Infants & Young Children
Vol. 36, No. 1, pp. 53–73

A Conceptual Model for a Blended Intervention Approach to Support Early Language and Social-Emotional Development in Toddler Classrooms

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The purpose of this article is to present a theory-driven blended intervention model that integrates evidence-based interventions to support language and social development of young children. We (1) provide an overview of practices that are designed to support language and social-emotional development, (2) present a theory of change model that outlines the theoretical basis for our proposed approach, and (3) provide an example of the conceptual model via the blending of Tier 1 interventions that provide class-wide language and behavioral support for young children. We conclude by arguing for the parsimony that a proactive synergy between social and language interventions blended into a single professional development approach will provide. **Key words:** *language development, social-emotional development, Tier 1 support, toddlers classrooms*

THE TODDLER period (12–36 months) is characterized by rapid growth and development, in which learning occurs in dyadic interactions. Transactions between caregivers and children are essential to the unfolding of children's social communication and social-emotional development (Adamson, Kaiser, Tamis-LaMonda, Owen, & Dimitrova, 2020; Horm, Norris, Perry, Chazan-Cohen, & Halle, 2016). During this time, children learn to communicate and to express their social-emotional needs and experiences with adults and peers. Language and social-emotional development are closely related in early development; language abilities influence social outcomes, and emergent social skills influence children's opportunities to learn and use language (Qi, Kaiser, Milan, & Hancock, 2006; Rescorla, Ross, & McClure, 2007; Roben, Cole, & Armstrong, 2013). Attending to the cross-domain interaction between children's early language and social-emotional competence lays a critical foundation for learning and development in toddler classrooms (Downer, Sabol, & Hamre, 2010;

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Preparation of the manuscript was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R324A200193, to Vanderbilt University and the University of Washington. The opinions expressed are those of the authors and do not represent the views of the Institute of Education Sciences or the U.S. Department of Education.

Declarations of Interest: *None.*

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DOI: 10.1097/IYC.0000000000000232

Offer-Boljahn, Hövel, & Hennemann, 2019), particularly for children who have or may develop delays in language and/or social competence. The purposes of this article are to address the cross-domain linkages between language and social-emotional skills in early development, to discuss the toddler childcare setting as an important context for supporting cross-domain development, and to propose a model for toddler classrooms that support the codevelopment of language and social-emotional skills.

TODDLER CLASSROOM CONTEXT: ISSUES OF SUPPORT AND QUALITY

Young children learn and develop within the context of interactions with others in their environment. Homes are children's first learning environment, and primary caregivers are their first and most important teachers (National Academies of Sciences, Engineering, and Medicine, 2016). Primary caregiver–child interactions are an essential context in which children develop new skills (Gilkerson et al., 2017; Hart & Risley, 1995; Hoff, 2003, 2006; Shonkoff, 2003; Spinrad, Stifter, Donelan-McCall, & Turner, 2004; Zimmerman et al., 2009); however, many young children are also enrolled in group care such as private childcare, family childcare, and Early Head Start. Approximately 40% of children younger than 3 years are enrolled in care outside of their home (Mamedova & Redford, 2015). Toddler classroom organization and quality, teacher–child interactions, and support for language learning are key variables influencing the effects of childcare programs on child social-emotional and language outcomes (Bratsch-Hines, Carr, Zgourou, Vernon-Feagans, & Willoughby, 2020; Hong et al., 2019; Hooper & Hallam, 2017; Horm et al., 2018; McCartney et al., 2010; NICHD Early Child Care Research Network, 2001; Ramitha & Khadi, 2019; Salminen, Guedes, Lerkkanen, Pakarinen, & Cadima, 2021).

Providing effective support for each and every child in classroom settings begins with the implementation of high-quality universal supports (Greenwood et al., 2011; Jackson, Pretti-Frontczak, Harjusola-Webb, Grisham-Brown, & Romani, 2009). Universal support (or "Tier 1 of a multitiered approach) refers to the aspects of the classroom environment and teaching practices that are designed to optimize learning for all children. Universal supports are the foundation on which more intensive intervention supports can be applied for individual children (Greenwood et al., 2011). However, research suggests that many toddler classrooms do not consistently provide high-quality universal support, suggesting that more research is needed to support further policy improvements and professional development (PD) in these settings (Burchinal, Magnuson, Powell, & Hong, 2015; Kreader, Ferguson, & Lawrence, 2005; Ruzek, Burchinal, Farkas, & Duncan, 2014; Thomason & La Paro, 2009).

