. 29). “Family opinions about postsecondary options can be important, and disagreements can lead to tensions at the IEP meeting. Students who feel confident that they know what their families want for them are better able to discuss postsecondary options” (Woods et al., 2010, p. 12).

PCP supports age-appropriate TA in an ongoing process of collecting information on the youth’s needs, strengths, preferences, and interests as they relate to measurable postsecondary goals and the annual goals that will help facilitate attainment of postsecondary goals. “This process includes a careful match between the characteristics of the youth and the requirements of secondary environments and postsecondary environments along with recommendations for accommodations, services, supports, and technology to ensure the match. Youth and their families are taught how to use the results of TA to drive the transition requirements in the IEP process, develop the SOP

document, and advocate for needed or desired supports to succeed in meeting postsecondary goals” (IDEA, 2004).

With SWD, higher expectations are often rewarded. In terms of transition plans, it is recommended that the student’s team advocate for integrating vocational and career-related goals with practical, strengths-focused steps for accessing vocational and career services, using the IEP to create opportunities to gain both knowledge and access to services associated with paid work (Antosh et al., 2013; Carter, Broke, & Trainor, 2014).

KEEP STRENGTHS-BASED ASSESSMENTS AT THE HEART OF CONVERSATIONS ABOUT ACADEMIC PROGRESS AND STUDENT GOALS, EVEN WHEN ADDRESSING NEEDS FOR ACCOMMODATION. (AVOID MAKING DEFICITS CENTRAL IN DISCUSSIONS.)

An emphasis on strengths-based assessment approaches affirms that strengths coexist alongside needs in every person, including people with disabilities (Thompson, Wehmeyer, & Hughes, 2010). “All students need to be able to stand up for themselves, to express their needs and desires, and to function independently as adults. Students with disabilities, just as their peers without disabilities, need to understand their own strengths and weaknesses and learn how to apply their strengths to learning and performance on the job. Students with disabilities must become aware of effective coping mechanisms and accommodations that can help them succeed. Most important, they must know when and how to communicate their needs when making decisions and when functioning in the learning or employment environment. These self-advocacy skills are critical for all students” (Beech, 2011, p. 22).

Each member of the IEP team, including parents, student advisors and mentors, and the student see different strengths in each student. “Individual transition planning team members often have different vantage points from which to observe a student, each may hold distinct expectations about the transition domains that are important to address for a student, and/or each may compile different information about a student’s competence and support needs. Such multi-informant approaches may be particularly important when conducting planning for students who have complex communication challenges and may encounter difficulties articulating their own goals, interests, strengths, and support needs” (Carter et al., 2014, p. 245).

PROMOTE SELF-DETERMINATION ASSESSMENT DATA FOR TRANSITION PLANNING.

IDEA 2004 mandates that youth be invited to their IEP meetings each time transition services are discussed (Section 300-321). This law also mandates that each student with disability exit school with an SOP document that includes a summary of academic and functional performance along with recommendations on how to assist the individual in meeting postsecondary goals (IDEA, 2004). Students can learn to lead many aspects of this process. A one- or two-page profile that details a student’s needs, strengths, preferences, and interests when they are aged 14 and 16 should provide the foundation for documenting TA data. The youth, at these ages, should be taught to share this information in some format with the IEP team. Student participation in the IEP meeting and techniques to incorporate self-management, self-advocacy, and self-monitoring are also identified as

effective evidence-based practices (Test et al., 2009).

BALANCE OBJECTIVE MEDICAL DIAGNOSES THAT IDENTIFY MOST NEEDED ACCOMMODATIONS WITH A WHOLE-PERSON APPROACH THAT INTEGRATES ACCOMMODATIONS, STRENGTHS, AND PERSONAL GOALS FOR THE LEARNER'S PLAN.

Although the IEP is based on medical and behavioral diagnoses that must be considered, these diagnoses are only part of the mandate to serve and accommodate SWD. "Educational systems tend toward rigidity over fluidity... and the contexts educators create (including the pros and cons of an accurate and thoughtful IEP) can serve to either enable or disable" (Berman & Connor, 2016, p. 21). In addition to a strength-based approach with students, to move beyond technical framing of medically defined (and limited) interventions, the team must consider social and intellectual inclusion as well as aptitudes and goals to build a child's academic skills and social abilities.

EFFECTIVE PRACTICES AND RESOURCES

USE MULTIPLE FORMAL AND INFORMAL ASSESSMENT TOOLS TO MEASURE AND SUPPORT PROGRESS.

"A systematic approach to ensuring that students are on track to meet the CCSS (College- and Career-Ready Standards) is integral to high expectations. Early indicators (such as attendance, performance on state assessments, suspension incidences, and mobility) and appropriate response systems should be put into place to ensure that students who may be behind are identified and appropriate response systems implemented" (Achieve, 2018, p. 10).

According to the [National Secondary Transition Technical Assistance Center](#), transition assessments can be formal or informal. Formal assessment typically involves using a standardized procedure for administering, scoring, and interpreting an assessment. Clear definitions of how an assessment is administered, scored, and interpreted allows for interpretation of a student's score relative to other students (e.g., norms), although not all standardized assessments are norm referenced. Informal assessment procedures are less structured and do not allow for comparison with other students. However, because informal procedures allow for assessment of student performance over time, they are useful in designing and evaluating the effects of instructional interventions. In addition, informal assessment includes data to be collected from a variety of individuals (e.g., parents, teachers, employers) using a variety of nonstandardized methods.

The [Self-Directed IEP](#) is an evidenced-based instructional practice that teaches students to become active participants in their IEP meetings with coaching provided as needed by the teacher who taught the lessons. Over time students use their learned skills to lead their IEP meetings. Once the Self-Directed IEP skills are learned and practiced, educators should teach students more detailed IEP engagement using the other ChoiceMaker lesson packages and the instructional materials found at the [I'm Determined](#) web site. For quick reference: [Self Directed IEP Information Sheet](#)

The [National Technical Assistance Center on Transition](#) assists state and local education agencies with collecting information about age-appropriate transition planning for SWD and shares materials

and personnel development resources.

The [Indicator 13 Checklist](#) provides states with a structure for collecting data to comply with IDEA and a checklist (Neubert & Leconte, 2013, p. 3).

The [Transition Assessment and Goal Generator](#) (TAGG) is a new online TA for secondary-aged SWD, their families, and professionals. TAGG items derive from research-identified student behaviors associated with post-high school employment and education. TAGG provides a norm-based graphic profile, present level of performance statement, lists of strengths and needs, and suggested IEP annual transition goals. Several recent studies indicate that TAGG produces valid and reliable results (Burnes, Martin, & Terry, 2018; McConnell, Martin, & Hennessey, 2015).

BUILD AWARENESS OF MULTIPLE GRADUATION PATHWAYS TO POSTSECONDARY WORK AND SCHOOL OPPORTUNITIES INTO THE IEP PROCESS.

“Designing multiple pathways is increasingly proving to be an effective strategy in providing all students with alternative methods of instruction and support across a wide range of college and career preparatory content areas. Providing multiple pathways that link academics and career preparation more tightly through flexible learning opportunities in the classroom and beyond is becoming a popular strategy for reforming secondary education and creating stronger links to postsecondary education and careers” (College & Career Readiness & Success, 2013, p. 17).

USE UNIVERSAL DESIGN FOR LEARNING (UDL) TO INTEGRATE YOUTH’S UNDERSTANDING OF THEIR SOP INTO THE IEP PROCESS.

“The youth is taught an appropriate technique to present the results of TA at the IEP meeting when transition services are discussed annually. This is best accomplished through UDL principles using multiple means of expression (e.g., oral presentation, written profile, PowerPoint presentation with text to speech features or pictures)” (Neubert & Leconte, 2013, p. 3).

ROOT CAUSE: COMMUNITY-BASED SUPPORT

WHAT THE LITERATURE SAYS: THEORY

Community networks can maximize the strengths, support goals, and transition plans in all of the environments in which SWD interact with peers and adults. Collaboration and partnerships are critical to ensuring that SWD have the comprehensive and wraparound supports needed to make the transition to college, careers, and independent living.

WHAT THE LITERATURE SAYS: EVIDENCE

Community-based support can be both formal and informal, but for effective TA and planning, the more engaged a community is, the more successful the social and career development will be for SWD. Services are more effective if they are provided on site in the community where the individual and family reside (Davis et al., 2010, p. 47).

Interagency coordination and planning is a critical element of transition assessment and planning. Balancing the “complex inter-related system of staffing, support, knowledge building (i.e., training, technical assistance), relationships, and funding” (Antosh et al., 2013, p. x). Collaboration at both the local and state levels is often required through multiple local and state systems. Typical transition planning teams must be expanded to include all of the disciplines and agencies that will impact the life of the person with a disability.

Community-based employment and skill development is another important part of transition preparation and success. “The current infrastructure for youth employment has been undercapitalized to the point that it is serving less than 10 percent of all eligible youth. This is clearly unacceptable. Young adult employment services need to be upgraded so adequate support is provided to young people who need help in navigating new environments and accelerating maturation” (Sturgis, 2013, p. 10).

Family systems and the community surrounding the families of SWD also must be activated as networks of support. Family, partner, and community organizations must be included in a student’s community as voices in the planning process, with clear roles and responsibilities for all partners (Harvard Family Research Project, 2011).

RECOMMENDATIONS AND STRATEGIES

INCREASE TRUST AND INVOLVEMENT BY ADDRESSING NEEDS SUCH AS TRANSPORTATION AND TECHNOLOGY ACCOMMODATIONS IN SCHOOL, THE HOME, WORK EXPERIENCE/TRAINING, AND COMMUNITY EVENTS.

Disability is a relative idea, viewed differently from culture to culture and even person to person. Accommodations must be individualized and access normalized. Disability is not an individual issue; it affects the whole community (National Gateway to Self-Determination, 2012). Everyone (whether with a disability or not) must decide what they will do each day (attend school, volunteer, work), where they will live, and how they will stay healthy and safe. Accommodating these needs and developing the necessary trust and involvement in community engagement is a necessary part of supporting TA and planning (Missouri Family to Family, 2016).

IDENTIFY COMMUNITY PARTNERS TO SUPPORT FAMILIES AND SWD IN WORKING TOGETHER TO MEET STUDENT GOALS.

Community-partnerships support development, goals, prevention of setbacks, and successful integration of new skills and self-determination.

- “Cross-system crisis prevention and intervention planning is recommended and requires the intentional development of collaborative relationships among all service providers.
- Individuals and their families will use fewer crisis services if individual planning includes clearly delineated ways of dealing with emergencies (who to call and when) as well as access to respite services when needed.
- It is important to have forums in which families have input, ‘and not just the squeaky wheel families.’ This may result in going door-to-door to do interviews to find out what families really need and not assuming that the families with the greatest need are being served.
- A central part in learning how to support young people with dual diagnoses includes measuring outcomes and testing the degree to which people’s lives have really changed rather than being managed” (Davis et al., 2010, p. 51).

Skills for college and career readiness need to be developed in multiple environments, with the support of many different adults inside and outside of school hours. “Many skills may best be learned in non-classroom, experiential learning settings, such as community service projects, extracurricular activities, internships, work, and afterschool programs.... Given the complex process of helping youth—especially youth with disabilities—to prepare for college and careers, it is unrealistic to expect schools to do this work in isolation” (College & Career Readiness & Success Center, 2013, p. 6).

“Many students with disabilities need a range of interventions and supports, such as physical accommodations, physical and mental health services, child welfare services, and independent living supports to be college and career ready. Many of these interventions and supports are provided by programs or systems that are not school based, suggesting that coordination among schools and other youth-serving systems is needed. Research has shown that instruction and supports provided outside the classroom and in the community have an impact on post-school outcomes (White & Weiner, 2004). Fostering interagency collaboration has also been linked with positive post-school outcomes in education, independent living, and employment (Bullis, Davis, Bull, & Johnson, 1995; Repetto, Webb, Garvan, & Washington, 2002). Coordinating the design and delivery of services across schools and other providers can be a challenge (U.S. Government Accountability Office, 2012) for numerous reasons, including that the K–12 and other systems generally have limited understanding of one another and of how each operates, the terms and definitions each uses, eligibility requirements, and funding availability. Also, different systems have different priorities, and they sometimes operate at cross-purposes. Coordinating these services is also an important part of developing a transition plan, yet many times the school counselor is not familiar with other providers or with how to connect to other systems” (College & Career Readiness & Success Center, 2013, p. 21).

EFFECTIVE PRACTICES AND RESOURCES

IDENTIFY PARTNERS AWARE OF SUPPORT NEEDS FOR SWD.

Disability Navigators assist youth in accessing services from various governmental agencies and community-based organizations. They fill gaps in services and address systemic issues, ideally applying a holistic and collaborative perspective. “The use of Family Navigators has proven effective in increasing parent knowledge and future orientation and in increasing family knowledge of support systems and service options and in developing specific strategies for implementing person-centered plans” (Antosh et al., 2013, pp. 6-7).

ENGAGE FAMILIES AND CAREGIVERS OFFICIALLY AND EXPLICITLY.

Project SEARCH is an international network of employment transition sites for SWD. They promote multiple strategies to build community engagement and accountability, including asking caregivers and partners to sign a contract, meet regularly in teams, and collaborate to support participation in the employment preparation program (Davis et al., 2010).

Best practices for TA in the IEP integrate principles of choice and self-determination in the following ways:

- “The youth and family are free to express their desires and hopes for the future during assessment and at IEP meetings; the youth’s postsecondary goal does not depend on the available ‘programs or services’ within a school or the community;
- The youth is taught to develop and update annually (to the extent possible) the SOP by using the results of TA to detail his or her needs, strengths, preferences and interests, postsecondary goals, accommodations, supports, and technology needs;
- The youth is taught an appropriate technique to present the results of TA at the IEP meeting when transition services are discussed annually. This is best accomplished through UDL principles using multiple means of expression (e.g., oral presentation, written profile, PowerPoint presentation with text to speech features or pictures)” (Neubert & Leconte, 2013, p. 3).

GraduateFIRST is a Georgia statewide dropout prevention initiative that uses a data-driven self-determination focused intervention framework developed by the National Dropout Prevention Center (NDPC). GraduateFIRST’s mission focuses on increasing the number of students with disabilities earning a general education diploma and decreasing the dropout rate for SWD. While dropout prevention is not synonymous with college and career readiness, graduation from high school is a key step in preparing for life in college and beyond. GraduateFIRST addresses issues regarding use of data and diagnostic assessments and providing guidance, counseling, and transition services, using ‘Collaboration Coaches’ and developing school-based team leaders to help students and parents find and use resources.

Using a framework provided by NDPC-SD, GraduateFIRST follows a four-step process to address school dropout issues for SWD: study data trends, identify and intervene to offer student support, create individual service plans, and gather and review final data and share the results.

“GraduateFIRST has contributed to improved outcomes among students with disabilities. Georgia has made steady progress in its high school graduation rates, with 43.3 percent of Georgia students with disabilities graduating in 2011, compared to 37.7 percent in 2008. The graduation rate of one participating high school’s students with disabilities subgroup rose from 43.8 percent in 2009 to 85.6 percent in 2011 after the implementation of GraduateFIRST (College & Career Readiness & Success Center, 2013, p. 22).

SUPPORT COLLABORATIVE STRATEGIES FOR TEAMS, AGENCIES, AND SERVICES.

[Communicating Interagency Relationships and Collaborative Linkages for Exceptional Students \(CIRCLES\)](#) is a multi-level intervention that includes interagency collaboration and teaming as a key component to ensure positive post-school outcomes for students with disabilities. The CIRCLES Project is funded through a grant from the Institute for Educational Sciences (IES) (Provenmire et al., 2015). CIRCLES involves three levels of interagency collaboration: (1) The community-level team provides administrative leadership for the array of transition services offered and assists in finding solutions for problems that may arise in service delivery; (2) The school-level team provides each student with access to an array of representatives from community agencies that may provide services to the student after graduation; and (3) The individual-level team writes [the IEP](#) including the transition component.

ROOT CAUSE: SELF-DETERMINATION

WHAT THE LITERATURE SAYS: THEORY

Promoting and enhancing the self-determination of SWD means putting their agency at the center of their experiences and decisions and helping them act in a purposeful and planned manner, based on their own assessment of potential actions and results and with the support of their TA team. Self-determination, which includes both self-advocacy and self-efficacy, is a specific challenge for people with disability (PWD) because the systemic supports that respond to their diagnosis often impose low expectations and implicitly or explicitly teach them that they are impaired and therefore not capable of self-assessment, self-regulation, or independent ambitions.

Both self-advocacy and self-efficacy are important to self-determination and are central concepts in theories and practices of effective transition planning for SWD. Self-advocacy includes building the ability to speak up for themselves, make their own decisions about their lives, learn how to get information and understanding, articulate their own interests, find out who can support their journey, know their rights and responsibilities, solve problems, listen and learn, and reach out to others who need help and friendship. Self-efficacy refers more specifically to their belief in the capacity to do what is necessary to achieve their goals, control their lives and social environment, and have the energy and ability necessary to succeed.

WHAT THE LITERATURE SAYS: EVIDENCE

“The current consensus among professionals and parents is that we need to actively promote student self-determination, self-advocacy, and student-centered planning. Federal special education policy has supported students’ participation in transition services, acknowledging that in order for this planning to be successful, students have to attend meetings and have the skills and opportunities necessary to advocate effectively for themselves. Starting with the 1990 Re-Authorization of the Individuals with Disabilities Education Act (IDEA), transition services were required to be based on students’ needs and consider students’ interests and preferences. The IDEA 1997 and 2004 Amendments further supported student participation in transition planning by requiring that they be invited to their IEP meeting when transition goals were discussed” (Antosh et al., 2013, p. 31). Studies have shown that students with learning disabilities demonstrate lower levels of self-determined behavior than their peers without disabilities, but that interventions that build social and skill instruction promote self-determination as part of sustainable career success (Field, Sarver, & Shaw, 2003; Pierson, Carter, Lane, & Glaeser, 2008).

“Promoting the self-determination of adolescents with disabilities has become best practice in secondary education and transition services (Wehmeyer, Agran, Hughes, Martin, Mithaug, & Palmer, 2007). Self-determination status has been linked to the attainment of more positive transition outcomes, including more positive employment and independent living (Martorell, Gutierrez-Rechacha, Pereda, & Ayuso-Mateos, 2008; Wehmeyer, & Palmer, 2003; Wehmeyer & Schwartz, 1997) and recreation and leisure outcomes (McGuire & McDonnell, 2008), and more positive quality of life and life satisfaction (Wehmeyer & Schwartz, 1998; Lachapelle et al., 2005; Nota, Ferrari, Soresi, & Wehmeyer, 2007; Shogren, Lopez, Wehmeyer, Little, & Pressgrove, 2006). Research has also shown that direct instruction of self-determination skills benefits students with disabilities—specifically students with learning disabilities (Algozzine, Browder, Karvonen, Test, & Wood, 2001; Cobb, Lehmann, Newman-Gonchar, & Alwell, 2009; Test, Fowler, Kohler, & Kortering, 2010; Wehmeyer,

Abery, et. al., [sic] 2011). Teaching self-determination skills to students, regardless of their personal or environmental characteristics, has the potential to improve students' academic achievement, which thereafter has the potential to lower dropout rates and lead toward positive post school outcomes" (Zheng, Erickson, Kingston, & Noonan, 2014, p. 470).

RECOMMENDATIONS AND STRATEGIES

SEE THE STUDENT AS AN INDIVIDUAL, RATHER THAN A DISABILITY OR DIAGNOSIS. UNDERSTANDING THE CHALLENGES AND ACCOMMODATIONS REQUIRED TO BUILD MEANINGFUL TRANSITIONS TO WORK AND ADULTHOOD IS A PART OF A LARGER RELATIONSHIP WITH THE STUDENT, WHO SHOULD BE AN ACTIVE PART OF THE TRANSITION PROCESS.

"People First Language is a respectful way of speech. People First Language puts the person BEFORE the disability. It is important to think of and put the person as an individual first. The disability is just one of many characteristics, qualities, and aspects of the individual. People First Language uses words all people understand" (National Gateway to Self-Determination, 2012, p. 10).

In a 2014 study, Wagner, Newman, and Javitz found that "the nature and severity of youth's disabilities shape life trajectories, and the strongest variable in affecting outcomes was whether the student was able physically, cognitively, and behaviorally to understand and directly assess his or her academic skills. In terms of the relationship of poverty and disability, the two are inter-related, with causal factors in both disability and poverty that require intervention in order to compensate for the relationship between the inter-related results of socioeconomic status and disability status" (p. 15).

BALANCE PEER INTERACTION IN SMALL AND LARGE GROUPS TO BUILD JOB AND LEADERSHIP SKILLS AND TO INCREASE SWD COMFORT WITH RISK, SELF-EXPRESSION, AND COMMUNITY ENGAGEMENT. CHALLENGES AND SUPPORTED STRETCHING EXPERIENCES INCREASE SELF-DETERMINATION SKILLS.

Internal and institutional smaller learning communities can support positive relationships with peers and adults as well as the development of career goals and self-determining skills. "One of the leading efforts in building positive adult/student relationships is the growth of smaller learning communities. Smaller learning communities with a focus on CTE, often known as career academies, have been found to increase the attendance rate and the likelihood of staying in school for students who entered the programs at high risk of dropping out" (ACTE, 2007, p. 5).

INTEGRATE OPPORTUNITIES FOR CHOICE, SELF-EXPRESSION, AND SELF-DETERMINATION INTO IEP, CLASSROOM, EXTRACURRICULAR, AND OTHER TRANSITION-RELATED EXPERIENCES.

Neubert and Leconte (2013) note that programs that support developing self-determination skills include the following characteristics:

- "The youth and family are free to express their desires and hopes for the future during

assessment and at IEP meetings; the youth's postsecondary goal is not dependent on the available "programs or services" within a school or the community;

- The youth is taught to develop and update annually (to the extent possible) the SOP (Summary of Performance) to detail his or her needs, strengths, preferences and interests, postsecondary goals, accommodations, supports, and technology needs" (p. 3).

Choosing and working toward goals are important strategies of self-determination. "The completion of four or more self-identified transition goals was a predictor of competitive employment and higher education enrollment" (Landmark, Ju, & Zhang, 2010, p. 171). In addition to academic achievement in elementary through high school, "increased self-determined behavior has positive impacts on individualized education program participation (Martin, Greene, Van Dycke, & Gardner, 2006; Mason, Field, & Swailowsky, 2004; Test et al., 2010; Wehmeyer, Abery, et. al., 2011; Williams-Diehm, Wehmeyer, Palmer, Soukup, & Garner, 2008), as well as long-term positive impacts on post-school outcomes (Lachapelle et al., 2005; Martorell et al., 2008; Nota et al., 2007; Shogren et al., 2006; Test et al., 2009; Wehmeyer & Palmer, 2003)" (Zheng et al., 2014, p. 471).

CREATE OPPORTUNITIES FOR MEANINGFUL SELF-ASSESSMENT EXPERIENCES AS WELL AS TO ASSESS AND AFFECT PROGRAMMING AND CURRICULUM TO PREPARE SWD FOR SUCCESS IN THE WORKFORCE.

Positive Youth Development is a concept built on active engagement of youth in the communities of learning and work they participate in. When we value their voices as participants, we teach them to value their insights and understand themselves as leaders and partners in their own development. "As recipients of services, youth understand better than anyone the impact of those services on their growth and development. Program administrators and others in the service delivery system can learn much from youth when evaluating agency policies and practice. Youth may or may not know the policy and practice guidelines, but they know their experiences within the system of services" (RHYTTAC, 2008, p. 12).

In addition to skill-based self-assessments, Antosh et al. (2013) recommend incorporating "cultural and linguistic competence self-assessment (at both the organizational and individual level)" (p. 25). This helps SWD and their teams strengthen cultural adaptations to transition services and supports. Respecting a student's individual culture, interests, skills, and abilities, and giving them access to self-assessment teaches them that their self-determination is both developmental and fundamental to their supports.

ENCOURAGE SWD TO ACCURATELY AND HONESTLY SHARE THEIR EXPERIENCES WITHOUT SHAME.

Self-determination begins with self-knowledge. Youth create meaning along the lines of their disabilities. Hernandez-Saca, Kahn, & Cannon (2018) noted the following themes that shape the stories they develop to create meaning: "(a) navigating [multiple marginal identities and] disability systems imposed from culture and institutions, (b) presenting their dis/ability challenges as interconnected with multiple identities, and (c) engaging in their own identity meaning making.... [Youth] and young adults with dis/abilities need to make sense of what it means to be labeled within special education categories and at their intersections of gender, race, ethnicity, and so on" (pp.

