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Intensifying Interventions for Students With Emotional and Behavioral Difficulties: A Conceptual Synthesis of Practice Elements and Adaptive Expertise

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Abstract

We consider an emerging challenge in special education that involves the interplay between an emphasis on evidence-based practices (EBPs) and the need to provide individualized intensive interventions for students with significant emotional and behavioral problems. With the use of Multi-Tiered Systems of Support (MTSS), teachers are expected to implement standardized EBPs with fidelity. Yet, students with significant difficulties tend to have problems that reflect a complex set of changing factors that require carefully tailored and coordinated interventions that are adapted to students' ongoing dynamic needs. To address this issue, we discuss the concept of practice elements (PEs) as a foundation for identifying intervention strategies, and we consider how the concepts of adaptive expertise (AE) can help guide the selection of PEs and implementation and modification of multistrategy approaches to increase responsiveness to students with emotional and behavioral problems. Implications for service delivery and future research are considered.

Keywords

problem behavior, intensive intervention, practice elements, adaptive expertise, multitiered systems of support

Students with emotional and behavioral disorders (EBD) experience the most harmful outcomes of any student population with or without disabilities (King et al., 2019; Prince et al., 2018). This includes difficulties in the academic, behavioral, and social domains as well as postschool outcomes. The pervasiveness of negative outcomes underscores the interconnectedness of student behavior, educational performance, ecological, and social context factors operating as a system (Farmer et al., 2020). Although Multi-Tiered Systems of Support (MTSS) provides a framework to promote students' school success, evidence-based strategies to address the needs of youth with EBD are limited (Kern et al., 2015). The lack of effective strategies to support students with the most serious adjustment problems reflects the relative low number of students with EBD (<5% of the school population) and the fact that intervention development and validation efforts tend to center on universal (Tier 1) and selected (Tier 2) strategies using manualized programs designed to prevent rather than treat severe problems (Farmer, 2020; Wehby & Kern, 2014). Thus, there has been less focus on the creation and dissemination of targeted (Tier 3) interventions for students who require intensive support.

Several other factors may impact the effectiveness of targeted interventions for students with EBD. First, intervention intensification involves individualizing strategies to address specific characteristics and needs of students and the contexts in which they are served. This makes it necessary to go beyond standardized, scripted interventions and use data to guide the modification of strategies to address students' unique needs and circumstances (Maggin et al., 2016). Second, intensive emotional and behavioral difficulties are complex phenomena that tend to be multidetermined and reflect the contributions of factors within students, the classroom, and the broader ecological contexts in which students are embedded (Farmer et al., 2020; Sullivan et al., 2015). Interventions need to address multiple factors and developmental processes in a

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coordinated and systematic yet individualistic fashion without a clear blueprint (Sutherland, Farmer, et al., 2018). Third, intensive EBD reflect dynamic processes (Sutherland & Oswald, 2005). Interaction patterns may emerge in classrooms between students, their peers, and teachers that operate to elicit, reinforce, and maintain problem behavior (Gunter et al., 1994; Sutherland et al., 2008; Wehby et al., 1995). It is necessary to not only intervene with students, but also with interactional process and context factors that support students' behavior (Farmer et al., 2018; Trach et al., 2018).

Although researchers using rigorous experimental design have investigated effective strategies which can be implemented in a tiered (i.e., mostly Tiers 1 and 2) support system, the process of intensifying interventions for students with EBD must go beyond a highly controlled program and leverage ecological factors and developmental processes to guide day-to-day practices (Chorpita, 2019). We propose that intensive interventions should build upon a broad knowledge of core elements of effective evidence-based interventions that can be combined and adapted to address the multifaceted factors and developmental processes that contribute to and maintain students' emotional and behavioral difficulties. Individualizing interventions should be guided by both in-stream (real time) and structured data on developmental processes and ecological factors that support problem behaviors (Farmer et al., 2020; Maggin et al., 2016).

Dynamics and Challenges of Intervening With Problem Behavior

When students experience significant behavior difficulties, they may engage in behaviors detrimental to themselves and highly disruptive to the class. These behaviors impede instruction, evoke aggressive and antisocial behaviors from peers, create a climate of destruction and fear in the classroom, and contribute to violence and potentially serious physical harm (Borum, 2000; Farmer et al., 2016; Shores & Wehby, 1999). Sustained problem behaviors are associated with school dropout, antisocial and violent patterns, delinquency, mental health problems, adult criminality, and early death (Bergman et al., 2009; Cairns & Cairns, 1994; Lipsey & Derzon, 1998). However, such poor outcomes often occur when problem behavior is part of a system of correlated constraints reflecting complex transactions between students' academic, behavioral, and social problems and social ecological risks (Cairns & Cairns, 1994; Farmer et al., 2020).

Because of the imminent possibility of disrupted instruction and the likelihood of a climate that impedes learning and potentiates eventual harm to students and classmates, teachers may experience fear, anger, or urgency (Borum, 2000; Shores & Wehby, 1999). As a result, teachers may try to avoid students' behavioral escalation by engaging in a curriculum of noninstruction; that is, not involving the student in challenging instructional or social activities that may evoke problem behavior (Gunter et al., 1994).

To better address students' behavior difficulties, teachers can focus on three levels: the characteristics of students that contribute to their behavior; features within the classroom that elicit and sustain the behavior; and factors outside the classroom that find their way into the classroom and shape student capacity to regulate behavior and engage in instruction. Problems occurring in the dynamic system/process cannot be addressed with step-by-step interventions based on a standardized script. Such problems require expertise in using in-stream information to make adaptations to intervention, choosing intervention strategies which can be brought together in a coordinated fashion, and adapting strategies in relation to students' adaptive functioning across developmental domains of interest (Farmer et al., 2020; Sutherland, Farmer, et al., 2018).