The lack of strong universal supports in toddler classrooms is likely closely related to limited PD for classroom teachers serving infants and toddlers (Austin, 2018; Greenwood et al., 2011). Less than 20% of providers in infant and toddler programs report having professional training to address language and behavior challenges (U.S. Department of Health and Human Services, 2010–2015). Differences in pay and credentials lead to toddler classrooms staffed by teachers with less experience and education than teachers of preschool-aged children (Austin, 2018; Whitebook, McLean, Austin, & Edwards, 2018). To improve the quality of universal care in toddler classrooms, and to ultimately strengthen child language and social-emotional skills, teachers need access to a classroom model that integrates developmental principles and evidence-based practices.

Research examining the effects of classroom contexts on toddlers' development is relatively limited compared with what is known about effects of classroom contexts for preschool- and elementary-aged children. This is a critical gap in the literature in the field (Bleses, Jensen, Slot, & Justice,

2020; Burchinal et al., 2015; Caronongan, Moiduddin, Atkins-Burnett, Niland, & Kharsa, 2019; Greenwood, Schnitz, Carta, Wallisch, & Irvin, 2020; Walker et al., 2020). Specific attention to classrooms serving children in this developmental range is warranted. Toddlerhood marks a time in which development is occurring rapidly. In addition, toddlers vary greatly in the range of language and social-emotional skills they acquire across this age period (Horm et al., 2016). Teachers need specific knowledge and strategies to support the unique and diverse needs of toddlers effectively within classroom settings (Caronongan et al., 2019; Horm et al., 2016).

Toddlers in childcare classrooms represent a wide range of sociocultural and linguistic backgrounds. Very little research has addressed the unique needs of toddlers from culturally and linguistically diverse backgrounds. In addition, research has not yet examined how to meaningfully adapt toddler care to reflect the diversity among the families and communities that are the social-emotional and linguistic contexts for early childhood development. Culturally and linguistically responsive educational models are key to providing inclusive, effective support for all young learners; however, research and developmental interventions that include teachers and children who are culturally and linguistically diverse and that promote cultural and linguistic responsiveness for infants and toddlers in childcare are limited (Buysse, Peisner-Feinberg, Páez, Hammer, & Knowles, 2014; Larson et al., 2020). Another limitation in the current literature is that researchers often do not adequately report teacher and child participant characteristics as needed to determine if and how interventions work with diverse populations (Larson et al., 2020; Greenwood et al., 2020; National Association for the Education of Young Children [NAEYC], 2019; Walker et al., 2020). Thus, we begin this article by acknowledging the limited research available for recommending practices for toddlers from diverse cultural and linguistic backgrounds; however, our intention in presenting this new model for toddler classrooms is to be inclusive of all children and teachers, as we consider the cross-domain linkages between language and social-emotional development.

CO-OCCURRENCE OF DELAYS IN LANGUAGE AND SOCIAL-EMOTIONAL COMPETENCE

In this article, we focus on two critical domains of early learning: language and social-emotional development. Together, early language and social-emotional skills provide a critical foundation for future academic learning and social behavior with adults and peers. The language developmental domain encompasses children's ability to interact with peers and adults in order to share wants, needs, information, and ideas. Early language development includes children's abilities to express themselves, as well as understand and respond to communication when interacting with peers and adults (Owens, 2020). Early language skills are predictive of vocabulary, phonological awareness, reading comprehension, mathematical achievement, and self-regulation, which are the basis for academic achievement (Duff, Reen, Plunkett, & Nation, 2015; Morgan, Farkas, Hillemeier, Hammer, & Maczuga, 2015). Language skills are essential for participation and learning from classroom instruction and strongly correlated with academic success (Chow, 2018; Duncan et al., 2007).