295-296). It is important to consider the specific circumstances of youth as part of their overlapping identities as well, including state-supported services such as foster care (Harwick, Lindstrom, & Unruh, 2017).

EFFECTIVE PRACTICES AND RESOURCES

EMPHASIZE SELF-DETERMINATION IN TRAININGS FOR ALL ADVISORS AND MENTORS.

[Charting the LifeCourse™](#) is a project of the University of Missouri–Kansas City Institute for Human Development. National Gateway to Self Determination documentation includes advising through self-determination and an information guide for advisors. This guide focuses on the basic elements of advising a self-advocacy group by promoting self-determination and working within the disability system.

INTEGRATE SELF-DETERMINATION THEORY IN PRE- AND IN-SERVICE TRAINING FOR ALL TEACHERS.

Pre-service and in-service training should include content and strategies to help teachers integrate self-determination theory to prepare SWD to achieve academically and to experience positive adult outcomes. “Although teachers continue to feel pressure to improve the reading and mathematics performance of students with learning disabilities, research clearly supports the need to enhance students’ self-determination skills as a contributor to this charge” (Zheng et al., 2014, p. 471).

FIND CREATIVE WAYS FOR SWD TO SELF-EXPRESS.

Students could create a Lifebook or Lifebox: “A Lifebook is a collection of words, photos, graphics, artwork, and memorabilia that creates a life record. It can serve many purposes in the life of a person with a disability. It can be used to help service coordinators, providers, and friends get to know an individual. It can be used to help plan for the future. It can be used in advocating. It can be used in making choices and decisions. A Lifebook allows individuals to be active contributors to, or authors of, the services they receive. It allows them to be causal agents! (National Gateway to Self Determination, 2012, p. 31).

INTEGRATE SPECIFIC SELF-DETERMINATION ASSESSMENTS INTO THE IEP, CLASSROOM, AND TRANSITION PLANNING.

[The Zarrow Center at the University of Oklahoma](#) offers [links to three self-assessment tools](#), the Choice-Maker Self-Determination Assessment (curriculum-referenced), the AIR Self-Determination Assessment (Capacity and Opportunity), and the ARC Self-Determination Scale (measuring strengths and weaknesses).

The [Self-Determined Learning Model of Instruction](#) (SDLMI) incorporates principles of self-determination and student-directed learning to form an instructional model that involves teaching students to learn and apply curriculum augmentation strategies such as self-monitoring. Students learn a three-phase process for goal achievement: **What is my Goal?** (to set a goal); **What is my**

Plan? (to develop and implement an action plan to achieve the goal); and **What have I learned?** (to evaluate progress in achieving the goal and to adjust their goal or plan accordingly as needed).

“The SDLMI has potential as a universal support/Tier 1 intervention, although further research is needed as its impacts have only been documented for students with disabilities on access to and progress in the general education curriculum. For example, Shogren and Plotner (2012) found that students with disabilities taught using the SDLMI have greater access to the general education curriculum than a control group, even when instruction did not take place in the general education classroom. Essentially, the SDLMI can be implemented to support instruction in both general education curriculum content areas (i.e., enhancing academic skills) as well as student’s unique behavioral and functional learning needs (i.e., self-determination and goal attainment skills) for more positive transition outcomes. By implementing the SDLMI as a Tier 1 intervention, in the context of the general education curriculum and classroom, its impact could be broadened and the goal of MTSS— to provide high-quality instruction for all students— could be realized” (Shogren, Wehmeyer, & Lane, 2016, p. 219).

ROOT CAUSE: EARLY INTERVENTION

WHAT THE LITERATURE SAYS: THEORY

SWD benefit from information and training with skills-based assessments and interest in CTE/STEM from elementary school on, but it is particularly important to begin transition planning in middle school, even though it is mandated by IDEA (2004) to begin at age 16. Policy and program development that emphasizes prevention of negative learning and employment impacts and increases the chance of positive life choices, and early intervention in transition is important for all at-risk youth, not just SWD (Herz et al., 2012).

Transition services must be included in the IEP by the time a youth reaches age 16, or younger when appropriate (IDEA, 2004). More than one-half of the states require that transition services be included in the IEP by the time a student reaches age 14. Therefore, it is important that youth learn self-determination skills as early as possible so that they can play prominent and leading roles in crafting their postsecondary goals and annual IEP goals.

WHAT THE LITERATURE SAYS: EVIDENCE

Student-focused planning and student development should be at the center of transition planning throughout school experiences for SWD (Landmark et al., 2010). Although middle school students are not as frequently placed in internships and employment, experiences that prepare at-risk youth with disabilities for CTE/STEM careers benefit long-term outcomes, and inclusion in employment preparation programs builds confidence, self-efficacy, fundamental skills (such as job search, academic career preparation, and employment-related social skills) and can support more positive post-school employment options (Landmark et al., 2010).

Interventions beginning in middle school will have impact because of their positive effects on a challenging transition-time for all students, often especially challenging for SWD. “Students experience many changes in their school environment associated with the transition from elementary to middle school, and much concern has been focused on whether the organization of the junior high or middle school exacerbates the difficult adjustments confronting young adolescents. Competition, social comparison, and ability for self-assessment can be harmful to young adolescents at a time of heightened self-focus. Student perceptions of the quality of school life decline as they progress from elementary to middle schools. The goals of elementary schools tend to be task oriented, whereas the goals of middle schools tend to focus on performance” (Anfara & Schmid, 2007, p. 61).

Effective and ongoing interventions should include regular assessments and appropriately stepped transitions to future employment with attention to meaningful graduation requirements for all students, including students with disabilities (Achieve, 2013). Transition planning should be age appropriate, that is, “an ongoing process of collecting information on the youth’s needs, strengths, preferences, and interests as they relate to measurable postsecondary goals and the annual goals that will help facilitate attainment of postsecondary goals” (Neubert & Leconte, 2013, p. 3).

RECOMMENDATIONS AND STRATEGIES

INTEGRATE ASSESSMENT OF MATH, PROBLEM-SOLVING, AND CTE-/STEM-ASSOCIATED SKILLS INTO THE IEP FROM MIDDLE SCHOOL ON. THIS STRATEGY BUILDS A FOUNDATION FOR SUCCESS IN SECONDARY AND POSTSECONDARY CTE/STEM CAREER DEVELOPMENT.

Inclusive programs should account for the specific CTE/STEM skills required for college and career readiness and build them into the experiences of interested SWD from middle school on. “According to IDEA 2004 (Section 300.302), the IEP must include: appropriate measurable postsecondary goals based on age-appropriate assessments—related training, education, employment, and, where appropriate, independent living skills, and the transition services (including courses of study) needed to assist the youth in reaching those goals” (Neubert & Leconte, 2013, p. 2). Integrated assessment should include measurements for 21st century CTE/STEM employment skills for all learners who depend on an IEP, including IT literacy and reading/writing/problem-solving literacy.

OFFER ONGOING HANDS-ON CTE/STEM LEARNING OPPORTUNITIES OUTSIDE OF THE CLASSROOM TO BUILD INTEREST IN SCIENCE AND TECHNOLOGY STARTING IN ELEMENTARY SCHOOL AND INCREASING THROUGH MIDDLE SCHOOL.

21st century skills, IT literacy, and career readiness are interrelated, and should be part of transition planning for all SWD from elementary school on, but particularly in middle and upper school as SWD link measurable postsecondary goals per their IEPs and prepare for careers with appropriate technology and psychological assessment supports (Lombardi et al., 2017a, 2017b). Even though many children participate in after school programs in elementary years, studies have shown that as students enter their teen years, their participation in expanded learning opportunities (ELOs) drops off (Bowles & Brand, 2009). This is particularly true for SWD, who often face greater challenges making a transition between elementary and middle, and middle and high schools.

INTEGRATE ADAPTIVE COPING AND EMOTIONAL REGULATION PATTERNS IN CLASSES DURING ELEMENTARY SCHOOL AND THROUGHOUT ADOLESCENT DEVELOPMENT TO BUILD POSITIVE EMOTIONAL ASSOCIATIONS WITH LEARNING AND SCHOOL.

For SWD, it is particularly important to assess and improve noncognitive social skills such as “(a) redefining roles and expected behaviors, (b) shifting membership in and position within social networks, (c) reorganizing social support resources, (d) restructuring ways of cognitive appraisal, and (e) managing the stress associated with uncertain expectations” (Alfara & Schmidt, 2007, p. 64). All of these skills will support the challenging transitions of middle to high school and high school to work and will prepare SWD for other life and work transitions through a positive life course.

Effective interventions should be “focused on improving the academic and functional achievement of the youth to facilitate movement from school to post school activities, including post-secondary education, vocational education, integrated and supported employment, continuing and adult

education, adult services, independent living, or community participation” (Neubert & Leconte, 2013, p. 2). This training and preparation cannot begin at age 16; rather, it must be integrated into ongoing developmental and transition steps toward autonomy and career success from elementary school on.

BUILD REGULAR AND MEANINGFUL ASSESSMENTS INTO THE TRANSITION PROCESS, USING ELEMENTARY SCHOOL SUPPORTS AND ASSESSMENTS AND FOCUSING ON ACCURATE INTEGRATION OF STUDENT NEEDS WITH SCHOOL AND INTER-AGENCY PROGRAMS.

Build awareness of the big picture of early intervention as well as the needs and interests of individual learners as they move through transitions. Individual student assessments should be contextualized with overall SWD population assessments to ensure both compliance and effectiveness to IDEA and state standards. “Administrative data represent a potential resource to help identify the size of the vulnerable youth population, its involvement over time in various public systems, and important transition outcomes for the population.... Linked administrative data can also help identify youths’ trajectories through various systems, identifying potential gaps in services and opportunities to target interventions” (Osgood, Foster, & Courtney, 2010, pp. 224-225).

Early intervention with dual or multiple diagnostic and support needs also supports transition success, because many SWD have more than one diagnosis or marginalization. The different systems that serve each student may not offer enough support to accommodate all the student’s needs, either because of dual disabilities or at-risk circumstances. “Some of the challenges noted by NASMHPD [the National Association of State Mental Health Program Directors] and throughout the literature include differences in philosophies between the mental health and developmental disability systems, involvement of multiple systems, deciding who is responsible for providing services, determining eligibility, conducting accurate assessments, securing funding, availability of adequately trained staff, and identifying and implementing effective interventions” (Davis et al., 2010, pp. 10-11).

With adequate assessment, teachers and students build relationships that support both the transfer of knowledge and positive associations with achievement and self-determination, increasing SWD ability to be adaptive, cope with academic stressors, and maintain positive attitudes in the classroom. “As the results clearly show, these efforts should start during primary school, to prevent maladaptive developmental patterns of achievement emotions” (Vierhaus, Lohaus, & Wils, 2016, p. 20).

PROVIDE NUMEROUS OPPORTUNITIES, BEGINNING IN THE EARLIEST SCHOOL YEARS, TO EXPOSE SWD TO THE WIDE RANGE OF CAREER POSSIBILITIES.

Students need knowledge of multiple career paths to guide their transition planning, from elementary school on. Giving students, parents, and support teams access to up-to-date information can build early curiosity and interest. The [U.S. Department of Labor’s 16 Career Clusters and their related Career Pathways](#) provide a useful resource for supporting transition planning from early stages of student goal-setting to the postsecondary transition and to employment. As an organizing tool for curriculum design and instruction, [Career Clusters](#) provide the knowledge and skills for the 16 Career Clusters and their Career Pathways. It is a useful guide for developing programs of

study and for creating individual student plans of study. It supports clarity of student interests and can potentially be an empowering tool for developing knowledge about pathways related to their interests, skills, and the market.

EFFECTIVE PRACTICES AND RESOURCES

MEET THE TRANSITION NEEDS OF YOUNG PEOPLE WITH MULTIPLE DIAGNOSES.

[Paving the Way: Meeting Transition Needs of Young People with Developmental Disabilities and Serious Mental Health Conditions](#), a report of a meeting of experts hosted by the NASMHPD in 2003, concluded by identifying the following best practices or “ideal” characteristics of a service system for persons who are dually eligible, which include the following:

- “Screening and assessments are completed by trained professionals with appropriate instruments.
- Programs provide individualized or person-centered services that exceed diagnostic needs to incorporate comprehensive services to meet an individual’s needs and goals.
- Funding for programs and services is flexible enough to allow for cross-system collaboration and person-centered planning.
- Services are provided by professionals trained in both mental health and developmental disabilities interventions.
- Services provided to people who are dually eligible are based on the most current information and research specific to the needs of this population.
- Service providers are knowledgeable about the effects of trauma and interventions to address past trauma and to reduce retraumatization.
- Programs provide services to directly support caregivers.
- Programs provide services in the least restrictive setting appropriate for the individual and provide services to support individuals as they transition to less restrictive settings.
- The mental health and developmental disability systems work collaboratively to provide services to individuals and to change policy and system practices to support cross-system collaborations. Collaborations also include the criminal justice, primary care, and public health, and educational systems” (Davis et al., 2010, p. 53).

USE COMPREHENSIVE TOOLS FOR ASSESSMENT.

“The [Smarter Balanced assessment system](#) is a valid, fair, and reliable approach to student assessment that provides educators, students and parents meaningful results with actionable data to help students succeed. [Its] assessment system, aligned to Common Core State Standards, consists of three major components, all designed to improve teaching and learning: Digital library, Interim Assessment Tools, and Summative (end-of-year) assessment. These assessments are designed for high school students, to measure readiness for certificate programs and college courses.”

The [Partnership for Assessment of Readiness for College and Careers](#) (PARCC) has developed multiple tools. Since 2010, the PARCC states have been leaders in developing assessments that measure students’ readiness to succeed in college and career. Thousands of educators have contributed to the design of innovative new test questions that measure students’ readiness to master rigorous academic content, think critically and apply knowledge to solve problems, and

conduct research to develop and communicate a point of view. with the goal of fostering deep learning and thinking in the classroom with tools accessible to all. This assessment consortium includes tools for teachers in multiple disciplines for all grade levels.

DESIGNATE A CTE/STEM SUPPORT PERSON WHO WILL MONITOR PROGRESS AND NEEDS TO ACHIEVE AND ASSESS CTE/STEM GOALS.

“Designate someone (e.g., special educator, school counselor) to be responsible for reviewing the youth’s folders for background information on academic performance and school history, assessment results to date, work habits and attendance patterns, medical information, and previous IEP goals and outcomes. This information should be compiled in a one- or two-page format for the IEP team to use with the youth in planning for TA. The planning question to answer at this point is as follows: What information is known about the youth and does this assist him or her or the IEP team to determine tentative measurable postsecondary goals?” (Neubert & Leconte, 2013, p. 5).

ENGAGE PRINCIPALS AS KEY LEADERS IN ESTABLISHING EQUITABLE EARLY INTERVENTION IN STEM CURRICULUM AND PROGRAMMING.

“Principals are uniquely positioned to guide instruction in their schools. Ensuring that teachers are participating in content-specific and pedagogically relevant professional development can help ensure that best practices are being used in math and science classrooms. Bringing these skills and tools back to the classroom can also make teachers feel more prepared, and empower them to make the best instructional decisions for their students. With support from their principal, math and science teachers can ensure that students are getting the best STEM education possible” (Colbert, 2014, p. 51).

ROOT CAUSE: LEGAL MANDATES FOR INCLUSION AND ACCOMMODATION

WHAT THE LITERATURE SAYS: THEORY

The legal mandates under IDEA (Individuals with Disabilities Education Act, 1997) and IDEIA (Individuals with Disabilities Education Improvement Act, 2004) are often difficult to define, or are defined differently by different school districts, which may or may not have clear policies around concepts such as access to the general education curriculum or mandates to support effective behavioral and disciplinary actions, effective assessment and accommodation for multiple skills required for transitions, and student/parent empowerment in the IEP process (Drasgow & Yell, 2001; Soukup, Wehmeyer, Bashinski, & Bovaird, 2007; Weber, 2013). Nonetheless, the courts have rigorously enforced these requirements in recent years, particularly around assessment of needs and assignment of responsive goals and services to meet the broad mandate to support SWD, based on the IDEA mandate to address all areas of disability (Weber, 2013).

The evolving landscape of IDEA and IDEIA is complex. The range of mandated interventions, accommodations, and programming depends not only on the disabilities of participating students, but also on the procedures, staffing, and opportunities in local schools and districts. Developing theories in the field about the needs and rights of SWD have impact on interpretation, policy developments, legal developments, and school implementations around these mandates. On the ground, this means that administrators and teachers on an IEP team must be both responsive and thorough, often stretching resources and connecting with additional collaborations to support self-efficacy, transition, and inclusion in specific ways for each SWD. For example, although schools and districts are not legally required to alter their programs to ensure inclusion, the Office of Civil Rights suggests that additional programming should be part of “the safe and equal opportunity to participate” for SWD (Klotz, 2013).

As case law develops, courts may be motivated by several goals: enforcing provisions that expand the scope of IDEA/IDEIA, reflecting an increasing focus on inclusion with programs serving students without identified disabilities, and/or reacting to cutbacks in school services as a result of economic conditions, nationally and locally, since the recent recession (Weber, 2013, p. 291). In 2005, the Supreme Court found that, despite state laws that call for schools to demonstrate compliance, ultimately the burden of proof in legal proceedings is largely on the parents because generally it is the parents who initiate a lawsuit (Child Protection Law Report, 2005). However, the often-challenging combination of compliance, collaboration, and conflict management needed to prevent legal problems falls squarely on school and district, and in practice, court proceedings place IEP team proceedings, assessment data, and actions toward accommodation and inclusion under great scrutiny.

Although IDEA’s inclusive and broad mandate is well meaning, its implementation has unfortunately “created a morass of paperwork that has little to do with student achievement” (President’s Commission on Excellence in Special Education, 2002, p. 12). The 2004 revisions shifted the emphasis from a culture based on process to one based on results, with the hope that educators would have more flexibility in supporting and including SWD.

WHAT THE LITERATURE SAYS: EVIDENCE AND PRECEDENT

Laws and legislation supporting SWD and all students can be best applied in alignment with each other, connecting federal and state policies to maximize effectiveness, resources, and compliance (Tomasello & Brand, 2018). Best practices discussed in other sections of this root cause document can be flexibly supported through integrated applications of [Every Student Succeeds Act](#) (ESSA), [Individuals with Disabilities Education Act](#) (IDEA), and other educational initiatives such as the 2014 [Results Driven Accountability](#) from the U.S. Department of Education, and the [Americans with Disabilities Act](#), [Carl D. Perkins Career and Technical Education Act](#) (Perkins), [Workforce Innovation and Opportunity Act](#), and the [Rehabilitation Act](#). It is important to be aware of opportunities for innovation and expansion that might result from these mandates and initiatives, as well as track shifts in legal requirements for support for SWD.

The IEP is the main arena requiring compliance and care in the context of these mandates. Once parents decide to litigate, it is an IEP team's failures that are highlighted. In a useful 2016 guide to avoid errors in IEP design, Yell and colleagues documented court cases and outlined best practices (to be detailed in the next section) to avoid five common procedural errors: failing to conduct a complete and individualized assessment, failing to address all of a student's needs in the PLAAFP (Present Level of Academic Achievement and Functional Performance), failing to write ambitious, measurable goals, failing to provide comprehensive special education services, and failing to monitor student progress (Yell, Katsiyannis, Ennis, Losinski, & Christie, 2016).

There is often a significant gap between the expectations for IEP teams and their actual performance. IDEA 97 mandates individual assessment, program planning, and inclusive placement via the IEP and associated programs. "In terms of assessment, teams are expected to design, conduct, and document functional behavioral assessments, and to collect data to substantiate dangerous behavioral situations. Teams must also be competent in reviewing the appropriateness of programs and services being provided for students as well as in implementing strategies to assess such constructs as a student's understanding of the impact and consequences of behavior and the ability to control behavior. These latter concepts are included within the manifestation determination responsibilities expected of these teams. In the area of program planning, IEP teams are expected to address the behavioral needs of students at the IEP development stage whose behavior interferes with their learning or the learning of others. Teams must also design and implement behavioral intervention plans for students who are facing significant disciplinary measures. Finally, in terms of placement decision making under the new IDEA, IEP teams may be called upon to recommend appropriate sites for use as interim alternative educational settings for students facing major disciplinary consequences" (Smith, 2000, p. 404).

RECOMMENDATIONS AND STRATEGIES

IDENTIFY CLEAR AND EFFECTIVE INFORMATION RESOURCES TO MAXIMIZE KNOWLEDGE AND UPDATE INFORMATION AS LEGISLATION AND TRENDS SHIFT.

This is particularly important for team members who have not been trained in working with SWD, or who may have participated in short-term professional development and need tools to expand their knowledge in these often complex and evolving mandates.

For example, the [National Association for School Psychologists](#) (NASP) offers multiply themed

podcasts and resources for parents and school psychologists around UDL, discipline, assessment, diagnosis, diversity, and inclusion. Fact Sheets and updates can be easily downloaded and shared. There is an [extensive set of resources for ESSA](#) implementation, with [useful research and policy summaries](#) as well. (See the Resources section for websites and links that can support effectiveness and awareness. In addition, identify and update when necessary handouts and links that all members of the IEP team can use.)

Identifying and sharing resources such as those from NASP with every member of a student's IEP team can prevent legal conflicts and support informed best practices to support the rights and inclusion of SWD.

SUPPORT SWD WITH COMPLETE AND FREQUENT ASSESSMENT.

To support the IDEA mandates, IEP goals need to be specific and results measurable, with attention to multiple levels of skill development and ongoing assessment to support transition planning. "The importance that the United States Department of Education attaches to accurate evaluation is underscored by the Department's longstanding regulation providing that parents who disagree with the school district's evaluation may obtain an independent evaluation at public expense" (Weber, 2013, p. 296).

In a study of hearing results from parent complaints, key recommendations included gathering detailed data over time and resisting the urge to abbreviate the assessment process (Smith, 2000). Other studies of legal proceedings identified incomplete assessments that looked only at a narrow area of need and accommodation, resulting in academic competence without social or work skills, or programming that did not consider overlapping dis/abilities (Weber, 2013). Multiple benchmarks for progress and follow-up assessments are expected as part of the transition assessment and implementation process to prepare SWD for education, employment, and independent living after high school.

ESTABLISH AND DOCUMENT BEHAVIOR AND DISCIPLINE PRACTICES IN ORDER TO SUPPORT STUDENTS AND PROTECT TEAMS FROM LEGAL INTERVENTION.

FBA (Functional Behavior Assessments) and BIP (Behavior Intervention Plans) should be based on an information-gathering, problem-solving team process that includes intense assessment and collaborative planning. "Unfortunately, rather than adopting researchbased practices in the FBA and BIP process, many school districts have developed chart systems based on lists of misbehaviors and potential causes in which the entire process becomes a brief exercise in marking boxes and filling in the blanks (Yell & Katsiyannis, 2000). Such practices are not likely to withstand administrative or judicial scrutiny when challenged in a due process hearing or a court of law" (Drasgow & Yell, 2001, p. 249).

In the context of behavior and discipline practices, it is important to consider mental health services as both a legal right and key support for SWD in transition planning. "[If] a student has a disability under the Individuals with Disabilities Education Act (IDEA), and that disability exists concomitantly with mental health problems, or if a student has a mental health problem that constitutes a disability under the IDEA, school district personnel have a responsibility to evaluate all of the student's needs

and to provide services to meet all those needs to provide a free appropriate public education (FAPE)" (Yell, Smith, Katsiyannis, & Losinski, 2018, p. 68).

ADDRESS DEFICIENCIES IN AVAILABLE SERVICES AND DOCUMENT AND EVALUATE THE RELIEF ACCOMMODATIONS.

Although schools may offer targeted services, particularly in academic areas, not all needs identified in an IEP may be served by those programs, and therefore it is important to consider overlapping deficits and needs for remediation to ensure that the needed benefits are addressed. Speech, writing, occupational, and behavioral services, parent training, and postsecondary transition services must be considered beyond academic achievement in the IEP process, including but not limited to "pragmatic language skills, vocational skills, and independent living skills" (Weber, 2013, p. 306). To meet the mandate that IEPs address "all areas of suspected disability," IEPs must also be attentive to social and educational transitions and the student supports that strengthen the skills of the IEP team, including adequate training for teachers and administrators (Weber, 2013).

