Preparing Teacher Educators for Statewide Scale-Up of Multi-Tiered System of Support (MTSS)

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Abstract

Multi-Tiered System of Support (MTSS), as a fully integrated set of practices and interventions directed to academics and behavior, with emerging applications to social and emotional learning in the teaching/learning process, is very much in its ascendency in schools across the United States and elsewhere. As a result, there is an emerging need to prepare teacher and administrator educators to enter the rapidly expanding number of implementing schools and districts. Requisite dispositions, skills, and knowledge germane to ensuring successful applications, sustainability, and resultant student outcomes from MTSS introduction into systems praxis are increasingly required. In this position paper, we discuss the origins of MTSS, its expansion into various areas of education in the United States, and its emerging contribution to the thorny issue of inclusion. We conclude with examination of Innovation Configuration, a heuristic to assist teacher and administrator educators in the development of course syllabi and other professional learning vehicles addressed to MTSS.

Keywords

teacher preparation policy/service delivery, educational reform, teacher preparation practices and outcomes, Multi-Tiered System of Support

With this position paper, we advance the position that Multi-Tiered System of Support (MTSS) represents innovation in contemporary schooling; that it offers a potential pathway to achievement of the goals of inclusion; and that there is a critical need to prepare Institutions of Higher Education (IHE) teacher and administrator educators to, in turn, introduce new preservice personnel to this complex, transformative praxis. In support of the latter, a heuristic, the Innovation Configuration (IC), is examined as a means to assist the process. MTSS is a growth industry in education. Fueled by School Improvement Grants (SIGs) to states and coupled with numerous state initiatives directed to scaling up MTSS, fully integrated, tiered instructional supports are rapidly becoming commonplace in many schools around the country (McIntosh & Goodman, 2016). This expansion is leading to a critical need to prepare preservice teachers and administrators to enter the education workforce with the complex, transformational

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components of skills, new knowledge, and dispositions needed to effectively and efficiently implement MTSS (McCart et al., 2014; McIntosh & Goodman, 2016; Sailor, 2017). The authors of this article have been engaged collaboratively, over a 3-year period, to implement an ambitious initiative to scale up MTSS statewide. To assist this effort, collaborative partners in the State MTSS scale-up initiative led by Orange County Department of Education (OCDE) included SWIFT Education Center at the University of Kansas (swiftschools.org) and Collaboration for Effective Educator Development, Accountability and Reform (CEEDAR) Center at the University of Florida (ceedar.education.ufl.edu/). Together with the OCDE, these partners used a personnel preparation organizer known as an IC (Hall & Hord, 1987; National Comprehensive Center for Teacher Quality [NCCTQ], 2011; Roy & Hord, 2004) to produce a set of 18 (as of this writing) conceptual maps. These maps are designed to be rubrics to guide teacher and administrator educators in their IHEs in construction of new or adapted course syllabi to prepare school and district personnel on MTSS, Universal Design for Learning (UDL), and other components. These maps include UDL as a key component of MTSS installation and implementation, as well as the SWIFT four-part framework of evidence-based support, which serves as a *scaffold* to the complex task of installing and implementing MTSS with measured fidelity (McCart et al., 2014).

The theoretical framework of the MTSS IC is reflected in Figure 1. MTSS is a primary transformative instructional practice and has been shown to have a direct and positive relationship with student academic and socio-behavioral outcomes (Choi et al., 2019; McIntosh & Goodman, 2016). Several of these reported analyses examined measures of fidelity of MTSS installation and implementation in relation to annual state assessments of grade-level math and reading proficiencies. Furthermore, investigators using statistical modeling procedures demonstrated that the four evidence-based practice domains supporting MTSS implementation produced

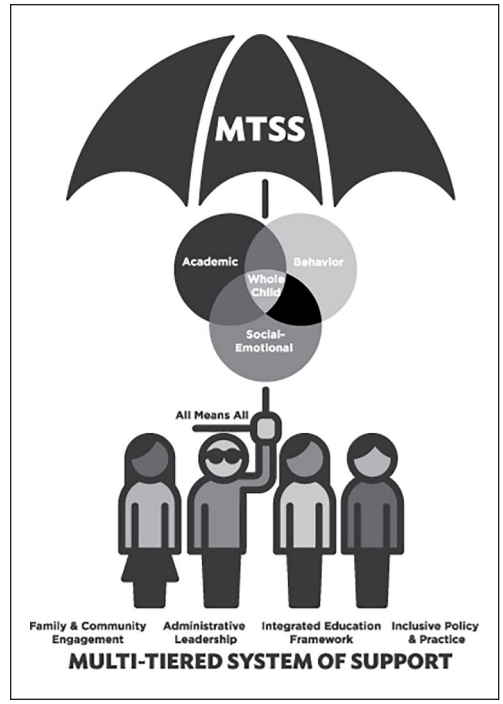

Figure 1. Theoretical framework for Multi-Tiered System of Support with supporting domains.

associated impacts on student outcomes (academic, behavioral, social, and emotional; Choi et al., 2019). For a review of the evidentiary basis for each of the five domains covered by the IC maps, see Sailor et al. (2017).

Figure 1 shows MTSS to be an overarching system of support by providing three tiers of instructional intensity directed to academic, behavioral, social, and emotional indicators of *whole child* components of learning. SWIFT's four domains of Family and Community Engagement, Administrative Leadership, Integrated Educational Framework, and Inclusive Policy and Practice each encompasses evidence-based practices that ensure that the transformational processes apply to all students, no matter their needs for more specialized supports and services, and all school staff.

In the sections that follow, we begin with an explanation of the origins of MTSS in education, discuss the contemporary structure and applications of MTSS in practice, and

discuss its potential extension in Social and Emotional Learning (SEL). Next, we consider its application addressed to the thorny issue of inclusion as a possible enhancement, particularly for students often segregated and, therefore, marginalized by virtue of requiring extensive supports and services. Furthermore, we discuss the process of statewide scale-up of MTSS from the standpoint of our experience in an ambitious ongoing effort in a large state. We conclude with a discussion of IC as a useful heuristic to assist teacher and administrator educators in preparing new, general education and specialized personnel to support installation, implementation, and sustained practice in the complex transformation embodied by MTSS.

The Advent of Tiered Instructional Strategies

Origins of MTSS

Tiered instruction found its way into educational praxis through the field of special education. Its origins lay in the three-tiered public health strategy employed in the United States by the federal Centers for Disease Control and Prevention (CDC). Examples of Tier 1 CDC strategies can be found in restaurant restrooms with signs reminding employees to wash their hands before returning to work. If a severe outbreak of an infectious disease occurs, such as the COVID-19 virus, as this is being written, the CDC prepares such Tier 2 strategies as spot announcements on radio and TV offering advice to the public on procedures to avoid exposure, and equips health providers and hospitals with proactive systems of prevention. They activate Tier 3 strategies in cases of potential or real pandemic and may include, for example, travel restrictions and quarantined sections of geographic areas and hospitals in infected regions.