In light of the complexity of intensifying interventions for students with EBD, special education teachers can serve as intervention specialists who assist in selecting and adapting evidence-based strategies and coordinate the implementation of individualized interventions with professionals across multiple disciplines (Farmer et al., 2016; Talbott et al., 2020; Wehby & Kern, 2014). Special education teachers need knowledge and skills for selecting practice elements (PEs) from evidence-based interventions and adapting them to effectively address students' intensive and unique needs. In the following discussion, if not otherwise specified, special education teachers are simply referred to as teachers.

PEs as a Foundation for Intervention Intensification

Although evidence-based interventions have been shown to be effective in experimental design studies, translating these successes to real-world classrooms is difficult. It is helpful to identify specific strategies/elements within evidence-based programs to improve outcomes (Becker & Domitrovich, 2011; Dishion, 2011). These strategies have been referred to as PEs (Chorpita & Daleiden, 2010) or evidence-based kernels (Embry & Biglan, 2008). PEs are individual skills or practices commonly found across evidence-based programs (Chorpita & Daleiden, 2010). This concept has promise for improving educational services provided to students with intensive behavioral needs. Becker and Domitrovich (2011) highlighted both the usefulness of a PEs approach to prevent and intervene in a variety of youth problem behaviors, and the capacity of a PEs approach to capitalize on naturally occurring learning opportunities within classroom contexts. In addition, the identification of high-quality PEs also improves the fit within tiered-levels of behavior support (e.g., Response to Intervention, Positive Behavioral Interventions and Supports) and the sustainability of the intensive intervention.

The identification of PEs creates a toolbox which interventionists can use to create an individualized intervention approach (Garland et al., 2008). Two recent examples identified common elements among behavioral and preacademic interventions for preschool (McLeod et al., 2017) and elementary (Sutherland et al., 2019) students with or at risk for EBD. Twenty-four PEs were identified for both preschool and elementary school children with challenging behavior. Some of the PEs overlapped across the studies, supporting the validity of this process. These included focusing on emotional regulation, building problem-solving skills, applying reinforcement, instructing social skills, facilitating positive teacher–student relationship, providing active supervision/monitoring, providing choice, providing error correction, modeling appropriate skills, providing opportunities to respond, providing praise, providing precorrection, establishing rules, and using time out (see Table 1). Unique PEs in each study highlight the need for identifying PEs associated with different developmental stages (early childhood v. elementary) and contexts (preschool classrooms v. elementary classrooms).

PEs identified from empirically supported interventions can create a foundation of evidence-based practices for teachers. For students who do not respond to manualized Tier 1 and/or Tier 2 interventions, teachers might consider selecting elements from existing protocols that could be implemented and intensified to develop individualized interventions adapted to the specific needs of a particular student. Farmer et al. (2016) proposed a three-step process for individualizing intervention. First, teachers review a small set of evidence-based PEs matched to specific student behavioral and learning needs (McLeod et al., 2017; Sutherland et al., 2019). Next, teachers select specific PEs in a deliberate and flexible manner, constructing intervention plans addressing multiple learning and behavioral outcomes for the target student (Sutherland, Farmer, et al., 2018). Finally, teachers actively manipulate and intensify the PEs to be consistent with the needs of students and dynamic developmental/contextual factors.

As Figure 1 suggests, this is an ongoing and iterative process that involves clarifying whether students' difficulties reflect problems in single or multiple domains of school functioning (i.e., academic, behavioral, or social; see Farmer et al., 2020). In addition, teachers determine whether difficulties may be multidetermined and supported by a range of factors at different times and in different settings (see Kern & Wehby, 2014; Sutherland, Farmer, et al., 2018). As teachers and interventionists accumulate additional data about specific domains that contribute to students' difficulties, they select PEs from evidence-based interventions that link to the specific domains, contexts, and setting events associated with the problem behavior (Maggin et al., 2016; Shores & Wehby, 1999; Sutherland, Conroy, et al., 2018). Teachers and/or interventionists then implement the PEs, adapt them to contexts, and make further adaptations depending on students' response to the PEs within particular contexts.

Adaptive Expertise Framework Guiding Modification of PEs

While the process of identifying common PEs holds much promise for promoting students' academic and behavioral success, its effectiveness with students with intensive behavioral problems relies on teachers' knowledge of student-specific characteristics and associated developmental processes, and the ability to adapt PEs accordingly. Intensifying interventions using PEs to support students who are not responsive to Tier 2 strategies also places emphasis on teachers' capacities to modify and implement different aspects of evidence-based strategies based on students' unique needs, developmental factors, and social contexts (Farmer et al., 2020). Teachers must not only have the knowledge and skills for evidence-based interventions but also have flexibility and responsiveness to students' needs and varying contexts as part of the problem-solving process (Maggin et al., 2016; Wehby & Kern, 2014). The use of adaptive expertise (AE) in the iterative process to intensifying intervention (see Figure 1) can help guide selection, implementation, modification, and delivery of evidence-based PEs.

AE Frameworks and Practices in Intensifying Interventions

AE has been conceptualized as a capacity which allows teachers to not only master the implementation of practices efficiently, but also demonstrate the flexibility to identify and modify existing strategies to meet students' academic and behavioral needs (DeArment et al., 2013; Mason-Williams et al., 2015). There are two types of expertise: adaptive and routine (Hatano & Inagaki, 1986). While routine experts use procedural competencies to tackle familiar situations efficiently, adaptive experts generate conceptual knowledge through the application and modification of mastered procedures in both familiar and unfamiliar situations. Adaptive experts can explain why the skill works, modify existing skills, and identify alternative and innovative procedures when needed (Hatano & Inagaki, 1986; Hatano & Oura, 2003).