FOR AN IEP TO BE FULLY LEGALLY ADEQUATE, ADDRESS ABILITIES AND STRENGTHS AS WELL AS WEAKNESSES TO INTEGRATE THE IDEA MANDATES IN INDIVIDUALIZED PROGRAMS.

UDL, self-determining, and inclusive practices are part of IEP programs, with transition plans that emphasize strengths-based solutions, are best practices for transition and inclusion under IDEA mandates. [Section 1401 \(34\) of IDEA \(2004\)](#) notes that transition services should be "a results-oriented process... based on the individual child's needs, taking into account the child's strengths, preferences, and interests" (IDEA, 2004, para 2 & 3). "It seems evident not only that the law mandates that students with intellectual and developmental disabilities be involved and progress in the general curriculum, but also that such students receive a high-quality education" (Palmer, Wehmeyer, Gipson, & Agran, 2004, p. 427).

The challenge is that in general, IEPs do not accomplish even the most basic mandated assessment. The 2004 IDEA amendments promote a minimum of "accurate and objective measurement of student progress" with fundamental requirements mandated but allowing multiple flexible approaches to form and strategy to support student strengths and challenges (Ruble, McGrew, Dalrymple, & Jung, 2010, p. 1459). However, in their study of the performance of IEPs in relationship to the primary criteria of IDEA, Ruble et al. (2010, p. 1466) found that teams overwhelmingly produced legally inadequate documents, with goals neither measurable nor reflecting state standards. However, when the documents did meet the minimum standard, the goals "tended to be adopted without individuation to the child," and specialized instruction, either accommodational or strengths-based, appeared disconnected from the individual student's objectives or transitional needs (pp. 1466-1467).

FOLLOW IDEA'S ORIGINAL AND EVOLVING MANDATE FOR MAINSTREAM INCLUSION WITH MULTIPLE SUPPORTS.

"A focus on student access to the general education curriculum should, in fact, move the inclusion discussion from being primarily about where students are educated and how to support students in

that environment to a discussion about what is taught, how curriculum content is delivered, and what supports are needed to ensure progress in the general education curriculum” (Soukup et al., 2007, p. 102). As IEP and school teams shift their emphasis, it is important to document and study the new programs and interventions to ensure compliance with IDEA and state/local regulation, with the possibility that they can serve as a model for other schools and districts.

When SWD are placed in general education, according to the President’s Commission on Excellence in Special Education (2002), both special educators and general educators “share responsibilities for children with disabilities. They are not separate at any level—cost, instruction, or even identification” (p. 7). The commission’s key recommendation, “consider children with disabilities as general education children first” (p. 9), identifies flexibility in the use of education funds (including IDEA funding) as foundational to best practices.

In the 2004 IDEA amendments, “Congress acted on this declaration by adding provisions to implement testing of the achievement of children in special education using learning standards based on the general education curriculum.... By requiring the assessments and services that the children need to make that advancement in inclusive settings with their nondisabled peers, again the courts are enforcing both the letter and the spirit of the current law. And by resisting creation of a budget-shortfall exception that the law nowhere provides, courts that apply the all areas and each need provisions as written further the underlying goals of guaranteeing appropriate education and inclusion that Congress had in enacting IDEA” (Weber, 2013, pp. 318, 322).

BUILD STUDENT LEADERSHIP IN IEP AND TRANSITION MEETINGS.

Recent evidence reveals that student attendance does not translate into student leadership or self-advocacy in IEP meetings. Presence does not necessarily indicate engagement or even participation. “IDEA has mandated [student-attendance and engagement in] transition-oriented IEP meetings since 1997, but... [it] seems naive to presume that students attending their transition IEP meetings will learn how to co-actively participate and lead this process through serendipity” (Martin et al., 2006, p. 189). In their study (observation and participant survey-based) of the time that students actively participated in IEP meetings, Martin and colleagues found that special educators and other members of the support team perceived that students spoke and participated more than they did. In the cases studied, students spoke and participated only 3 percent of the time (p. 196).

Furthermore, while teacher and administrative team leaders reported believing they were respecting and empowering students, student perceptions of feeling either respected and comfortable speaking measured the lowest of all meeting participants polled from the IEP meetings. “To meet the intent of IDEA’s transition reforms, at least three changes need to occur. First, students need to learn about the IEP process and their own role prior to attending an IEP meeting. Second, adult team members need to learn how to facilitate student involvement in the meeting. Third, school and adult participants need to establish the expectation that students be actively involved in their own meetings” (Martin et al., 2006, p. 197).

IMPLEMENT BEST PRACTICES FOR TEACHER AND IEP TEAM TRAINING IN EFFECTIVE ASSESSMENT AND PROGRAMMING.

In many contexts, public policy expects knowledge and training to support accommodations, assessment, and intervention for diverse and overlapping disabilities. Members of a student's IEP team, or school/work team, might not have the necessary background to administer and track assessments or to identify potential problems that could impact the student academically and socially and in work environments.

"Public policy has exceeded the existing FBA knowledge base.... IDEA '97 now requires that school-based teams conduct FBAs, although they currently may not have the knowledge and training to do so. [Teachers] and team members can be trained to use this methodology effectively and efficiently. It will, however, require an increased emphasis on the methods and strategies of FBA during pre-service preparation. Additionally, school districts will need to provide in-depth in-service training to faculty who are not familiar with FBAs" (Drasgow & Yell, 2001, p. 248).

Resources:

The [Association for Career & Technical Education](#) (ACTE) offers a resource page for teachers and administrators linking IDEA mandates for IEP engagement, transition support, and accommodation strategies to include SWD in CTE.

The [National Collaboration on Workforce and Disability](#) offers excellent transition resources, including news and updates about developments in IDEA mandates and policies.

The College & Career Readiness & Success Center (CCRSC) at the American Institutes for Research (AIR) [published a useful guide](#) in January 2018 for applying ESSA and IDEA to college and career readiness for SWD, with case studies and links to programs in multiple states. This report also provides an overview of key legislation and an appendix that summarizes alignments with ESSA and IDEA for easy reference. It serves as a useful resource for experienced educators who seek a clear reference for planning and for educators who are new to working with mandates for SWD.

The nonprofit [Alliance for Excellent Education](#) (All4Ed) offers toolkits, data, and informational webinars to help educators identify issues, gather information, and design effective programming around best practices and legislative mandates. It offers [diverse resources to demystify and apply ESSA](#), including [five best practice-themed toolkits](#), one specifically for CTE. One of its [fact sheets](#) identifies the minimum number of students needed to form a student subgroup for federal accountability and reporting purposes (the N-Size) for each state under ESSA. It also offers a web resource to share information about ESSA in each state, [How Good Is Your State's Education Plan?](#) with accessible and thorough equity data dashboards examining each state's 2017 ESSA plan.

EDUCATION

The root causes, strategies, and models in this section are ones for which educational professionals, especially SWD support staff, educators, and administrators, have the most direct impact and concern. The topics in this section include the following:

- Academic Proficiency
- Access to and Participation in CTE/STEM
- Curriculum/Instruction
- Classroom Climate
- Inclusive Classrooms
- Activities/Networks

ROOT CAUSE: ACADEMIC PROFICIENCY

WHAT THE LITERATURE SAYS: THEORY

SWD often underachieve academically because of their assumed weaknesses and unmet needs for accommodation. SWD have a variety of skills and gifts, some of which are obscured by their disability, and some of which are part of their particular style of intellectual and social processing (related to, but not necessarily categorizable, as a disability). Building the academic proficiency to succeed in CTE/STEM fields requires effective assessment and accommodation.

WHAT THE LITERATURE SAYS: EVIDENCE

Building academic proficiency to prepare for CTE/STEM participation is a multi-skilled developmental process for SWD. The relationship between academic proficiency and high expectations cannot be ignored and is of particular importance for the intellectual and social development of SWD. “Not only do parents’ expectations influence students’ expectations, but students’ own expectations can also influence parents’ expectations, both of which independently influence and are influenced by students’ achievement” (Zhang, Haddad, Torres, & Chen, 2010, p. 488). Studies have shown that exploratory instruction starting in elementary and middle school courses give students exposure to occupations and can assist them in preparing academic and career plans for CTE/STEM preparation (Beech, 2011). Whether SWD are enrolled in college-prep, occupational certification programs, or technical/vocational education, high academic standards in math and reading with consistent and equitable College and Career Ready standards lay the foundation for success (Achieve, 2013).

“Though students with disabilities who plan to attend college appear better off academically than their peers with disabilities who do not plan to attend, their academic opportunities in mathematics remain limited in comparison to peers without disabilities. Students with disabilities do not obtain the same level of academic opportunity in terms of math coursework, which has implications for their post school opportunities” (Wilson, Hoffman, & McLaughlin, 2009, p. 8).

RECOMMENDATIONS AND STRATEGIES

TEACH STUDENTS THAT ABILITIES CAN BE EXPANDED.

“Identifying essential skills and planning learning opportunities to gradually increase these skills demonstrates both the concept of building on strengths and the practice of expanding abilities in the context of CTE/STEM achievement” (Beech, 2011, p. 26).

INTERVENE TO REVISE UNDERESTIMATION.

“Students with disabilities should be held to high expectations while acknowledging the aspirations, interests, talents, and desires of each student as well as the necessary learning supports needed for each student to succeed. All adults in the school—principals, teachers, counselors, and aides—need to embrace a culture and belief system that students with disabilities are capable of high-level work and can complete a high school diploma, succeed in postsecondary education, and establish meaningful careers and independent lives. Furthermore, school staff and families must work to help students set goals based on their ‘personal bests,’ goals that reflect the realities of students’ disabilities without constraining them through the limitations of lowered expectations. Goals should be personalized to include student strengths, abilities, and aspirations while pushing them to maximize achievement based on these abilities” (Brand et al., 2013, p. 7).

ASSESS STRENGTHS AS WELL AS NEEDS FOR ACCOMMODATION OR TRAINING.

Effective “interventions to promote desired outcomes are geared toward either enhancing personal capacity or, equally or more importantly, to modifying the contexts in which people function” to support strengths identified (Wehmeyer, 2011, p. 155).

In the process, the rigor inherent in STEM fields should be assessed and monitored, particularly during the early years of skills acquisition. The curriculum should not be made less demanding, but students should be prepared to master difficulties and understand the time commitment to achieve academic proficiency. Competency and proficiency assessments should be part of “a holistic evaluation of student progress while (1) participating in STEM courses; (2) sitting through classes; (3) completing assignments; (4) meeting with professors; (5) interacting with other students; (6) digesting material; (7) working on group projects; and (8) learning new concepts and ideas” (White & Mitchell, 2013, p. 61).

It is important for educators to recognize SWD’s capacities and to highlight their strengths, gifts, talents, and emerging competencies for successful learning to occur. “Qualities that can be recognized as strengths, or need to be developed, include critical thinking, information literacy, reasoning and argumentation, innovative, flexible, takes initiative, appreciate diversity, reflective, communicate, collaborate, responsible and personable” (NRC, 2012, cited in Fisher, 2017, pp. 9-10). Student interests and goals should be at the center of this assessment. “Self-determination demonstrates positive relationships with both academic achievement and self-concept” (Zheng et al., 2014, p. 468).

BUILD PROFICIENCY AND INTEREST IN CTE/STEM TO MOTIVATE PARTICIPATION AND PERSISTENCE.

Interventions to build academic proficiency should follow cognitive and emotional components to maintain interest and motivation. The four key components are as follows:

1. “The activity must evoke positive and/or pleasant feelings.
2. The student must devote a high degree of concentration to the activity.
3. The level of difficulty of the activity must not be so hard that it cannot be mastered, and at the same time, it should not be too easy.
4. Feelings of competency and proficiency must be derived from the activity” (White & Mitchell, 2013, p. 48).

EFFECTIVE PRACTICES AND RESOURCES

UNDERSTAND THE VALUE AND IMPORTANCE OF EXPANDED LEARNING TIME SUPPORTS.

Opportunities for expanded learning time are important for SWD and can include both inclusive and specialized programming, with a range of strategies that can be adapted to CTE/STEM transition pathways. Both inclusion and excellence are important to make this strategy effective. [The National Center on Time & Learning](#) offers resources to expand learning beyond the classroom as well as advocates for extending the school calendar and instructional time opportunities to improve educational outcomes for all at-risk student populations. Its resources are designed to support diverse students, and its offers strategies for greater inclusion in CTE/STEM activities and career paths. Expanded learning time includes blended learning, summer programs, and after school programming as well as an emphasis on reimagining the time students spend at school to support educational equity.

ASSESS STUDENT NEEDS IN THE CONTEXT OF THE PROFICIENCIES REQUIRED IN EACH COURSE.

Questions to assess the strengths and needs of each student include the following:

- “What prerequisite skills and background are necessary for this course or program?”
- Which skills are critical for success?
- In what areas will the student need additional preparation or support?
- Will the student need specialized or adapted equipment and tools?
- What assistance will the student need to obtain resources and complete assignments?
- How well can the student stay on track and adapt to routines and changes?
- What accommodations have been successful in the past?
- Can the student use the same kind of books, tools, and instructional resources as other students? Will the instructional management system require adaptations to support the student’s need for structure and limits?” (Beech, 2011, p. 21)

IDENTIFY ALTERNATIVE ASSESSMENTS THAT EXPAND CONVENTIONAL ASSESSMENT TOOLS FOR ACADEMIC PROFICIENCY.

For example, rather than testing rote learning, use performance assessment: “Because they allow students to construct or perform an original response rather than just recognizing a potentially right answer out of a list provided, performance assessments can measure students’ cognitive thinking and reasoning skills and their ability to apply knowledge to solve realistic, meaningful problems” (Darling-Hammond & Adamson, 2010, p. 7).

INCREASE SWD PARTICIPATION IN INCLUSIVE CTE/STEM COURSES WHENEVER POSSIBLE.

A [poster](#) from Kansas State University helps stakeholders to see the big picture and provides statistics and specific strategies (Thurston et al., 2015).

IDENTIFY AND ASSIST SWD WHO ASPIRE TO SCIENCE AND ENGINEERING CAREERS BUT LACK ACADEMIC PROFICIENCY.

The Center for Assistive Technology and Environmental Access at the Georgia Institute of Technology produced a 2012 book that outlines multiple specific accommodation strategies to support skill building and academic proficiency in CTE/STEM. Authors Moon, Todd, Morton, and Ivey note, “As STEM education becomes increasingly reliant on cutting-edge instructional technologies, it remains imperative that pedagogy is not inaccessible to learners with disabilities. At the same time, it is important that technology-oriented solutions do not overshadow efficacious, process-based approaches for accommodating students with disabilities” (2012, p. 16).

ROOT CAUSE: ACCESS TO AND PARTICIPATION IN CTE/STEM

WHAT THE LITERATURE SAYS: THEORY

The path to CTE/STEM inclusion moves first through math proficiency and continues with inclusion in science and STEM interdisciplinary coursework and activities. Whether SWD are enrolled in college-prep, occupational certification programs, or CTE, appropriately high academic standards in math and reading, with consistent and equitable College and Career Ready standards, lay the foundation for future success (Achieve, 2013, p. 5).

WHAT THE LITERATURE SAYS: EVIDENCE

Although algebra and geometry are critical gatekeeper courses for upper-level secondary mathematics and science coursework and college entrance, a frequent practice in many districts is to steer struggling students into courses that “dumb down” the mathematics content. “Moreover, such courses lead nowhere, leaving students unprepared to pursue postsecondary education [or many CTE/STEM careers]. The Common Core have increased the rigor in elementary and secondary mathematics and, if the promise of these standards is to be realized, educators must give all students equitable access to this content.... Without such supports we virtually guarantee that many students will not succeed in algebra and geometry; as a result, they will be denied access to higher-level secondary math courses such as calculus, to science courses, and ultimately to college” and CTE/STEM careers (Equity Assistance Centers, 2013, p. 6).

There are SWDs who are both interested and motivated to study math to prepare for CTE/STEM careers and to pursue postsecondary education. Motivation and inclusion are reciprocal here: “However, youth with disabilities did not reach the same level of math coursework, were less likely to report being on a college preparatory track, and had lower GPAs than their peers without disabilities who also planned to attend a two- or four-year college or university” (Wilson et al., 2009, p. 7).

“Readiness for college and career depends on more than the mastery of English language arts/literacy and mathematics content and skills, but these two content areas serve as a foundation for the study of other academic disciplines and contextualized learning” (Achieve, 2013, p. 2).

RECOMMENDATIONS AND STRATEGIES

UTILIZE REAL-WORLD TEACHING STRATEGIES WITHIN AUTHENTIC SETTINGS, BUILDING MATH AND PROBLEM-SOLVING SKILLS IN WORK-RELATED CONTEXTS, INCLUDING WORK-BASED LEARNING (WBL).

“Plasman and Gottfried (2016) find that applied STEM courses are predictive of better outcomes for students with learning disabilities (e.g., lower dropout rates, higher test scores, higher rates of postsecondary enrollment)” (Theobald, Goldhaber, Gratz, & Holden, 2017, p. 9). In addition, WBL inside and outside the classroom helps “young people integrate knowledge and experience,...as a vehicle for conveying academic concepts as well as a broad perspective of the skills required for successful transitions from school to further education and careers. Proponents argue that not only can such an approach meet the needs of U.S. employers for a highly skilled workforce, a focused investment in WBL can also provide ‘employability’ or ‘21st Century’ skills and serve as a foundation for lifelong learning in a time of rapid technological change” (NRC, 2012).

The necessary technology adaptive supports should be seamlessly integrated into these experiences. “Through hands-on experiences,...students can be fully integrated into [mathematics and] STEM laboratory classes and can be an essential contributor in...group activity.... Through the availability of these technologies students with [physical and learning disabilities] are given the opportunity to collect data in a quantifiable

hands-on way” (Supalo, Hill, & Larrick, 2014, p. 1259).

MAKE MATH AND SCIENCE A REQUIREMENT (EXPLICITLY ENSURE PREREQUISITES AND FUNDAMENTAL KNOWLEDGE FOR SWD) AND RAISE EXPECTATIONS FOR SWD WITHIN THOSE REQUIREMENTS.

The structure of curriculum matters in the math course-taking choices and achievement of SWD. When most students take the same level of math coursework, and those courses include advanced-level math, studies find higher average math achievement for students with and without disabilities. “Schools shape students’ course of study in mathematics by limiting or broadening the available math classes that make up the curriculum. For some students with disabilities, this suggests that raising course-taking expectations in mathematics can have a positive effect on their course-taking and achievement.” (Wilson et al., 2009, p. 8).

STRONGLY ADVOCATE FOR ACCESS TO ADVANCED AND AP COURSES AND CREATE INCENTIVES WHILE BUILDING AND ENSURING EFFECTIVE AND APPROPRIATE ACCOMMODATIONS, MODIFICATIONS, AND SUPPORT.

It is important to ask “whether the learning difficulties for many of these students may have been curriculum or instructional difficulties in addition to learning disabilities. If tasks involving complex mathematical thinking are thought to be suitable only for ‘high achievement’ students, then the result may be that students with learning disabilities are given only routine and repetitive tasks. However, if all learners are treated as having the capacity to engage with complex concepts, and are supported through flexible, dynamic sequences, it appears that students with learning disabilities who are generally considered ‘low attainers’ can transcend expectations” (Beatty & Bruce, 2016, p. 36).

Inclusion in challenging and regular math classes, and other general education programs, has been demonstrated to be beneficial for postsecondary outcomes. “Students with disabilities who spend 80-100% of the school day in general education classes have fewer absences and are more likely to graduate on time, enroll in college, and find employment than students with disabilities who spend less time in general education classrooms” (Theobald et al., 2017, p. 25).

ENSURE THAT SWD HAVE ACCESS TO SCIENCE FAIRS AND OTHER SCHOOL CTE-/STEM-RELATED SPECIAL EVENTS.

CTE/STEM special events that apply math and science skills in experiences outside the classroom are motivating and engaging. Including students in recruitment and awards opportunities is key to increasing confidence and career goal clarity and persistence. Furthermore, if SWD do not have access on the ground level to these access points for achievement and networking, then academic inclusion and success may not be enough to provide a career boost in CTE/STEM (Alfeld, Charner, Johnson, & Watts, 2013).

ADDRESS MATH/SCIENCE DEFICITS AND POTENTIAL IN THE IEP FROM ELEMENTARY SCHOOL THROUGH HIGH SCHOOL.

“In light of research that suggests that early Algebra course-taking improves math achievement of low achieving students (Gamoran & Hannigan, 2000) and may lead to more advanced mathematics course-taking in high school (Smith, 1996), transition planning may need to begin sooner than federal law currently requires. Since course of study can be influenced by the expectations codified in school policies (i.e., constrained

curriculum), students with disabilities who have college aspirations should be required to take Algebra by the ninth grade. Transition planning would need to begin prior to ninth grade to allow educators, parents, and students to develop a plan that will consider any need for remediation of prerequisite skills and supplemental programming that will allow for the development of a college preparatory course of study through high school” (Wilson et al., 2009, p. 10).

“In order for students to grow in acquiring knowledge and/or learning how to perform a task, their current abilities have to be recognized. Then, with assistance and encouragement from the teacher, they can progress to their next level of growth. Such assistance and encouragement can take many forms, including modeling, giving examples and counterexamples, discussing specific dos and don’ts, and providing repeated exposure to a task, along with giving students multiple opportunities to experience new material—gradually transferring knowledge and skills before expecting students to ‘own’ them” (Berman & Connor, 2016, pp. 19-20).

INCREASE MEANINGFUL TRAINING OPPORTUNITIES FOR TEACHERS OF CTE/STEM AND SPECIAL EDUCATION TO SUPPORT EFFECTIVE INTERVENTIONS AND INCLUSION AS WELL AS BUILDING FOUNDATIONAL MATH/SCIENCE SKILLS.

“STEM teachers tended to engage in fewer professional development opportunities and dedicated fewer hours in the professional development regarding students with categorical disabilities and LEP than the remainder of the teaching population. Overall, STEM teachers’ perceived utility of the provided professional development experience was lower than that of the remainder of the teaching population.... Quality professional development improves teacher skills of identifying and addressing student misconceptions, as well as improving teacher pedagogical content knowledge” (Li, Ernst, & Williams, 2015, pp. 1-2).

“Pedagogical content knowledge helps teachers transform the content knowledge they possess into forms that are pedagogically powerful and yet adaptive to the variation in ability and background presented by the students.... [Many] special education teachers do not feel prepared to teach math to students with disabilities.... Education teachers take, on average, only 1.2 methods courses that focus on teaching math to students with disabilities” (Meyen & Greer, 2010, p. 51).

“Finally, fiscal inequities [between schools, programs, and student populations] must be addressed.... Resources should be reallocated to provide professional development and ongoing coaching for teachers and other professionals, as well as academic and other supports for students. The allocation of discretionary and other funds must reduce, and not contribute to, inequities” (Equity Assistance Centers, 2013, p. 7).

INTERVENE WITH AND INCLUDE SWD EARLY IN STEM CURRICULUM TO LAY THE GROUNDWORK FOR COPING AND LEARNING SKILLS NEEDED FOR ACADEMIC SUCCESS AND CAREER READINESS.

Increase strategies that support developing problem-solving skills and learning to identify errors early in mathematics training. “As problem solving is difficult for students across ability levels but particularly so for students with learning disabilities (LD), a failure to gain proficiency in this skill translates to a cumulative struggle in mathematics overall. Ultimately, this struggle extends to other areas where mathematical proficiency is important, and the trend of students incapable of pursuing a career in STEM fields continues” (Sharpe, Futz, & Krawec, 2014, p. 45).

“Instructional equity must be based on students having an opportunity to learn skills and concepts in mathematics that are aligned with assessments. Holding students with disabilities accountable for skills and concepts they have not had an opportunity to learn is unfair at best (Meyen & Greer, 2010, 50). Addressing

deficits and building on strengths builds positive academic achievement emotions that will sustain future success” (Vierhaus et al., 2016, p. 20).

EFFECTIVE PRACTICES AND RESOURCES

IDENTIFY APPROPRIATE CAREER ASSESSMENT TOOLS TO SUPPORT INCLUSION.

The [Life Centered Career Education \(LCE\) assessment tool and curriculum](#) is geared toward students with mild mental and learning disabilities (IDEA, 2004). The objective of this educational tool is “to establish present levels of student competency, to determine IEP goals and objectives, to guide program planning and instructional content, and to measure student progress towards a set of standards” (Davis et al., 2010, p. 28).

