Including College and Career Readiness Within a Multitiered Systems of Support Framework

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Current practices of college and career readiness (CCR) emerged from within secondary school reform efforts. During a similar timeframe, evidence-based schoolwide interventions—positive behavioral interventions and supports (PBIS) and response to interventions (RTI)—were developed, first targeting elementary initiatives and then translated to secondary schools. We provide an overview of a recently established CCR framework underscoring both academic and nonacademic factors necessary for student success. To operationalize CCR approaches within secondary schools, an effort must be made to utilize existing interventions and strategies as well as data-informed efforts included within multitiered systems of support (MTSS). Therefore, we examine how CCR can be extended within secondary MTSS approaches and extend current methods by recommending measures aligning CCR elements within essential data-based decision making and fidelity of implementation tenets of MTSS. By embedding CCR within established MTSS approaches, improved post-school outcome for all students, including those with disabilities, can be achieved.

Keywords: *adolescence, career development, college readiness, qualitative research, special education, student behavior/attitude, student cognition*

PREPARING students for graduation has long been a priority of American high schools; however, over the past decade, this focus has shifted away from solely high school graduation to promoting students' successful entry into postsecondary education and the workforce (Dougherty & Lombardi, 2016; Fowler et al., 2014; U.S. Department of Education, 2012). As such, high school educators face a daunting challenge to prioritize academic and nonacademic elements and personalize learning to meet the individual needs of students, particularly learners with disabilities. In many respects, improving postsecondary outcomes for youth with disabilities requires engaging all secondary staff, including general and special educators, through schoolwide efforts. To date, while the expansion of multitiered systems of support (MTSS) within secondary schools involves primarily academic and behavioral support, adding a college and career readiness (CCR) focus may provide an opportunity to merge academic, behavioral, and nonacademic factors supporting students not only to complete high school but to be prepared for postsecondary education and long-term careers.

The purpose of this paper is to propose a framework for extending secondary school reform by incorporating research and evidence-based practices involving both general and special education to promote CCR for learners with disabilities. Given the emerging implementation of schoolwide MTSS in secondary schools, we first introduce MTSS and describe implementation of two evidence-based approaches initially designed for elementary schools (i.e., response to intervention [RTI] and positive behavior interventions and supports [PBIS]). Next, we define research associated with CCR, a common lexicon used throughout secondary education policies and practices and highlight an emerging framework of CCR. We then provide examples of embedding CCR into MTSS to improve post-school outcomes not only for all students but particularly those with disabilities. Finally, we make recommendations to measure fidelity of implementation.

Multitiered Systems of Support in Secondary Schools

MTSS frameworks typically comprise several principles: (a) providing schoolwide supports for students, staff, and family members; (b) using data for decision making and problem solving; (c) creating multilevel prevention systems to increase student academic skills and improve behavior;

(d) implementing screening and progress monitoring; and (e) ensuring a continuum of evidence-based practices and interventions across increasingly intensive supports, including universal, targeted, and intensive tiers of support (D. Fuchs & Fuchs, 2006; National Center on Response to Intervention, 2010; Sugai, 2012). MTSS approaches were developed initially as elementary initiatives, and as would be expected, the most established of these, RTI (RTI Action Network, n.d.) and PBIS (Sugai et al., 2010), have gained traction within secondary schools. Both RTI and PBIS are considered schoolwide frameworks promoting interventions and supports accessible to all students while ensuring targeted and intensive academic and behavioral interventions to those in need, including learners with disabilities (D. Fuchs & Fuchs, 2006; Sugai, 2012). In the next section, the use of RTI and PBIS in secondary schools is explored as well as the unique contextual influences needed if MTSS is to be successfully infused into secondary schools (Danielson, Roberts, & Scala, 2010).

Response to Intervention

RTI is a multilevel prevention approach that maximizes academic achievement and reduces problem behaviors. RTI relies on data to identify, support, and monitor student learning needs by providing increasingly more intensive evidence-based interventions. Essential components include: (a) providing high-quality, scientifically based classroom instruction; (b) ongoing student screening, assessment, and progress monitoring; (c) multitiered interventions and problem-solving approaches; and (d) family involvement (D. Fuchs & Fuchs, 2006; RTI Action Network, n.d.). RTI approaches in high schools are relatively nascent, occurring primarily as districts and states scale up these initiatives from elementary to middle and high school settings. Emergent research indicates RTI implemented within secondary schools can influence student academic and behavioral outcomes, but only when certain adjustments to secondary infrastructures are made (Stepanek & Peixotto, 2009). Factors previously identified as necessary for high school implementation of RTI are also associated with secondary school reforms, such as transforming school climate, reorganizing secondary infrastructures (e.g., smaller learning communities, flexible scheduling), reconsidering graduation requirements, and aligning RTI efforts within existing district initiatives (Danielson et al., 2010).