Inherent in the concept of AE is flexibility and metacognition. Flexibility allows experts to refine strategies to address complex situations (National Research Council, 2000). This is particularly relevant for students with severe, persistent behavior needs. Validated, standardized interventions might not work effectively for every individual, requiring teachers to adapt interventions according to given student characteristics and contexts (Maggin et al., 2016). In some ways, this is analogous to the concept of competence (i.e., delivery of interventions that are skillful,

Table 1. Practice Elements of Behavioral and Preacademic Interventions for Students With or at Risk for EBD.

Item	Definition	Preschool	Elementary
Content			
Emotion regulation	Instruction focused on identifying/labeling (e.g., I'm happy, I'm mad, I'm sad) or regulating emotions.	X	X
Group contingency	Teacher applies a positive or negative consequence to all students within a group, including the focal student, for the group's performance of predetermined behavior.		X
Home–school communication	Teacher has a regular system for communicating with the focal student's parents or guardians about the student's social, behavioral, or academically related skills and/or difficulties. This includes written, electronic, or oral communication.		X
Instructional antecedent	Teacher manipulates instructional antecedent events that immediately precede desirable social/behavioral or academically related behavior of a focal student/group of students.		X
Instructional feedback & discussion	Teacher provides extra instructional information or discussion following a correct response or appropriate behavior of focal student/group of students.		X
Peer tutoring	Teacher arranges groups of students (including the focal student) to work together in pairs to learn academic material or practice academic tasks.		X
Problem solving	Instruction focused on skills designed to bring about solutions to social, emotional, or behavioral problems.	X	X
Promoting behavioral competence	Instruction that focuses on setting classroom behavioral expectations, using strategies to manage student behavior, or promoting positive behavioral engagement in instructional activities.	X	
Punishment	Teacher applies consequence or removal of a preferred consequence to a focal student/group of students following the occurrence of problem behavior(s) to reduce the likelihood of future occurrences of problem behavior(s).		
Self-management	Teacher provides instruction focused on helping a focal student/group of students learn to independently manage their own social or academically related behavior(s), such as assessment, monitoring, and reinforcing of the student's own behavior.		X
Reinforcement/tangible reinforcement	Teacher applies preferred consequence or removes nonpreferred consequences to focal student/group of students following the occurrence of behavior(s) to increase the likelihood of future occurrences of desirable behavior(s).	X	X
Routines	Teacher uses a regular daily schedule and planned rituals around common tasks, transitions, and activities that provide classroom structure and organization for the focal student/group of in the classroom.		X
Social skills	Instruction focused on prosocial behavior (e.g., friendship skills, social etiquette, sharing, taking turns) with peers.	X	X
Teacher–student relationship	Teacher behavior that conveys warmth, closeness, and interest when listening to and interacting with a student.	X	X
Delivery			
Active supervision/monitoring	Teacher actively engages in and monitors the behavior of the focal student including using verbal or gestural prompting and/or proximity.	X	X
Behavioral momentum	Teacher presents focal student/group of students with a series of high probability compliance requests prior to presenting low probability compliance request.		X
Choices	Teacher provides a student the opportunity to select between two or more equally desirable options related to instructional activities.	X	X
Differential reinforcement	Providing attention and/or praise to other students to remind a specific student of a behavioral expectation.	X	
Error correction	Teacher provides corrective feedback following an incorrect response or undesirable behavior.	X	X
Ignoring	Teacher ignores undesirable behaviors.	X	
Instructive feedback	Teacher provides extra instructional information while responding to a correct response or appropriate behavior.	X	
Modeling	Teacher demonstrates, or has a peer demonstrate, a skill to promote learning.	X	X
Narrating	Teacher provides a verbal description of a student's behavior.	X	

(continued)

Table 1. (continued)

Item	Definition	Preschool	Elementary
Opportunities to respond	Teacher uses questions or prompts (i.e., gestural, verbal, visual) that seek an active, observable, and specific response from a student.	X	X
Praise	Teacher provides positive verbal statements of approval in response to an appropriate social, emotional, or behavioral response.	X	X
Precorrection	Teacher uses prompts (i.e., gestural, verbal, visual) in advance of a student responding to remind a student of appropriate behavior and correct responding (rules, expectations, routines) before a problem behavior occurs.	X	X
Premack statements	Teacher uses "if-then" statements to establish behavioral contingencies between two student actions or behaviors.	X	
Rehearsal	Teacher encourages a student to practice an appropriate behavioral skill (e.g., sharing during interactions with peers).	X	
Response cost	Teacher removes reinforcers from the focal student/group of students in response to undesirable behavior		X
Rewards	Teacher provides primary (e.g., desired reward) or secondary (e.g., points) reward(s) in response to desirable social, emotional, or behavioral response by the focal student/group of students.		X
Rules	Teacher uses prescribed guidelines to teach the rules and behavioral expectations of the classroom.	X	X
Scaffolding	Engaging in a collaborative instructional method designed to facilitate learning that is appropriate for the student's cognitive and language developmental level.	X	
Supportive listening	Teacher conveys understanding for the topic a student is discussing.	X	
Time-out	Teacher removes a student from an activity for a specified period of time following a problem behavior.	X	X
Visual cueing	Teacher uses visual cues to prompt a student for appropriate behavioral responses or consequences.	X	

Note. Preschool (McLeod et al., 2017) and elementary (Sutherland et al., 2019).