Programming “utilizes technology to build the infrastructure and delivery system to provide instructional resources aligned with curriculum standards and assessments” (Meyen & Greer, 2010, p. 50). Meyen and Greer’s [Blended Assessment with Instruction \(BAIP\)](#), in development at the University of Kansas, is a model of practice that integrates assessment standards in mathematics with instructional resources for teachers, students, and parents. The BAIP parental support for mathematics uses online support and teacher interaction to inform parents of the concepts their students are learning in the classroom while the instruction is occurring. It also provides suggestions on how parents may engage their children in understanding the concepts through relevant structured activities, teachable moments, and other at-home pedagogical strategies. For more information, see their 2010 article, “Applying Technology to Enhance STEM Achievement for Students with Disabilities,” in the *Journal of Special Education Technology*.

This Transition Coalition offers reviews of the most frequent career and life skills inventories to support transition planning.

The [Supports Intensity Scale \(SIS\)](#) measures the individual’s support needs in personal, work-related, and social activities in order to identify and describe the types and intensity of the supports an individual requires. SIS was designed to be a part of PCP processes that help all individuals identify their unique preferences, skills, and life goals. A Spanish-language version exists for this scale as well. For more information, see Verdugo et al. (2016).

A [summary report](#) from the University of Kansas Research in Disabilities Education Synthesis Project is a good visual tool based on 10 years of research.

MODEL INCLUSION AND COMMUNITY (PARENT/SCHOOL/EMPLOYER/CAREER COUNSELORS) IN PROGRAMS BUILT FOR ALL STUDENTS.

A notable example of collaborations and training/academic programs supported by local businesses is the Siemens/Olympia school/employment preparation collaboration, which includes Siemens-led STEM days at middle and elementary schools to introduce students to engineering and robotics, active recruitment of students starting in high school, and a path to apprenticeships and additional training. Parents, teachers, and administrators are included in this effort in different ways (Alfeld et al., 2013). This program begins with informational and exploration sessions, and students gradually move toward access to intensive internship and training programs.

The [Upward Bound Math and Science program](#) is designed to strengthen the math and science skills of participating students. The goal of the program is to help students recognize and develop their potential to excel in math and science and to encourage them to pursue postsecondary degrees in math and science, and ultimately careers in the math and science profession. This is a grants-based program supporting intensive hands-on science and math projects and access to outside speakers, field trips, and a 6-week summer

program. Built on a collaboration with a postsecondary institution, this program provides disadvantaged high school students with skills and experiences to prepare them for college success in STEM.

Critical Learning Instructional Paths Supports (CLIPS) and related pattern-based learning strategies can offer hands-on learning and exploration through online technology. These creative teaching solutions can be designed for collaborative or individual projects. For example, CLIPS are created using flash animation and incorporate audio narration, offering students the ability to consider mathematical concepts in non-static environments. Using technology as an expressive tool creates “two specific ways that this kind of environment would support students with learning disabilities by focusing their attention... and [making]... mathematical connections interactively” (Beatty & Bruce, 2012, pp. 25-26). CLIPS activities allow students to construct deep conceptual understanding of complex algebraic relationships rather than memorize procedures. “CLIPS incorporates a dynamic graduated teaching sequence that proceeds along a continuum from concrete iconic representations (virtual tiles) to representational formats (graphs and diagrams) to more abstract or symbolic representations. The online activities directed students’ attention to specific important ideas, particularly the explicit connections between actions on concrete (linear growing patterns) or abstract (graphs) representations and the related symbolic procedures (pattern rules and equations). CLIPS also incorporate immediate levelled corrective feedback, which has been shown to be an important element within an instructional system” (Beatty & Bruce, 2012, pp. 25-26, 35).

ROOT CAUSE: CURRICULUM/INSTRUCTION

WHAT THE LITERATURE SAYS: THEORY

Inclusive curriculum and differentiated, strengths-based instructional strategies support student interest and career readiness. It is important for schools looking to innovate with inclusion of SWD in CTE/STEM to rethink tiered systems of interventions to accommodate implementation of the Common Core and to provide appropriate professional development to teachers to implement tiered systems with fidelity and responsiveness to the real learning characteristics of the individual students in those systems (Equity Assistance Centers, 2013).

WHAT THE LITERATURE SAYS: EVIDENCE

School composition and climate affected the level of course-taking and math achievement of SWD; however, these effect sizes were smaller than those related to curriculum structure (Wilson et al., 2009, p. 8). The barriers to employment faced by PWD begin at school. "Studies indicate that youth with disabilities have poorer career decision-making skills, lower career outcomes expectations, and poorer vocational identities than their peers without disabilities" (Ochs & Roessler, 2001). This highlights the need for earlier intervention and adoption of curricula with a transition focus in K-12 education (Antosh et al., 2013, p. 12). Curricular implementation is doubly valuable because the new standards demand more of students and teachers alike... If the Common Core are implemented without adequate supports for all students, and for those serving them, the inequities long inherent in American education will persist and deepen, with greater numbers of our most vulnerable students pushed into failure" (Equity Assistance Center, 2013, pp. 1-2).

RECOMMENDATIONS AND STRATEGIES

USE MULTIPLE CREATIVE TECHNOLOGIES OF TEACHING AND LEARNING TO ENGAGE AND ACCOMMODATE SWD.

There are numerous resources for technical support for SWD. The Individuals with Disabilities Education Act (IDEA) (1990) established the working definition of assistive technology (AT) as "[a]ny item, piece of equipment or product system, whether acquired or commercially off the shelf, modified or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities" (Zascavage & Winterman, 2009, p. 46). Requiring and integrating these technologies into the curriculum supports equity and may well offer opportunities for other learners to expand their learning strategies.

INTEGRATE SOCIAL EMOTIONAL LEARNING (SEL) STRATEGIES AND POSITIVE BEHAVIORAL SUPPORT (PBS) INTO ALL CURRICULAR STRATEGIES AND EACH CLASSROOM EXPECTATION.

All students need clear rules and consistent enforcement in the classroom. Some SWD need accommodations to help them control their own behavior, and PBS and SEL create a healthy learning climate when they are integrated into every classroom and supported by curricular expectations. When conducting inclusive curriculum planning "special behavioral plans or counseling services might be needed for some students with disabilities. Accommodations for grouping arrangements may be needed for students who require increased personal attention and support from school personnel. Students may require additional assistance and guidance on tasks through small group instruction or tutoring" (Beech, 2011, p. 50).

INCORPORATE INTERDISCIPLINARY COLLABORATION WITH HYBRID VISUAL/

VERBAL AND HANDS-ON ASSIGNMENTS (INCLUDING STEAM).

Interdisciplinary collaboration supports “a sense of purpose for learning, adequate time for relevant engagement, and use of hands-on activities, and other approaches that link learning to students’ prior knowledge” (Bargerhuff, 2013, p. 5). By adding authenticity and relevance, a learning experience builds toward employment in good careers (Partee & Halperin, 2006, p. 6). Cultural enrichment and STEAM can be a source of both authenticity and relevance for marginalized or at-risk populations. In a recent study of culturally integrative STEAM Girl’s activities in a Native American community, “a majority of respondents answered ‘agree’ or ‘strongly agree’ that they like STE and that by majoring in those disciplines and obtaining a degree, they could help to improve their communities” (Kant, Burckhard, & Meyers, 2018, p. 21).

EMBED INTERVENTIONS WITHIN GENERAL EDUCATION INSTRUCTION AND ACTIVITIES.

There is strong evidence to support the benefits of inclusion of SWD in general education, if accommodations are integrated without stigma. Theobald et al. (2017) found that “students with disabilities who spend 80% to 100% of the school day in general education classrooms experience better outcomes than students with disabilities who experience less inclusion, all else equal. Specifically, students with disabilities who spend 80% to 100% of the school day in general education classrooms have fewer absences, higher academic performance, higher rates of grade progression and on-time graduation, and higher rates of college attendance and employment than students with disabilities who are similar in other observable ways but spend less time in general education classrooms” (p. 4).

IMPLEMENT UNIVERSAL DESIGN FOR LEARNING (UDL) PRACTICES.

UDL best practices are useful as tools to look at whole curricula, from advanced classes to special topics and remedial offerings. “Effective UDL provides all students with access to the methods, materials, and technology to maximize their learning. The framework of a UDL classroom begins with curricula designed to maintain high expectations for all types of learners. In this manner, UDL uses technology to supplement and enhance individualized assessment and instruction” (Zascavage & Winterman, 2009, p. 47). UDL offers ways for SWD to demonstrate both knowledge and skills regardless of specific disabilities, without changing the content expected in the classroom. “Universal design strategies, for example, involve providing students with multiple means of representation, action/expression and engagement. Accommodations, such as extended time and use of text-to-speech technology, are used during both instruction and assessments. Attention should be paid to universal design and accommodations before considering alternative routes” (Achieve, 2013, p. 11). The use of technology (particularly within a UDL framework) is “a fundamental tool for providing access to STEM instruction” (Bargerhuff, 2013, p. 5).

IDENTIFY AND CORRECT BIAS IN CURRICULAR AND INSTRUCTIONAL MATERIALS.

Standard practices and assumptions are not necessarily appropriate for all learners, including SWD. Sometimes biases are embedded in curricular expectations, and other times biases are embedded in supporting materials. Be aware of stereotypes in the examples, narratives, and framing of stories of PWD in CTE/STEM fields, and support students to critically engage with the assumptions behind those stories that might marginalize them or lower their expectations. Often, literature and film examples play on biases that stigmatize disability as a tragedy or inevitable limitation and celebrate any achievement as a miracle. If you are modeling high expectations in your classroom, curricular and instructional materials and embedded assumptions about assessment can undercut your efforts (Ware & Hatz, 2016).

For example, there is a tendency to equate participation and talking in class, and many teachers assess

intelligence and understanding by the degree of talking/discussion. "A largely unquestioned universal classroom norm is having student raise their hands to be called on to speak, signaling their readiness and ability to participate in the learning experience. However, such expectations (or even requirements) neglect to consider a host of valid reasons why some students do not speak up in class" (Berman & Connor, 2016, p. 20).

STRESS MODELS OF TEAM TEACHING IN CURRICULUM THAT INCLUDE SWD SUPPORT PERSONNEL (PARA-PROFESSIONALS, TEACHER AIDES, AND SPECIAL EDUCATION CO-TEACHERS) AND CONTENT TEACHERS.

There are many ways to promote collaboration and team teaching, which supports individualized instruction and reduces the burden on the sole teacher in a class. An interdisciplinary curriculum can be inclusive of multiple content-area perspectives, learning practices, and teaching staff. In a 2013 study, Bargerhoff found that an interdisciplinary curriculum "increased communication among faculty [and special education support staff]. They had more opportunities to share insights on their SWD (i.e. 'what works for me'). As a team, the faculty and staff committed to developing and supporting an 'advisory' period. Every adult in the school supervised a group of students during advisory as well as on special projects evolving from student discussion during advisory times. The rationale for this was that every student would have at least one adult that knew him/her well" (pp. 16-17). Content teachers can work with special educators and aides for insight into the learning of SWD, while still maintaining "ownership of all students." Collaboration honors insights of all of the team, therefore providing multiple solutions to build successful experiences in the classroom for SWD.

BUILD IN INSTRUCTIONAL APPS AND TECHNOLOGY WITH EFFECTIVE TEACHING STRATEGIES (SCAFFOLDING, PERFORMANCE FEEDBACK, REPETITION, REINFORCEMENT, ATTENTION TO INDIVIDUAL LEARNING RATES).

"The term 'scaffolding' is used by educators to describe the types of support needed when students are first acquiring new knowledge and skills. In the same way scaffolding is used in the building industry, scaffolding in learning provides temporary structure and support for the learner until the concept or competency is completely mastered. Scaffolding for learning may be provided through verbal prompts and cues, visual highlighting and diagrams, or other types of assistance to help students to build their knowledge and proficiency. Students need support until they are able to use the knowledge and skills on their own. The key to the use of scaffolding in teaching is recognizing that it is temporary. Prompting and guidance needed at the beginning of learning must be removed for students to become independent" (Beech, 2011, p. 29).

It is important to use technology supports and blended learning to provide instructional supports (e.g., scaffolding) when necessary. Including instructional apps has been shown to narrow the achievement gap between SWD and other learners. "Without such supports we virtually guarantee that many students will not succeed in algebra and geometry; as a result, they will be denied access to higher-level secondary math courses such as calculus, to science courses, and ultimately to college" (Equity Assistance Centers, 2013, p. 6).

"Technology provides the capacity to (a) provide immediate feedback to teachers on the performance of learners individually, and in aggregate, to facilitate databased instructional decisions; (b) provide feedback to students as they engage in Web-based instruction; (c) present skills and concepts in graphics and animation for clarity; (d) offer opportunities for students to interact with the delivery of instruction in a manner that is engaging; (e) deliver instruction aligned with standards and formative and summative assessments; (f) embed assessments in instructional applications; (g) provide instructional opportunities in non-school settings; (h) employ features that enhance motivation; and (i) monitor student progress" (Meyen & Greer, 2010, p. 51).

INTEGRATE SELF-DETERMINATION DEVELOPMENT WITHIN ACADEMIC CONTENT

STRATEGIES (SELF-INSTRUCTION, SELF-MONITORING, AND SELF-EVALUATION) TO SUPPORT STUDENT ENGAGEMENT WHILE BUILDING ACADEMIC SUCCESS AND SELF-CONCEPT.

In an effective curriculum, self-determining characteristics should be taught in combination and integrated with academic goals and practices (Williamson, Robertson, & Casey, 2010). Developing self-determination is a valuable part of curricular development for all students, but particularly for SWD. “Self-determination and self-concept have been shown to be correlated with positive school engagement and adult outcomes. These students are more likely to sustain intensive efforts to learn challenging academic content, capitalize on their strengths, and take ownership of their actions” (Zheng et al., 2014, p. 463).

Recent research has provided causal evidence of the importance of self-determination for students to achieve positive transition outcomes. In a study of levels of the connections between self-determination and sustainable transition after high school, Shogren et al. (2015b) found that self-determination status at the end of high school predicted significantly more positive employment, career goal, and community access outcomes. “When considering the multiple personal and environmental factors that impact adult outcomes, the consistent positive relationship across research studies between self-determination and employment is very promising. It suggests that, in practice, teachers can consider self-determination interventions a useful component of their limited instructional time, particularly to promote employment and community access in adulthood” (p. 265).

Numerous curricular and instructional models have been identified to enable teachers to provide an instructional focus on self-determination (Wehmeyer & Field, 2014). Algozzine, Browder, Karvonen, Test, and Wood (2001) found evidence for the efficacy of instruction to promote component elements of self-determined behavior, including interventions to promote self-advocacy, goal setting and attainment, self-awareness, problem-solving skills, and decision-making skills. These include the Self-Determined Learning Model of Instruction, TAKE CHARGE for the Future, The Self-Directed IEP, and Whose Future is it Anyway? (Antosh et al., 2013, p. ix).

EFFECTIVE PRACTICES AND RESOURCES

FAMILIARIZE YOURSELF WITH NEXT GENERATION SCIENCE STANDARDS AND APPLY THEM WITH EQUITY.

Within the [Next Generation Science Standards](#) (NGSS), there are three dimensions to learning science: Crosscutting Concepts, Science and Engineering Practices, and Disciplinary Core Ideas. These dimensions are combined to form each standard—or performance expectation—and each dimension works with the other two to help students build a cohesive understanding of science over time.

INTEGRATE WBL INTO THE CURRICULUM AND AS A SUPPLEMENT TO CLASSROOM EXPERIENCES.

“Work-based learning (WBL) is thought to be useful to students because it demonstrates the applications of classroom learning in the real world, engages them by using authentic tasks and tools, and teaches them employability skills. Furthermore, WBL provides opportunities outside traditional academic instruction to be successful” (Alfeld et al., 2013, p. 4).

INTEGRATE CAREER EXPLORATION INTO THE CORE CURRICULUM FOR ALL LEARNERS.

“Integrate transition assessment activities including career exploration and development into the core curriculum (supported by general educators, special educators, and transition specialists) to assist students in developing self-directed measurable goals for employment” (Antosh et al., 2013, p. 13).

IDENTIFY TECHNOLOGICAL SUPPORT USING UNIVERSAL DESIGN.

“Provide a range of universally designed technological supports such as iPads, laptops, and communication devices so students with IDD [Intellectual or Developmental Disabilities] can maintain their schedules, notes, etc. with age-appropriate supports. Collaborate with faculty and students in occupational therapy, rehabilitation counseling, and special education to teach students how to use these devices” (Antosh et al., 2013, p. 15).

- “Seek and use AT [assistive technology] as early as possible in a child’s development. To be most effective with children and youth, this generally requires the involvement of families and close care providers in understanding how the technology can be used (Blair, 2004; Alper & Raharinirina, 2006).
- Ensure access to essential AT (e.g., communication and/or mobility devices) across life domains. If use of a device is critical in school it is likely necessary at a job site (Burgstahler, 2003).
- Seek funding arrangements that allow technology to be used in all environments in which the individual interacts (e.g., school, home, work, community). This is an important consideration when assistive devices are purchased using public funds and relied on as a primary means of functioning (e.g., augmentative and alternative communication, or AAC) (Hess & Gutierrez, nd).
- Pursue innovative funding to maximize flexibility in how and where technology is used. Individual Development Accounts (IDA), federally-funded state financial programs, AT loan programs, and public/private insurance funding are good possibilities (search ‘assistive technology funding’ online for state-specific resources).
- Ensure that school assignments are accessible to all students, including those who use AT. Teachers increasingly rely on the use of technology to educate children (Edyburn, 2008; Izzo, Murray, & O’Hanlon, 2005). Ensuring that those who use AT can access the same technology (e.g., computers, websites, and so on) as those who don’t use AT is critical to student success (Blair, 2006; Rose & Gravel, 2012) during and following school” (Antosh et al., 2013, p. 22).

USE DISABILITY-FRIENDLY PLANNING AND ASSESSMENTS TO MAKE CLASSES MORE EFFECTIVE AND EASE THE CHALLENGES OF CURRICULUM PLANNING.

“Focusing on the essentials of learning begins with the planning process used by the teacher. The [University of Kansas Center for Research on Learning](#) has developed three planning routines that use a combination of graphic organizers and specific implementation strategies (Lenz, 1997). These help teachers lay out the key concepts and critical skills as they plan a whole course (Course Organizer™), a unit of instruction (Unit Organizer™), or a single lesson (Lesson Organizer™). Teachers and students use the graphic organizers to guide learning and monitor understanding of the instructional content.... By laying out the important ideas and critical details graphically, you can help students see how the ideas are connected to each other. Don’t forget to label the lines between the ideas to show how the ideas link together” (Beech, 2011, p. 27). This resource lays out many curricular strategies to support effective planning and student understanding, including a description of scaffolding techniques (Beech, 2011, p. 30).

INTEGRATE PERFORMANCE ASSESSMENT INTO CONTENT TESTING.

“There are a number of advances that can make Performance Assessments more efficient and effective as both measurement and teaching tools. For example, tasks can be designed to yield scores on different dimensions of performance in more than one content domain, which has practical as well as pedagogical

appeal. Well-designed tasks that yield multiple scores reduce the time and costs of task development, test administration and scoring by raters. Tasks that cut across content domains may also motivate a more integrated approach to teaching and learning” (Darling-Hammond & Adamson, 2010, p. 34).

The [Cognitive Research Trust](#) (CoRT) assessment tools for CTE/STEM outline teacher assessment for curriculum and benefits of including SWD in general CTE/STEM classrooms. “CoRT thinking skill lessons, developed by Edward de Bono and applied to an extensive variety of problems in business, education, and personal lives since 1970, are the most widely used materials for the direct teaching of thinking” (Rule & Stefanich, 2012, p. 44).

INTEGRATE STORYTELLING INTO THE CURRICULUM FOR DEVELOPMENTAL AND APPLIED LEARNING.

The Sphere (Social/Participatory/Helpers/Evolving/Round/Energizing) Model was developed to address the privilege of the able learner, to nurture a truly inclusive literacy-learning environment. The tenets of the model are as follows:

- Social: Learning happens in a social context within a supportive community.
- Participatory: Participation in all forms is active engagement, evidence of a brain at work, and not a challenge to authority.
- Helpers: There are opportunities for all learners (including teachers) to be the helpers and the helped.
- Evolving: Story time is fluid and evolving, open to student expressions of power and collaboration.
- Round: By design, the learning environment is without walls or edges. It embraces rather than excludes.
- Energizing: Teachers respond to student energy, aiming for balance, so that children can learn in the best possible way.

“The Sphere model calls on teachers to challenge their own expectations of ‘how a learner acts’ in order to disengage the deficit-model that continues to underlie many of our teaching philosophies. By taking the focus away from ideals of behavior and self-regulation for a contained period of time, we can create possibilities for our students that may not otherwise exist. How might this affect the way they see themselves or one another? Perhaps most importantly, how might these experiences help overturn the expectations that school and society have for diverse learners?” (Tsuei, 2016, p. 146).

There is a diversity of accommodations for SWD in CTE. For example, the report [Accommodations and Modifications for Students with Disabilities in Career Education and Adult General Education](#) (2011) contains a good place to start to begin to build strategies to use with SWD. These include instructional strategies such as understanding the needs of SWD; managing time and classroom activities; and teaching techniques and assessment practices. Accommodations include AT; instruction and assessment; learning and work environment; and job requirements. “Modifications may include modified program or course requirements, concepts or skills significantly below the targeted grade level, or alternate curriculum goals. Modifications to curriculum outcomes should be considered only after all appropriate accommodations have been tried” (Beech, 2011, p. 59).

ROOT CAUSE: CLASSROOM CLIMATE

WHAT THE LITERATURE SAYS: THEORY

Healthy classroom ecology supports community, engaged learning, and a diverse curriculum to develop a healthy academic self-concept for achievement through and beyond the school years.

WHAT THE LITERATURE SAYS: EVIDENCE

A healthy classroom climate supports equity, regardless of the learner's race, gender, national origin, linguistic background, economic level, or ability. The Equity Assistance Centers identify five key questions to ask when assessing whether a classroom climate supports SWD as well as students identified as "normal:"

1. "How does this system, policy, procedure, or practice affect all learners?"
2. Can we identify negative or adverse consequences for any identifiable population as a result of this system, policy, procedure, and practice? How might that adverse impact be avoided? As we create new systems, policies, procedures, and practices, what precautions should we take to avoid negative consequences?"
3. How do we monitor our work and ensure equally positive outcomes for all students?"
4. How do we change our systems, policies, procedures, and practices to produce fair and equitable outcomes for students and their families?"
5. How do we engage students, families, and communities in meaningful ways and as partners in decision-making and implementation of the Common Core?" (Equity Assistance Centers, 2013, pp. 3-4).

RECOMMENDATIONS AND STRATEGIES

PAY ATTENTION TO EQUITY IN PARTICIPATION.

"We define equitable treatment as patterns of interaction between all individuals within an environment that are characterized by acceptance, respect, support, and safety. Students should feel challenged to become invested in the pursuits of learning and excellence without fear of threat, humiliation, or danger, all of which undermine students' ability to succeed. Inequitable treatment of students can also compound negative consequences" (Equity Assistance Centers, 2013, p. 6). Authentic inclusion, in part, as contextual, collaborative, and organic, is always a work-in-progress.

ACKNOWLEDGE EDUCATOR AS WELL AS PEERS AS ROLE MODELS, REGARDLESS OF ABILITY.

"If teachers have no real voice in analyzing and contributing to solving the challenges of inclusive education, then there is even less likelihood that students can be heard" (Berman & Connor, 2016, p. 22). "Teacher/educators often need to be able to role model or demonstrate the principles or skills that they are teaching" (Escovitz & Solomon, 2013, p. 5).

Equity in access to opportunity builds expertise and confidence, supporting student development as role models and resources for their peers. Internships/equitable opportunities support successful negotiation and integration of CTE/STEM and validate learning processes in the classroom. "Real world exposure to work related to each student's unique interests includes informational interviewing, job shadowing, community projects, and internships. Students bring their experiences and projects back to the classroom where their teachers ... can wrap academics around their projects in ways that are relevant to their current interests and aspirations and learning plans. Sharing their work experiences with other students in the school setting encourages reflection and problem solving and widens the exposure of other students to different work options (Alfeld et al., 2013, p. 51).