The introduction of tiered instructional strategies in the field of special education originated through two lines of research and development, one focused on the development of a pedagogy addressed to behavior problems impeding the learning process, and the second addressed to the remediation of problems associated with learning to read. In the case of behavioral instruction, a program of research and development funded by the U.S. Department of Education, and led by Rob Horner at the University of Oregon, was launched in the mid-1980s to provide educators with pedagogical practices that would obviate the need for aversives, which were becoming anathema in public schools (Horner et al., 1990; reviewed in Dunlap et al., 2009). This robust program of what is now termed Positive Behavior Interventions and Support (PBIS) continues to be supported by the Office of Special Education Programs (OSEP) and is an active part of educational programming in thousands of schools across the country and internationally (Horner & McIntosh, 2016).

Tiered intervention practices that are focused on academics originated with a program of research at Vanderbilt University and the University of Kansas Center for Research on Learning (Deno, 2005; Fuchs & Deshler, 2007; Fuchs & Fuchs, 2006). The aim of that early effort was reading skill improvement for struggling students, and development of additional sources of data to be employed in the determination of eligibility for special education services under the Learning Disability (LD) category. Whereas PBIS became the primary descriptor for tiered intervention strategies directed toward behavior problems impeding the learning process, Response to Intervention (RTI) became the primary descriptor for academics (e.g., Sailor, 2009).

By 2008, arguments were surfacing in the literature to combine PBIS and RTI into "a broader RTI logic approach that fully integrates academic and behavioral functions and interventions" (Sailor et al., 2009). The Kansas State Department of Education (KSDE) was first to launch a statewide initiative to combine tiered intervention strategies under the newly coined term, *Multi-Tiered System of Support*. That term was picked up by Sugai and Horner (2009) and remains today as the umbrella term for transformational school reform that fully integrates academic,

behavioral, social, and emotional interventions (McIntosh & Goodman, 2016).

The Structure of MTSS

Since the MTSS initiative first appeared on the KSDE website in 2008 (www.ksmtss.org), funded by a SIG from the U.S. Department of Education, numerous states have launched similar statewide, grant-funded MTSS efforts, many funded in part by SIG grants. Much of the research emerging from such initiatives was summarized in McIntosh and Goodman (2016). The impact of schoolwide MTSS transformation on socio-behavioral and academic outcomes in fully implementing schools has, thus far, been impressive (McIntosh & Goodman, 2016; Satter et al., 2019). The term *transformation* applies because (a) *tiered interventions apply to all students* in a noncategorical fashion; (b) *measurement of programs* (e.g., screening, progress monitoring) *occurs at all levels of support* to guide decisions concerning intervention, levels of intensity, and curricular modifications; (c) *MTSS fully integrates social and behavioral interventions with academic interventions* (e.g., Lane et al., 2016); (d) *MTSS offers a schoolwide, unified instructional framework* that applies to all students, thus potentially reducing the need for categorical classrooms by providing more efficient use of space and personnel (e.g., Billingsley & Bettini, 2019; Satter et al., 2019); (e) *MTSS is driven by interactive team decision and support processes* operating across both district and school leadership personnel, wherein these processes support fully integrated special education, English Learners, Title I, gifted and talented, and general education decision-making; and (f) MTSS embraces and utilizes UDL principles (Rose & Meyer, 2002), thus contributing, among other educational enhancements, to greater participation by and inclusion of students with all types and degrees of disability (Sailor & McCart, 2014). This latter is discussed in more detail further on in this article.

Achievement for all students is the collective mission for local educational agencies (LEAs) and schools. This achievement is dependent on creating a system in which all students are fully valued, welcomed, well supported, and engaged in the learning that focuses on excellence and equity for all students. An array of supports must be in place to ensure all students are benefiting from and engaged in learning. In addition, LEAs need to reflect on their system and current practices to determine whether they are intentional about creating an MTSS. The reflection process begins with a strengths-based approach wherein LEAs are able to celebrate the effective practices and policies that are in place. Teams can then leverage those strengths as they focus their efforts on the areas for opportunity that will support their transformation to MTSS.

MTSS embraces the whole child approach to teaching and learning. It incorporates a continuum of support that aligns academic, behavioral, and, more recently, social and emotional learning in a fully integrated system of support for the benefit of all students. MTSS is built on the premise that universal support (Tier 1), which addresses the whole child, must be provided for all students. Some students, however, may need supplemental support at various times (Tier 2), and a few students may require more intensified support (Tier 3) to be successful in the most inclusive and equitable learning environment of their grade-level peers. Instruction coherently employs the array of supports and services so that all students have access to high-quality instruction (Fullan, 2015a, 2015b). This coherence requires ongoing screening and progress monitoring to ensure that the appropriate evidence-based practices are provided. The array of supports is grounded in UDL, including differentiated instruction, culturally responsive pedagogy, and integrated education implemented at all levels of support.

A coherent educational system relies on the ability to effectively link school, district, regional, state, and federal resources in efficient and innovative ways that support the transformation to MTSS. This linkage is referred to as the *whole system of engagement*

approach (Miller, 2013). The education system can build on the idea that originated in the business community where

> stakeholders are vital sources of wisdom, creativity, passion and energy. Everyone has something to give, a role to play. Engaging stakeholders in a way that fosters collaboration helps maximize, protect and reinvest in the organization's most important asset—its people. To harness this potential, whole system engagement brings together diverse perspectives from inside and outside an organization, which helps to create stronger solutions and accountability. (p. 3)

In education, the whole system of engagement begins with students and families at the heart and purpose of the work. For the academic, behavior, and social and emotional learning needs of students to be met, the school serves as the point of transformation. Schoolwide transformation efforts that lead to desired student outcomes are dependent on the LEA that serves as the point of intervention. In turn, the LEA utilizes regional, state, and/or federal resources as the primary source of technical assistance (TA) to sustain an MTSS. The MTSS framework builds on the strengths of all stakeholders in the school community while mapping and matching all available resources to the effort.

As schools and LEAs work toward transforming their systems so that they are truly aligned to MTSS, they engage in the continuous improvement cycle. LEAs are committed to ongoing learning, self-reflection, adaptation, and professional growth. They follow a process of disciplined inquiry where professional learning communities (PLCs)—also known as networked communities—identify, adapt, and successfully scale up promising interventions in education (Bryk et al., 2015).