Unfortunately, research has identified concerns when RTI is launched wholescale without carefully considering unique characteristics of secondary schools. This is especially troubling given reported limited use of evidence-based interventions, especially at Tier 1 among secondary educators (Johnson & Smith, 2008). Meanwhile, others have found substantial lack of knowledge about progress monitoring among secondary faculty (Sansosti, Telzrow, & Notemeyer,

2010), and secondary school leaders have noted that scheduling and structural factors, including time for collaborative planning and professional development, were significant barriers to successful implementation of RTI (Samuels, 2009). Finally, researchers concerned with adolescent learning and student engagement have argued for broader, youth-driven approaches to secondary school success (Lawson & Lawson, 2013).

While distinguishing between elementary and secondary RTI efforts has occurred, discussions have predominantly centered on single interventions (e.g., reading, math) without considering the larger context of success after high school (L. S. Fuchs, Fuchs, & Compton, 2010; Vaughn & Fletcher, 2010). Increasingly, states and districts are blurring RTI's emphasis on individual academic assessment, intervention, and data-based decisions with terminology more closely associated with multitiered instructional delivery models (Berkeley, Bender, Peaster, & Saunders, 2009). For these reasons, considering how RTI is operationalized within secondary schools as an essential MTSS approach affords the opportunity to make stronger linkages to broader understandings of adolescent learning and engagement. Similar to RTI, the recent expansion of PBIS in high schools exemplifies a shift toward secondary systems reform, as described next.

Positive Behavioral Interventions and Supports

PBIS is an evidence-based, schoolwide framework utilizing multiple tiers of social and behavioral supports designed to improve school culture and leading to improved student behavioral outcomes. To do this, PBIS promotes consistent schoolwide behavioral expectations along with increasingly intensive interventions using research-based strategies for effective, team-based implementation. Employing PBIS in secondary schools requires adherence to established contextual factors and therefore can specifically activate and leverage adolescent engagement.

Well-established evidence exists acknowledging PBIS as effective in elementary schools for reducing problem behavior (Bradshaw, Koth, Thorton, & Leaf, 2009; Horner, Sugai, Todd, & Lewis-Palmer, 2005; Morrissey, Bohanon, & Fenning, 2010). However, there is a paucity of research at the secondary level, as noted in one study tracking 19,054 schools implementing PBIS where only 2,403 (12.6%) were high schools (Flannery, Frank, Kato, Doren, & Fenning, 2013). Interestingly, fidelity of implementation data associated with high schools in this particular study indicated that to be effective, compared with elementary schools, PBIS took longer to implement and required additional personnel. Similar to results among secondary schools implementing RTI (Danielson et al., 2010; L. S. Fuchs et al., 2010), PBIS researchers have stressed the influence of secondary school contexts on effectiveness.

To some extent, PBIS is further advanced in promoting secondary implementation, and emerging evidence suggests meaningful connections can take place between PBIS approaches and certain facets of preparing secondary students to be college and career ready. For example, Freeman and colleagues (2016) found preliminary positive relationships between PBIS implementation and high school dropout prevention among 883 high schools across 37 states. In their study, PBIS had positive effects on student behavior and attendance, which are well-established dropout risk indicators (Gleason & Dynarski, 2002; Rumberger, 2001). However, and of particular note, short-term PBIS interventions did not have a significant impact on decreasing dropout rates (Freeman et al., 2016), but rather, progress toward school completion strengthened over time. Such findings substantiate conclusions that supporting PBIS in secondary schools requires long-term and unique approaches situated within adolescent engagement to ensure school completion leading to positive post-school outcomes.