BUILD SELF-ADVOCACY AND SELF-EFFICACY IN LEARNING EXPERIENCE BY ACKNOWLEDGING AND HONORING DIFFERENCES.

Many benefits can be derived from conscious implementation of diversity awareness in the educational environment. Culturally responsive pedagogy improves academic outcomes for students and makes learning more interesting and connected to the real world. More importantly, a successful diversity awareness program turns a school into a place where no child is afraid to enter or be different (NAESP, 2018). Self-determination (self-advocacy and self-efficacy) builds a developing self-concept, or a student's understanding of their identity and relationship to others in the world. Self-concept is multidimensional because it comprises various facets. Healthy classrooms are inclusive in ways that support development of a student's healthy social, physical, and academic self-concept.

PROVIDE OPPORTUNITIES FOR COLLABORATION TO CREATE RESPECTFUL RELATIONSHIPS.

"Studies of resiliency in childhood identify a strong sense of belonging as key to effective coping and the confidence that changes and disruptions in life will turn out well. This kind of resiliency is in stark contrast to the 'learned helplessness' that hampers coping and is present in students experiencing serious psychological and social problems" (Anfara & Schmid, 2007, p. 62). Cooperative group learning facilitates learning content and provides an opportunity for students to practice social skills in a safe environment. Multiple strategies exist for building successful collaboration in a climate of inclusion. In one study, "teachers employed flexible grouping based on the targeted learning objective and characteristics of students. The jigsaw strategy allowed teachers to tailor tasks in cooperative groups to particular student needs, preferences, and strengths. Typically developing students received explicit instruction on how to interact with SWD or others who dislike 'group work'" (Bargerhuff, 2013, p. 15).

SET A TONE THAT HONORS EVERY STUDENT'S NEED FOR SOME LEVEL OF INDIVIDUALIZED SUPPORT AND TECHNICAL HELP. REDUCE THE STIGMA OF ACCOMMODATIONS.

This strategy begins with a change in mindset and extends to relationships in the classroom. "Disability resides only in the fit between a person's capacities and the demands of the context in which that person functions. Disability is not a problem within the person, or a characteristic of a person. It is not, as my colleagues at the AAIDD [American Association on Intellectual and Developmental Disabilities] have noted in defining intellectual disability, something one 'has', but is a state of functioning that exists if there is a gap between that person's capacities and the demands of the context" (Wehmeyer, 2011, p. 155). If this concept of disability becomes normalized, then all students (diagnosed with a disability or not) will benefit from understanding that accommodations and strengths go hand in hand.

CONFIGURE THE ROOM PHYSICALLY TO SUPPORT ACCESS TO TEACHING AND LEARNING ACTIVITIES FOR ALL STUDENTS, CONSIDERING THE PARTICULAR SOCIAL, BEHAVIORAL, AND ACCESSIBILITY NEEDS FOR FULL PARTICIPATION BY SWD.

"Defining disability as a limitation rather than a health condition per se highlights the social and technological context of the individual. In a world with electric wheelchairs, for example, a child with impaired mobility will be less disabled than he or she would be otherwise. It follows then that home and school environments can shape disability and that new technologies can either mitigate or exacerbate disability" (Currie & Kahn,

2012, p. 4). Basham, Israel, and Maynard defined access from a cognitive as well as a physical perspective, and suggested, “If they are to serve all students and teachers across various learning environments, modern instructional tools should move beyond accessibility to focus on usability” (2010, p. 14).

KEEP EXPECTATIONS BOTH HIGH AND REALISTIC FOR ALL STUDENTS, INCLUDING SWD.

There is a great deal of power in teacher achievement expectations, or “the beliefs teachers hold about their students’ academic capabilities and subsequent levels of achievement.... They are thought to be largely influenced by factors such as students’ prior achievement, but also by ethnicity, SES [socioeconomic status], gender, and student diagnostic labeling” (Peterson, Rubie-Davies, Osborne, & Sibley, 2016, pp. 123-124). Student math scores have been shown to be affected by teachers’ implicit biases, either positively or negatively, depending on the bias.

Transition planning may be enhanced by holding high expectations for SWD. Assessments are an opportunity to test and examine expectations, whether they are too low or realistically high for individual learners. Teacher teams can monitor each other’s expectations, as can the IEP team that receives reports such as the Transition Plan Inventory (TPI). In one study, the large number of needs or interventions rated as not appropriate (or not relevant) on the TPI by teachers was surprising to researchers. Although some circumstances make items unnecessary, in most other cases, social skills and community connections did not seem to be valued, and academic/work transition expectations were discounted consistently (Carter et al., 2014).

“Teachers who balance their dedication to academic content with their understanding of individual student characteristics displayed the flexibility necessary to maintain high expectations while incorporating reasonable accommodations and modifications. Research-based instructional practices that focused on authentic, problem-based lessons engaged and sustained student interest while building on their prior knowledge and skills” (Bargerhuff, 2013, p. 18).

EFFECTIVE PRACTICES AND RESOURCES

ENCOURAGE ALL STUDENTS AND TEACHERS TO PARTICIPATE IN NATIONAL COMPETITIONS, SUCH AS THE SUPER STEM COMPETITIONS.

The [United States Super STEM Competition](#) is an educational nonprofit organization running an annual competition to challenge the creative mind of all middle school, high school, and college students. Prizes include recognition awards for schools, students, or classroom. Additionally, female students of registered schools are eligible to apply for the Susan Sanford Memorial STEM Scholarship. Equitable school-wide STEM initiatives support innovative and inclusive classroom climate. Super STEM Schools can transform expectations for all learners. (Bevans, 2014).

BE AWARE OF LEGAL REQUIREMENTS AND BEST PRACTICES ACCOUNTABILITY TO SUPPORT HEALTHY CLASSROOMS FOR ALL LEARNERS.

The [American Institutes for Research, School Practices and Accountability for Students with Disabilities](#) found that “accountable schools had a higher percentage of students identified as having disabilities, were more likely to have students attending a central district program for SWD, and had more special education teachers but fewer other staff per 100 SWD, compared with non-accountable schools” (2011, para. 4). Accountable schools also favored co-taught settings.

BUILD EFFECTIVE TEAMS AND TRAIN TEACHERS TO MASTER THEIR MULTIPLE

ROLES, ACKNOWLEDGING AND REWARDING THEIR WORK AS TRANSITION ADVISORS IN AND OUTSIDE THE CLASSROOM.

Advisors and teachers take on “multiple roles include teaching, counseling, mentoring, advocating, and other roles. In addition to working with students in school, advisors travel to internship sites to work with students and meet with their mentors. The internship coordinator helps students write cover letters and resumes, works with mentors, and collects paperwork for CTE requirements. Additional staff who are not advisors include special education teachers, grant-funded positions to integrate STEM into the program, and a college and career specialist. Mentors are employer-based volunteers who supervise and guide students in one or more of the following activities: visiting classrooms to describe their career paths or teach a lesson; providing a group with a tour of their work place; participating in informational interviews with students; having students shadow them for a day so students can gain a deeper understanding of the mentor’s work; and guiding students through a project-based internship at their worksite (Alfeld et al., 2013, p. 52).

INCLUDE FREQUENT ASSESSMENTS OF CLASSROOM CLIMATE FROM THE TOP DOWN TO SUPPORT HEALTHY TEACHING AND LEARNING ENVIRONMENTS.

“Educators at every level—state, district, school, classroom—must assess the adequacy, quality, and equity of students’ opportunities to learn by asking whether their systems, policies, procedures, and/or practices:

- enable all students to learn rigorous content,
- enable all students to achieve at high levels,
- consider the diverse, multiple ways in which students learn,
- enable all teachers to teach all students,
- reflect the best classroom practice and research,
- support ongoing professional development of educators,
- ensure safe and secure environments, free of prejudice and violence,
- provide every student access to the most current education technology, updated libraries, and well-equipped science labs,
- provide students with career exposure and work-based experience, and
- offer opportunities for preschool and learning outside the school walls” Equity Assistance Centers, 2013, p. 8).

BE AWARE OF CURRENT STATISTICS AND ISSUES IN SCHOOL AND CLASSROOM CLIMATE.

There are multiple resources for data about legal and other issues affecting classroom climate. One of the richest is the [Civil Rights Data Collection \(CRDC\)](#), a survey of all public schools and school districts in the United States conducted by the U.S. Department of Education, Office for Civil Rights. The CRDC measures student access to courses, programs, staff, and resources that impact education equity and opportunity for students. The CRDC has long provided critical information used by the Department of Education’s Office for Civil Rights (OCR) in its enforcement and monitoring activities. In addition, the CRDC is a valuable resource for other federal agencies, policymakers, researchers, educators, school officials, parents, students, and other members of the public who seek data on student equity and opportunity. In 2018, OCR released a report on [Data Highlights on School Climate and Safety in Public Schools](#) that includes disaggregated data for SWD. These tools provide excellent data benchmarks to compare these same data locally to determine how the needs of SWD are being met.

ROOT CAUSE: INCLUSIVE CLASSROOMS

WHAT THE LITERATURE SAYS: THEORY

Inclusive learning practices are important for all students, not just SWD. However, for SWD, inclusion is fundamental for achieving academic, career, and social goals, because there has been a history of exclusion based on stereotypes and separation. Students with categorical disabilities and limited English proficiency (LEP) may need specialized programming, and their teachers should be prepared to help them have an equal chance of succeeding in CTE/STEM classrooms and future careers.

In addition to reframing inclusionary practices as pedagogy for equity, new models for inclusion must enter practice, particularly in urban school districts, where disability, race, and socioeconomic status overlap to complicate achievement and access. In the broader context of inclusive education, the design of structures for inclusive practice requires some capacity for local flexibility in finding ways to address “the non-negotiables, including meaningful collaboration, accommodation for student needs, and purposeful assessment” (Olander, 2016, pp. 56-7).

WHAT THE LITERATURE SAYS: EVIDENCE

“It is generally agreed that definitions of inclusive practices put forth the following components:

- School provide comprehensive and ongoing support to better meet the need of a diverse range of students.
- Professionals work collaboratively to provide support and effective instruction.
- Students are educated in natural settings that are highly effective in meeting their needs.
- Students are educated together.
- Students are valued members of all classrooms.
- Students are provided supports to meet individual needs and achieve valued appropriate learner outcomes” (McLeskey, Waldron, Spooner, & Algozzine, 2014, pp. 4-5).

Personalization, flexibility, and meaningful accountability are particularly important to at-risk students, which include SWD (Sturgis, 2013, p. 9). Inclusion benefits both teachers and students.

Teachers involved in inclusive school programs exhibit more positive attitudes toward SWD than do teachers at schools with pull-out programs—programs in which students are removed (“pulled” out) from the regular classroom to receive instruction in a resource room by a special educator (McLeskey et al., 2014). Additionally, highly effective teachers show more tolerance toward SWD than typical teachers (Treder, Morse, & Ferron, 2000), indicating that much progress in this area can be made. However, teachers report that they lack the knowledge and skills to make appropriate accommodations for SWD, which highlights the need for professional development.

RECOMMENDATIONS AND STRATEGIES

DIFFERENTIATE INSTRUCTION TO BUILD SELF-EFFICACY AND ACHIEVEMENT.

It is important to acknowledge that teachers charged with delivering differentiated instruction to meet the individualized needs of learners must often do so by shifting an established one-size-fits-all curriculum to meet the needs of diverse learners—a time-consuming process (Biancarosa & Griffiths, 2012). However, differentiated instruction is beneficial to all learners and is not just a strategy that should be used with SWD.

SWD may have different skill mastery and diverse abilities that should be remediated and integrated in the inclusive classroom. “Instructional equity must be based on students having an opportunity to learn skills and concepts... that are aligned with assessments. Holding students with disabilities accountable for skills and

concepts they have not had an opportunity to learn is unfair at best” (Meyer & Greer, 2010, p. 50).

PROVIDE TRAINING AND PAIR TEACHER MENTORS WITH SWD EXPERIENCE WITH TEACHERS NEW TO INCLUSIVE CLASSROOM WORK.

“States must establish effective teacher preparation and professional development systems to ensure that general education teachers, special educators, and transition specialists are prepared to work with students with disabilities. States should review their licensing or certification systems to ensure that teachers are trained to work with students with disabilities and that they know how to use research-based instructional strategies. General and special education teachers should have more joint training on effective instructional strategies for teaching students with disabilities and low-performing students, as many of the strategies for special education students are beneficial for all students. States must also begin planning for how they will help educators ensure that all students are able to master the CCSS [College and Career Ready Standards], given their increased rigor. There may be lessons to be drawn from the special education field about helping students with disabilities” (College & Career Readiness & Success Center, 2013, p. 10).

“The emerging consensus about effective professional development suggests that teachers need opportunities to work with colleagues who face similar challenges, including other teachers from their schools and those who have similar teaching assignments. Other recommendations include engaging teachers in investigations, both to learn disciplinary content and to experience inquiry oriented learning; to examine student work and other classroom artifacts for evidence of what students do and do not understand; and to apply what they have learned in their classrooms and subsequently discuss how it went” (Colbert, 2014, p. 51).

“The significance of developing knowledge and strategies beyond subject content should be valued by STM teachers. Professional development that is closely aligned with practice helps teachers address student learning objectives and misconceptions” (Li et al., 2015, p. 8).

CREATE PERSON-TO-ENVIRONMENT FIT FOR ACTIVITIES FOR SWD (AND ALL OTHERS) TO MODEL ADAPTIVE LEARNING.

Person-to-environment fit is a teaching and learning strategy based on research in job-crafting and adaptation strategies. In terms of work theory, this idea supports learning strategies for creating more effective fit or identifying work that fits a person’s skills and tendencies, which is particularly important for SWD. An inclusive classroom is an ideal place to model and teach successful person-to-environment fit strategies to build academic success and future workplace resiliency. There is a strong correlation between person-environment fit and job/educational satisfaction, and modeling adaptive learning prepares students for 21st century challenges by supporting self-determination and resilience. “When individuals perceive a lack of fit with their environment, they may manipulate the environment to improve fit as an alternative to leaving. Individuals can affect changes in their day-to-day work experience from the bottom up by changing the tasks they do, organizing their work differently, or changing the nature of their relationships with others” (Su, Murdock, & Rounds, 2015, p. 91).

Implementing person-to-environment fit in the classroom requires more facilitation and coaching strategies than conventional teaching strategies. Linking projects and problem-based learning to strategies of person-to-environment fit, or the match between student and their most compatible work environment, will support content-based instruction, building person-to-project fit. Successful models include executive coaching (Dechausay, 2018) and linking skills development and course content to predicted CTE/STEM employment demands.

INTEGRATE CTE/STEM CONCEPT-ORIENTED INSTRUCTION TO SUPPORT AND MOTIVATE SWD TO BUILD SUSTAINABLE MATH/TECHNOLOGY/SCIENCE INTEREST AND CAREER GOALS.

CTE has historically been a leader in inclusive strategies for all students, including SWD. CTE educates students in the context of careers and prepares them to succeed in postsecondary education and the workforce. “It is also a critical strategy to addressing the nation’s high school graduation crisis. For thousands of high school students, including those who are on the verge of dropping out, CTE offers relevant learning experiences that answer the question ‘Why do I have to learn this?’ while at the same time enhancing students’ academic achievement and meeting industry needs” (ACTE, 2007, p. 7).

INCREASE TECHNOLOGY ASSISTS IN THE CLASSROOM FOR MASTERY OF READING AND WRITING, AND IN OTHER AREAS THAT WILL IMPROVE COMPREHENSION, SKILLS DEVELOPMENT, AND GOAL-SETTING.

To ensure that all students build the capacities necessary to thrive as 21st century learners and workforce contributors, program initiatives should fall under three categories, Digital Citizenship, Personalized Learning, and Improving Equity for All Learners. “One of the three purposes of the [Student Support and Academic Enrichment](#) (SSAE) program is to improve the use of technology as another means to achieve academic achievement, specifically, by promoting digital literacy of all students and providing professional development to the educators that teach and support them.”

BUILD MULTI-TIERED SYSTEMS OF SUPPORTS FOR ALL STUDENTS TO SUPPORT SELF-REGULATED, GOAL-DIRECTED LEARNING.

A multi-tiered system of supports (MTSS) is a systemic, continuous-improvement framework in which data-based problem-solving and decision-making is practiced across all levels of the educational system for supporting students. Educators provide strong core instruction (i.e., Tier 1), identify early signs of academic and behavioral risk through screening, provide scientifically based interventions of increasing intensity in response to student needs (i.e., Tiers 2 and 3), and monitor students’ progress in an ongoing data-driven process.

“Effective tiered intervention strategies depend on accurate diagnostic information and data about what is or is not working for students and what new adjustments need to be made, such as whether to move a student into or out of a more intensive level of support. One increasingly popular approach to gathering and adjusting to key diagnostic information is Response to Intervention (RTI), which may utilize progress monitoring as one of its components” (Duffy, 2007, p. 1). RTI is a data-driven approach that supports early intervention as well as ongoing support systems and has primarily been adopted in elementary schools but may be an effective model for assessment.

Barrett and Newman recommend the following strategies to support effective MTSS:

- a. “PD/coaching for educators that implement Tier 1 and Tier 3 instruction and intervention,
- b. collaboration and coordination between systems and departments, and
- c. data reviews that include the integrity of MTSS implementation, personnel changes, and the purpose of each type of data collected” (2018, p. 39).

In addition, the appendix to Barrett and Newman (2018) offers useful guidelines for instruction for SWD in this context.

CONSIDER PHYSICAL NEEDS SUCH AS TRANSPORTATION AND COMFORTABLE INCLUSION IN THE CLASSROOM ENVIRONMENT AS PART OF SUPPORT FOR ACADEMIC SUCCESS SUPPORT.

Universal design “must be intrinsic to infrastructure, technology and information, [emphasizing accessibility as] a human right. When buildings are built for public consumption, websites are created for the public..., the needs of individuals with disabilities must be considered.... The lack of access is one of the fundamental reasons for inequalities” (Abidi & Sharma, 2014, p. 67).

It is important to be attentive to “the ways that bodies interact with the socially engineered environment and conform to social expectations [and] determine the varying degrees of dis/ability or able-bodiedness, or extraordinariness.... All people have degrees of dis/ability, able-bodiedness, and extraordinariness, depending upon the context, task, and interactions” (Connor, 2013, pp. 498-499).

ADDRESS BEHAVIORAL AND ACADEMIC NEEDS.

Individually specific social skills training and academic support is important for successful employment transitions, particularly with students with autism spectrum disorders (Landmark et. al., 2010).

FRAME NEEDED SUPPORT AS GOAL-RELATED THROUGH STRENGTHS-BASED CLASSROOM AND IEP ASSESSMENT.

Focusing on youth’s strengths creates a supportive, confidence-building environment. “Operating from a strengths-based perspective allows youth and their families to move forward positively toward their goals” (Croke & Thompson, 2011, p. 816). Structurally, it helps to eliminate stereotyped distinctions between types of students, replacing the concept of “significant subgroups” with an understanding that individual student progress and needs will vary with or without disability diagnoses, and all student populations are significant. The Equity Assistance Centers recommend that teachers and administrators “use disaggregated data to monitor for student progress and equity in achievement and other student outcomes, attending to all population subgroups” (2013, p. 10).

Furthermore, strengths-based assessments and goal-setting should be related to meaningful age-appropriate transition assessment as programs build toward postsecondary goals for SWD. “This includes collecting and compiling information that leads to an understanding of their unique needs, strengths, preferences, and interests as they relate to the demands of career and college readiness” (Neubert & Leconte, 2013, p. 1).

INTEGRATE SUPPORT TEAM AND ACCOMMODATIONS WITHOUT STIGMA TO DECREASE ISOLATION AND BULLYING AND TO BUILD SELF-MASTERY, COMMUNITY SKILLS, AND CAREER OPPORTUNITIES.

Integration of accommodations is often considered “special” rather than adaptive. This ties into a common assumption in traditional classrooms, where disability tends to be understood as simply a medicalized deficit intervention. One strategy to reduce stigma is to frame disability accommodations as only one of many learning strategies required for skills and knowledge acquisition, and that stereotypes about certain groups often preclude effective adaptations for learning and community-building. In one study, “inviting students to find ‘value’ in disability involved recognition of the prevalence of deficit language that circulates in discussions of diversity and disability. Students were quick to recognize that... discourse on diversity was exclusive to race, but they did not initially grasp how an exclusive framing of the ‘needs’ of black families, the ‘needs’ of urban youth, and the ‘needs’ of those living in urban poverty contributed to the unyielding discourse of deficiency....

Slowly we considered how diversity and disability were interchangeable ‘problems’ in need of a ‘solution’” (Ware & Hatz, 2016, p. 29).

Another study suggests that high expectations and flexible groupings can reduce the stigmatization of difference and build relationships that support diversity. High expectation teachers often use practices such as flexible groupings as opposed to ability groups. Flexible grouping supports collaboration and high-level peer modeling in the process without creating the sometimes divisive distinctions (Peterson et al., 2016; Rubie-Davies, 2015).

Accommodations often include only small changes in the way work is accomplished for SWD to be successful in their instruction or training program (Beech, 2011).

EFFECTIVE PRACTICES AND RESOURCES

MONITOR AT-RISK STUDENTS TO INTERVENE BEFORE ACADEMIC PROBLEMS ARE EVIDENT.

The RTI resource [BrightBytes](#) can be helpful for programs and teachers interested in data-driven tools. The Intervention module streamlines the referral process by connecting students in need to the right support services. The module allows educators to quickly assign services, track the fidelity, frequency, and efficacy of those efforts, and easily review and communicate progress or adjustment needs with stakeholders. The [BrightBytes website](#) also includes tools for predictive analysis of [success](#), data analytic tools, and resources for building effective technology interventions that preserve student privacy while promoting success and engagement.

SUPPORT INCLUSIVE CLASSROOMS WITH SCHOOL-WIDE INITIATIVES.

“Schoolwide Integrated Framework for Transformation (SWIFT) is a whole-system school reform model provided through a national technical assistance center that addresses core features of inclusive education support for elementary and middle schools, particularly those that are chronically low performing and those serving students with the most extensive needs” (Algozzine et al., 2017, p. 302).

The [SWIFT Schools Program](#) uses MTSS strategies to address six critical issues facing America’s elementary and middle schools:

1. fragmented supports and lack of family engagement
2. achievement gaps
3. student engagement and behavior that impedes learning
4. lack of implementation with fidelity of evidence-based interventions
5. lack of sustainability and replication
6. lack of knowledge sharing and resource availability

INTEGRATE RIGOR, RELEVANCE, AND RELATIONSHIPS.

The Bill and Melinda Gates Foundation coined the “rigor, relevance and relationships” phrase as the answer to improving the country’s schools. Although rigor often receives the most attention, relevance and relationships are critical as well. The Gates Foundation states that “all students need adult mentors who know them, look out for them, and push them to achieve. Students need to be known as individuals within the school community and be connected to their peers and to positive adult relationships. In the 2006 High School Survey of Student Engagement, 24 percent of students who have considered dropping out of high

school cited the reason ‘No adults in the school cared about me’” (ACTE, 2007, p. 5).

INTEGRATE EVIDENCE-BASED LITERATURE AND EXPERT MENTORING/RESOURCES (VIRTUAL AND IN PERSON) FOR TEACHER TRAINING.

INCLUDE HANDOUTS IN TRAINING PACKETS

For example, use a summative but clear and pragmatic article such as Zascavage and Winterman’s “[What Middle School Educators Should Know about Assistive Technology and Universal Design for Learning](#)”.

CAST is a resource and training organization for teachers and administrators for effective [Universal Design for Learning](#). Its website offers [assessment tools and strategies](#) that may be of service in the inclusive classroom.

The [Center on Instruction](#), a U.S. Department of Education-funded Content Center that operated from 2005 to 2012, provided current research, resources, and exemplars for a number of content areas, including special education. The Center created meta-analyses that synthesized and distilled rigorous research into an easy-to-use format. It also offered practice guides, professional development materials, and other tools for educators and policymakers.

The American Institutes for Research offer several resources. One example is a video about “[The Value of Intensive Intervention](#).”

PARTICIPATE IN PROFESSIONAL DEVELOPMENT THAT SUPPORTS BOTH CTE/STEM CONTENT AND INCLUSIVE PRACTICES.