Similarly, early social-emotional development and regulation are strongly predictive of the frequency and quality of peer relationships and academic skills (McCormack, Harrison, McLeod, & McAllister, 2011). The social-emotional domain captures features of development including children's self-regulation, self-confidence, perseverance, emotional literacy, and specific skills associated with interactions with peers. Social-emotional skills in young children might include noticing and responding appropriately to others' emotions, expressing their own emotions appropriately, noticing and helping peers, and engaging in social problem solving (Artman-Meeker, McLaren, Hemmeter, & Grisham-Brown, 2017). Development of

language and social-emotional skills, individually and together, impacts children's learning experiences and opportunities for positive social interactions with peers and adults (Chow, Cunningham, & Stehle Wallace, 2020; Salmon, O'Kearney, Reese, & Fortune, 2016). Toddlers and preschoolers with receptive and expressive language delays are at high risk for poor social-emotional development and behavior challenges (Davis & Qi, 2020; Fisher, 2017; St. Clair, Forrest, Yew, & Gibson, 2019). Children with language delays are more likely to demonstrate internalizing (anxious and withdrawn behavior) and externalizing (aggressive and disruptive behaviors) behaviors than age-matched peers beginning as early as 2 years of age (Irwin, Carter, & Briggs-Gowan, 2012) and are also at greater risk for other social-emotional difficulties, such as difficulty forming peer relationships (St. Clair et al., 2019).

The relation between language and children's social-emotional development is dynamic and complex, with mixed evidence regarding whether this relation is uni- or bidirectional (Bichay-Awadalla, Qi, Bulotsky-Shearer, & Carta, 2020; Bornstein, Hahn, & Suwalsky, 2013). Broadly speaking, one explanation for the relation between these two domains of development is that children with more limited language skills have more limited abilities to regulate their environment, interact with peers, communicate their wants and needs to others, and participate in social and learning interactions that would further their language and social development (Chow, Walters, & Hollo, 2020; Rescorla et al., 2007; Roben et al., 2013). There is also evidence that when toddlers receive language intervention that improves their expressive and receptive language skills, changes in their rate of communication resulting from the intervention mediate reductions in challenging behavior (Curtis, Frey, Watson, Hampton, & Roberts, 2018). This mediating effect is likely the result of more frequent engagement and communication with their caregivers.

In classroom settings, internalizing and externalizing challenging behaviors can constrain children's interactions with communication partners and limit children's access to opportunities to learn and practice foundational language and communication skills with immediate, functional feedback; limited and difficult interactions potentially contribute to further delays in language development (Chow, Walters, et al., 2020; Qi et al., 2006; Shearer, Bichay-Awadalla, Bailey, Futterer, & Qi, 2020). Challenging behavior places children at an increased risk of exclusion from specific activities and potential suspension or expulsion from their early learning programs (Gilliam, 2005). Specifically, African American children are more likely to be expelled than children in other demographic categories (Gilliam, 2005). Suspension and expulsion from typical educational settings or even exclusion from daily activities further limits children's opportunities to learn from interactions with teachers and peers and to participate in systematic instruction, thus perpetuating a negative cycle that can lead to persistently poorer language, social, and academic outcomes.

Given the effects of these foundational developmental differences can have on children's longer term academic and social developmental trajectories, models of classroom intervention that address skill development across these two domains during the toddler and early preschool years are needed (d'Souza, d'Souza, & Karmiloff-Smith, 2017; Kuhl, Tsao, & Liu, 2003). Studies have consistently shown that core language skills remain stable from the toddler years through adolescence (Bornstein, Hahn, & Putnick, 2016; Bornstein, Hahn, Putnick, & Pearson, 2018; Gooch, Thompson, Nash, Snowling, & Hulme, 2016; Johnson et al., 1999). As such, early support for language development is important to establish in a timely fashion, particularly for very young children and toddlers, to improve the likelihood of later success (Chow & Wehby, 2018; Rescorla, 2005; Walker, Greenwood, Hart, & Carta, 1994). This is important, given that language skills in kindergarten predict the

development of later externalizing behavior, even when early language delays and high levels of externalizing behavior do not co-occur (Menting, Van Lier, & Koot, 2011). This suggests that the role of language in the development of challenging behavior may not always be detectable early on but still remains an important precursor to positive or negative developmental trajectories.

In the following sections, we draw on preschool and parent/caregiver literature and summarize key foundational strategies that adults can use to facilitate language and social-emotional development with all children. We emphasize how these foundational strategies are complementary. We describe these practices to highlight the integrative compatibility of quality social-emotional and language support, given that supportive, nurturing, and responsive interactions form the basis for both domains of development. We then propose a framework for integrating these practices into a blended comprehensive universal language and social development intervention. Providing this type of support in toddler classrooms early is important for all children and particularly for those who have or may develop delayed language and social-emotional competence.