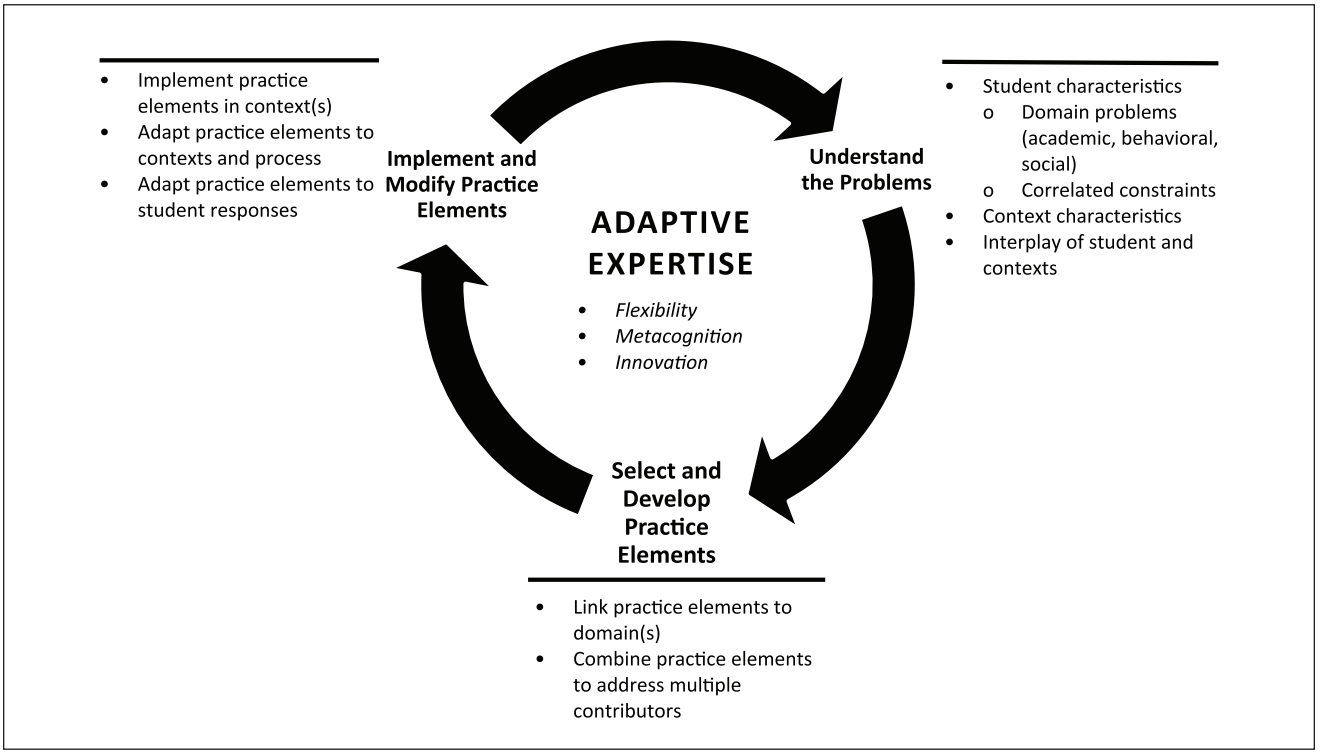

Figure 1. Selection and adaptation of practice elements (PEs) in intervention intensification.

well-timed, and responsive to individual student needs) within the treatment integrity literature. Recent work highlights the importance of competence in treating child problem behavior, with classroom teachers' competence of delivery mediating the effect of the BEST in CLASS program on young children's externalizing behavior (Sutherland, Conroy et al., 2018).

Along with flexibility, metacognition is a critical dimension of adaptation (Lin et al., 2005), which allows educators to understand the strengths and areas of needed improvement within their own instruction and interactions with students. During the problem-solving process, instead of systematically utilizing standardized, built-in, and efficient procedures to solve familiar problems, teachers go beyond routine competencies and procedural efficiency, recognize the complex and dynamic nature of student behavior, and modify interventions responding to student needs (DeArment et al., 2013; Farmer et al., 2018). The accumulation and integration of experience and conceptual knowledge can further develop experts' flexibility to solve novel or complicated problems (Hatano & Inagaki, 1986; Hatano & Oura, 2003).

When AE frameworks are embedded in intervention, they can support ongoing and iterative intensification of PEs as shown in Figure 1. The challenge is for school professionals to adapt their practices by considering multiple factors and processes when manipulating intervention component features to fit students' needs. AE supports this process by enhancing teachers' knowledge of the student, the developmental processes affecting their functioning, and the continual adaptation of PEs while being flexible and using metacognition to understand various components of the problem. Once the problem is understood, a pedagogical knowledge base will aid with the selection and incorporation of appropriate PEs. While the intervention is being implemented, a flexible mindset and innovative thinking are needed to modify the interventions based on the student's response to and the contexts of the intervention.

Adaptive Practices Facilitating Intervention Intensification Process

Adaptive practices reflect teachers' use of AE to engage in the problem-solving process when responding to the variability of student needs, classroom dynamics, and complex settings and service delivery. With respect to intervention intensification, the identification of PEs in evidence-based interventions is critical; but more importantly, while teachers undertake certain modifications to strategies, factors ranging from students' characteristics and classroom ecologies to students' broader social contexts are addressed deliberately (Maggin et al., 2016; Sullivan et al., 2015; Wehby & Kern, 2014). Thus, teachers' adaptive practices in an intensive intervention process involve the capacity to modify instructional and behavioral supports to address student needs and refine instructional strategies based on the interplay between student characteristics and the contexts. It also involves modifications in the delivery of intensive interventions and in teachers' and related service providers' roles while serving students with severe and persistent behavioral difficulties. Adaptive practices which involve teachers using AE to facilitate the intervention intensification process are discussed below.

Modification of instructional and behavioral supports to address student needs. Intensification of PEs requires consideration of whether the constituent parts can be tailored to address specific needs of students. Different from standardized interventions which provide teachers with a set of validated protocols to ensure the implementation fidelity/integrity, the intensification of PEs focuses on the malleable aspects of the intervention components which align with students' range of needs to increase proper intensity and potential effectiveness of individualized interventions. Intensification includes variation in dosage (Lagoa et al., 2014; Wehby & Kern, 2014) or other content or structural modifications such as quality indicators (e.g., timing, responsiveness; Sutherland, Conroy, et al., 2018). It might include increasing the number of times students are asked to respond, increasing the schedule of reinforcement for a preferred behavior, or systematically decreasing the presentation of certain elements.