Summary

Positive results are emerging when MTSS strategies such as RTI and PBIS are implemented with fidelity in secondary schools. However, research also cautions that establishing RTI and PBIS in high schools requires careful consideration of contextual and systems factors related to both adolescent learners and the structural dynamics of secondary schools. Notably missing from current discourse related to MTSS, RTI, and PBIS is a focus on promoting secondary and post-secondary success, such as is the case with policy and practice connected to college and career readiness. To date, a systematic examination of the relationship between MTSS frameworks and CCR in secondary schools has just begun. In particular, a cornerstone of MTSS decision making is missing, that is, data systems in place representing secondary influences and post-school outcomes. From a secondary perspective, this requires considering how to incorporate academic, behavioral, and adolescent influences to support school completion and prevent student failure—a fundamental premise of MTSS to not only complete high school but to be prepared for postsecondary education and careers. In the next section, we will define several critical aspects of CCR and posit expanding an existing framework specifically applied to youth with disabilities.

Defining College and Career Readiness

Current CCR policy and practice initiatives were the result of efforts leading to reification of the Common Core State Standards, known as the CCSS (National Governors Association for Best Practices & Council of Chief State School Officers, 2010). It is important to clarify that CCSS emphasizes CCR predominantly through an academic lens. It is now recognized that CCR goes beyond core academics to essential nonacademic skills (e.g., critical thinking, learning strategies, self-monitoring, social skills), along with contextual factors influencing student motivation toward school engagement (Krauss, Pittman, & Johnson, 2016). As such, educators face the daunting challenge of prioritizing academic and nonacademic elements of CCR while personalizing student learning to meet the individual needs of all students, including students at risk of school failure and those with disabilities.

There is growing evidence contending that academic measures do not sufficiently align with the set of knowledge and skills needed by either first-year college students (Brown & Conley, 2007) or entry-level employment settings (Brand & Valent, 2013). Moreover, the College and Career Readiness and Success Center posits three broad domains, including academic knowledge, career pathway knowledge, and skills for lifelong learning (American Institutes for Research, 2014). Nonacademic factors are now being closely aligned with CCR, such as student dispositions and behaviors enabling engagement, as contributing to academic knowledge and skill gains (Lawson & Lawson, 2013).

Examining extant CCR models reveals similarities and differences. One well-established framework describes four keys occurring concurrently for promoting college and career readiness: (a) content knowledge, (b) key cognitive strategies, (c) learning strategies, and (d) transition knowledge and skills (Conley, 2010). Similarly, Farrington et al. (2012) acknowledged the critical role of student engagement by specifying academic and nonacademic indicators impacting high school performance. Unique to their work, Farrington and colleagues describe a progression of influences, beginning with psycho-social beliefs aligned to academic mindsets (e.g., sense of belonging, self-efficacy) as the entry point to student learning. Student beliefs then impact social engagement, academic perseverance, and learning strategies, culminating in positive academic behaviors (e.g., going to class, doing homework). It is these positive academic behaviors that have been found most closely associated with academic performance among secondary students (Allensworth & Easton, 2007).

In general, CCR incorporates core academic and nonacademic skills (e.g., critical thinking, metacognition, self-monitoring, study skills; Krauss et al., 2016), student motivation and engagement (Lawson & Lawson, 2015; Savitz-Romer, 2013), and knowledge of postsecondary requirements (Conley, 2012). Therefore, emergent CCR models encompass both student academic skills as an essential foundation but clearly articulate critical nonacademic skills, opportunities, and contexts necessary for ensuring readiness for life after high school (Nagaoka, Farrington, Ehrlich, & Heath, 2015).

Implications for Students With Disabilities

Specific to youth with disabilities and parallel to the emergence of CCR, transition planning and service requirements

under the Individuals with Disabilities Improvement Education Act (IDEA) have promoted successful transitions to postsecondary education and training, employment, and independent living. Secondary special education and transition stakeholders have advanced a wide array of evidence-based interventions that facilitate positive post-school outcomes among students with disabilities (cf. Test, Fowler, et al., 2009). Unfortunately, rather than supporting convergence of CCR and transition practices, such policies and practices at best work alongside each other and at worst, lead to conflicting and contradictory efforts (Morningstar, Bassett, Kochhar-Bryant, Cashman, & Wehmeye, 2012). For example, career education programs, community-based experiential learning, social-emotional development, and behavioral interventions often are developed separately for adolescents with and without disabilities (Dougherty & Lombardi, 2016). In many respects, improving postsecondary outcomes for youth requires engaging all secondary staff, including general and special educators. Given that most youth with disabilities are primarily served within general education settings (McLeskey, Landers, Williamson, & Hoppey, 2012), operationalizing CCR within secondary MTSS requires broader considerations, including student and contextual influences.