ADULT STRATEGIES THAT SUPPORT EARLY SOCIAL-EMOTIONAL DEVELOPMENT

Across evidence-based programs that promote positive behavior and social-emotional development in young children, a consistent set of practices to support early learners has been identified that includes nurturing and responsive relationships, supportive environmental arrangements, explicit teaching of rules and routines, and positive specific feedback (Chow, Cunningham, et al., 2020). At the foundation of most early learning approaches is a deep commitment to nurturing and responsive interactions between children and adults (Hunter & Hemmeter, 2009; Kong & Carta, 2013; Landry, Smith, Swank, & Guttentag, 2008; Yoder et al., 1995). High-quality classrooms that include social-emotional and behavioral support emphasize adult-led interactions, including following children's interests, joining play, engaging in rich conversational exchanges, and building relationships with families (Powell, Diamond, Burchinal, & Koehler, 2010). Classroom structure can support positive interactions and child engagement; teachers who implement strategic environmental arrangements increase the likelihood of child engagement and communicative behaviors (Davis & Fox, 1999; Kaiser, Ostrosky, & Alpert, 1993). Environmental strategies include having sufficient materials rotated to maintain child interest and support specific language use, arranging the daily schedule to meet children's changing developmental needs, and arranging the physical environment to support social play between children and frequent engagement with adults one to one or in small groups (Hemmeter, Ostrosky, & Fox, 2021). Clear positive behavior expectations communicated frequently can contribute to children understanding how to interact with others and materials appropriately, which helps ensure the classroom is physically and emotionally safe for children (Hemmeter, Ostrosky, et al., 2021). Strong environmental strategies can also help teach toddlers to participate independently across classroom contexts while providing teachers with additional structure.

High-quality support for young children includes positive specific feedback and support for engagement with adults, peers, and activities, appropriate behaviors, and peer-related social skills. Effective positive specific feedback is a form of teacher attention delivered contingent on desired behaviors (e.g., walking safely, using gentle hands, cleaning up toys) and specifying the desired behavior (Conroy, Sutherland, Haydon, Stormont, & Harmon, 2009). This specific feedback is more effective than nonspecific praise (Partin, Robertson, Maggin, Oliver, & Wehby, 2009). For example, teachers may provide verbal feedback and encouragement for children's persistence by describing in positive

terms how they built a block structure, the way they solved a problem with a peer, or the way they turned the pages in a book. Positive descriptive feedback allows teachers to highlight behaviors consistent with the classroom expectations while also contributing to nurturing adult–child relationships (Hemmeter, Ostrosky, et al., 2021).

There is evidence that both individual and class-wide interventions can improve social-emotional skill development and reduce children's challenging behavior (McLeod et al., 2017). At the preschool level, rigorous evaluations of curricula such as PATHS (Domitrovich, Cortes, & Greenberg, 2007) and the Head Start REDI program (Nix et al., 2016) have shown positive effects on preschoolers' social skills. Promising preschool intervention models such as BEST in CLASS (Conroy, Sutherland, Vo, Carr, & Ogston, 2014; Sutherland et al., 2018) and Prevent–Teach–Reinforce (Dunlap, Lee, Joseph, & Strain, 2015) also reduce challenging behavior in children deemed at risk for emotional and behavioral problems. A small number of programs have been developed specifically for toddlers, including the Incredible Years parent and toddler series (Webster-Stratton, Reid, & Beauchaine, 2011). These programs have not been studied across children representing a wide range of demographic characteristics (e.g., originally implemented with children who have specific diagnoses and race/ethnicity not reported) and targeted families rather than classroom teachers as interventionists (Webster-Stratton et al., 2011).