For academic interventions, the process of intensification involves breaking instruction up into smaller steps, using precise and frequently repeated language, engaging students in think-aloud strategies to promote students' explanations, modeling completion of learning activities, fading instructional support, and building students' fluency in instructional content (Powell & Fuchs, 2015). In the context of behavioral interventions, the intensification of the behavioral support should be based on individual characteristics, function(s) of problem behavior, and varying contexts associated with students' problem behavior (Maggin et al., 2016; Wehby & Kern, 2014). Behavioral interventions can be individualized by rearranging the antecedent contexts to prevent problem behavior or encourage desirable behavior, instructing students in functionally equivalent replacement behavior, and modifying the consequence of problem behavior or rewarding appropriate behavior (Kern et al., 2015).

Responding to transactional interplay between student characteristics and contexts. Problematic behavior of students with EBD often reflects the contributions of a system of interconnected factors (Farmer et al., 2016). This situates the intensifying of PEs to not only focus on each student's problem behavior, but also on dynamic processes between students and multiple factors in classroom and school contexts that may contribute to students' behavior and the impact of interventions (Farmer et al., 2020; Shores &

Wehby, 1999). Teachers need to assess information regarding developmental processes and adapt strategies to correspond to students' needs as well as contextual factors that contribute to their functioning in the classroom and their broader patterns of adjustment (Farmer, 2020; Kern & Wehby, 2014).

Developmental processes are conceptualized as the mechanisms in which multiple factors collectively influence students' functioning and affect their long-term outcomes (Farmer et al., 2020). Academic, behavior, and social factors tend to operate as a bidirectionally interconnected system (i.e., correlated constraints) and affect the developmental pathway of students' adaptation and educational outcomes (Cairns & Cairns, 1994). Academic factors include students' academic skills/competencies, school valuing, motivation, and perceptions of instructional engagement (Hamm et al., 2012). Behavioral factors include antecedents, consequences, setting events, motivating operations, and behavior related norms (Gunter et al., 1994; Shores & Wehby, 1999; Wehby & Kern, 2014). Social factors include social skills, interactional patterns, social roles, peer relationships and affiliations, bullying involvement, student–teacher relationships, and social norms (Farmer et al., 2018; Trach et al., 2018). To address the multifaceted needs of students with EBD, it is important to tailor strategies focusing on the interplay of multiple factors both within the student and between the student and particular contexts.

Modification of intervention delivery grounded in data-driven process. Adaptive practices emphasize the need for intervention intensification and delivery to be guided by extensive data collection including the dynamics around the individual's problem behaviors and the classroom or broader ecologies that support or impede student development. The process starting from initial selection of PEs to intensification using PEs requires teachers to collect data to inform whether interventions address specific student characteristics, needs, and circumstances within the unique context of the classroom (Farmer et al., 2016). Data collection may target various issues depending on the particular needs of students, such as classroom practices, instructional supports, cultural considerations, and a wide array of contextual factors (Maggin et al., 2016).

Intensifying PEs also necessitates an ongoing data-driven process, which leads to individualized and adapted interventions provided to students with EBD. Unlike Tier 2 interventions, which involve a standardized program that is packaged in a manual and represents a single approach, the intensification of interventions involves a data-driven process to make individualized decisions and adjustments (Maggin et al., 2016). The delivery of intensive interventions is an iterative, multistep process comprising constant progress monitoring and systematic use of diagnostic assessment (e.g., functional behavioral assessment), followed with intervention adaptation in quantity and quality, and further validation of the effectiveness of the individualized behavioral strategies (Wehby & Kern, 2014).

Modification of teachers' and related service providers' roles. Data-based intervention illustrates an ongoing and systematic process by intensifying interventions through progress monitoring, diagnostic assessment, and adaptations of evidence-based practices (Berry Kuchle et al., 2015). The complex nature of the adaptive practice sets teachers' pathways to being experts on evidence-based interventions as well as being flexible, innovative problem solvers who can integrate data and make decisions to tailor interventions in response to students' behavioral and academic needs. As intensive interventions rely on the data-driven process, it would assume that special education teachers are no longer solely instructors with knowledge of evidence-based strategies, but function as intervention specialists who identify the issues associated with students' nonresponsiveness to interventions, leverage the data to inform the adaptation of interventions, and are capable of selecting effective PEs and determining the degree of the modification to address students' needs (Farmer et al., 2016). In addition, to adequately address students' with EBD multifaceted needs, special education teachers would assume the leadership role to coordinate the work with professionals across disciplines to deliver the service to students with EBD (Talbott et al., 2020).

Implications for Service Delivery and Future Research

Intensifying interventions places emphasis on practitioners' ability to be adaptive and responsive to students' complex needs. It requires practitioners to acquire the knowledge and skills of evidence-based interventions and also build flexibility and responsiveness to students' needs and contexts as part of the problem-solving process (Maggin et al., 2016; Wehby & Kern, 2014). Teachers' adaptation and responsiveness have the potential to optimize evidence-based practices for supporting students with emotional and behavioral difficulties. The development of AE leads to special education teachers understanding of why, how, and when to adapt these PEs to effectively meet students' needs.

Service Delivery

Given the intractability of challenging behavior of students with EBD and the flexibility inherent in data-driven interventions, there are several implications for service delivery. As noted previously, teachers' adaptive practices in interventions build on their understanding of the complexity and heterogeneity of students' emotional and behavioral issues (Farmer et al., 2016). When intensifying interventions, it is important to identify constraints associated with students'

emotional and behavioral difficulties and the interconnection across students' academic, social, and behavioral domains (Farmer et al., 2020; Maggin et al., 2016).