Extending MTSS to Social and Emotional Learning

Many schools throughout the United States are experiencing positive results for their students in the areas of academics and behavior after implementing a tiered system of support. In fact, RTI and PBIS "have been implemented on a scale of social significance that has evaded many previous attempts at school reform" (McIntosh & Goodman, 2016, p. 4). These two particular initiatives have resulted in a reduction in disruptive behaviors and bullying, and have shown an increase in academic achievement, school safety, school climate, and teacher perceived self-efficacy, social competence, and emotional regulation (McIntosh & Goodman, 2016). Growing research from the Collaborative for Academic, Social, and Emotional Learning (CASEL; casel.org) provides evidence regarding the positive impact that social and emotional skills have on academic achievement. Current findings document that SEL programs yielded significant positive effects on targeted social and emotional competencies and attitudes about self, others, and school. They also enhanced students' behavioral adjustment in the form of increased prosocial behaviors and reduced conduct and internalizing problems, and improved academic performance on achievement tests and grades. The findings add to the growing empirical evidence regarding the positive impact of SEL programs (Durlak et al., 2011).

A fully integrated MTSS links decisions about academics and behavior. SEL can be increasingly nested within MTSS to address the needs of the whole child. This leads to a more coherent system and focuses on optimizing learning by providing a safe, welcoming learning environment with few distractions. As a result, instructional time is maximized, which leads to student success (McIntosh & Goodman, 2016). According to the California Department of Education,

> there is a growing body of research proving that SEL is fundamental to academic success, and must be woven into the work of every teacher in every classroom and every after school and summer enrichment program, if we truly want to prepare all our students for college and careers. (California Department of Education, 2016)

MTSS and Inclusion

The evidence base for inclusive education is extensive. Evidence for academic benefits for students with Individualized Education Programs (IEPs) in inclusive programs has been reported by Choi et al. (2017); Cole et al. (2004); Cosier et al. (2013); Kurth and Mastergeorge (2010a, 2010b); and Dessemontet et al. (2012). Additional studies were reviewed in McLeskey et al. (2014). Evidence for socio-behavioral benefits for nondisabled peers of included students was reported by Kalambouka et al. (2007); Ruijs and Peetsma (2009); Ruijs et al. (2010); and Dessemontet and Bless (2013). Evidence for socio-behavioral benefits that extended from school inclusion into adulthood was reported by Copeland and Cosbey (2008); Rojewski et al. (2013); Ryndak et al. (2010); Test et al. (2009); Wehmeyer (2006); White and Weiner (2004); and Woodman et al. (2016).

The advent of tiered instructional arrangements augmented by UDL has some important implications for how the term *inclusion* (including *full inclusion*, *inclusive education*, etc.) is operationally defined. Historically, the term has carried a *place-based* connotation, defining the least restrictive environment (LRE) requirement of the Individuals with Disabilities Education Act (2004) as increased percentage of time spent by students with IEPs in general education *classrooms*. Problems associated with place-based definitions have stymied policies directing educational practices over the years (Kurth et al., 2014; Morningstar et al., 2017). Critics of inclusive education among academics in special education have, correctly in our view, pointed out the deficiencies in educational programming for students with IEPs in general education classrooms when students cannot progress apace in a curriculum block due to factors impeding their learning (Kauffman et al., 2017). Others have made reference to associated negative outcomes on the part of general education students arising from disruption in classrooms that included students who experience behavior disorders (Cooc, 2019; Fletcher, 2010).

Students who are not successfully engaging the grade-level general education curriculum, even with UDL-supported differentiated instruction, may receive additional support. This additional support may be provided in a group arrangement in the general education classroom or may involve participation in a small group setting elsewhere in the school; for example, a small group scheduled in the school library during fourth-grade reading block, guided by a school librarian. This group may have a cross-grade mix of students with IEPs, language learners, and others who share a common level of relative proficiency in reading. Similarly, students who cannot progress measurably in grade-level instruction or with additional support arrangements may participate in more intensified instructional arrangements at times during the school day and, perhaps, during after-school programming.

Waitoller and Kozleski (2013) and Artiles and Kozleski (2007) have offered a redefinition of inclusion based on the concept of *equity*, which, in our view, provides a closer alignment with MTSS and obviates the problems associated with place-based definitions. *Equity-based* inclusion shifts the policy concerns away from specific classroom-focused issues and toward concerns of how all available educational supports and services are equitably matched to measured student needs, regardless of reasons for the specialized support (e.g., special education, English Language Learning, gifted education). An equity definition of inclusion carries the inherent advantage of applicability to all students and, thus, acts as a deterrent to categorical segregation of some students.

Equity-based inclusion considers the *whole school environment* rather than specific classrooms as the focus of concern for instructional delivery (Choi et al., 2019; Hicks et al., 2018; Sailor, 2017). Instead of the traditional *pull out/push in* service provision, students are served through a complex master schedule with grouping and/or one-on-one arrangements in accordance with their instructional requirements. When students, regardless of why they need additional instructional support

and services, can benefit measurably (i.e., show by progress monitoring) from instruction in the general education classroom, then scheduling them into that environment for a particular curricular component, such as during the reading or math block, is appropriate. Instructional practices, in this case, may be augmented by peer-assisted learning strategies (McMaster & Fuchs, 2016), co-teaching arrangements (Sullivan et al., 2014), and other strategies associated with inclusive education.

In all cases, the intent of equity-based inclusion is to provide students maximal engagement with the curriculum at grade level as soon as progress monitoring indicates feasibility. Setting a master schedule to handle these varied and fluid instructional arrangements obviously becomes quite complex. Nevertheless, implementation of MTSS through a complex master schedule provides a potential pathway to the desegregation of students who were previously isolated in separate classrooms or schools and does so without disrupting grade-level instructional programming. The focus is on providing an *instructional match* at all times during the school day, between any students' *documented need* for additional support and services and *available resources*, regardless of the particular source of support (e.g., special education, Title programs).

Scaling Up MTSS Statewide

In 2012, researchers at SWIFT were awarded the national TA Center working with five states, 18 school districts, and 64 schools for inclusive reform, called SWIFT Center (Sailor, 2012). SWIFT provided TA to Maryland, Mississippi, New Hampshire, Oregon, and Vermont state education agencies (SEAs), and selected LEAs and schools over a 4-year period. The TA was designed to support installation, implementation, sustainability, and scale-up of MTSS as the principal driver for enhancing inclusive education. Partnership agreements with the states and districts contained data-use agreements, which allowed SWIFT to use its fidelity of implementation tool (Algozzine et al., 2016; Morsbach Sweeney et al., 2014) to provide systematic analyses to determine the impact of implementation in the schools on student outcomes associated with reading, math, behavior, and inclusion. Results to date from that effort, which ended in 2017, are in the early stages of dissemination as of this writing (e.g., Choi et al., 2019; Sailor et al., 2018) and are supportive of a growing body of research indicating significant associations of positive student outcomes with MTSS when implemented with fidelity (McIntosh & Goodman, 2016).