“Through general observation, there are a multitude of professional development opportunities for STM educators. However, many of these tend to be initiative-based or content-specific. This current trend in professional development offerings could be a contributing factor in STM educators not being active participants in practice-centric opportunities. Wei et al. (2010) reported that national investments in teacher learning regarding teaching LEP and students with disabilities appear to trend toward focusing on ineffective short-term workshops. Teachers, especially science and mathematics educators, should be encouraged to participate in and be offered more opportunities of quality practice-oriented professional development” (Li et al., 2015, p. 8).

ROOT CAUSE: ACTIVITIES/NETWORKS

WHAT THE LITERATURE SAYS: THEORY

Without access to extracurricular activities, some SWD may give up on CTE/STEM careers. For SWD, learning social and academic skills should occur with specialized teachers and among peers with similar needs, in multiple contexts during and beyond school hours. In addition, recruitment to STEM extracurricular activities reduces barriers to career participation and planning.

WHAT THE LITERATURE SAYS: EVIDENCE

“Expanded learning opportunities (ELOs) ... have been effective in helping youth improve their academic performance and school engagement, learn skills important for career success, develop positive social and behavioral skills, and improve their health and wellness” (Bowles & Brand, 2009, vii). Programs outside of school and classroom experiences

- contribute to student’s interest in and understanding of STEM,
- connect youth to adults to serve as mentors and role models, and
- reduce the achievement gap by socioeconomic status (NRC, 2012).

Within after-school CTE/STEM activities, coaches naturally promote positive interactions through teamwork and collaboration in a supportive environment. Thus, the goal of most STEM activities is team-based competition rather than prescriptive direct instruction using different types of curriculum. The outcome is not an individual grade or accomplishment of a goal or objective; it is winning a competition or award in a natural environment (Fisher, 2017, p. 9).

RECOMMENDATIONS AND STRATEGIES

CREATE CAMP AND SCIENCE FAIR EXPERIENCES TO BUILD CONFIDENCE, COMMUNITY, AND SKILLS.

Career and Technical Student Organizations (CTSOs) that engage students in co-curricular activities that are closely related to CTE classroom programs allow students to have access to mentors, take on student leadership roles in the organizations, and develop a range of project management, public speaking, and leadership skills. “CTSO activities positively affect students’ academic engagement, and the stronger the student’s involvement, the better the results” (ACTE, 2007, p. 5). Informal learning environments such as after school STEM activities also give SWD an environment to practice and generalize soft skills needed before transitioning to the workplace (Fisher, 2017).

A 2017 study of a general student population participating in competitions found that students who participate in STEM competitions “are more likely to express interest in a STEM-related career at the end of high school than are students who do not participate.... The impact of competition participation on pursuit of a STEM career is three times stronger when students compete in more than one competition” (Miller, Sonnert, & Sadler, 2017, p. 95). Because SWD are motivated by similar needs as other students, it seems likely that these findings reflect the responses of SWD to participation in these extracurricular activities.

SWD should also be actively recruited to participate in STEM activities through strategies such as “reverse inclusion, whereby a club is formed for SWD using IDEA funding and students without disabilities would be allowed to participate” (Fisher, 2017, p. 11).

OFFER ACADEMIC SUPPORT OPPORTUNITIES THAT DO NOT PREVENT SWD FROM PARTICIPATING IN INCLUSIVE SCHOOL ACTIVITIES.

The education system must provide a continuum of flexible interest-based learning opportunities that utilize effective teaching methodologies and respond to these students' varied needs and life circumstances (ACTE, 2007, p. 6).

PROVIDE OPPORTUNITIES FOR SWD TO LEARN ABOUT LEADERSHIP STYLES AND STRATEGIES, IDENTIFY THEIR PERSONAL STYLES, AND APPLY THEM WITHIN DIVERSE ACTIVITIES AND ENVIRONMENTS.

Leadership training and experience, and increased self-determination and social capital, go hand in hand, and are often directly or indirectly part of extracurricular activities. SWD can become leaders in their own right with inclusive support and opportunities to develop the social skills needed to build confidence and CTE/STEM career efficacy. "Leaders guide or direct others on a course of action, influence the opinions and behaviors of others, and behave as an example" (National Gateway to Self-Determination, 2012, p. 41).

EFFECTIVE PRACTICES AND RESOURCES

DESIGN SCHOOL-BASED ENTERPRISES THAT INCLUDE AND ACCOMMODATE SWD.

School-based enterprises are "simulated or actual business/industry conducted by a school...[replicating] a specific business or industry, and a learning experience that provides direct links between students, their curriculum and the world of work.... The school-based enterprise must be oriented and run by students. Teachers serve as advisors, but not chief executive officers" (Alfeld et al., 2013, p. 8).

As an example, the [Network School for Employability Skills](#) focuses on networks to prepare students to become productive members of the workforce. This work is accomplished by combining CTE and employability skill training through the operation of 11 community-based enterprise areas. A hands-on instructional approach is supported by equipment and technology as textbooks and each enterprise area as a classroom. Special emphasis is placed on knowledge and skills essential for success in business interactions. Local employers afford students opportunities for job shadowing and volunteer experiences, mock and live interviews, internships, and cooperative education placements.

IDENTIFY AND CREATE INTEGRATED EMPLOYMENT OPPORTUNITIES FOR SWD.

"There is ample evidence that integrated employment is more cost-effective than facility-based strategies" (Antosh et al., 2013, p. 13). The [Integrated Employment information page at ODEP](#) (Office of Disability Employment Policy) offers a toolkit as well as this useful definition: "Integrated employment refers to jobs held by people with the most significant disabilities in typical workplace settings where the majority of persons employed are not persons with disabilities. In these jobs, the individuals with disabilities earn wages consistent with wages paid workers without disabilities in the community performing the same or similar work; the individuals earn at least minimum wage, and they are paid directly by the employer." Inclusion through integrated employment is socially and economically beneficial to PWD.

SUPPORT COMPREHENSIVE LEARNING BY USING MULTIPLE SYSTEMS,

ASSESSMENTS, TEAMS, AND SUPPORTS FOR TEACHERS AND STUDENTS TO ENSURE.

Expanded Learning Opportunities (ELOs) are meaningful and build success for all participants. They:

1. “Promote a vision for a comprehensive learning system that draws upon all the resources available throughout the community. Expanded learning opportunities are a critical component of this vision.
2. Develop shared accountability by identifying outcomes and measures to which all programs and providers in the comprehensive learning system will be held accountable. Current measurement systems do not take a holistic look across systems at the knowledge, skills, abilities, and attitudes youth need.
3. Support partnerships and collaboration by breaking down barriers and provide support for intermediary organizations to manage the work.
4. Focus on quality by building capacity across and within systems to ensure high-quality implementation of services. Policymakers can ensure that ELOs are designed, implemented, and operated to high-quality standards by providing sufficient resources for hiring strong, well-trained leaders and key staff; supporting ongoing training and professional development for staff; building capacity of programs to meet the needs of youth based on research; and collecting and using data and evaluation for ongoing program improvement.
5. Ensure all youth have equal access to high-quality services from various providers. Policymakers should make special efforts to ensure that certain groups of youth, such as youth with disabilities, Native American youth, or foster youth, have access to quality ELOs.
6. Improve data collection, evaluation, and research to track youth as they move across programs/ systems and measure the impact of their participation in expanded learning opportunities. Data systems should be longitudinal and follow youth for a number of years so that longer-term impacts can be measured. Policymakers should also require publicly-funded programs to use a percentage of funding for evaluation.
7. Ensure sustainability of efforts so programs continue in the absence of ongoing public funding” (Bowles & Brand, 2009, pp. xi-xii).

WHEN MANAGING DIVERSE GROUPS, BUILD SELF-ADVOCACY INTO PLAY.

“Always ASK! Don’t ASSUME! Ask if someone wants your help. Ask if someone wants to participate. Ask and give choices. This goes for the group as well—work together on group priorities, preferences, goals, etc. Don’t assume that you know what the group wants” (National Gateway to Self-Determination, 2012, p. 41).

MAINTAIN HIGH STANDARDS IN ALL PROGRAMS.

Successful programs do not water down their standards, but maintain high standards of performance for young people and offer appropriate supports so that they can meet these standards (Partee & Halperin, 2006).

IDENTIFY FUNDING AND STATE/FEDERAL SUPPORT FOR INCLUSIVE AFTER SCHOOL PROGRAMMING.

For example, use programs such as those through the [ASPIRE](#) (After School Partnerships Improve Results in Education) Act, which “supports the expansion and development of afterschool programs that demonstrate how academic content relates to career opportunities, provide opportunities for civic engagement and service

learning, and equip students with marketable skills. Programs best suited for ASPIRE grants improve academic achievement by reinforcing core curriculum while also providing opportunities for students to broaden their curriculum through learning outside of the traditional classroom.”

IF THEY DO NOT YET EXIST IN YOUR SCHOOL OR COMMUNITY, BUILD INCLUSIVE PROGRAMS TO SUPPORT CTE/STEM TRANSITION AND INTEREST.

The following are resources for program development:

The Massachusetts United Way developed guidelines for [Connecting School and Afterschool: 15 Ways to Improve Partnerships](#).

“Since 1985, the [Envision Career and Leadership Program](#)’s immersive programs have inspired more than 800,000 students. Through programs that are taught by subject matter experts and built on modern, 21st-century curriculum and learning principles, [it] provide[s] hands-on, practical experience in a number of academic and career categories... that students call amazing and parents call transformative.” Opportunities exist for elementary through high school, many focused on STEM engagement.

CAREER AND TRANSITION DEVELOPMENT

ROOT CAUSE: ROLE MODELS/MENTORING

WHAT THE LITERATURE SAYS: THEORY

Role models and mentoring by successful PWD in career and classroom contexts support SWD in building self-esteem and high expectations. Include diverse role models (in curriculum and in support teams) for all marginalized learners.

WHAT THE LITERATURE SAYS: EVIDENCE

Clear evidence supports the benefits of mentoring by adults who share life experiences with youth, including race, disability, and gender, while other research suggests that shared interests are also important for mentoring success (Sowers, Powers, & Schmidt, 2017). In terms of the statistically low number of PWD available to serve as mentors in STEM careers, identifying a combination of potentially beneficial intersections of interests and demographics in mentors offers a strong resource for SWD interested in STEM.

RECOMMENDATIONS AND STRATEGIES

INTEGRATE EXAMPLES OF NOTABLE PWD IN CTE/STEM CAREERS INTO THE CURRICULUM, AND EMPHASIZE THESE SUCCESS STORIES AS “NORMAL” RATHER THAN EXCEPTIONAL.

Unwanted or isolating “special treatment” stories, coupled with ideas about “normal” career paths and challenges are not limited to classroom management, but are built into narratives in CTE/STEM content and career development materials. Assumptions about PWD extend into assumptions we make about workers with disabilities in CTE/STEM and other fields. Identifying successful PWD and resisting making their stories either heroic or pitiful challenges unconscious cultural ideas about disability that mark people with disabilities “weird” or “exceptional” (Davis & Boyd, 2017).

INVITE AND INCLUDE PWD AS PART OF THE TEAM OF DIVERSE SUCCESSFUL COMMUNITY LEADERS IN CTE/STEM FIELDS WHO SPEAK TO YOUR CLASS OR PARTICIPATE IN AFTER SCHOOL EXPERIENCES/CAMPS. CONSIDER INVITING ALUMNI TO SPEAK AS WELL.

The absence of mentors who have faced and conquered the types of challenges SWD will navigate in their careers can translate into lowered expectations and interest for SWD. In a 2017 study, Sowers et al. initiated a trial of a STEM mentoring program that was part of a transition for SWD into STEM career and college programs. They identified “significant differences...between mentored and nonmentored students for measures of STEM-related knowledge, engagement, confidence and general career planning confidence” (p. 196). Quality CTE programs offer mentoring and positive relationships with appropriate adults in the broader community, whether through formal mentoring or experience in internships and job shadowing. “MENTOR, an organization focused on the expansion of mentoring activities nationwide, concludes that [mentors are key connections with career success], given their benefits, such as positive association with students’ grade point average, attendance rates, self-esteem and the feeling that school was relevant to work” (ACTE, 2007, pp. 5-6).

Mentoring need not always be face-to-face. Long-term virtual mentoring, often the most easily available

from national programs for students in transition, has been shown to increase “students’ perception of self-determination and self-advocacy,” both across types of disability and populations with different race and ethnicity (Gregg, Galyard, & Wolfe, 2017, p. 205). This mentoring was provided through digital voice communications platform and included online learning and training practices, links to STEM resources, and consistent contact with a STEM mentor.

PROVIDE OPPORTUNITIES IN THE CLASSROOM AND OTHER SCHOOL ACTIVITIES FOR ALL STUDENTS, INCLUDING SWD, TO BE MENTORS AND ROLE MODELS, PREPARING THEM FOR LEADERSHIP IN THEIR FUTURE CAREERS AND BUILDING CONFIDENCE AND ENGAGEMENT IN TRANSITION ACTIVITIES.

Although rigor often receives the most attention in CTE/STEM training, relevance and relationships are critical as well. The Gates Foundation states that “all students need adult mentors who know them, look out for them, and push them to achieve.” In the 2006 High School Survey of Student Engagement, 24% of students who have considered dropping out of high school cited the reason “No adults in the school cared about me” (ACTE, 2007, p. 5). Learning to be a mentor, as well as benefiting from relationships with peer and professional mentors, builds community and confidence.

EFFECTIVE PRACTICES AND RESOURCES

LOOK FOR MODELS OF MENTORING/SUPPORT TO BUILD EFFECTIVE MENTORING PROGRAMS.

The [DO-IT Scholars program](#) is funded by the National Science Foundation and the University of Washington. The program offers support for SWD, starting in the sophomore year of high school. Supports include mentoring and peer advising through online communications and personal meetings. Mentors, many of whom have disabilities themselves, offer advice on college and careers, independent living, and self-determination and self-advocacy skills. Students also participate in online group discussions and social networks, develop technology skills, participate in WBL opportunities, and attend two consecutive summer sessions on the University of Washington campus, where they learn how to navigate college life, access disability-related services, and explore career options. The University of Washington has conducted longitudinal research that finds positive trends in college enrollment, participation in STEM fields, college graduation, and employment linked to student enrollment in this program (Burgstahler, Moore, & Crawford, 2011).

IDENTIFY LOCAL AND NATIONAL MODELS THAT OFFER BEST PRACTICES.

For example, technical schools may offer strategic and extended CTE/mentoring programs that are integrated into curriculum and career development practices and can be part of any CTE/STEM initiative.

The William H. Turner Technical Arts High School in Miami, Florida, is an alternative school, with many students enrolled because they have not been successful elsewhere. “The smaller learning communities within the career academy model the school employs, where students choose one of seven areas that interest them, give students more personalized attention and provide valuable career exploration opportunities. In addition to their classroom work, Turner Tech students participate in hands-on experiences in the workplace. They spend time during their junior and senior years in a work experience, mentorship, community service or internship program, and may be placed in jobs related to their fields of study in the summer. Through business advisory committees, the business community interacts with the students, and the students get added insight and positive adult interaction. Student interest in postsecondary education is encouraged, and beginning in their junior years, students have the opportunity to participate in college courses at Miami-Dade Community College. As part of a capstone program, students do a project in the 11th grade. They get a mentor and then research a problem and come up with a hypothesis and a solution. In their senior years, the

students must do an exhibition—they go through a job interview and display their portfolios during a process in which the members of the business advisory committees act as panelists. When a student is at risk of failing or dropping out, a team of professionals steps in to prevent it. Turner Tech is proving the case for the role of CTE in dropout prevention, with dropout rates that fall far below the average in the urban district” (ACTE, 2007, p. 5).

ROOT CAUSE: CAREER PREPARATION IN SCHOOL TEAMS

WHAT THE LITERATURE SAYS: THEORY

Because SWD have a variety of communication preferences and challenges in identifying, assessing, and achieving work goals, the SWD team (including the career counselors in the school) should be certain that career materials and transition-to-work practices emphasize multiple types of communication, assessments, and connection to employment and training opportunities, built on clear understandings of legal and practical strategies for career success for PWD.

WHAT THE LITERATURE SAYS: EVIDENCE

The transition to work or training can be a challenge for SWD. High school counselors and team members for SWD often lack knowledge about today's workforce and emerging career fields and are often less well-informed about other postsecondary options besides traditional college pathways (College & Career Readiness and Success Center, 2013). Often, SWD support teams are inadequately prepared with "knowledge of disability inclusion, effective practices and civil rights protections; whereas disability service providers are not actively engaging in job-driven, industry-driven partnerships and coalitions" (Harris, Switzer, & Gower, 2017, p. 283). Bridging these gaps will open doors for students with diverse disabilities.

In addition to helping program staff access knowledge on the different systems, key organizations, and cutting-edge advocacy and programming, career learning topics should include but not be limited to

- "Building community-wide re-engagement systems;
- Next generation learning for over-age and undercredited students, including technology-enhanced and competency-based models;
- Further exploration into an 'eduployment' pathway;
- Innovation in training and employment;
- Learning sciences and social-emotional learning; and
- Bridges to postsecondary for students without a high school diploma" (Sturgis, 2013, p. 12).

The diversity of SWD requires clarity on the specific disabilities presenting in student social and learning contexts through the lens of transition planning, applying both skills-based and identity-aware lenses using multiple evidence-based studies such as the 2005 study by Karpur, Clark, Caproni, and Sterner of transition for students with emotional disability, or Sotomayer's 2013 study of STEM instruction for ELLs. It is important to create and provide appropriate professional development and up-to-date research for school counselors and other members of the SWD team so that they can provide appropriate and culturally responsive guidance and support for all students (Equity Assistance Centers, 2013).

RECOMMENDATIONS AND STRATEGIES

BUILD CAREER COUNSELING PARTNERSHIPS INTO CLASSES, CAMPS, AND AFTER-SCHOOL ACTIVITIES TO SUPPORT INTEREST IN CTE/STEM CAREERS AND PROGRAMS.

Employment preparation program participation of all kinds has been linked "to more positive post-school employment," including developing good job search skills, mastering vocational needs, and participating in career education and work-study programs (Landmark et al., 2010, p. 6).

EDUCATE SCHOOL/CAREER COUNSELORS ABOUT TRANSITION NEEDS OF SWD AND GENERAL SUCCESSES AND ACCOMMODATIONS FOR PWD IN THE

WORKFORCE SO THAT THEY CAN PROVIDE THE RESOURCES AND TRAINING IN ASSESSMENT TOOLS APPROPRIATE FOR SWD.

“Initially, assessing environments requires time and effort on the part of a youth, special educator, or other personnel responsible for the transition requirements on the IEP. This person needs access to forms and methods to ‘teach’ this strategy to youth and their family whenever possible. Additional skills and knowledge needed by personnel include (a) knowledge of vocational education (or CTE) methods, models, and curricula; (b) knowledge of school and post school services available to specific populations of individuals; and (c) knowledge of scope and role of agency personnel related to transition services (CEC, 2009). It is also important that personnel understand how TA planning and methods vary for youth with high-incidence disabilities and for youth with intellectual and development disabilities (e.g., Carter et al., 2014; Martin & Sylvester, 2011; Neubert, 2012). Identifying the appropriate methods to guide TA and to determine the requirements of environments should provide the path for youth (along with their families) to reach desired post school goals that truly match interests, preferences, and needs” (Neubert & Leconte, 2013, p. 8).

All team members, including the student and parents, should be involved in this process and should understand the legal and occupational rights of PWD. “To ensure that all youth with disabilities have access to and can participate in age-appropriate TA services, youth, their families, and local education agency and interagency personnel must understand key terms and mandates in the Individuals with Disabilities Education Act (IDEA) of 2004 and the IDEA Final Regulations (Office of Special Education Programs [OSEP], 2006). Currently, there are no federal definitions of age-appropriate transition, functional vocational evaluation (FVE), or suggested methods for students with high- and low-incidence disabilities. Rather, it is largely left to State and local education agencies to determine how they conceptualize and provide age-appropriate TA. In fact, special education personnel often serve as the decision makers for when, where, and how they will implement TA for students with disabilities” (Neubert & Leconte, 2013, p. 2). Opening the conversation to include all support team members will increase knowledge and opportunities in each transition assessment situation.

BRING COMMUNITY AND BUSINESS LEADERS FROM CTE/STEM FIELDS INTO SCHOOLS, AND SHARE INTERNSHIP AND TRAINING OPPORTUNITIES WITH SWD.

Given opportunity and accommodations, many SWD will thrive in the classroom and in work situations. But even SWD who do not have high GPAs may succeed in a CTE/STEM career path. If teachers can communicate a student’s gifts and skills to leaders who are mentoring and providing internship opportunities, connections between strong candidates with aptitude and drive and career paths will be facilitated. Good examples include the Siemens/Olympia collaboration in Washington, which explicitly uses team-based, strengths-based assessment to identify best fit, not simply by GPA but by interest and motivation (Alfeld et al., 2013, p. 67).

EDUCATE SCHOOL/CAREER COUNSELORS AND TRANSITION SUPPORT PROFESSIONALS ABOUT THE JOB-SEEKER’S RIGHTS IN GENERAL, AND THE RIGHTS OF PWD IN THE WORKPLACE SPECIFICALLY, SO THAT THEY CAN OFFER SUPPORT FOR RELATED ISSUES IN RESUME WRITING, NEGOTIATING, AND EMPLOYMENT ACCOMMODATION AND ELIGIBILITY.

“Promoting an understanding of federal policies can be addressed in preservice, in-service, graduate certificates, or professional development modules [for all student advisors]. Knowledge and skills for leadership and policy from the Special Education Transition Specialists Standards (Council for Exceptional Children [CEC], 2009) include history of national transition initiatives, transition-related laws and policy, and emerging issues and trends that potentially affect the school community and the mission of the school”

(Neubert & Leconte, 2013, p. 2).

A resource database should be made available for counselors, team members, and support staff so that they can understand the laws and support processes for workers with disabilities. An excellent source of information is [CareerOneStop](#).

TRAIN ALL STAFF IN THE CONCEPTS OF CUSTOMIZED EMPLOYMENT, AS DEFINED BY THE U.S. DEPARTMENT OF LABOR'S OFFICE OF DISABILITY EMPLOYMENT POLICY, TO DEMONSTRATE THAT STUDENTS WITH THE MOST SIGNIFICANT DISABILITIES CAN ACQUIRE MODIFIED SKILLS SETS THAT WILL MATCH SPECIFIC EMPLOYER NEEDS.

According to the [ODEP](#), "Through Customized Employment, the relationship between employee and employer is personalized in a way that meets the needs of both. It's a universal strategy that benefits many people, including people with disabilities. Reflecting this universal strategy, for many years, ODEP has worked to strengthen the capacity of the nation's workforce development system to improve employment outcomes for people with disabilities through Customized Employment. ODEP has evidence-based research data showing that Customized Employment leads to positive employment outcomes for individuals with disabilities."

ProjectSEARCH offers a variety of best practices and strategies because its staff conduct a thorough job analysis in each department of host companies to identify the tasks a student must learn, from most basic to most complex. Although some students may never master the higher complexity tasks, if their basic skills are very strong, customized jobs might be identified or created to give them access to meaningful and engaging work (Christensen & Richardson, 2017).

By considering employer needs, Customized Employment supports transition success for SWD (Ju, Zhang, & Pacha, 2012).

BUILD SELF-DETERMINATION ASSESSMENT DATA INTO PROGRAM EVALUATION AND PERSON-CENTERED PLANNING.

By following a person-centered approach to transition planning, a coordinated set of activities designed to support the young adult in moving from school to post-school settings and activities can be identified. "Effective transition efforts will involve extensive collaboration among school and agency professionals, families, and the young adult" (Zatta & McGinnit, 2016, p. 474).

PCP entails the promotion of self-advocacy on the part of the student and their parents by identifying educational, career, and quality-of-life goals. This approach is built around the person's own vision of what quality of life means. Family participation is also important for effective PCP application.

EFFECTIVE PRACTICES AND RESOURCES

BE ATTENTIVE TO CULTURE WHEN MONITORING TRANSITION TO EMPLOYMENT.

Tilson and Simonsen's 2013 study of successful employment specialists noted that "successful professionals exhibit traits and behaviors beyond the mechanics." Therefore, the authors "conducted a qualitative study incorporating in-depth interviews with 17 top-performing staff of a national program, The Marriott Foundation's Bridges from school to work. Four personal attributes emerged from the interviews: (a) principled

optimism; (b) cultural competence; (c) business-oriented professionalism; and (d) networking savvy” (p. 125).