There is also evidence that teachers can be coached to implement class-wide positive behavior support with fidelity in early childhood settings. For example, practice-based coaching (Snyder, Hemmeter, & Fox, 2015) has been used to support teachers' use of Pyramid Model practices (Hemmeter, Snyder, Fox, & Algina, 2016). The Pyramid Model (Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003; Hemmeter, Ostrosky, et al., 2021; reviewed in more detail later) is an evidence-based tiered framework for supporting young children's (infancy–preschool) social-emotional development and preventing challenging behavior in group care settings. The Pyramid Model has been primarily studied in early childhood classrooms serving preschool-aged children; however, intervention materials and strategies have been adapted and extended into infant and toddler classrooms as well, recognizing the differences in infant, toddler, and preschool-aged children's social-emotional needs (Bigelow, Carta, Irvin, & Hemmeter, 2019; Branson & Demchak, 2011; Fox, Carta, Strain, Dunlap, & Hemmeter, 2010). Increasing the extent to which preschool teachers use the Pyramid Model with fidelity has translated to reported decreases in children's challenging behavior and increases in prosocial behaviors (Hemmeter et al., 2016; Hemmeter, Fox, et al., 2021). These findings indicate a strong promise that PD targeted at enhancing teachers' use of positive behavior and social-emotional support strategies can positively impact child outcomes.

ADULT STRATEGIES THAT SUPPORT LANGUAGE DEVELOPMENT

A strong evidence base exists for training caregivers on specific sets of core strategies that promote language development. Research-based strategies for improving language outcomes for young children include those characterized as being facilitative of communication opportunities (including responsiveness, strategic wait time, and scaffolding child responses) as well as those that provide well-timed rich linguistic input related to aspects of language such as sentence diversity, vocabulary, and grammar (Adamson et al., 2020; Heidlage et al., 2020; Rowe & Snow, 2019). In their review of features of adult input that facilitate child language development, Rowe and Snow (2019) highlight the importance of considering (a) the contributions of multiple dimensions of adult input (vocabulary, contextualized and decontextualized language, syntax, etc.) and strategies for engaging children in conversations; (b)

how features of these dimensions of language build upon and influence each other; and (c) the use of strategies that align with and are compatible with the changing developmental needs of young children as they age.

Language learning is rooted in interactions between children and their communication partners (Adamson et al., 2020; Ford et al., 2020). Quality linguistic input is modeled most effectively within engaging conversations; adults can facilitate communication behaviors and rich conversation by making themselves accessible for conversation, speaking with warm affect, adjusting the rate of speech and complexity of their language to each child's level of comprehension, responding to child communication bids, and encouraging peer language interactions (Cabell, Justice, McGinty, DeCoster, & Forston, 2015; Chow, Walters, et al., 2020; Justice, Jiang, & Strasser, 2018; Rowe & Snow, 2019; Girolametto & Weitzman, 2002). Particularly, key is contingent responsiveness (i.e., responding to children's vocalizations, gestures, and words with semantically related language). The effects of adult responsiveness are evident as early as the first year of life, with parent responsivity significantly predicting child communication (Paavola, Kunnari, & Moilanen, 2005; Tamis-LeMonda, Bornstein, & Baumwell, 2001); similar associations exist in classroom settings (Cabell et al., 2015; Girolametto & Weitzman, 2002; Hansen & Broekhuizen, 2020). By encouraging and increasing the number multiple-turn conversations that children engage in with teachers, the number of opportunities for children to hear, practice, and receive feedback on increasingly complex language skills also increases (Barnes, Grifenhagen, & Dickinson, 2016; Rowe & Snow, 2019).

Within warm, responsive adult–child conversations, important features of high-quality adult linguistic input for toddlers include modeling syntactically and grammatically diverse sentences, as well as diverse and rare vocabulary (Hadley, Rispoli, & Holt, 2017; Hoff, 2003; Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002). To increase models of language and sentence diversity as children enter later toddlerhood, adults can use strategies such as expanding or recasting a child's utterance, which provide children with models of new, more sophisticated, and diverse vocabulary or syntactical structures (Camarata, Nelson, & Camarata, 1994; Cleave, Becker, Curran, Van Horne, & Fey, 2015; Nelson, Camarata, Welsh, Butkovsky, & Camarata, 1996; Roberts & Kaiser, 2015; Whitehurst et al., 1988). Finally, as children's language develops through toddlerhood and beyond, high-quality language support also includes modeling language and conversational topics that move from the here and now to more the abstract and decontextualized (Rowe, 2012). This includes scaffolding of child responses by helping children generalize content to various contexts, making reasoning explicit, explaining complex concepts, and encouraging children to make predictions about outcomes based on given information (Pentimonti et al., 2017).