Distinct student-level factors addressing the complexities of adolescent learning and development associated with CCR may not be systematically taught or measured sufficiently. For certain subpopulations, such as students with disabilities, the course failure and dropout rates are nearly twice as high as students in the general education population (U.S. Department of Education, 2012). Unfortunately, students with disabilities are also less likely to receive academically rigorous secondary curricula (Gregg, 2007). This is troubling given recent evidence that students with disabilities are more likely to pursue two- and four-year postsecondary degrees if they receive instruction in general education classrooms in core subjects (Lombardi, Doren, Gau, & Lindstrom, 2013). Given such disparities, it very well could be that students with disabilities as well as other at-risk groups may not have equitable access to CCR opportunities or expectations. We would argue that rather than redesigning or disrupting existing secondary initiatives, incorporating CCR approaches within existing MTSS efforts would ensure critical aspects of adolescent engagement could lead to essential college and career competencies. The expansion of MTSS already occurring in secondary schools provides an opportunity to merge systems and approaches, particularly given the past decade of focused attention on CCR. Importantly, this proposition does not entail creating a new system from the ground up but rather leveraging existing systems and practices to promote access to CCR opportunities that can impact all students, especially those with disabilities.

Using a College and Career Readiness Framework

Recently, Morningstar, Lombardi, Fowler, and Test (2017) recommended an organizing CCR framework for students with disabilities emphasizing academic and non-academic factors. This framework emerged iteratively through a review of existing CCR education research using models and research described previously as well as focus groups with state-level education leaders responsible for secondary special education as well as other initiatives targeting at-risk youth (e.g., dropout prevention systems). While intended to promote CCR for secondary students with disabilities, this framework was predicated on critical research from secondary education and school reform described in the prior section as well as transition and secondary special education literature. The six domains and defining subcategories are described next.

Academic Engagement

Academic engagement relies on behaviors and skills needed to be productive and develop work habits transferable to college and career settings. Three areas of academic engagement were identified by Morningstar et al. (2017): cognitive/content, knowledge structures, and behaviors. Cognitive engagement refers to linking ideas and organizing concepts across and within content, thereby making knowledge relevant and meaningful. Knowledge structures go beyond acquisition of facts to emphasize varying levels of challenge leading to complexity and depth of knowledge. Behavioral engagement is evidenced by how students engage in school (e.g., regular attendance, class participation, completing homework assignments) so that students understand the connection between everyday behaviors and long-term goals (Fredricks, Blumenfeld, & Paris, 2004).

Mindsets

Mindsets support persistence toward personal growth (Dweck, 2008) through connections to school likely to increase trust, academic risks, learning from mistakes, and connecting to individual life circumstances. Fostering a growth mindset is often linked to perseverance (Duckworth, Peterson, Matthews, & Kelly, 2007). While mindset is nonacademic by definition, evidence links the concept to academic performance for adolescents with and without disabilities (Lombardi, Rifenbark, & Freeman, 2017). Additionally, mindsets include components most often associated with self-determination for students with disabilities (e.g., decision making, goal setting, self-monitoring; Wehmeyer et al., 2012) necessary for adult success.

Learning Processes

Long noted for including skills and routines to access academic content (Deshler et al,. 2001), learning processes target academically related skills (e.g., test taking, note taking, time management). Evidence indicates first-generation

college students and adolescents with disabilities participating in high school learning strategy programs reported greater levels of confidence in managing college coursework (Watt, Johnston, Huerta, Mendiola, & Alkan, 2008). Morningstar et al. (2017) identified two critical indicators: (a) accessing academic content (e.g., test taking, note taking, organizational skills) and (b) engaging in learning (e.g., collaboration/group skills, nonverbal communication, listening, speaking).

Critical Thinking

Adapted from a cognitive strategies framework (Lombardi, Conley, Seburn, & Downs, 2013), critical thinking is defined as occurring across post-school academic, employment, and living settings. Given the importance for college students and entry-level employees to quickly master problem-solving skills, states and districts increasingly are requiring direct evidence of critical thinking through student senior projects or culminating portfolios (Paul, 2014). Considering how critical thinking is exhibited and applied to future environments is an essential characteristic of college and career readiness.