Following the conclusion of the OSEP-funded SWIFT Center for TA, the University of Kansas research group established SWIFT Education Center in response to requests from increasing numbers of LEAs and SEAs around the country, as well as abroad, to assist with ongoing MTSS initiatives through TA and professional learning opportunities. By far, the largest of these efforts has been a partnership with OCDE, the lead agency for a statewide scale-up effort, together with Butte County Office of Education, beginning in 2016 and continuing as of this writing. Funds were appropriated by the state legislature and dispersed to OCDE by California's Department of Education (2016) to create an infrastructure of support for the scale-up effort by providing train-the-trainer experiences to teams at the level of each of the state's 58 county offices of education and selected LEAs within each county, for implementation via mini-grants in annual cohorts for 3 years. As of this writing, more than 1,200 state schools have begun MTSS implementation using SWIFT Fidelity Integrity Assessment (SWIFT-FIA) as a planning and self-assessment device, and with the externally administered SWIFT Fidelity of Implementation Tool (SWIFT-FIT) as an evaluation measure. This effort is continuing under a new appropriation from the state legislature, starting in 2019, with continuing administration by OCDE (Mijares, 2017).

The advent of tiered instructional strategies to address behavior that impedes the learning process as well as academics, now delineated under the umbrella term MTSS, has resulted in transformed educational praxis

affecting all students, staff, and administrators. A critical need now exists to, in turn, begin to transform initial personnel preparation programs as well as professional learning curricula to address this changing educational ethos. The next section considers the IC, a heuristic for teacher and administrator educators, consultants, TA providers, and others to help get the process started.

IC: A Heuristic for Teacher and Administrator Preservice Preparation and Professional Development on MTSS

Educator attitudes and beliefs (disposition) about how children should be taught, when in alignment with practice, appear to be a complex interactive process that predicts successful job performance (Leko & Roberts, 2014). Evidence from research supports two positions on the relationship between beliefs and change: (a) that changes in educator beliefs are required to precede changes in practice (Richardson et al., 1991); and the opposite, (b) that changes in beliefs occur as a result of changes in practice (Fullan, 2007; McLeskey & Waldron, 2007). An example of this interactive process of attitude change, supportive of position (b) above, was reported by McLeskey et al. (2001). In a study of educator attitudes toward inclusion of students with IEPs, the authors found that, ". . . positive experiences of working in inclusive settings is related to more positive perceptions of inclusion, and results from other studies corroborate this idea" (Leko & Roberts, 2014, p. 45).

It is reasonable to assume that many, if not most, preservice settings prepare educators to enter situations that operate under categorical service delivery models that differentiate instructional responsibilities by traditional grouping arrangements. Special education teachers look after students with IEPs, teachers certified in gifted education take responsibility for students identified for that category, and so on. Transforming praxis to inclusive MTSS requires a different constellation of disposition, skills, and knowledge than educators trained in more traditional systems are likely to possess. Sindelar et al. (2014) presented the case for school-embedded personnel preparation to address this need: "by embedding training within a specific model of service delivery, they overcome the problem that traditional teacher education programs face in preparing teachers for many different districts in which service delivery is likely to vary" (p. 63). The authors provided a review of several contemporary personnel preparation models and concluded in favor of "aligning coursework and field experience, as exemplified by an apprenticeship model and many alternative routes" (p. 64).

According to the NCCTQ (2011),

> Innovation Configurations are designed to evaluate current teacher preparation and professional development by determining the extent to which evidence-based practices are taught, observed, and applied within teacher preparation and professional development programs. Use of innovation configurations advances collaborative practices and encourages an examination of the similarities, differences, and gaps among programs by answering two questions: What types of instruction and experiences do teachers receive throughout their preparation and/or professional development that promote use of evidence-based instructional practices? To what extent are teacher's and teacher candidates provided an opportunity to apply these strategies with explicit feedback and sustained implementation and support to ensure fidelity? (p. 3)

Figure 2 presents, by way of example, an MTSS-IC, which consists of the *structural components* of MTSS. Five other closely related ICs are also available, four of which are for the *essential supports* provided by the scaffolding domains of practice in the SWIFT framework (McCart et al., 2014) and one for UDL (Israel et al., 2014). Each of the six ICs is organized by the requisite *Disposition* (D), *Knowledge* (K), and *Skills* (S), indicated through research to be critical features of practice in installation, implementation, and scale-up of MTSS.

Structural Components of MTSS	Implementation Levels			
Instructions	Level 0	Level 1	Level 2	Level 3
Place an X under the appropriate variation implementation score for each course syllabus that meets the criterion level from 0 to 3. Score and rate each item separately as the number of the highest variation receiving an X under it. D = Dispositions (Beliefs) K = Knowledge S = Skill	No evidence that the component is included in the syllabus, or the syllabus only mentions the component.	Syllabus contains at least one of the following: reading, test, lecture/ presentation, discussion, modeling/ demonstration, or quiz.	Syllabus contains one item from Level 1, plus at least one of the following: observation, project/activity, case study, or lesson plan study.	Syllabus contains at least one item from Level 1 and one item from Level 2, plus at least one of the following: tutoring, small group student teaching, or whole group internship.

Multi-Tiered System of Support	
MTSS is a continuum of system-wide practices that are grounded in research for data-based decision making to meet the academic, behavioral, and social-emotional needs of all students.	Rating
D: Develops understanding of the belief that all students should be educated in the most inclusive learning environment regardless of eligibility for special education or other student support services.	
D: Develops understanding of the belief that collaboration opportunities among stakeholders is necessary in order to monitor the needs of the whole child.	
K: Recognizes that a School Leadership Team includes: • administrators • teachers • para-professionals/para-educators • specialized personnel • family members • community members	

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Figure 2. *(continued)*

Multi-Tiered System of Support	
MTSS is a continuum of system-wide practices that are grounded in research for data-based decision making to meet the academic, behavioral, and social-emotional needs of all students.	Rating
K: Develops understanding that all students need a continuum of support (universal, additional/supplemental, intensified) to meet the needs of the whole child (academic, behavioral, and social-emotional). These supports: • utilize data to inform decisions • have clearly defined decision rules for access and cessation • are delivered by skilled and trained personnel	
K: Develops understanding that inclusive academic, behavioral, and social-emotional instruction must be universally designed and function together to meet the needs of the whole child.	
K: Recognizes essential elements of an effective multi-tiered system, including supporting domains: • integrated educational framework • family and community engagement • administrative leadership • inclusive policies and practices	
K: Develops understanding of key elements in a comprehensive and well-functioning schoolwide data system, including: • a valid and reliable evidence base • universal screening tools • diagnostic assessments/tools • progress monitoring measures and data to check student improvement • student outcome data (e.g., office discipline referrals, academic assessments, attendance, school climate surveys) • implementation data (e.g., classroom walkthroughs, instructional rounds, X University center's Fidelity Integrity Assessments) • capacity data (e.g., classroom walkthroughs, instructional rounds) • aggregate data analysis (e.g., school, grade, classroom, student subgroups)	
K: Develops understanding of effective collaboration practices, including but not limited to: • co-teaching • co-planning • analyzing data (e.g., screening, diagnostic, progress monitoring)	