As reviewed earlier, research is clear about the specific linguistic input and interactional strategies that support early language development during dyadic interactions. However, there is surprisingly little published experimental research on *implementing* these principles in classroom settings with children younger than 3 years. Research on caregiver language intervention for very young children has primarily been conducted with parents and caregivers in homes during play, routines, and shared book reading (Heidlage et al., 2020; Walker et al., 2020).

The few published experimental studies of language-focused, universal supports in toddler classrooms have demonstrated mixed results for toddlers. For example, Girolametto, Weitzman, and Greenberg (2003) found that coaching on Hanen Program for Early Childhood Educators (an interaction-focused language support program; Weitzman & Greenberg, 2002) significantly improved teachers' use of interaction support strategies (e.g., promoting turn-taking and appropriate wait time) and, in turn, children in the

experimental group demonstrated increased levels of productive language during samples collected in a small group play activity and book reading with their teachers. In contrast to the findings from the Girolametto et al. (2003) study, Landry et al. (2014) found that the implementation of a PD model focused on responsive interactions between teachers and children (Responsive Early Childhood Curriculum; RECC) improved teachers overall scores on a rating scale designed to capture features of structural and process quality in the classroom but did not improve child language outcomes. The authors identify guiding children's behavior and supporting engagement as key components of the RECC; however, they do not report an intentional blending or sequencing of these components with the language and cognitive skill-focused strategies that were targeted in the PD. A subset of teachers also received training on key social-emotional skills (RECC+; friendship, emotional expression, self-esteem). Training was minimal, however, and the only significant differences between children in the RECC versus the RECC+ conditions at posttest were on teacher-reported measures of child anxiety and anger/aggression. Overall, both intervention conditions resulted in significant gains in child emotional understanding. Authors highlighted low to moderate fidelity of implementation of strategies targeting cognitive and academic skills in the intervention classrooms as a potential explanation for the null findings.

Finally, Bleses et al. (2020) evaluated a 20-week "school-readiness" curriculum focused on language, literacy, and numeracy skills in toddler classrooms. Teachers attended a training session and were provided with weekly thematic units, vocabulary words, and mathematical skills to target, sequenced across a 20-week period. Teachers learned strategies for promoting language development such as scaffolding, extending conversations using open-ended questions and expansions, and teaching new vocabulary words. At posttest, children enrolled in classrooms in which teachers had received the curriculum had significantly higher scores on teacher-reported measures of vocabulary and language use; however, effect sizes were relatively small. Investigations of the same intervention delivered at scale using a train-the-trainers approach found similarly significant but modest effects on child language outcomes (Bleses, Jensen, Højen, Slot, & Justice, 2021). Overall, these findings of small effects on child language outcomes and potential dosage limitations are consistent with findings from the preschool classroom intervention literature (Dickinson, 2011; Markussen-Brown et al., 2017).

CONSIDERATIONS FOR CROSS-DOMAIN DEVELOPMENTAL SUPPORT IN TODDLER CLASSROOM SETTINGS

Toddler classrooms offer a unique opportunity for developmental support for the co-emergent language and social skills that are the foundation for later academic and social success. Center-based toddler child-care settings are a bridge between the dyadic, individually focused support most young children experience with their primary caregivers at home to progressively more group-based activities and instructional experiences in preschool–kindergarten and elementary classrooms. It is important to consider the fact that unlike the primarily one-to-one individual interactions in which therapists or caregivers implement support strategies in a home or clinic-based setting, toddler classrooms require adults to respond to multiple children with highly variable communication and behavioral needs within and across activities. This context also requires managing the unique organizational and logistical features of a toddler classroom (variable toddler sleep schedules, transitions, maintaining ratio with classroom staff, diapering, feeding, etc.) while engaging in interactions with children. Thus, it is imperative to consider the broader classroom ecology when intervening to improve teacher–child language interactions.

There is emergent evidence from observational research in preschool classrooms that teachers who demonstrate stronger skills for supporting children's social-emotional development and behavior are more likely to also demonstrate higher quality language interactions (Cunningham, Hemmeter, & Kaiser, 2020). These findings suggest that organizing toddler classroom environments and supporting children's social-emotional development may be important foundations for high-quality language support. Cunningham et al. (2020) also found that PD focused on social-emotional and positive behavior support strategies alone was not sufficient to improve teachers' use of quality language strategies in preschool classrooms, suggesting that a PD approach that addresses strategies in both domains may be needed.