In preparing teachers to be more responsive to students' severe and persistent emotional and behavioral needs, it is important to cultivate teachers' AE to individualize intervention. With growing emphasis on data-driven intervention, professional development and training to facilitate teachers' ability to adapt evidence-based strategies in intensive interventions is needed. Mason-Williams et al. (2015) demonstrated that when preservice special educators are given opportunities to establish routine knowledge while developing AE, they manifest increased ability to select and implement effective interventions based on research-based practices. Therefore, when facing students with more intractable behavioral difficulties, the development of AE along with the greater understanding of PEs can help prepare teachers to modify practices and identify alternatives while considering students' unresponsiveness and changing constraints.

As the field continues to expand the common PEs catalog beyond current efforts focusing on early childhood and early elementary (McLeod et al., 2017; Sutherland et al., 2019), teachers and other service providers will be able to identify PEs that have evidence for positively impacting child and student outcomes across a range of age and target domains. The PEs approach allows teachers to identify the intervention targets (e.g., problem behavior, classroom engagement, social interactions) of students and then identify those PEs with evidence for effectiveness at improving the selected target behavior. Teachers' developing AE then allows them to implement the chosen PEs with the highest likelihood of success with a particular student within contexts. For example, teachers may increase the dosage of a particular element (e.g., Wehby & Kern, 2014) while simultaneously using their understanding of peer social contexts (e.g., Farmer et al., 2016), and remaining responsive to students' needs at a particular time (e.g., Sutherland, Conroy, et al., 2018). Using AE, teachers are able to intensify interventions for students in need of Tier 3 supports by combining PEs and manipulating particular intervention characteristics to increase the likelihood of success for these students.

In addition to traditional teacher roles that integrate AE and PEs approaches, novel service delivery models also hold promise for delivering Tier 3 interventions to students. Recent literature has re-envisioned special educators' role as intervention specialists with expertise in intensive interventions (Farmer et al., 2016; Talbott et al., 2020; Wehby & Kern, 2014). It is critical that special educators assume leadership roles as intervention specialists who work across disciplines to integrate data, help identify and adopt strategies, and coordinate interventions across multiple stakeholders to ensure effective service delivery (Farmer et al., 2016; Maggin et al., 2016). Directed consultation, a professional development model, is framed to help build school capacity to support and equip teachers with skills necessary for becoming intervention specialists. Specifically, this model includes teachers' flexibility in the process of collecting data and identifying leverage points, selecting PEs, adapting and modifying intervention components while considering correlated constraints, and implementing intensive interventions with dynamic behavior support (Sutherland, Farmer, et al., 2018).

Future Research

While the use of a PEs approach in combination with an AE framework holds promise for the intensification of Tier 3 interventions for students with EBD, there remains much we do not know. Prior studies of the PEs approach have identified effective strategies commonly used with students with EBD in preschool and elementary schools (McLeod et al., 2017; Sutherland et al., 2019), as mentioned earlier in this article. Although the PEs selected are from evidence-based intervention programs validated by rigorous experimental research, the generalization of the implemented strategies among students in other grade levels and in different content areas need further study. The PEs approach could be replicated with other grade levels (e.g., middle school) and content areas (e.g., reading) to increase the utility of this process for special educators across the student spectrum.

In addition, intensifying PEs is a data-driven process. Assessment of diverse student needs and developmental factors and transactional processes between student characteristics and the contexts would inform the selection and intensification of appropriate PEs. Further research can identify valid, reliable, and practical assessment tools which special education teachers can use to efficiently collect comprehensive data on students and constraints and to identify connections between individual and ecological contexts. Additional research can also examine how ongoing assessment of student responses and correlated constraints can help effectively tailor and modify the intervention approach.

There is also a significant need for research on assessing and training special education teachers in AE. This article focuses on an AE framework building on PEs to improve the effectiveness of targeted interventions. Valid and reliable measurement tools are necessary to help assess teachers' development of AE to identify teachers who need more support in developing their AE. Studies are also needed to examine the strategies which best facilitate teachers' AE. Coaching and supervision provide particular opportunities for fostering and supporting teachers' developing AE (Kern et al., 2015). Additional work is needed to investigate whether training approaches differentially affect teachers' use of learned knowledge/skills in adapting practice during the problem-solving process. Future research could also examine special education teachers' trajectories in developing AE (Hammerness et al., 2005), identify patterns of AE trajectories, and delineate individual characteristics that influence the development of AE.

In light of the complexity in the decision-making process, more research is needed to investigate the degree to which special education teachers adapt to an array of contextual factors when tailoring PEs in intensive interventions for students with EBD. Research investigating the efficiency and effectiveness of special education teachers' use of AE in their instruction and how it affects students' learning outcomes is also needed. This type of work could be conducted simultaneously with rigorous experimental trials to help us better understand the malleability of AE and associated impact on fostering positive outcomes for students with EBD. Research examining relations between teachers' AE and implementation of PEs with students with Tier 3 needs would help us better understand how these mechanisms work together (or don't) to synergistically impact students' downstream outcomes.

Finally, research is needed to determine the capacity of school systems for supporting this intervention approach and the infrastructure needed to sustain it. To prepare special education teachers to develop AE, research can also investigate how teacher preparation programs embed the conceptual framework of AE in the design of coursework and clinical experience to navigate preservice and inservice teachers' professional development (DeArment et al., 2013; Talbott et al., 2020).

Conclusion

Teachers and other service providers continue to struggle to meet the academic and behavioral needs of students with intensive emotional and behavioral difficulties. While individualizing interventions to address specific social, behavioral and academic needs of students through intensification is critical in addressing the learning and behavior problems of this vulnerable population of children and youth, implementation remains a challenge. We argue in this article for the integration of a PEs approach with an AE framework to address the multiple factors and processes that contribute to and maintain students' emotional and behavioral problems. The combination of both the dynamic and systematic nature of this novel approach has much promise for addressing the seemingly intractable challenges faced by this population of children and youth.