Interpersonal Engagement

The fifth CCR domain was influenced by research emphasizing social emotional development as well as school and community engagement (e.g., communication, empathy, social awareness, respect for diversity; Morningstar et al., 2017). Interpersonal skills linked to school success are foundational in preparing students for postsecondary education and the workforce. As evidenced by research, students with disabilities who have had positive social experiences during high school are two to three times more likely to be employed after high school and are more actively engaged with their communities, families, and friends (McConnell et al., 2013). Furthermore, positive social interactions between employees with disabilities and coworkers have been associated with greater job retention (Roberts et al., 2010).

Transition Competencies

The final domain in the CCR framework developed by Morningstar et al. (2017) targets planning for life after high school. Transition competencies emphasize critical processes underlying the transition to postsecondary education and careers (e.g., college and job applications, developing resumes). Early planning is an essential aspect in preparing students for the demands of college (e.g., faculty and peer expectations, dormitory living, recreation and leisure) and career environments (e.g., professionalism, interviewing, coworker/supervisor relationships). Within a distinct subgroup of adult roles and responsibilities, specific supports and opportunities are necessary for students with disabilities

to access and develop skills such as financial literacy, accessing community resources, health and wellness, transportation, and independent living (Morningstar et al., 2017).

Summary

While multidimensional and comprehensive, the CCR framework described here concentrates on student skills and dispositions indicative of increased engagement in secondary schools, thereby implying a greater likelihood of being college and career ready. However, such concepts do not sufficiently address how education services ensure students are engaged and prepared for college and careers. In the next section, we consider how to incorporate CCR within explicit systemswide efforts operationalized within MTSS.

Toward Including CCR Within an MTSS Framework

Previously, proponents advocated for merging state-level MTSS structures with special education and transition services to ensure students with disabilities transition from high school to adulthood (Morningstar, Bassett, et al., 2012). It is essential to keep in mind that schools continue to utilize the data-based decision-making procedures already associated with MTSS to ensure students continue to be screened and identified when additional supports (Tiers 2 and 3) are needed. Furthering these conjectures, we offer selected examples of how secondary schools can utilize existing efforts as well as consider new strategies associated with CCR across multiple tiers of supports, facilitating post-school success for not only students with disabilities but potentially all students. Due to space limitations, these examples focus on two CCR domains, with Table 1 offering other examples of CCR strategies and interventions across the three tiers of support.

Embedding Three Tiers of Supports to Promote Mindsets

As would be expected, Tier 1 practices are universal and provided to all students, including students with disabilities who would be included in Tier 1 instruction, service, and supports related to the CCR domain, mindsets. As noted in Table 1, individual learning plans are being used in many high schools as an initiative within career and technical education that responds to education and workforce development efforts. Individual learning plans are launched in ninth grade with students to plan coursework tied to specific career pathways (Skaff, Kemp, Sternesky McGovern, & Fantacone, 2016). For the most part, and in conjunction with the development of learning plans, students participate in career assessment and awareness. Individual learning plans have been shown to promote strong connections between students' high school course selection and future career and postsecondary goals (Phelps, Durham, & Willis, 2011).

While such career planning processes may be extended to students with disabilities, it is not uncommon that certain subpopulations of students with disabilities (e.g., those with more extensive support needs, those in separate settings and classrooms) may be left out of an effective schoolwide Tier 1 planning approach. Sometimes it may be due to competing priorities or understandings of federal requirements, such as those associated with the Individualized Education Program (IEP). From a CCR perspective, the individualized nature of the IEP more closely aligns to a Tier 2 or 3 strategy and should not block student access to the effective efforts associated with individual learning plans. Using this example, learning plans are *first* incorporated into all student planning procedures, being modified and adapted for students with more significant learning and support needs.

Students at risk of not completing school or those with more targeted support needs may access Tier 2 intervention associated with mindsets through Check-In Check-Out (Crone, Hawken, & Horner, 2010). This intervention supports critical skills and opportunities pertaining to mindsets in that students receive supplemental supports to increase positive behaviors through interpersonal mentoring and social problem solving. This Tier 2 small group intervention can be used with any student needing more intensive academic and/or behavioral supports. It is an evidence-based intervention utilizing multiple components: (a) increased positive adult contact through a mentor, (b) embedded social skills training, (c) frequent feedback, (d) home-school communication, and (d) reinforcement contingent on meeting behavioral goals (Everett, Sugai, Fallon, Simonsen, & O'Keeffe, 2011). As would be expected within a CCR framework, Check-In Check-Out can be used to target student college and/or career goals that map on to their individualized learning plan and serves as a motivating force toward school engagement.