Teachers are a critical link in interventions that require responsive processes and linguistic input. There are no compelling data demonstrating that changes in teachers' behavior as a result of current PD models have been sufficient to result in significant changes in child language outcomes with older preschoolers (Markussen-Brown et al., 2017). Few studies have examined language support interventions and curricula in toddler classrooms with children from a wide variety of backgrounds (Burchinal et al., 2015; Walker et al., 2020). Professional development focused on linguistic input, social communication processes, and social-emotional development are needed for toddler teachers to implement evidence-based strategies with fidelity and sufficient dosage in the complex ecology of toddler classrooms. To date, no evidence-based early intervention models have integrated and systematically sequenced support for both domains of development in toddler classrooms. We propose that an important next step is developing a theory-driven blended intervention model that builds on developmental research demonstrating the cross-domain relationship of language and social-emotional skills and tactically integrates evidence-based social-emotional and language support strategies appropriate for toddlers.

An ideal toddler classroom includes an intentionally designed curriculum including a scope and sequence that addresses both domains of development and leverages research about social engagement, social interaction, and modeling within and across language and social-emotional development. Toddler language and social-emotional development occur in the context of relationships; thus, toddler classroom environments must be supportive of sustained, positive, and responsive interactions between teachers and children, as well as between children and their peers. We propose that a supportive social environment can be leveraged to create more high-quality teaching and learning opportunities. The foundation for learning opportunities involves the organization of the classroom environment, strengthening the quantity, quality, and valence of teacher–child interactions and integrating positive behavior support strategies across the day to create a setting in which high rates of child engagement are probable. In such a context, social-emotional and language development can be addressed frequently through modeling and instruction designed to teach specific skills.

BLENDING INTERVENTIONS TO SUPPORT EARLY LANGUAGE AND SOCIAL-EMOTIONAL DEVELOPMENT

Implementing practices that promote children's social-emotional development and prevent challenging behavior can also support the use of language-rich instructional strategies. By systematically implementing these strategies in classrooms, teachers can simultaneously address the foundations of social-emotional skills and social communication. Interventions that support child engagement, promote social-emotional competence, and reduce challenging behavior will improve classroom routines and activities and provide teachers opportunities to use instructional strategies to teach language skills;

together, these changes in environment, interaction, and instruction will improve children's long-term academic outcomes.

Figure 1 illustrates the theory of change for a *blended intervention model* in which teachers' use of intentional universal supports for language and social-emotional development indirectly affects child outcomes via changes in (a) teacher instructional skills that support children's language development and (b) the quality and frequency of teacher–child interactions that support children's language development. This model illustrates how teacher–child interactions occur within the ecology of multidimensional classroom context and how features of the context could either enhance or constrain the type, valence, and frequency of teacher–child interactions. In this model, teachers' use of strategies that promote active child engagement and prevent challenging behavior positively impact on the overall learning environment by (a) increasing child engagement in activities and social interactions and (b) reducing disruptive behaviors that interrupt or impede opportunities for teachers and children to engage in instruction, extended social and play interactions, and conversations.

Thoughtful environmental arrangements and tactical scheduling create a context in which teachers have frequent opportunities to observe, engage, and comment on children's positive behaviors. In turn, teachers who provide high-quality positive behavior support also establish a positive social and learning environment in which they can more easily provide targeted developmentally appropriate support to children. Increasing teachers' use of naturalistic language support practices in conjunction with positive behavior support strategies can hypothetically allow teachers to leverage new opportunities to implement evidence-based language strategies in the context of a supportive, interaction-focused environment. These changes in teacher instruction and interaction with children provide an essential context for linguistic input matched to the child's focus, which, in turn, we hypothesize, will ultimately impact child language production and comprehension, as well as improved social-emotional skills.