“Culture defines the beliefs and practices surrounding transition for youth with disabilities and special health care needs. Culture influences the beliefs and practices of families and youth about transition within the contexts of health care, employment, postsecondary education, and independent living” (Antosh et al., 2013, p. 23). Cultural literacy for educators includes a responsibility to:

- “Acquire knowledge about the beliefs and practices related to transition from youth to adulthood for the diverse cultural groups in the geographic area served by an organization or program.
- Engage in cultural and linguistic competence self-assessment (at both the organizational and individual level). Use results to strengthen cultural adaptations to transition services and supports” (Antosh et al., 2013, p. 25).

USE TOOLS TO SUPPORT STUDENT SELF-ASSESSMENT AND GOAL SETTING.

Temple University Collaborative on Community Inclusion of Individuals with Psychiatric Disabilities developed [“A Practical Guide for People with Mental Health Conditions Who Want to Work.”](#) This is a very user-friendly document, directed toward at-risk individuals. “The authors believe that people in recovery should have the opportunity to live their lives as independently as possible in their communities. For many people, work can be an important part of recovery, of achieving self-sufficiency, and of maximizing their potential. If you are a person in recovery without a job, you may be wondering whether working is a good idea for you. You might want to know whether you can find the help you need to prepare for work. You might be uncertain about how to get started or worried that you won’t succeed. You might be wondering how to find a job you enjoy and begin to build a long-term career for yourself” (Escovitz & Solomon, 2013, p. 5).

TRAIN FACILITATORS IN USING ASSESSMENTS AND IN EFFECTIVE TA FACILITATION STRATEGIES.

The College and Career Readiness Success (CCRS) Center offers tools and links to evidence-based practices for transition support. An excellent publication offering statistics, strategies, and summaries of evidence-based transition practices for SWD is the American Institutes for Research (AIR)/CCRS study by Brand et al. (2013), [Improving College and Career Readiness for Students with Disabilities](#).

[The Indiana Institute on Disability and Community](#) also offers a good list of assessments and strategies for age-appropriate transitions and other practices: NSTRC/Transition Assessment.

IDENTIFY RESOURCES THAT WILL HELP MAKE TA MORE EFFECTIVE.

[The Center for Parent Information & Resources](#) offers a list of categories under IDEA, a good place to start for fundamental definitions or to share fundamental definitions with inexperienced teachers, with links, stories, causes, and support strategies.

[ProjectIDEAL](#) offers information about educational strategies for general education and special education classrooms.

The [PACER Center](#) offers numerous resources for parents and educators, as well as workshops and live stream events.

IDENTIFY GENERAL SUPPORTS TO IMPROVE PROGRAMS AND FACILITATION.

Kohler’s Taxonomy for Transition Programming helps in assessing transition services and opportunities. “The five areas of the Taxonomy include (a) student focused planning (e.g., student participating in individual

education plan [IEP] development), (b) student development (e.g., teaching employment skills, teaching life skills), (c) interagency collaboration (e.g., creating frameworks for delivering services collaboratively), (d) family involvement (e.g., training families in self-determination), and (e) program structures (e.g., allocating resources to provide transition services)” (Test et al., 2009, p. 117).

MAKE INFORMATION FOR ADVISORS ON ALL LEVELS AVAILABLE TO SUPPORT SELF-ADVOCACY IN THE TA PROCESS.

[Advising through Self-Determination: An Information Guide for Advisors](#) (2012) promotes advising through self-determination. Emphasizing leadership and informed decision-making with advisors and allies, this guide focuses on strategies for creating and advising a self-advocacy group, promoting self-determination, and navigating the disability system.

BUILD IN FUNCTIONAL VOCATIONAL EVALUATION (FVE) ASSESSMENTS.

The [Functional Vocational Evaluation Assessment](#) developed by the [Vocational Evaluation and Career Assessment Professionals Association](#) provides a systematic assessment process to identify practical, usable career- and employment-related information about an individual. FVE incorporates multiple formal and informal assessment techniques to observe, describe, measure, and predict vocational potential. A distinctive feature in all FVEs is that they include (and may emphasize) individualized experiential and performance-based opportunities, in natural vocational or work environments.

LINK WITH ONLINE, NATIONAL, AND LOCAL SERVICES TO SUPPORT STUDENTS.

[Jobs for America’s Graduates](#) (JAG) is a state-based national nonprofit organization dedicated to preventing dropouts among young people who have serious barriers to graduation and/or employment. In more than three decades of operation, JAG has delivered consistent, compelling results—helping more than 1.2 million young people stay in school through graduation, pursue postsecondary education, and secure quality entry-level jobs leading to career advancement opportunities. Its website includes a [library of resources for educators, trainers, and administrators](#).

[Advance CTE](#) advocates for policies and legislation that enhance and sustain high-quality CTE programs throughout the nation. To that end, Advance CTE represents the CTE interests of its members in the nation’s capital by actively monitoring [federal legislative](#) developments and maintaining a focus on the latest research, news, and issues influencing the dialogue on CTE and education policy.

“The [National Career Clusters Framework](#) provides a structure for organizing and delivering quality CTE programs through learning and comprehensive programs of study. In total, there are 16 Career Clusters in the Framework, representing more than 79 Career Pathways to help students navigate their way to greater success in college and career. As an organizing tool for curriculum design and instruction, Career Clusters provide the essential [knowledge and skills](#) for the 16 Career Clusters and their Career Pathways. It also functions as a useful guide in developing programs of study bridging secondary and postsecondary curriculum and for creating individual student plans of study for a complete range of career options. As such, it helps students discover their interests and their passions, and empowers them to choose the educational pathway that can lead to success in high school, college and career” (AdvanceCTE, 2018).

USE CUSTOMIZED EMPLOYMENT RESOURCES AND VIDEOS FOR TRAINING AND PROFESSIONAL DEVELOPMENT.

Videos from the U.S. Department of Labor, focused on employers, youth, and a general audience, highlight the benefits of [Customized Employment](#), an employment strategy that matches the skills and preferences of the individual with the specific business needs of the employer. This process results in expanded employment

opportunities for those who utilize and engage in this innovative, evidenced-based approach to employment. The general audience video is available in both English and Spanish.

- [Solutions for Youth with Disabilities](#)
- [Solutions for Employers](#)
- [Creating Opportunities and Solutions](#)
- [Creating Opportunities and Solutions \(Spanish\)](#)

The [website](#) also allows visitors to “Choose a Disability Employment Policy Resource by Topic” and is an excellent resource for multiple approaches and legal requirements for full employment for PWD.

ROOT CAUSE: EMPLOYMENT PARTNERSHIPS

WHAT THE LITERATURE SAYS: THEORY

SWD benefit from work/school partnerships with local businesses and advanced educational opportunities prepared to train and support SWD and committed to accommodating and hiring PWD.

WHAT THE LITERATURE SAYS: EVIDENCE

Employers' needs are at the core of these partnerships, which place SWD in meaningful work experiences that are both supported and valued by participating partners. "Employers identified stigma, uncertainties about applicant abilities, and the complexity of the public disability employment service system as hiring challenges, and increasing diversity, expanding talent, and increasing brand loyalty as advantages to employing PWD. Employers recommended establishing business-to-business networks and improving coordination across the disability employment service system to increase job opportunities for people with disabilities" (Henry, Petkauskos, Stanislawzyk, & Vogt, 2014, p. 237).

Partnerships that connect classroom and work experiences build confidence and self-advocacy skills for SWD. Volunteer, unpaid, and paid internships beginning no later than age 14 lay the groundwork for sustainable paid employment. Carter, Trainor, Swedeen, & Owens (2009) also demonstrated the importance of combined school and community strategies involving education and vocational rehabilitation (VR) personnel to increase summer employment "through a multi-component intervention to increase summer work experience for students with severe disabilities" (Antosh et al., 2013, p. 13).

RECOMMENDATIONS AND STRATEGIES

INCREASE PARTNERSHIPS WITH COMMUNITY COLLEGES AND OTHER LOCAL COLLEGES/UNIVERSITIES FOR INCLUSIVE CERTIFICATE AND TRAINING OPPORTUNITIES FOR SWD IN SECONDARY SCHOOL TO PREPARE FOR CTE/STEM AND OTHER OPPORTUNITIES.

A range of certificates and degrees may offer appropriate career preparation for all students. These steps to employment require partnerships both in the workplace and in local colleges and universities. Certificates recognized by local industry (e.g., in welding, auto body) as well as state certificates (e.g., health professions) are only a few examples of the licensing and training needed for access to CTE/STEM careers. Activities and opportunities should be geared toward student interests and grade level. "Many partnerships allow students to simultaneously earn high school and college credits, tuition free, at community colleges, technical schools, and selected colleges and universities. Some students take courses at the nearby Career and Technical Education Centers. Career counselors and other team members need to help students identify certificate and higher education options aligned with their interests, holding high expectations and taking student interests, goals and employment fit into account" (Alfeld et al., 2013, pp. 51, 54). Collaboration between college disability student services and high school staff will support success in these certificate and outside educational opportunities.

COLLABORATE WITH LOCAL EMPLOYERS IN SECONDARY SCHOOL PROGRAMS TO CREATE INTERNSHIP AND OTHER WBL OPPORTUNITIES.

Job developers and other employment service providers must make it their business to learn about the mission, goals, and hiring needs of local employers, adopting a "demand side" approach and to network with other job developers in their areas (Henry et al., 2014, p. 244).

Paid or unpaid work experiences have been linked to successful post-school employment for SWD (Landmark et al., 2010). Local business internships can be integrated with school opportunities such as public-speaking classes and tech classes to prepare for the specific collaborations available through local companies. In this way, teachers and business collaborators can fill gaps that parents or students might not be able to bridge without support (Alfeld et al., 2013).

“High-quality work-based learning requires that students have the opportunity to engage meaningfully with the experiences offered and to reflect thoughtfully on their learning.” Participating employers must share the learning goals of educators and students, and WBL programs must have strong links to the labor market to meet employer needs” (Alfeld et al., 2013, p. 9).

CONNECT WITH COMMUNITY MENTORS WHO ARE SUCCESSFUL IN SEVERAL FIELDS TO ADVISE AS CAREER GOALS ARE SET AND PURSUED.

After exploring different interests and jobs, students often change their ideas about what they want to pursue. Experiences with community mentors help them gain clarity on what they do not want to do as well what they do want to do. In addition, gender and racial stereotypes influencing their initial selections often are overcome as students learn about a wider range of options and meet people in the field (Alfeld et al., 2013).

IDENTIFY NATIONAL PROFESSIONAL ORGANIZATIONS AS A RESOURCE FOR EMPLOYER TRAINING.

WBL experiences for SWD can include internships, cooperative work experience, job shadowing, and service learning. Professional organizations can be a great way to create a community of support for SWD participation in WBL activities. Local communities, guided by youth with disabilities, need to be able to define the programs they need for SWD, using national organizations. “Initially we attempted to enter each community with a standardized model, but it didn’t work. You have to come in to the community and partner. Take the time to build relationships, visit with folks and figure out how it works best for them and the youth in their community. You tell us how it should be done” (Davis et al., 2010, p. 55).

Co-op academic/work opportunities provides good experiences for SWD that expand their access and opportunity. Many can work while they are in school to support themselves with the skills they learned. It also allows them to decide prior to college or certification whether this is the field that they want to pursue because they experience the industry in a real way. This is a win-win scenario for student and employer, because a student is learning about a potential career, and an employer is training a potential employee.

ENLIST DEPARTMENT OF VOCATIONAL REHABILITATION AND COMMUNITY REHABILITATION PROVIDERS TO PARTNER WITH CTE/STEM EDUCATORS.

“One challenge [of school to work pathways for SWD] include the fact that the students aren’t as mature as they could be and that they still need to learn to work as a team” (Alfeld et al., 2013, p. 67). Social, behavioral, and skills-based interventions may be necessary to ensure successful transition steps and to identify appropriate placements, including employers prepared to work with SWD and community service networks to support SWD.

EFFECTIVE PRACTICES AND RESOURCES

USE ALLIANCES WITH COMMUNITY TRANSITION PROJECTS NATIONALLY AND

IN LOCAL COLLEGES AND COMMUNITIES AS A RESOURCE FOR MODELS AND PROGRAM DEVELOPMENT.

In the [CUNY Youth Transition Demonstration Project](#), “youths received direct services for one school year, after which summer employment and limited follow-up services were made available. Youths attended Saturday sessions offering recreational and social activities and workshops on self-determination, benefits planning, or career development. Students from the partner campuses who enrolled in a course on working with youths with disabilities led the social and recreational activities; many of these students (and other staff) had disabilities themselves. While youths attended these activities, family members met to discuss benefits and issues related to the youths’ self-determination. Youths also developed person-centered plans for identifying and achieving their goals. Parent advocates checked in with families to ensure they participated and met with the people who could address the youth’s (or parent’s) needs. Services culminated with an offer of seven weeks of summer employment through New York City’s Summer Youth Employment Program or in an on-campus job” (Hemmeter, 2012, p. 5).

“[Project SEARCH](#) is based on collaboration among many partners, including education, Vo-cational Rehabilitation, community rehabilitation providers, long term support, employers, and families. The program works with a variety of employers, including hospitals, banks, universi-ties, insurance companies, nursing homes, manufacturers, and a zoo. Host businesses should be accessible through public transportation, have a cafeteria and high status in the community. The students are learning independent living skills as well as employment competencies. Businesses with an exercise facility are a bonus, giving young adults with disabilities access to exercise, because many young people with disabilities find it difficult to negotiate public transportation and once they get home from work, it is unlikely that they will go back out to the gym. Typically, each business in the program hires about 20 to 25 percent of each class each year. The Project SEARCH staff helps other student interns locate jobs, using their skills in related businesses. The placement rate from the Cincinnati programs is currently about 80 percent, and staff are working to increase it” (Davis et al., 2010, p. 18).

[Project C3](#), a PACER Program, is a community-directed program. In its Minnesota workforce project, each region was allotted funds. “Project C3 staff approaches local communities with about \$10,000 to pay youth interns and additional support for the administrative costs of com-munity stakeholders who agreed to serve as lead partners implementing local program activities. Community stakeholders decide how to use the money, how to recruit the youth, the length of the project, and which community partners should be involved. Project C3 provides a trainer that can meet in person with both partner agency staff and youth interns, and who also provides technical assistance and training to community partners and youth remotely via online meetings” (Davis et al., 2010, p. 55).

Many schools work to create allies in local businesses, creating opportunities for internships, worksite visits, mentoring, and ultimately, employment, for students. CTE/STEM employer/school alliances can bring in important resources for all students. The more diverse the student involvement, the more effective the program in supporting inclusion of SWD and other marginalized populations. It is important to move beyond low-level job training in these educational and economic engagements.

Some of these collaborations go beyond referrals to work, internship opportunities, or club sponsorship programs, which are the most common. An example of one such program, a local corporate/school collaboration, can be found in the [Olympic High School/Siemens Energy Corporation Apprenticeship Program](#). This collaboration brings significant resources into Olympic High School from Siemens and serves as a potential model for other programs that could focus on SWD in particular. Siemens is only one of the “200 business partners who donated 1.5 million dollars through cash and in-kind contributions [to programming and work opportunities at the Olympic High school]. Through an advisory committee, these companies

designate which courses students should take...[to build the skills to work in that field and their specific company]. Olympic High School is now partnering with Siemens to select and send students through the apprenticeship program ('fertilize and cultivate the pipeline'). The career development coordinator at Olympic High School, which is 3 miles down the road ('right around the corner') from Siemens, said 'Really, they needed our kids. It made sense. We wanted to connect with them. We want to become part of that pipeline. We know we have to become part of that pipeline.' The Dean of Continuing Education at CPCC believes that building a high-quality workforce can attract more companies to the region" (Alfeld et al., 2013, p. 63).

ESTABLISH INCLUSIVE SCHOOL-BASED ENTERPRISES.

School-based enterprises vary and can include restaurants, school stores, and more specific connections to CTE/STEM careers, from CTE activities such as car repair to computer-based businesses. Chambers of commerce connections can facilitate community development opportunities. Related coursework can include financial literacy, marketing, customer service, and other fundamentals. "In terms of advice for other schools hoping to set up an SBE, the first thing the teacher would recommend is getting the gold certification document from DECA and use it as a resource for guidelines. There is an outline for a business plan. It gives the big picture of what is needed to run a program, then the teacher can interpret/adapt locally" (Alfeld et al., 2013, p. 70). Another great resources is the DECA Guide for Starting and Managing School- Based Enterprises.

INCLUDE DEVELOPMENT OF SELF-DETERMINATION AND SELF-ADVOCACY SKILLS AS WELL AS ACCOMMODATIONS IN STUDENT EMPLOYMENT SUPPORT.

"The development of advocacy skills is embedded throughout the Project SEARCH curriculum, and participants practice these skills both in the classroom setting and on the job site. Growth in the ability to identify needs and ask for help was specifically noted" (Christensen & Richardson, 2017, p. 352).

ROOT CAUSE: WORK–LIFE BALANCE

WHAT THE LITERATURE SAYS: THEORY

The families of SWD need support in developing quality work–life–family balance, partly because they must manage disability in addition to standard childrearing issues. This community-based support will help parents and their children have a healthier life, in the present and in the future. Improving family dynamics and creating opportunities for SWD to learn skills that will help them balance leisure and work will help them navigate the specific social/employment dynamic of building a healthy life at work and outside of work.

WHAT THE LITERATURE SAYS: EVIDENCE

“Although expectations of youth with disabilities are similar to the expectations of other youth, both youth and families report needing additional information and school experiences that prepare them for adult life” (Antosh et al., 2013, p. 6). This is part of a paradigm shift in preparation for employment, one that moves from narrow work-focused skill-development to more holistic and sustainable preparation for adult life. This approach is part of a movement toward “eduployment” that recognizes “the multiple ways work and schooling reinforce each other and prepare a young person for taking on the responsibilities of adulthood” (Sturgis, 2013, p. 3). Work–life balance should be part of strengths-based transition planning needs to focus on whole life development in and outside of work experience. Developing social skills increase effectiveness in building interpersonal relationships, communication, and work/leisure activities (Carter, 2011).

RECOMMENDATIONS AND STRATEGIES

SUPPORT EMPLOYED PARENTS OF SWD, WORKING WITH EMPLOYERS AND SCHOOL TO MANAGE WORK–LIFE–FAMILY BALANCE FOR GREATER FAMILY PSYCHOLOGICAL AND PHYSICAL HEALTH.

Parents are often left without support and isolated by professionals, who share “horrible pictures and stereotypes” rather than addressing the practical social, physical, emotional, and educational needs of their child’s particular disability (Goddard, Lehr, & Lapadat, 2000, p. 278). It is therefore no surprise that they feel overwhelmed and do not ask or expect help or come to believe they are the sole advocate for their child (p. 279), and cannot support their own work–life balance in the face of the challenges of navigating multiple systems. They need family-based interventions and support to shift their experience and expectations so that they can create a healthy family environment for their child(ren) with disabilities. Childcare, transportation and other fundamental support services should be provided to parents of SWD and other adults supporting SWD at school activities where their participation is expected.

INCREASE SWD ABILITY TO BUILD SOCIAL NETWORKS AND SOCIAL CAPITAL TO SUPPORT THEM TO ACHIEVE THEIR FUTURE GOALS.

Social capital describes the networks of relationships among people who live and work in a particular society, enabling that society to function effectively and the individual to thrive. For SWD, social capital is generated through appropriate inclusion and the development of social skills and self-determination. It is therefore important to include SWD in CTE/STEM extracurricular clubs for social as well as career enhancement. Attention to finding accommodations for active leisure and extracurricular social contacts outside of the classroom to support better health and sustainable community support beyond school builds social capital. “The set of relationships and social ties to individuals and organizations that expand your choice-making opportunities, increase your options, and lead to an improved quality of life. For individuals with disabilities and for organizations, increased social capital can further full inclusion in the community, improve access to

social support networks, and increase quality of life (National Gateway to Self-Determination, 2012, p. 16).

BUILD AWARENESS IN SWD THAT WORK IS ONLY A PART OF A SUCCESSFUL LIFE, AND REDUCE TENSION AROUND SHAME AND THE NEED TO PASS AS “NORMAL” IN COMMUNITY/SOCIAL CONTEXTS AS WELL AS AT WORK.

The emphasis on work preparation, incomplete as it may be for many SWD, does not prepare them for inclusive leisure activities that would create a personal network outside of work and provide balance and stability in adult life. For many SWD, this is a problematic omission, because SWD feel the pressure to pass even more outside of the necessary accommodations of the classroom or the workplace, resulting in them being outside the mainstream in many parts of their lives. SWD need “opportunities ... to embrace the dignity of ordinary risks, as prompted in ‘the pursuit of recreation, hobbies, leisure, good times, friends and family’ in ordinary places” (Philo & Metzler, 2005, p. 85). Depending on their disability, personal relationships, including dating, might seem out of reach or in direct opposition to projections of asexuality (Liddard & Slater, 2018). This awareness is important because building reliable friendships and satisfying recreation that includes both disabled (specialized) and non-disabled (mainstream) contexts is part of overall health and well-being over a lifespan and may affect the ability to build autonomy, maintain connections, and manage stress in and outside the workplace (Sylvester, Donnell, Gray, Higgins, & Stalker, 2014).

EFFECTIVE PRACTICES AND RESOURCES

USE HOLISTIC ASSESSMENTS TO IDENTIFY WAYS THAT SWD CAN PLAN FOR A FULL AND BALANCED TRANSITION TO ADULTHOOD.

For example, [Charting the Life Course](#), per the website description, offers a “framework that was developed to help individuals and families of all abilities and at any age or stage of life develop a vision for a good life, think about what they need to know and do, identify how to find or develop supports, and discover what it takes to live the lives they want to live. Individuals and families may focus on their current situation and stage of life but may also find it helpful to look ahead to start thinking about life experiences now that will help move them toward an inclusive, productive life in the future. The framework is designed to help any citizen think about their life, not just individuals known by the service system. Even though the framework was originally developed for people with disabilities, it is designed universally, and can be used by any family making a life plan, whether they have a member with a disability or not.”

MAKE LEISURE INTERESTS AND ACTIVITIES PART OF PERSON-CENTERED PLANNING AROUND TRANSITIONS INTO HEALTHY ADULTHOOD AND HEALTHY WORK–LIFE BALANCE.

“Person-centred planning should not be divorced from social context, relationships and differing degrees of dependency. Domestic leisure activities such as listening to music, while not necessarily ‘meaningful’ in the terms laid out in UK policy discourse, can become crucial resources for social bonding for people with learning disabilities. Thus, they should be considered carefully as part of a dynamic, socially situated and person-centred planning process” (Hassan, 2017, p. 73).

USE BEST PRACTICES TO BUILD SOCIAL CAPITAL FOR SWD.

“Social capital is a resource (something you can obtain, use, and invest), a catalyst (something that causes change), and an outcome (with potential benefits to both the individual and the community). Social capital is about the connections we have with others; connections of value to all involved. It is about linking with others in order to build a network, access opportunities and, in turn, contribute to the larger society, through

our talents, creativity, energy, and care. Social capital is never depleted by use; rather it expands the more you use it!" (Tilson and Ward, 2016). Tilson and Ward explore the building and use of social capital to create meaningful outcomes in life in a webinar titled [Building Social Capital to Access Opportunities and Contribute to Our Communities](#).

FAMILY

ROOT CAUSE: CTE/STEM AWARENESS

WHAT THE LITERATURE SAYS: THEORY

Parental support is foundational for SWD to aspire to and achieve high expectations for career placement in nontraditional careers. To that end, it is crucial that parents have as much access as possible to information about career development, resources, and success stories of professionals with disabilities.

WHAT THE LITERATURE SAYS: EVIDENCE

Because family plays an important role in career decisions for individuals with disabilities, expanding family knowledge of CTE/STEM opportunities is a key for encouraging interest and supporting goal setting and achievement. CTE/STEM awareness should be part of the career information for all SWD, both as specific career path information and as part of developing 21st century skills. It should be part of an entire package of transition information; “youth and families often report needing additional information and school experiences that prepare them for adult life” (Antosh et al., 2013, p. 6). It is also critical to determine whether youth and their family have similar or divergent career expectations regarding the future (Lindstrom, Doren, & Metheny, 2007), both in context of career expectations and in terms of CTE/STEM career paths.

RECOMMENDATIONS AND STRATEGIES

DESIGN ACTIVITIES TO PROMOTE FAMILY ROLES IN STRENGTHS-BASED CTE/STEM DEVELOPMENT.