For students with disabilities who have been identified as needing special education services, a Tier 3 intervention associated with mindsets is the evidence-based self-directed IEP intervention. This intervention provides intensive small group and/or individualized supports to students with disabilities to learn the skills associated with not only planning for their transition to adulthood but to actually lead the IEP team meeting and self-monitor their progress toward their transition goals. Incorporated into this Tier 3 planning is a mandated element of the transition-focused IEP, identifying the courses of study associated with a student's long-term postschool goals (e.g., postsecondary education, employment, and independent living). This example allows all students, including those with disabilities, to engage in existing Tier 1 (individual learning plans), support certain students as needed with a Tier 2 (Check-In Check-Out) intervention, and provide specific students with Tier 3 (self-directed IEP) planning; all three levels of supports are associated with the mindsets CCR domain. It is not expected that every student receives all three levels of supports but that schools consider and plan for supports across all three tiers that can address outcomes associated with mindsets.

Embedding Three Tiers of Support for Learning Processes

Relevant to learning processes, many secondary school classrooms embed the use of Cornell Notes as a learning routine to access academic content (Donohoo, 2010). This learning strategy might be taught and used with all students in an academic class. As would be expected, those students with disabilities would also be taught the Tier 1 strategy, with additional accommodations, as needed (e.g., using word prediction software with an electronic version of the Cornell note-taking format). However, a Tier 2 support that fits within the learning processes CCR domain might be a separate, small group study skills class where students learn certain note-taking strategies as part of an effort to ensure students at risk or who have more intensive needs are supported to learn additional strategies for engaging in and accessing academic content. For example, school programs such as AVID (Advancement Via Individual Determination) are geared toward promoting college readiness for students from the academic middle and who may be from underrepresented student populations (*What Is AVID*, 2017). AVID incorporates an elective course for teaching college entry skills and academic survival skills (e.g., study skills, note taking, time management, college entrance exam preparation, etc.). This small group Tier 2 intervention addresses accessing and engaging in academic success.

Along the same vein, for Tier 3 intensive supports, peer mentoring programs can be implemented within general education classrooms to ensure all students access and engage with academic content, as is the core focus of the learning processes domain. Intensive and evidence-based programs such as classroom-wide peer tutoring (CWPT; Kamps, Barbetta, Leonard, & Delquadri, 1994) and peer-assisted learning strategies (PALS; Saenz, Fuchs, & Fuchs, 2005) have been shown as effective for meeting intensive support needs of students with disabilities. Unfortunately, these evidence-based models have not been implemented beyond middle schools, and further research is clearly needed (L. S. Fuchs et al., 2010). One secondary approach that does have research supporting effectiveness within high school is peer supports strategies (Carter, Cushing, & Kennedy, 2009). Emerging evidence indicates that peer supports promote academic learning and acquisition of embedded skills relevant to CCR (e.g., communication, problem solving) as well as increased social interactions among adolescents with and without disabilities (Carter, Sisco, Chung, & Stanton-Chapman, 2010).

Summary

The proposed approach of embedding CCR within MTSS in secondary school provides a vehicle for operationalizing

TABLE 1

College and Career Readiness Framework Examples by Multitiered Systems of Support (MTSS) Tiers