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Figure 2. *(continued)*

Multi-Tiered System of Support	
MTSS is a continuum of system-wide practices that are grounded in research for data-based decision making to meet the academic, behavioral, and social-emotional needs of all students.	Rating
S: Teaches that general grade-level educators and specialized educators use co-planning opportunities to: • plan instruction using Universal Design for Learning, differentiated instruction, Culturally Responsive Teaching, and flexible grouping • plan for co-teaching • monitor student progress	

Figure 2. Innovation Configuration for MTSS.
Note. MTSS = Multi-Tiered System of Support.

These ICs are designed to support development of course syllabi in a teacher or administrator preparation curriculum for general, as well as, specialized educators. Their content can, of course, be adapted to comprise modular components of several courses for different educational personnel, including those for related service professionals. *Implementation Levels* of a syllabus can be scored on a 4-point metric shown at the top of each IC.

The structural components in the MTSS-IC appear in Figure 2. The four other ICs representing the essential support domains of the SWIFT framework can be downloaded from CEEDAR Center's website. For IC purposes, MTSS is defined as, "a continuum of system-wide practices that are grounded in research for data-based decision making to meet academic, behavioral, social and emotional needs of all students" (Batsche, 2014, p. 183).

The MTSS-IC suggests that a course syllabus on this topic contains instruction/reflection on two aspects of disposition. These refer to the importance of mindset, or basic assumptions of the teacher (or administrator) being prepared regarding the work involved in installing and implementing MTSS. The first dispositional aspect deals with the issue of inclusion, a hallmark of fully implemented schoolwide MTSS (Batsche, 2014). A necessary dispositional aspect is the belief that all students must be educated in the most inclusive learning environment regardless of eligibility for special education or other student support services.

The second *dispositional* aspect to be scored on the syllabus for the MTSS-IC refers to the importance of collaboration among stakeholders in addressing the multiple needs of the whole child. The perspective of parents, paraprofessionals, and other support professionals is not only respected when implementing MTSS but is actively sought. Evidence for positive impacts of collaboration on student outcomes has been provided by Kurth et al. (2015); Francis et al. (2016); and Shogren et al. (2015). Collaboration among school peers involved in the education of students with IEPs and its impact on student outcomes was reported by Carter et al. (2016); Cushing and Kennedy (1997); Ryndak et al. (2013); Schaefer et al. (2016); and Watkins et al. (2015).

The second *structural component* scored by the MTSS-IC syllabus is directed to *knowledge* (K) requirements of teachers and administrators to install and implement MTSS effectively and efficiently in their schools and classrooms. The knowledge component considers (a) the constitution of school leadership teams; (b) the continuum of supports (i.e., Tier 1/Universal; Tier 2/Additional or Supplemental; Tier 3/Intensified) that address the needs of the whole child (academic, behavioral, social,

and emotional); (c) the application of UDL principles in providing academic, behavioral, and social and emotional instruction; (d) the critical components comprising MTSS together with four supporting domains; (e) effective collaboration practices, including, but not limited to, collaborative teaching arrangements, particularly between special and general educators (e.g., co-teaching) together with its essential support component, collaborative planning; knowledge facilitative of the processes involved in analyzing data (e.g., screeners, diagnostic data such as from psycho-educational tests, and progress monitors); and (f) knowledge of the ingredients for a comprehensive and well-functioning schoolwide data system, which include (a) a valid and reliable evidence base; (b) universal screeners and diagnostic assessments/tools; (c) progress monitoring data to check student improvement; (d) student and organizational outcome data (e.g., office discipline referrals, academic assessments, attendance, school climate surveys); (e) implementation data (e.g., classroom walkthroughs, instructional rounds, fidelity integrity assessments); (f) capacity data (e.g., classroom walkthroughs, instructional rounds); and (h) aggregate data analyses (e.g., schoolwide, grade-level, student, and subgroups).

Finally, the third structural component to be scored in the MTSS-IC syllabus is *skills* (S). The IC focuses on collaborative planning opportunities, including (a) planning instruction using UDL, (b) methods to be employed for differentiating instruction, (c) incorporating culturally responsive teaching, (d) implementing flexible grouping arrangements (e.g., additional support groups within the context of grade-level instruction in the general education classroom, additional and/or intensified support groups in other school environments), and (e) measures and methods to use in monitoring student progress.

Instructions provided for scoring the adequacy of the D, K, and S components of the course syllabus are the same for the five domains of the SWIFT framework, namely, MTSS-IC, the Integrated Educational Framework (IEF-IC), the Family/Community Engagement (FCE-IC), the Administrative Leadership (AL-IC), and the Inclusive Policy and Practice (IPP-IC). For each structural component of MTSS, a syllabus construction *Implementation Level* score of 0 would be assigned if no mention of the component appears in the syllabus or if the component is mentioned without supporting activities. The same scoring standard applies to each of the essential support domain ICs.

In all cases, an *Implementation Level* score of 1 is assigned if the syllabus contains at least one of the following: reading, test, lecture/presentation, discussion, modeling/demonstration, or quiz. To earn a score of 2, the syllabus needs to contain one item from level 1, plus one item from the following list: observation, project/activity, case study, or lesson plan study. For a score of 3, the syllabus needs to contain at least one item from each of levels 1 and 2, plus at least one item from the following list: tutoring, small group student teaching, or whole group internship. Each of the syllabus requirements detailed under each scoring level has been drawn from evidence-based best practices disseminated through the literature of professional personnel preparation practices.

Implications for Specialized Education

The importance of MTSS coupled with UDL cannot be overestimated. Tiered arrangements within whole school applications rather than isolated, single classroom practice hold the potential to allow progress toward the phasing out of self-contained environments specific to particular subgroups such as special education, English learners, and gifted. In so doing, they enable a more equitable distribution of specialized supports and services (Waitoller & Kozleski, 2013). Furthermore, they offer the potential to reduce inappropriate referrals to special education by addressing impediments to learning early in the context of general education (Sailor, 2012). The trade-off for moving away from specialized, self-contained instructional arrangements is, of course, more complex master scheduling. With effective

and efficient data-based decision-making associated with MTSS screening and progress monitoring, movement of students in and out of tiered grouping arrangements and various school spaces has implications for whole school space allocation, as well as utilization of school staffing arrangements.