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References

Becker, K. D., & Domitrovich, C. E. (2011). The conceptualization, integration, and support of evidence-based interventions in the schools. *School Psychology Review*, *40*(4), 582–589.

Bergman, L. R., Andershed, H., & Andershed, A. K. (2009). Types and continua in developmental psychopathology: Problem behaviors in school and their relationship to later antisocial behavior. *Development and Psychopathology*, *21*(3), 975–992. https://doi.org/10.1017/S0954579409000522

Berry Kuchle, L., Zumeta Edmonds, R., Danielson, L. C., Peterson, A., & Riley-Tillman, T. C. (2015). The next big idea: A framework for integrated academic and behavioral intensive intervention. *Learning Disabilities Research & Practice*, *30*(4), 150–158. https://doi.org/10.1111/ldrp.12084

Borum, R. (2000). Assessing violence risk among youth. *Journal of Clinical Psychology*, *56*(10), 1263–1288. https://doi.org/10.1002/1097-4679(200010)56:10%3C1263::AID-JCLP3%3E3.0.CO;2-D

Cairns, R. B., & Cairns, B. D. (1994). *Lifelines and risks: Pathways of youth in our time*. Harvester Wheatsheaf.

Chorpita, B. F. (2019). Commentary: Metaknowledge is power: Envisioning models to address unmet mental health needs: Reflections on Kazdin (2019). *The Journal of Child Psychology and Psychiatry*, *60*(4), 473–476. https://doi.org/10.1111/jcpp.13034

Chorpita, B. F., & Daleiden, E. L. (2010). Building evidence-based systems in children's mental health. In J. R. Weisz & A. E. Kazdin (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 482–499). Guilford Press.

DeArment, S. T., Reed, E., & Wetzel, A. P. (2013). Promoting adaptive expertise: A conceptual framework for special educator preparation. *Teacher Education and Special Education*, *36*(3), 217–230. https://doi.org/10.1177/0888406413489578

Dishion, T. J. (2011). Promoting academic competence and behavioral health in public schools: A strategy of systemic concatenation of empirically based intervention principles. *School Psychology Review*, *40*(4), 590–597.

Embry, D. D., & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology Review*, *11*(3), 75–113. https://doi.org/10.1007/s10567-008-0036-x

Farmer, T. W. (2020). Reforming research to support culturally and ecologically responsive and developmentally meaningful practice in schools. *Educational Psychologist*, *55*, 32–39.

Farmer, T. W., Gatzke-Kopp, L. M., & Latendresse, S. J. (2020). The development, prevention, and treatment of emotional and behavioral disorders: An interdisciplinary developmental systems perspective. In T. W. Farmer, M. Conroy, E. M. Z. Farmer, & K. Sutherland (Eds.), *Handbook of research on emotional & behavioral disorders: Interdisciplinary*

developmental perspectives on children and youth (pp. 3–22). Routledge.

Farmer, T. W., Sutherland, K. S., Talbott, E., Brooks, D., Norwalk, K., & Huneke, M. (2016). Special educators as intervention specialists: Dynamic systems and the complexity of intensifying intervention for students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders*, *24*, 173–186. https://doi.org/10.1177/1063426616650166

Farmer, T. W., Talbott, B., Dawes, M., Huber, H. B., Brooks, D. S., & Powers, E. (2018). Social dynamics management: What is it and why is it important for intervention? *Journal of Emotional and Behavioral Disorders*, *26*, 1–10.

Garland, A. F., Hawley, K. M., Brookman-Frazee, L., & Hurlburt, M. S. (2008). Identifying common elements of evidence-based psychosocial treatments for children's disruptive behavior problems. *Journal of the American Academy of Child & Adolescent Psychiatry*, *47*(5), 505–514. https://doi.org/10.1097/CHI.0b013e31816765c2

Gunter, P. L., Jack, S. L., Depaepe, P., Reed, T. M., & Harrison, J. (1994). Effects of challenging behaviors of students with EBD on teacher instructional behavior. *Preventing School Failure: Alternative Education for Children and Youth*, *38*(3), 35–39. https://doi.org/10.1080/1045988X.1994.9944312

Hamm, J. V., Hoffman, A., & Farmer, T. W. (2012). Peer cultures of academic success in adolescence: Why they matter and what teachers can do to promote them. In A. Ryan & G. Ladd (Eds.), *Peer relationships and adjustment at school* (pp. 219–248). Information Age Publishing.

Hammerness, K. M., Darling-Hammond, L., & Bransford, J. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world: What teachers should learn and be able to do* (pp. 358–389). Jossey-Bass.

Hatano, G., & Inagaki, K. (1986). Two courses of expertise. In H. Stevenson, H. Azuma, & K. Hakuta (Eds.), *Child development and education in Japan* (pp. 262–272). Freeman.

Hatano, G., & Oura, Y. (2003). Commentary: Reconceptualizing school learning using insight from expertise research. *Educational Researcher*, *32*(8), 26–29. https://doi.org/10.3102/0013189X03200802

Kern, L., Evans, S. W., Lewis, T. J., State, T. M., Weist, M. D., & Wills, H. P. (2015). CARS comprehensive intervention for secondary students with emotional and behavioral problems: Conceptualization and development. *Journal of Emotional and Behavioral Disorders*, *23*(4), 195–205. https://doi.org/10.1177/1063426615578173

Kern, L., & Wehby, J. H. (2014). Using data to intensify behavioral interventions for individual students. *TEACHING Exceptional Children*, *46*(4), 45–53. https://doi.org/10.1177/0040059914522970

King, K. R., Gonzales, C. R., & Reinke, W. M. (2019). Empirically derived subclasses of academic skill among children at risk for behavior problems and association with distal academic outcomes. *Journal of Emotional and Behavioral Disorders*, *27*(3), 131–142. https://doi.org/10.1177/1063426617754082

Lagoa, C. M., Bekiroglu, K., Lanza, S. T., & Murphy, S. A. (2014). Designing adaptive intensive interventions using methods from engineering. *Journal of Consulting and Clinical Psychology*, *82*(5), 868–878. https://psycnet.apa.org/doi/10.1037/a0037736

Lin, X., Schwartz, D. L., & Hatano, G. (2005). Toward teachers' adaptive metacognition. *Educational Psychologist*, *40*(4), 245–255. https://doi.org/10.1207/s15326985ep4004_6

Lipsey, M. W., & Derzon, J. H. (1998). Predictors of violent or serious delinquency in adolescence and early adulthood: A synthesis of longitudinal research. In R. Loeber & D. P. Farrington (Eds.), *Serious & violent juvenile offenders: Risk factors and successful interventions* (pp. 86–105). SAGE.