MTSS Tiers	Academic Engagement	Mindsets	Learning Processes	Critical Thinking	Interpersonal Engagement	Transition Competencies
Tier I	• Student-directed progress monitoring • Career report in language arts • SAT/ACT PLAN tests as component of district assessment • Advisory periods with content on career development • Enrollment in career and technical education • Parent communication	• Individual learning plans • Service learning opportunities • Schoolwide mentoring (adult and peer models) • Parent involvement specialists • School climate screeners and initiatives • Tracking extracurricular activities • Self-determination skills (goal setting, action planning)	• Study strategies instruction embedded within academics (e.g., Cornell notes) • Technology-enhanced learning • Project-based learning • Cooperative learning • Small group and centered based • Online courses	• Budgeting in mathematics • Civic responsibility discussion in social studies • Flipped classrooms (technology enhanced) • Peer critique and mentoring • Student portfolios • Emphasizing higher order thinking	• Peer mentoring/peer counselors • Suicide prevention programs • Alcohol and drug prevention programs • Schoolwide positive behavioral interventions and supports • Civic education	• Early career assessment • College planning with guidance counselors • Post-school tracking systems for all • Multiple pathways: 21st Century schools; Tech Prep • School-business partnerships • Job fairs, college fairs • Child care, health classes • Budgeting/finance courses and workshops
Tier II	• Early warning systems • Check-In/Check-Out • College placement exam practice • Co-teaching in core academics • Instructional accommodations • Academic progress monitoring • Afterschool tutoring	• Dropout prevention models (schoolwide and student-specific) • Self-monitoring/self-regulation instruction and supports • Outreach to hard-to-reach families • Parent advocate as liaison • Social skills and communication	• Study skills class and additional support (e.g., AVID, GEAR UP) • Accommodations for engagement (guided notes) • Assistive technology for access to content • Small group instruction in goal setting • Self-monitoring academic behaviors (homework)	• Expanded AP courses and academic monitoring • Summer workshops and classes • Service-learning applying academics to real-life events	• Social skills tutoring • Social emotional counseling groups • School outreach to hard-to-reach families • Home visits/parent training	• Career academies • Expanded practice with college placement exams • Elective courses in career development • Job club • School and community collaboration • Summer career internships and employment programs
Tier III	• School engagement interventions (Check & Connect) • Curricular and instructional supports provided in general education • Collaboration with related services personnel (counseling, social work) • Peer supports strategies • Access to communication systems • Embedding skills across content and contexts	• Self-directed Individualized Education Program (IEP) planning • Self-determination instruction and opportunities • Parent engagement in planning and IEP development • Cultural liaisons for families • Peer mentoring strategies for intensive social supports	• Visual supports for scheduling/organization • Peer supports in general education • Assistive technology for communication and learning • Intensive self-monitoring/self-regulation • Self-determination skills training for problem solving, goal setting, action planning	• Problem-solving skills embedded in academic, behavior, social context • Curricular and instructional supports provided in general education • Opportunities to practice and generalize across multiple settings	• Individual counseling sessions • Instruction in social pragmatics, communication, and interactions • Access to social communication supports (AAC) • Collaboration with outside agencies • Cultural liaisons for families • Social stories/social narratives • Peer mentoring supports for social engagement (e.g., Best Buddies)	• Person-centered planning • Wraparound services • Work-based learning opportunities (paid and unpaid) • Community-based transition programs • Parent engagement in post-school planning • Collaboration with adult services for post-school supports • Instruction and experiences for health, wellness, relationships, sexuality, financial literacy

essential CCR domains with critical support from school and district comprehensive systems. Incorporating CCR within MTSS does not change the central tenets necessary for effective provision of supports and services in schools (e.g., data-based decision making, evidence-based practices). In fact, the value added of CCR included within MTSS frameworks is the capacity for educators, administrators, and support staff to not only be fluent in data use and systematic applications but to acknowledge the critical role of adolescent engagement to the process. This may mean collecting relevant data throughout school experiences known to predict college and career preparation. As illustrated within this section, focusing on CCR within MTSS interventions and strategies has the potential to impact student success. However, similar to most effective MTSS models, such efforts require adherence to fidelity of implementation, as will be described next.

Ensuring Fidelity of Implementation

As secondary schools consider integrating CCR within MTSS, fidelity of implementation (FOI) of policies and practices must be considered. Operationally, FOI has been defined as a measure of the extent to which critical components of a program are delivered as intended, resulting in improvements to student outcomes over time (Blasé & Fixsen, 2013; Harn, Parisi, & Stoolmiller, 2013). These authors maintain that school personnel should measure fidelity early and often, especially as new practices are installed. Without well-defined measures of implementation, it can be difficult to ascertain if ineffective outcomes are due to poorly constructed programmatic components or insufficient implementation (Century, Rudnick, & Freeman, 2010).