The implications of ICs for special education are significant. MTSS coupled with UDL affords a cultural transformation at the level of schools (McCart & Miller, 2020). In addition, MTSS as innovative praxis is in steep ascension. Impelled, in part, by federal SIGs and by Institute of Educational Research (IES) projects, the demand for highly trained, new special education teachers, as well as for immediate professional learning opportunities for existing special educators to adapt to the new reality of whole school applications of MTSS, is extant. The ICs, as described in this article for MTSS, offer preservice teacher educators in universities and colleges, teacher residency labs, continuing education providers, and others a systematic procedure for developing course syllabi to begin to address this need.

Conclusion

MTSS is a rising star in educational innovation. Fueled by U.S. Department of Education grants to states and IHE Studies grants to researchers, fully integrated, tiered systems of educational supports and instructional intensity for academics, behavior, and social and emotional learning have put MTSS on track to be a top transformational practice in American schools. In this position paper, we presented information on MTSS targeted particularly to teacher and administrator educators that included the origins of MTSS, its present ongoing structure in application, and its recent expansion into the integration of mental health supports and services through social and emotional learning. Implications of schoolwide MTSS for inclusive education were examined, particularly with respect to the issue of more fully integrating students with extensive needs for extra support and services. The position advanced in this article arose from participation of IHE teacher educators and researchers in a large state project for scale-up of MTSS. The critical need for specialized MTSS preparation of new teachers and administrators arose in the context of the state scale-up effort, and a potentially helpful heuristic for IHE and other teacher/administrators, the IC, was presented with an example applied to MTSS.

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References

Algozzine, B., Morsbach Sweeney, H., Choi, J. H., Horner, R., Sailor, W., McCart, A. B., Satter, A., & Lane, K. L. (2016). Development and preliminary technical adequacy of the schoolwide integrated framework for transformation fidelity of implementation tool. *Journal of Psychoeducational Assessment*, *35*(3), 302–322. https://doi.org/0734282915626303

Artiles, A. J., & Kozleski, E. B. (2007). Beyond convictions: Interrogating culture, history, and power in inclusive education. *Language Arts*, *87*(4), 358–364.

Batsche, G. (2014). Multi-tiered system of supports for inclusive schools. In J. McLeskey, N. Waldron, F. Spooner, & B. Algozzine (Eds.), *Handbook of effective inclusive schools: Research and practice* (pp. 183–196). Routledge.

Billingsley, B., & Bettini, E. (2019). Special education teacher attrition and retention: A review of the literature. *Review of Education Research*, *89*(5), 697–744. https://doi.org/10.3102/0034654319862495

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better*. Harvard Education Press.

California Department of Education, Professional Learning Support Division. (2016). *Developing, aligning, and improving systems of academic and behavioral supports: Scaling up multi-tiered system of supports (MTSS) in California, request for applications*.

Carter, E. W., Asmus, J., Moss, C. K., Biggs, E. E., Bolt, D. M., Born, T. L., Brock, M. E., Cattey, G. N., Chen, R., Cooney, M., Fesperman, E., Hochman, J. M., Huber, H. B., Lequia, J. L., Lyons, G., Moyseenko, K. A., Riesch, L. M., Shalev, R. A., Vincent, L. B., & Weir, K. (2016). Randomized evaluation of peer support arrangements to support the inclusion of high school students with severe disabilities. *Exceptional Children*, *82*(2), 209–233. https://doi.org/10.1177/0014402915598780

Choi, J. H., McCart, A., Hicks, T., & Sailor, W. (2019). Analysis of mediating effect of school leadership on MTSS implementation. *The Journal of Special Education*, *53*(1), 15–27. https://doi.org/10.1177/0022466918804815

Choi, J. H., Meisenheimer, J. M., McCart, A. B., & Sailor, W. (2017). Improving learning for all students through equity-based inclusive reform practices: Effectiveness of a fully integrated schoolwide model on student reading and math achievement. *Remedial and Special Education*, *38*(1), 28–41. https://doi.org/10.1177/0741932516644054

Cole, C. M., Waldron, N., & Majd, M. (2004). Academic progress of students across inclusive and traditional settings. *Mental Retardation*, *42*(2), 136–144. https://doi.org/10.1352/0047-6765(2004)42<136:APOSAI>2.0.CO;2

Cooc, N. (2019). Do teachers spend less time teaching in classrooms with students with special needs? Trends from international data. *Educational Researcher*, *48*(5), 273–286. https://doi.org/0013189X19852306

Copeland, S. R., & Cosbey, J. (2008). Making progress in the general curriculum: Rethinking effective instructional practices. *Research and Practice for Persons with Severe Disabilities*, *34*(1), 214–227. https://doi.org/10.2511/rpsd.33.4.214

Cosier, M., Causton-Theoharis, J., & Theoharis, G. (2013). Does access matter? Time in general education and achievement for students with disabilities. *Remedial and Special Education*, *34*(6), 323–332. https://doi.org/10.1177/0741932513485448

Cushing, L. S., & Kennedy, C. H. (1997). Academic effects of providing peer support in general education classrooms on students without disabilities. *Journal of Applied Behavior Analysis*, *30*(1), 139–151. https://doi.org/10.1901/jaba.1997.30-139

Deno, S. L. (2005). Problem-solving assessment. In R. Brown-Chidsey (Ed.), *Assessment for intervention: A problem-solving approach* (pp. 10–40). Guilford Press.

Dessemontet, R. S., & Bless, G. R. (2013). The impact of including children with intellectual disability in general education classrooms on the academic achievement of their low-, average-, and high-achieving peers. *Journal of Intellectual and Developmental Disability*, *38*(1), 23–30. https://doi.org/10.3109/13668250.2012.757589

Dessemontet, R. S., Bless, G. R., & Morin, D. (2012). Effects of inclusion on the academic achievement and adaptive behaviour of children with intellectual disabilities. *Journal of Intellectual Disability Research*, *56*(6), 579–587. https://doi.org/10.1111/j.1365-2788.2011.01497.x

Dunlap, G., Sailor, W., Horner, R. H., & Sugai, G. (2009). Overview and history of positive behavior support. In W. Sailor, G. Dunlap, G. Sugai, & R. Horner (Eds.), *Handbook of positive behavior support. Issues in clinical child psychology*. Springer. https://doi.org/10.1007/978-0-387-09632-2_1

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, *82*(1), 405–432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Fletcher, J. (2010). Spillover effects of inclusion of classmates with emotional problems on test scores in early elementary school. *Journal of*

Policy Analysis and Management, *29*(1), 69–83. https://doi.org/10.1002/pam.20479

Francis, G., Blue-Banning, M., Turnbull, A. P., Hill, C., Haines, S. J., & Gross, J. M. S. (2016). Culture in inclusive schools: Parental perspectives on trusting family-professional partnerships. *Education and Training in Autism and Developmental Disabilities*, *51*(6), 281–293. www.jstor.org/stable/24827524

Fuchs, D., & Deshler, D. D. (2007). What we need to know about responsiveness to intervention (and shouldn't be afraid to ask). *Learning Disabilities Research & Practice*, *22*(2), 129–136. https://doi.org/10.1111/j.1540-5826.2007.00237.x

Fuchs, D., & Fuchs, L. S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly*, *41*(1), 93–99. www.jstor.org/stable/4151803

Fullan, M. (2007). *Leading in a culture of change*. John Wiley.