These activities should be part of PCP for a transition program, involving both parents and students in assessment and activities that forward the individual student’s goals and exploration. “Parents of youth with disabilities report that PCP provides an opportunity to learn more about their child. Kevin, an 18-year old student, indicated that he was interested in auto repair, something that was a surprise to his mother. During the follow-up PCP session, Kevin’s mother reported that the project had resulted in improved communication between them. “We sit and we talk now. Yes, we do. Before he didn’t want to hear it.... Now we actually talk like two adults” (Croke & Thompson, 2011, p. 813).

CTE/STEM information should be a part of PCP planning. It is important to adequately prepare youth and their families for PCP. “For example, project staff should explain the underlying philosophy of PCP, emphasizing that the purpose is to help youth plan for their future. Families and youth should feel empowered to participate as equal partners, and youth should be encouraged to speak about what they want for their future.... Parents and youth needed to be able to explain the process and prepare for this new experience, which [differs] from school IEP sessions where youth [are] often not questioned or included” (Croke & Thompson, 2011, p. 815).

MAKE CTE/STEM PLANNING A PART OF THE IEP PROCESS.

Evidence indicates that transition planning in the IEP process is helpful for career and strengths-based development. “Additional resources should be allocated for supports and services for students with disabilities in CTE classrooms and for professional development to ensure that CTE instructors are properly trained in working with students with Individualized Education Programs (IEPs) and that special education staff are trained to integrate CTE participation into students’ IEPs” (Advocates of the Children of New York, 2016, p. 5). In *Strategies to Help Solve our School Dropout Problem*, Schargel and Smink (2001) identified five

potential benefits of CTE for at-risk students. These benefits include “enhancement of students’ motivation and academic achievement; increased personal and social competence related to work in general; a broad understanding of an occupation or industry; career exploration and planning; and acquisition of knowledge or skills related to employment in particular occupations or more generic work competencies” (ACTE, 2007, p. 3).

INVITE, INVOLVE, AND EDUCATE PARENTS.

Some programs have found that parents do not understand the potential of manufacturing work, either because they have no experience, or because they imagine the best track to success is a 2- or 4-year college degree. Regarding the Siemens/Olympic apprenticeship: “Companies don’t have as much participation as they should. It is hard to convince parents and students that this is a viable option. For some kids there is a ‘too good to be true’ mistrust. For parents, until they actually see the plant and learn about the paid tuition and the salaries, they are hesitant or even against their children doing the apprenticeship program. They also have misconceptions about manufacturing.... Parents and students (entering freshmen) are invited to meetings to talk about the landscape of the education and job market. Parents understand Fortune 100 and benefits package” (Alfeld et al., 2013, p. 67).

In a 2014 study, Rabren, Carpenter, Dunn, and Carney found that “in high-relative poverty areas, participation in CTE [for SWD] is associated with higher rates of employment during and after high school” (p. 29). Furthermore, they note that “participants in general education were also more likely to sustain meaningful employment past high school. Underrepresented groups like female and African-American students with disabilities face more barriers than Caucasian students with disabilities in these areas” (p. 36). Parents need to be aware that vocational education and CTE programs, as well as inclusion in general education, with STEM potential emphasized, can increase the chances that their SWD will be offered paths to immediate employment and income.

REDUCE SELF-BLAME THROUGH PARENT EDUCATION FOR BOTH PARENTS AND SWD TO IMPROVE PARENT–CHILD RELATIONSHIPS, REDUCING BARRIERS TO CAREER SUCCESS.

Parents and SWD often experience cultural stereotypes and assumptions about disability that compound feelings of guilt, sadness, and shame (Goddard et al., 2000, p. 280). Parents are often blamed, or blame themselves, for their child’s disability or disruptive behavior. Parenting courses do not generally address the diverse and specific issues of children with disabilities, and, to persist and hold high expectations, they need to reframe their experiences and help their child(ren) reframe them as well, with “acceptance, optimism and humor” (Goddard et. al, 2000, p. 281). They need to know that their children are not “broken” and that there are possibilities for the future. Supportive and collaborative pathways to CTE/STEM careers will help parents reframe their child’s present and future expectations.

EDUCATE PARENTS AS EQUAL TO PROFESSIONALS ON THE TEAM TO SUPPORT HIGHER EXPECTATIONS OF ACHIEVEMENT AND CAREER SUCCESS

Professional interventions are often experienced by parents as “invasive, lacking contextual understanding, overly bureaucratic and impersonal, and often dominated by an unquestioned adherence to traditional medical models. Offsetting their negative stories of relationships with professionals, they also described positive experiences and relationships, particularly when they felt some equality with the professionals” (Goddard et al., 2000, p. 283). If CTE/STEM and IEP team members want to make effective progress toward supporting career inclusion with SWD, meaningful parental involvement begins with positive relationships with

family members.

ENCOURAGE HIGH EXPECTATIONS FROM PARENTS FOR CTE/STEM INVOLVEMENT, WITH ATTENTION TO KEY CHALLENGES THAT THEIR CHILDREN FACE, COUPLED WITH AWARENESS OF PROGRAMS THAT MIGHT ADDRESS THEIR NEEDS.

In a way, this root cause combines knowledge, hope, and community support for higher expectations. Issues such as SWD dropout rates, low achievement, discouragement, and access affect parental expectations. Community-based interventions and access to community programming that builds family networks can support both SWD and their families. One example of these positive adult-student relationships in career development “is the growth of smaller learning communities. Smaller learning communities with a focus on CTE, often known as career academies, have been found to increase the attendance rate and the likelihood of staying in school for students who entered the programs at high risk of dropping out” (ACTE, 2007, p. 5)

EFFECTIVE PRACTICES AND RESOURCES

DEVELOP AND SHARE FACT SHEETS AND MATERIALS THAT LINK WITH RESOURCES FOR PARENTS AND STUDENTS.

The [Vocational Information Resource Center](#) provides information about vocational and technical careers, the skills that employers really want, trade schools, technical topics, and the current job market. The center is not exclusive to CTE/STEM careers. It provides detailed outlines for multiple sub-careers and links for fundamental requirements such as education, tasks, tools, special requirements, knowledge, skills, abilities, work activities, work styles, earnings, and other information.

Advance CTE provides several [fact sheets](#):

- [Career Technical Information Myths and Facts](#)
[The Value and Promise of CTE](#)
- [Career Clusters](#)

ROOT CAUSE: SCHOOL ENGAGEMENT

WHAT THE LITERATURE SAYS: THEORY

Healthy family CTE/STEM systems aligned with school programs support higher expectations, academic achievement, and student success.

WHAT THE LITERATURE SAYS: EVIDENCE

It is a myth that SWD and their parents are inherently in conflict. Student-centered transition planning must also be family-centered transition planning, and school engagement is key to maximizing student transitions (deFur, 2012). School engagement builds higher expectations into the “reciprocal relationship between parents’ expectations and adolescents’ expectations... [and between] expectations (both parents’ and adolescents’) and adolescents’ academic achievement” (Zhang et al., 2010, p. 479).

RECOMMENDATIONS AND STRATEGIES

PROVIDE OPPORTUNITIES BEYOND THE IEP FOR FAMILIES TO CHALLENGE LOW EXPECTATIONS FOR SWD IN CTE/ STEM.

The IEP is an important team opportunity for support for SWD, but it should not be the primary source of school contact with parents. Authentic “engagement with parents’ knowledge of their own children can significantly help teachers understand how best to teach students with disabilities. Learning what students think, know, and want—either directly from students or from their parents—allows teachers to work in ways that are deeply satisfying to both themselves and to those they teach, as the possibilities for learning—and inclusive education—are endless” (Berman & Connor, 2016, p. 22).

ACTIVATE FAMILY RESOURCES AND ENGAGEMENT TO INCREASE PREDICTORS OF SUCCESS IN EDUCATIONAL GOALS FOR SWD.

All parents and families should be informed about the Common Core and equipped to contribute to their children’s success with the more rigorous curricula called for therein. In particular, empowering the parents and families of students who have been traditionally underserved and underrepresented creates a place for their voice and engagement in all aspects of their children’s education experience (Equity Assistance Centers, 2013, p. 10). In the process, it is important to build family skills that support student self-determination. “Self-determination and self-concept have been shown to be correlated with positive school engagement and adult outcomes” (Zheng et al., 2014, p. 462).

INVITE AND EDUCATE FAMILIES TO SUPPORT CONTENT AND ASSIGNMENT STANDARDS FOR HOMEWORK AND OTHER EDUCATIONAL GOALS.

SWD whose families are “highly involved in ... educational planning achieve better community adjustment outcomes than individuals whose families were highly involved” (Landmark et al., 2010, p. 6). Furthermore, as families build skills to support their students in the school settings, linking school demands with future goals becomes more meaningful. Youth and families should be taught how to “systematically collect information that is related to a postsecondary goal. For example, if a youth with an intellectual disability and his or her family express an interest in attending a college program after exiting the school system, the first step is to explore college options, including cost of program, type of setting, transportation needs, support systems, and types of classes/work experiences. This can be done by visiting local and state colleges or by using national databases ThinkCollege.net or the Transition Coalition at the University of Kansas. Collecting

information on environments or programs provides youth and families with real information on requirements, demands, and cost or eligibility criteria—This is vital in the TA process” (Neubert & Leconte, 2013, p. 7).

IDENTIFY INTERSECTING ISSUES AFFECTING A STUDENT’S SUCCESS, INCLUDING DISABILITY BUT NOT EXCLUDING FAMILY ISSUES THAT MIGHT REQUIRE ADDITIONAL SUPPORT SERVICES

“The National Gateway to Self-Determination (2012) views efforts to promote self-determination in the context of the social-ecological model/framework. This framework allows you to look at the entire picture when trying to develop activities that promote self-determination, calling for strategies for support to take into account both the capacities of the person and the reality of the environment in which the person lives and works. The social-ecological model looks at not only the person, but also the environmental context. So when creating activities that increase and promote self-determination, we would want to address not only the individuals in the group, but also the environment in which they are living. Elements and situations which need to be examined can include: interpersonal, family, organization, community, policy, and services and supports” (p. 15).

EFFECTIVE PRACTICES AND RESOURCES DEVELOP PARENT-FRIENDLY INFORMATION.

Parent-friendly information about decision criteria while assessing college, certificate, or alternate diploma paths would engage both parents and students in exploring CTE/STEM career paths and licensing. “Parents [need to be] fully informed of consequences, including how different types of diplomas will be viewed by employers and postsecondary education programs” (Achieve, 2013, p. 10).

IDENTIFY KEY RESOURCES AND MAKE THEM EASILY AVAILABLE TO TEAMS AND PARENTS.

Such resources could include the following:

- “Parents as Collaborators: Building Partnerships with School and Community-Based Providers” by S. deFur (2012) provides a strong framework for building partnerships and understanding transition practices as a combination of communication, service delivery, and empowerment. General trends are explored as are parent perceptions and strategies for approaching effective intervention and collaboration. This is a good review for a team committed to bringing parents and students into the IEP and the larger team for transitioning.
- [The Family Engagement Tool for High School Success Toolkit](#) from the Harvard Family Research Project. This toolkit is designed to help those seeking to develop an informed and targeted family engagement project for high school students. This toolkit is based on an initiative that deliberately focused on improving academic outcomes for students at high risk of not graduating from high school. While not designed to provide guidance for the development of general family engagement strategies, the planning and implementation principles contained in the toolkit can be applied to a wide range of family engagement initiatives that focus on a broader range of student groups.

[The Response to Intervention: A Primer for Parents](#) is an excellent guide for parents and educators/team members unfamiliar with RTI (Response to Intervention) work. It identifies best practices, team-building strategies, evaluation and assessment procedures, and ways that parents can be involved in the RTI process.

- [Understood](#) resources have been compiled by 15 nonprofit organizations that have joined forces to support parents of the one in five children with learning and attention issues throughout their journey. This is a free resource with access to chat with experts.

INTERNAL/INDIVIDUAL

ROOT CAUSE: STEREOTYPE AND STIGMA THREAT

WHAT THE LITERATURE SAYS: THEORY

Academic achievement and individual development in terms of social skills and self-determination are positively influenced by the reduction in stereotype threat and stigmatization. No matter what their learning challenges might be, SWD also experience social disability, often intensified by intersecting marginalized identities, including gender and race. "Intersectionality theorists argue that locations of oppression and discrimination interact and shape the multiple dimensions of those experiencing them in a way that is not fully captured by separate examinations of each system" (Hernandez-Saca et al., 2018, p. 288). SWD grapple with their identity group legacies, their own understanding of these identities, as well as how others interpret and express those identities. This complicated and necessary process is key to making sense of their life experiences, challenges, and successes.

WHAT THE LITERATURE SAYS: EVIDENCE

Positive attributions, whether in the classroom, school, or CTE/STEM contexts, support sustainable success toward academic, social, and career goals. Programs and teams should be aware of their implicit and explicit attitudes and beliefs about SWD to prevent negative consequences of conscious or unconscious attribution of characteristics that might limit SWD. Slee (2011) describes the lowered expectations and un/conscious marginalization of SWD as "a programming flaw that makes SWD believe they are getting 'scraps from the table for children who, when all is said and done, are sometimes tolerated but never welcome'" (p. 43). Stereotypes and prejudiced attitudes can be positive or negative and can exist on an explicit and implicit level. "Teachers must be able to examine cultural and social hierarches for the ways inequality and injustice are produced and perpetuated within the curriculum, the classroom, and the school" (Oyler, 2011, p. 205). "Both explicit and implicit stereotypes and prejudiced attitudes develop from repeated exposure to pairings of a social group or object with a particular characteristic" (Peterson et al., 2016, p. 124). Importantly, knowledge of a particular stereotype does not necessarily mean endorsement of it. The key is "whether or not [teachers] suppress... automatic activation of [stereotyped] beliefs [in classroom situations].... Factors that interrupt teachers' ability to suppress automatically activated stereotypes (e.g., a busy classroom) could unconsciously allow these biases to leak out affecting a teacher's behavior" (Peterson et al., 2016, p. 124).

RECOMMENDATIONS AND STRATEGIES

TRAIN ADMINISTRATORS/STAFF/TEACHERS TO BE AWARE OF ASSUMPTIONS OF INADEQUACY PROJECTED ONTO SWD THAT LIMIT ASSESSMENT AND PROGRAMMING.

"To say that all children must thrive in a prescribed, 'normalized' setting, along a trajectory of 'typical' behaviors neglects the non-linear ways that many children [not just SWD] arrive at understanding themselves and their cultural worlds.... Similar to multicultural education frameworks, inclusive education should not be viewed as additive, but central to socially just curriculum and practices" (Yoon, Llerena, & Brooks, 2016, p. 64). The stereotypes that make teachers and students project deficit identities on SWD must be shifted to raise consciousness "of an exclusionary system that makes whatever unique characteristics that were intrinsic to them truly disabling" (Olander, 2016, p. 57).

EDUCATE TEACHERS TO RESIST THE STIGMATIZATION OF LEARNING DIFFERENCES (LDS) DESIGNATIONS IN MATH AND OTHER CTE-/STEM-RELATED

CLASSES, EMPHASIZING THE FACT THAT REAL CAUSES OF LDS MIGHT COME FROM DISPARITIES IN EARLIER PLACEMENTS, PREVIOUS TEACHERS' NEGATIVE ATTRIBUTIONS AND EXPECTATIONS, OR LACK OF ACCESS.

The stereotypes about, low expectations for, and tracking of SWD can often have as much an effect on their skills and self-esteem as their diagnosed challenges. More than medical identification, "disabilities are a social judgment, and disability scholars [argue] that disability is an idea and not a thing...it is not the way in which people vary or the differences they have in comparison to others but what we make of those differences that matter it is important to turn the lens on socially constructed schooling practices (e.g., curriculum, classroom management, schedules, movement) that create disabling situations for neuro-diverse children" (Yoon, 2016, p. 63).

ASSIST TEACHERS IN UNDERSTANDING BULLYING AND STIGMATIZATION ISSUES, IDENTIFYING INTERVENTION STRATEGIES, AND TEACHING STUDENTS TO RECOGNIZE AND SOLVE BULLYING SITUATIONS.

Current statistics show that bullying and isolating behavior from peers is not limited to disability and overlaps with multiple identities (Office of Civil Rights, 2018).

Classrooms are social environments where privilege is generally marked by the ability to be either Talented or Normal, and bullying is a negative and abusive part of students' social negotiations. Furthermore, as a part of reinforcing stereotypes, and therefore bullying, implicit and explicit "shared classroom understandings that produce and uphold the Normal are disseminated within the sanctioned discourses of child development, developmental psychology, special education, and classroom discipline.... As they encounter difference, they perform and defend their position because difference is positioned as needy and deficient when compared to the Normal" (Watson, 2016, pp. 81-82). In the social order of the classroom, bullying must be prevented or interrupted, and a healthy classroom climate established, to support all learners, not just SWD.

Classroom climate and bullying are related to school culture, size, and socioeconomic status, but bullying occurs at every school. Studies have also shown that students feel less safe in large schools and that verbal bullying is more likely to occur at such schools (Lleras, 2008). Research from the Health Resources and Services Administration's National Bullying Campaign showed that up to 25 percent of U.S. students are bullied each year. As many as 160,000 students may stay home from school on any given day because they are afraid of being bullied (Nansel et al., 2001). The growing trend of cyber bullying penetrates the home via computers and cellular phones (Center for Social and Emotional Education, 2010).

TEACH CRITICAL THINKING ABOUT THE WAYS IN WHICH MEDIA PORTRAY OR EXCLUDE PWD.

Local media and public information underline the "needs/problem/intervention" narrative of medicalized disability identity. Worse, media often veer between two extremes, "rehabilitative frameworks that reified old conversations on disability as a curse, tragedy, or misfortune in need of a cure" (Ware & Hatz, 2016, p. 29) and lionization of SWD success in meeting basic subsistence standards. "The importance of locating the goals of inclusive education squarely in the curriculum for consumption by all students can begin to challenge disability as a taboo topic. Until schools address the omission of disability history, art, and culture in the curriculum, where the real work of inclusion begins, society will continue to view disability as a devalued experience" (Ware & Hatz, 2016, p. 41).

One strategy for correcting this situation is to integrate stories about diverse PWD into the curriculum "to

sharpen awareness and develop critical insights about the actual meaning of disability as value-added diversity... [and to] identify and model communities that purposefully encourage career integration experiences for disabled people to replace the norm where non-disabled people earned salaries to manage the lives of disabled people who work in sheltered workshops for less than minimum wage” (Ware & Hatz, 2016, p. 29). In terms of building critical awareness of stereotypes, this inclusion is particularly important for CTE/STEM aspirations for marginalized students of all kinds.

REFRAME DISABILITY AS AN IDENTITY WITHIN MULTIPLE IDENTITIES (SOME MARGINALIZED, OTHERS PRIVILEGED OR “NORMAL”) AS A WAY OF LEARNING ABOUT EACH STUDENT BEYOND THE LABEL OF THEIR DIAGNOSIS.

The idea of “normal” is a cultural understanding that relates to different personal and professional identities that we all enact within school and work contexts. This has a direct and sometimes complicated effect on CTE/STEM inclusion, because it may not be immediately clear where barriers to interest and achievement originate.

Lambert’s 2015 case study of teaching practices in the math classroom focused on “contexts in which individual children appear enabled in mathematics, and ... the contexts in which they appear disabled [and asked] how can we create enabling rather than disabling mathematics classrooms for a broader range of learners? Mathematics education must include disability in calls for equity, as well as include learners with disabilities in research. As a mathematics education community, we can honor these children’s resistance by continuing to foster broader conceptions of mathematical competence for all children” (p. 16). Importantly, Hernandez-Saco et al. model an approach to reading both research on at-risk SWD and being attentive to SWD within schools by bringing this study into an expanded sense of identity. They contextualize Lambert’s profile of Ana within her intersecting identities and roles, “a bilingual Dominican female identified as learning disabled, and who downplays her interest in mathematics, mirroring the larger gender pattern of girls having to downplay their intelligence in fields that are traditionally dominated by stereotypes of who is smart and who is not.... [From the perspective of support for SWD, Ana’s self-understanding comes from many sources, including] the structural identities of gender, ethnicity, and being a student with a disability” (Hernandez-Saco et al., 2018, p. 303). It is important to note here that student identities and classroom construction of competencies intersect in ways that shape the experience of SWD and other marginalized learners.

The National Association of Elementary School Principals recommends the following steps, which support not only at-risk learners in general, but also individual learning and development for those who may be outside norms. They suggest that administrators and school culture should include measures that:

- “Provide strong professional development on cultural competence, equity, and social justice so that teachers and staff can improve classroom instruction and provide equitable school management strategies that will improve achievement for all students.
- Develop student interest surveys and lead teachers to learn about their students’ interests.
- Incorporate staff meeting time for teachers to report on: what motivates students to learn; how a relationship has been built with each student; and what they learned about students’ interests.
- Ensure that teachers identify and have a specialized focus on students who are marginalized or are at risk” (NAESP, 2018, pp. 10, 12).

EFFECTIVE PRACTICES AND RESOURCES

PARTICIPATE IN PROFESSIONAL DEVELOPMENT FOCUSED ON CULTURAL COMPETENCY AND IMPLICIT BIAS.

“Training programs that help teachers identify and reject discriminatory thoughts may also be useful in seeking to reduce their potential negative impact on some ethnic groups. Research has shown that, although implicit attitudes are automatic, they can be controlled if people are willing and able to exert cognitive control” (Peterson et al., 2016, p. 138).

BRING STUDENT VOICES FROM THE ANTI-BULLYING MOVEMENT.

A good example is a [video](#) from JAG Student Project (Keokuk, Iowa, High School anti-bullying campaign).

GATHER RESOURCES AND TOOLS TO IDENTIFY WAYS THAT STEREOTYPING WORKS BOTH IMPLICITLY AND EXPLICITLY AND IDENTIFY BEST PRACTICES FOR INTERVENTION IN THE CLASSROOM.

NAPE’s Comprehensive Educational Equity Programs include the [Program Improvement Process for Equity™](#) (PIPE) and [Micromessaging to Reach and Teach Every Student™](#) (Micromessaging). PIPE works with school-based teams of administrators, teachers, counselors, and staff to change the institutional culture, and Micromessaging works with teachers/faculty to change the culture of the classroom. NAPE’s [professional development](#) and [resources](#) include online courses, toolkits, posters, and career guidebooks.

The [NIH Stem Diversity Initiative](#) offers useful resources to understand implicit and explicit bias, microaggressions, and stereotype threat. The website also provides links to research, best practice strategies, sociocultural perspectives, and analysis of diversity practices success and failure.

[Reading Rockets](#) provides teacher resources for working with SWD. Specific knowledge about classroom practices can support shifting of the assumptions behind stereotypes as well as the classroom climate.

[Discover Education](#) provides information about incorporating lessons about stereotyping into the classroom curriculum.

[Digital Promise](#) and the [Rutgers Center for Effective School Practices](#) provide information on how to reduce the feeling of hostility and stereotype threat in a classroom.

INVOLVE PRINCIPLES IN LEADERSHIP FOR EQUITY AS WELL AS CTE/STEM STAKEHOLDERS.

The National Association of Elementary School Principals Diversity Task Force was established with the mission to examine and identify effective practices and exemplars to support principals who are leading strategic initiatives that promote positive student outcomes through policy and practice recommendations that ensure equity for all students and that honor and welcome diverse input. The findings and recommendations of the Diversity Task Force are compiled in [“The Principal’s Guide to Building Culturally Responsive Schools.”](#)

TREAT THE PHYSICAL AND SOCIAL EXPERIENCES OF SWD AS EACH STUDENT’S “NORMAL” AS A WAY TO RESIST IMPLICIT ASSUMPTIONS ABOUT WHAT “NORMAL” MEANS IN TEACHING AND LEARNING.

Teachers as well as students should pay attention to assumptions about what is normal and what is abnormal. “Placed outside of the social norms, people with dis/abilities rightfully ask: Who (re)creates that norm? Why has it been reproduced? Where was it reproduced? When was it reproduced? Where do we stand (or sit) in

relation to that norm? Who is positioned on the inside the norm and who on the outside? Who becomes advantaged and, conversely, who becomes disadvantaged by this arrangement? In asking these questions, we come to see that just as the world is racialized, gendered, and sexualized, it is also profoundly normalized” (Connor, 2013, p. 499).

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