Therefore, designing an FOI process to measure CCR within MTSS is another task that should be informed by established measures and methods. For the most part, when associated with a specific instructional practice or intervention (cf. O'Donnell, 2008), FOI is operationalized differently than for schoolwide programs (Blasé & Fixsen, 2013). Explicit methods for evaluating FOI of broad MTSS systems are less prevalent than fidelity measures for specific student-focused evidence-based methods, such as a reading or math intervention. More specifically, the literature on FOI of high school interventions such as PBIS are limited, with minimal emerging guidance (Flannery et al., 2013; Smith et al., 2016).

A validated instrument supporting implementation of broad MTSS-aligned framework is the SWPBIS Tiered Fidelity Inventory (TFI; Algozzine et al., 2014). The TFI is designed to measure alignment of schoolwide adherence to the core features of schoolwide PBIS (SWPBIS). School planning teams use the TFI to evaluate their implementation progress periodically throughout the school year to monitor implementation progress using data-based guidance. As noted previously, because PBIS is less likely to be occurring in secondary schools, use of the TFI in high schools is a critical goal for the future.

While the TFI is organized within an MTSS framework, it does not specifically focus on CCR. Currently, two tools do exist within secondary special education and transition for students with disabilities that could be adapted and merged within systemic MTSS measures: (a) Predictor Implementation School/District Self-Assessment (PISA; Rowe & Fowler, 2013) and (b) Quality Indicators of Exemplary Transition Programs-2 (QI-2; Morningstar, Gaumer-Erickson, Lattin, & Lee, 2012). These two instruments were initially designed as program evaluation measures to evaluate adherence to critical features and evidence-based practices and then implement change for identified gaps. However, their potential use toward evaluating fidelity of program-level implementation associated with CCR is evident.

First, the PISA includes 20 predictors of positive post-school outcomes for students with disabilities based on results from high-quality correlational research (Mazzotti et al., 2016; Test, Mazzotti, et al., 2009). This self-assessment could be adapted to assist secondary schools in identifying college and career services predictive of improved post-school outcomes. Next, the QI-2 could be used to identify effective practices and programs for supporting secondary students with disabilities to achieve post-school outcomes. The quality indicators are grouped into specific categories associated with transition to adulthood (i.e., planning, assessment, family and student involvement, curriculum and instruction, interagency collaboration, systems-level infrastructure). Neither instrument incorporates the critical MTSS feature of operationalizing supports across tiers and interventions.

In sum, while a specific measure of fidelity of implementation for integrating CCR within MTSS does not yet exist, there are several measures that closely align with certain elements of the overall approach that are worth considering for adaptations. There are some fidelity measures intended to be used schoolwide (SWPBIS), but they do not have a CCR focus; meanwhile, other measures map onto elements of CCR but were designed for students with disabilities who receive specific transition services (PISA, QI-2). A critical next step in the development of measures of fidelity will be to build on these existing measures, tailoring them to the needs of all students, by embedding CCR within an MTSS.

Concluding Comments

Operationalizing a CCR-focused MTSS approach can bridge the contextual factors unique to secondary schools and adolescent learners (Morningstar, Knollman, Semon, & Kleinhammer-Tramill, 2012). Therefore, the proposed integrated CCR approach goes beyond academic and behavioral

foci of most established multitiered methods (e.g., RTI, PBIS) by emphasizing student engagement and preparation for adult life as an essential component of in-school academic and behavioral success while at the same time preparing youth for college and careers. A critical distinction with this approach is that while RTI and PBIS are designed to support students to "get to graduation," they do not focus on postsecondary outcomes per se and are not sufficiently explicit in targeting critical CCR opportunities and experiences.

Our proposed framework integrates CCR and MTSS through a blended approach that unifies the best available evidence on academic and nonacademic factors with well-established methodologies for implementing MTSS. The proposed framework potentially enables secondary educators and researchers to collaborate with regard to data collection and analysis efforts, which then encourages testing and further refinement of the six-part CCR framework using empirical linkages within existing secondary MTSS efforts. Each element of the integrated CCR framework brings a distinct reference toward student-centered academic and nonacademic factors associated with short-term and intermediate outcomes (in-school learning engagement) as well as long-term outcomes (college and career success). The framework outlined herein promotes secondary school reform in which all students, including those with diverse learning needs, are included in school-wide college and career readiness efforts while ensuring benefit from multidisciplinary empirical literature (e.g., secondary special education, transition, RTI, MTSS). Ultimately, this approach has the potential to ensure high school is more meaningful and better prepares all students for adult life.

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