Fullan, M. (2015a). *Freedom to change: Four strategies to put your inner drive into overdrive*. John Wiley.

Fullan, M. (2015b). Leadership from the middle. *Education Canada*, *55*(4), 22–26.

Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process*. State University of New York Press.

Hicks, T., Sailor, W., & Choi, J. H. (2018, February 7–10). *Equity-based MTSS: A framework for inclusion* [Paper presentation]. Council for Exceptional Children, Tampa, FL.

Horner, R. H., Dunlap, G., Koegel, R. L., Carr, E. G., Sailor, W., Anderson, J., Albin, R. W., & O'Neill, R. E. (1990). Toward a technology of "nonaversive" behavioral support. *Journal of the Association for Persons With Severe Handicaps*, *15*(3), 125–132.

Horner, R. H., & McIntosh, K. (2016). Reducing coercion in schools: The impact of schoolwide positive behavioral interventions and supports. In T. Dishion & J. Snyder (Eds.), *The Oxford handbook of coercive relationship dynamics: Basic mechanisms, developmental process, and intervention applications* (pp. 330–340). Oxford University Press.

Individuals with Disabilities Education Act, 20 U.S.C. § 1400. (2004).

Israel, M., Ribuffo, C., & Smith, S. (2014d). *Universal design for learning innovation configuration: Recommendations for teacher preparation and professional development* (CEEDAR Document No. IC-7). http://ceedar.education.ufl.edu/tools/innovation-configurations

Kalambouka, A., Farrell, P., Dyson, A., & Kaplan, I. (2007). The impact of placing pupils with special educational needs in mainstream schools on the achievement of their peers. *Educational Research*, *49*(4), 365–382. https://doi.org/10.1080/00131880701717222

Kauffman, J. M., Hallahan, D. P., & Pullen, P. C. (2017). *Handbook of special education*. Routledge.

Kurth, J. A., Lyon, K., & Shogren, K. (2015). Supporting students with severe disabilities in inclusive schools: A descriptive account from schools implementing inclusive practices. *Research & Practice for Persons with Severe Disabilities*, *40*(4), 261–274. https://doi.org/10.1177/1540796915594160

Kurth, J. A., & Mastergeorge, A. M. (2010a). Academic and cognitive profiles of students with autism: Implications for classroom practice and placement. *International Journal of Special Education*, *25*(2), 8–14.

Kurth, J. A., & Mastergeorge, A. M. (2010b). Individual education plan goals and services for adolescents with autism: Impact of age and educational setting. *The Journal of Special Education*, *44*(3), 146–160. https://doi.org/10.1177/0022466908329825

Kurth, J. A., Morningstar, M. E., & Kozleski, E. B. (2014). The persistence of highly restrictive special education placements for students with low-incidence disabilities. *Research and Practice for Persons with Severe Disabilities*, *39*(3), 227–239. https://doi.org/10.1177/1540796914555580

Lane, K., Oakes, W. P., Cantwell, E. D., & Royer, D. J. (2016). *Building and installing comprehensive, integrated, three-tiered (Ci3T) models of prevention: A practical guide to supporting school success*. https://books.apple.com/us/book/building-installing-comprehensive/id1171269209?mt=13

Leko, M. M., & Roberts, C. A. (2014). How does professional development improve teacher practice in inclusive schools? In J. McLeskey, N. Waldron, F. Spooner, & B. Algozzine (Eds.), *Handbook of effective inclusive schools: Research and practice* (pp. 43–54). Routledge.

McCart, A. B., & Miller, D. (2020). *Leading through equity-based MTSS for all students*. Corwin.

McCart, A. B., Sailor, W. S., Bezdek, J. M., & Satter, A. L. (2014). A framework for inclusive

educational delivery systems. *Inclusion*, *2*(4), 252–264. https://doi.org/10.1352/2326-6988-2.4.252

McIntosh, K., & Goodman, S. (2016). *Integrated multi-tiered systems of support: Blending RTI and PBIS*. Guilford Publications.

McLeskey, J., & Waldron, N. L. (2007). Making differences ordinary in inclusive classrooms. *Intervention in School and Clinic*, *42*(3), 162–168. https://doi.org/10.1177/10534512070420030501

McLeskey, J., Waldron, N. L., So, T. S. H., Swanson, K., & Loveland, T. (2001). Perspectives of teachers toward inclusive school programs. *Teacher Education and Special Education*, *24*(2), 108–115. https://doi.org/10.1177/088840640102400205

McLeskey, J., Waldron, N. L., Spooner, F., & Algozzine, B. (Eds.). (2014). *Handbook of effective inclusive schools: Research and practice*. Routledge.

McMaster, K. L., & Fuchs, D. (2016). Classwide intervention using peer-assisted learning strategies. In S. Jimerson, M. Burns, & A. VanDerHeyden (Eds.), *Handbook of response to intervention* (pp. 253–268). Springer.

Mijares, A. (2017). *New system of support contributes to student success*. EdSource. https://edsource.org/2017/new-system-of-support-contributes-to-student-success/587309

Miller, M. (2013, June 16–19). *Everyone has a role: Whole system engagement maximizes collaboration* [Paper presentation]. The XXIV ISPIM Conference–Innovating in Global Markets: Challenges for Sustainable Growth in Helsinki, Finland. https://www.pnodn.org/Resources/Documents/Speaker%20Resources/Everyone-has-a-role_Michelle-Miller_ISPIM-June%202014.pdf

Morningstar, M. E., Kurth, J. A., & Johnson, P. E. (2017). Examining national trends in educational placements for students with significant disabilities. *Remedial and Special Education*, *38*(1), 3–12. https://doi.org/10.1177/0741932516678327

Morsbach Sweeney, H., Horner, R., Algozzine, B., Lane, K., Roger, B., Choi, H., McCart, A., & Sailor, W. (2014). *SWIFT fidelity of implementation tool* (Version 1.6). SWIFT Center.