Maggin, D. M., Wehby, J. H., Farmer, T. W., & Brooks, D. S. (2016). Intensive interventions for students with emotional and behavioral disorders: Issues, theory, and future directions. *Journal of Emotional and Behavioral Disorders*, *24*(3), 127–137. https://doi.org/10.1177/1063426616661498

Mason-Williams, L., Frederick, J. R., & Mulcahy, C. A. (2015). Building adaptive expertise and practice-based evidence: Applying the implementation stages framework to special education teacher preparation. *Teacher Education and Special Education*, *38*(3), 207–220. https://doi.org/10.1177/0888406414551285

McLeod, B. D., Sutherland, K. S., Martinez, R. G., Conroy, M. A., Snyder, P. A., & Southam Gerow, M. A. (2017). Identifying common practice elements to improve social, emotional, and behavioral outcomes of young children in early childhood classrooms. *Prevention Science*, *18*(2), 204–213. https://doi.org/10.1007/s11121-0160703-y

National Research Council. (2000). *How people learn: Brain, mind, experience, and school* (Expanded ed.). National Academies Press.

Powell, S. R., & Fuchs, L. S. (2015). Intensive intervention in mathematics. *Learning Disabilities Research & Practice*, *30*(4), 182–192. https://doi.org/10.1111/ldrp.12087

Prince, A. M., Hodge, J., Bridges, W. C., & Katsiyannis, A. (2018). Predictors of postschool education/training and employment outcomes for youth with disabilities. *Career Development and Transition for Exceptional Individuals*, *41*(2), 77–87. https://doi.org/10.1177/2165143417698122

Shores, R. E., & Wehby, J. H. (1999). Analyzing the classroom social behavior of children with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders*, *7*(4), 194–199. https://doi.org/10.1177/106342669900700401

Sullivan, T. N., Sutherland, K. S., Lotze, G. M., Helms, S. W., Wright, S. A., & Ulmer, L. J. (2015). Problem situations experienced by urban middle school students with high incidence disabilities that impact emotional and behavioral adjustment. *Journal of Emotional and Behavioral Disorders*, *23*, 101–114. https://doi.org/10.1177/1063426614528243

Sutherland, K. S., Conroy, M. A., McLeod, B. D., Algina, J., & Wu, E. (2018). Teacher competence of delivery of BEST in CLASS as a mediator of treatment effects. *School Mental Health*, *10*(3), 214–225. https://doi.org/10.1007/s12310-017-9224-5

Sutherland, K. S., Conroy, M. A., McLeod, B. D., Kunemund, R., & McKnight, K. (2019). Common practice elements for improving social, emotional, and behavioral outcomes of young elementary school students. *Journal of Emotional*

and Behavioral Disorders, *27*(2), 76–85. https://doi.org/10.1177/1063426618784009

Sutherland, K. S., Farmer, T. W., Kunemund, R. L., & Sterrett, B. I. (2018). Learning, behavioral, and social difficulties within MTSS: A dynamic perspective of intervention intensification. In N. D. Young, K. Bonanno-Sotiropoulos, & T. A. Citro (Eds.), *Paving the pathway for educational success: Effective classroom interventions for students with learning disabilities* (pp. 15–32). Rowman & Littlefield.

Sutherland, K. S., Lewis-Palmer, T., Stichter, J., & Morgan, P. L. (2008). Examining the influence of teacher behavior and classroom contexts on the behavioral and academic outcomes of students with emotional or behavioral disorders. *The Journal of Special Education*, *41*(4), 223–233. https://doi.org/10.1177/0022466907310372

Sutherland, K. S., & Oswald, D. (2005). The relationship between teacher and student behavior in classrooms for students with emotional and behavioral disorders: Transactional processes. *Journal of Child and Family Studies*, *14*(1), 1–14. https://doi.org/10.1007/s10826-005-1106-z

Talbott, B., DeArment, S., Sterrett, B., & Chen, C. -C. (2020). Leading the team for youth with emotional and behavioral disabilities: Special educators as intervention specialists. In T. W. Farmer, M. Conroy, E. M. Z. Farmer, & K. Sutherland (Eds.), *Handbook of research on emotional & behavioral disorders: Interdisciplinary developmental perspectives on children and youth* (pp. 449–461). Routledge.

Trach, J., Lee, M., & Hymel, S. (2018). A social-ecological approach to addressing emotional and behavioral problems in school: Focusing on group processes and social dynamics. *Journal of Emotional and Behavioral Disorders*, *26*(1), 11–20. https://doi.org/10.1177/1063426617742346

Wehby, J. H., & Kern, L. (2014). Intensive behavior intervention: What is it, what is its evidence base, and why do we need to implement now? *TEACHING Exceptional Children*, *46*(4), 38–44. https://doi.org/10.1177/0040059914523956

Wehby, J. H., Symons, F. J., & Shores, R. E. (1995). A descriptive analysis of aggressive behavior in classrooms for children with emotional and behavioral disorders. *Behavioral Disorders*, *20*(2), 87–105. https://doi.org/10.1177/019874299502000207