National Comprehensive Center for Teacher Quality. (2011). *Innovations configurations: Guidelines for use in institutions of higher education and professional development evaluation*.

Richardson, V., Anders, P., Tidwell, D., & Lloyd, C. (1991). The relationship between teachers' beliefs and practices in reading comprehension instruction. *American Educational Research Journal*, *28*(3), 559–586. https://doi.org/10.3102/00028312028003559

Rojewski, J. W., Lee, I. H., & Gregg, N. (2013). Causal effects of inclusion on postsecondary education outcomes of individuals with high-incidence disabilities. *Journal of Disability Policy Studies*, *25*(4), 210–219. https://doi.org/10.1177/1044207313505648

Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. Association for Supervision and Curriculum Development.

Roy, R., & Hord, S. M. (2004). Innovation configurations chart a measured course toward change. *Journal of Staff Development*, *25*(2), 54–58.

Ruijs, N. M., & Peetsma, T. T. D. (2009). Effects of inclusion on students with and without special educational needs reviewed. *Educational Research Review*, *4*(2), 67–79. https://doi.org/10.1016/j.edurev.2009.02.002

Ruijs, N. M., Van der Veen, I., & Peetsma, T. T. (2010). Inclusive education and students without special educational needs. *Educational Research*, *52*(4), 351–390. https://doi.org/10.1080/00131881.2010.524749

Ryndak, D. L., Jackson, L. B., & White, J. M. (2013). Involvement and progress in the general curriculum for students with extensive support needs: K–12 inclusive-education research and implications for the future. *Inclusion*, *1*(1), 28–49. https://doi.org/10.1352/2326-6988-1.1.028

Ryndak, D. L., Ward, T., Alper, S., Montgomery, J. W., & Storch, J. F. (2010). Long-term outcomes of services for two persons with significant disabilities with differing educational experiences: A qualitative consideration of the impact of educational experiences. *Education and Training in Autism and Developmental Disabilities*, *45*(3), 323–338. www.jstor.org/stable/23880107

Sailor, W. (2009). *Making RTI work: How smart schools are reforming education through schoolwide response-to-intervention*. John Wiley.

Sailor, W. (2012). *National center on schoolwide inclusive school reform: The SWIFT center* (Grant No. H326Y120005). Office of Special Education Programs, U.S. Department of Education.

Sailor, W. (2017). Equity as a basis for inclusive educational systems change. *Australasian Journal of Special Education*, *41*, 1–17. https://doi.org/10.1017/jse.2016.12

Sailor, W., Doolittle, J., Bradley, R., & Danielson, L. (2009). Response to intervention and positive behavior support. In W. Sailor, G. Dunlap, G. Sugai, & R. Horner (Eds.), *Handbook of Positive Behavior Support* (pp. 729–753). Springer.

Sailor, W., & McCart, A. B. (2014). Stars in alignment. *Research & Practices for Persons with Severe Disabilities*, *39*(1), 55–64. https://doi.org/10.1177/1540796914534622

Sailor, W., McCart, A. B., & Choi, J. H. (2018). Reconceptualizing inclusive education through multi-tiered system of support. *Inclusion*, *6*, 2–18. https://doi.org/10.1352/2326-6988-6.1.3

Sailor, W., Satter, A., Woods, K., McLeskey, J., & Waldron, N. (2017). *School improvement through inclusive education*. Oxford Bibliographies. https://doi.org/10.1093/OBO/9780199756810-0191

Satter, A., Meisenheimer, J., & Sailor, W. (2019). Equity and inclusivity in education. In M. J. Schuelka, C. J. Johnstone, G. Thomas, & A. J. Artiles. (Eds.), *The SAGE handbook of inclusion and diversity in education* (pp. 133–144). SAGE.

Schaefer, J. M., Cannella-Malone, H. I., & Carter, E. W. (2016). The place of peers in peer-mediated interventions for students with intellectual disability. *Remedial and Special Education*, *37*(6), 345–356. https://doi.org/10.1177/0741932516629220

Shogren, K., McCart, A., Lyon, K., & Sailor, W. (2015). All means all: Building knowledge for inclusive schoolwide transformation. *Research & Practice for Persons With Severe Disabilities*, *40*, 173–191. https://doi.org/10.1177/1540796915586191

Sindelar, P. T., Adams, A. J., & Leko, C. D. (2014). How can teacher education improve effective inclusive schools? In J. McLeskey, N. L. Waldron, F. Spooner, & B. Algozzine (Eds.), *Handbook of effective inclusive schools: Research and practice* (pp. 55–66). Taylor & Francis.

Sugai, G., & Horner, R. H. (2009). Responsiveness-to-intervention and school-wide positive behavior supports: Integration of multi-tiered system approaches. *Exceptionality*, *17*(4), 223–237. https://doi.org/10.1080/09362830903235375

Sullivan, A. L., Abplanalp, S., Jorgensen, J., Kozleski, E., & King-Thorius, K. (2014). Leadership for transforming districts into inclusive systems. In E. B. Kozleski & K. King-Thorius (Eds.), *Ability, equity, and culture: Sustaining inclusive urban education reform* (pp. 174–198). Teachers College Press.

Test, D. W., Mazzotti, V. L., Mustian, A. L., Fowler, C. H., Kortering, L., & Kohler, P. (2009). Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development for Exceptional Individuals*, *32*(3), 160–181. https://doi.org/10.1177/0885728809346960

Waitoller, F. R., & Kozleski, E. B. (2013). Working in boundary practices: Identity development and learning in partnerships for inclusive education. *Teaching and Teacher Education*, *31*, 35–45. https://doi.org/10.1016/j.tate.2012.11.006

Watkins, L., O'Reilly, M., Kuhn, M., Gevarter, C., Lancioni, G. E., Sigafoos, J., & Lang, R. (2015). A review of peer-mediated social interaction interventions for students with autism in inclusive settings. *Journal of Autism and Developmental Disorders*, *45*(4), 1070–1083. https://doi.org/10.1007/s10803-014-2264-x

Wehmeyer, M. L. (2006). Beyond access: Ensuring progress in the general education curriculum for students with severe disabilities. *Research and Practice for Persons with Severe Disabilities*, *31*(4), 322–326. https://doi.org/10.1177/154079690603100405

White, J., & Weiner, J. S. (2004). Influence of least restrictive environment and community based training on integrated employment outcomes for transitioning students with severe disabilities. *Journal of Vocational Rehabilitation*, *21*, 149–156.

Woodman, A. C., Smith, L. E., Greenberg, J. S., & Mailick, M. R. (2016). Contextual factors predict patterns of change in functioning over 10 years among adolescents and adults with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *46*(1), 176–189. https://doi.org/176-189.10.1007/s10803-015-2561-z

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