BLENDING EVIDENCE-BASED LANGUAGE AND BEHAVIOR SUPPORTS

We illustrate the feasibility of blending language and behavior interventions by reviewing the key components of two evidence-based interventions that, to date,

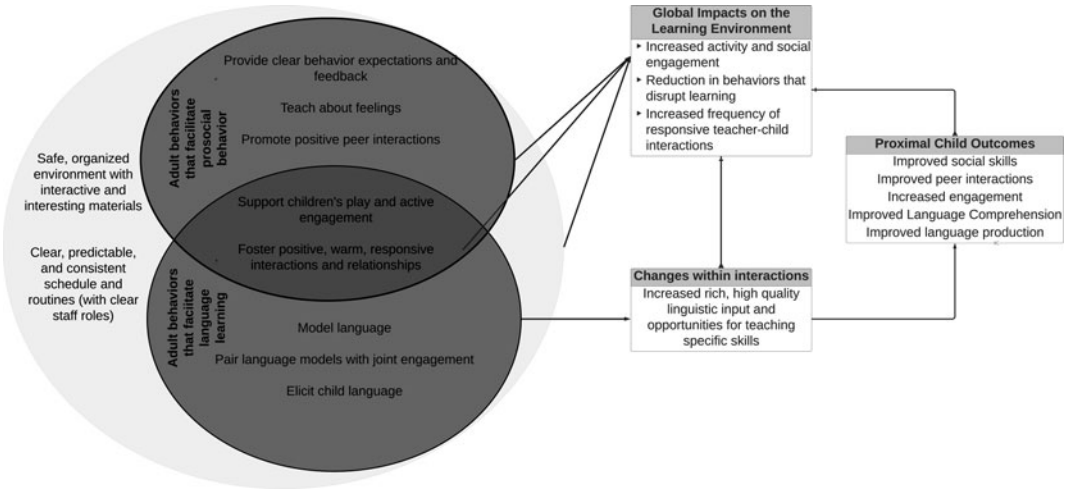

Figure 1. Logic model for blending language and social-emotional supports, highlighting the overlapping features of adult support situated within a broader classroom environment.

have only been implemented independently and demonstrate how components of each can be blended into a single PD approach. The Pyramid Model (Hemmeter, Ostrosky, et al., 2021) and Enhanced Milieu Teaching (EMT; Kaiser & Hampton, 2017) reflect the quality behavior and language support practices for toddlers outlined earlier. The Pyramid Model is a tiered framework for supporting social-emotional development and preventing challenging behavior in early childhood classrooms. Positive, nurturing relationships and high-quality classroom environments that support child engagement form the foundational Tier 1 practices that are designed to address the needs of all children in a classroom. Research on the Pyramid Model has demonstrated significant improvement on teachers' ratings of children's social skills and decreases in teachers' perceptions of children's challenging behavior (Hemmeter et al., 2016; Hemmeter, Ostrosky, et al., 2021). The Pyramid Model includes effective PD that improves teachers' use of evidence-based practices that foster positive behavior and social-emotional development (Hemmeter et al., 2016; Hemmeter, Ostrosky, et al., 2021).

Enhanced Milieu Teaching is a naturalistic language intervention grounded in strategies that increase engagement and leverage naturally occurring opportunities to model, elicit, and practice developmentally appropriate language and communication skills (Kaiser & Hampton, 2017). High-quality evaluations of EMT have demonstrated significant, positive effects on language development in young children with a range of language skills (Kaiser & Roberts, 2013a; Roberts & Kaiser, 2015). Across these studies, primary caregivers were taught to use EMT using the Teach–Model–Coach–Review (TMCR) framework (Kaiser & Roberts, 2013b), and these caregivers were able to use and maintain EMT strategies with children at high levels of fidelity (Kaiser & Roberts, 2013a; Roberts & Kaiser, 2015; Roberts, Kaiser, Wolfe, Bryant, & Spidalieri, 2014).

COMMON ELEMENTS BETWEEN THE PYRAMID MODEL AND EMT

From a common elements approach (Garland, Hawley, Brookman-Frazee, & Hurlburt, 2008; McLeod et al., 2017), the Pyramid Model and EMT share core conceptual features that form a logical and synergistic basis for integrating the two interventions. The shared conceptual features of these interventions are outlined in Figure 2. Specifically, two foundational components are reflected in each intervention: (1) building relationships between caregivers and children through responsive, positive interactions and supportive communication, and (2) intentional design of the environment (both in terms of schedules and physical arrangement) and use of active engagement strategies to support child participation. We define examples of specific practices from each individual intervention reflected in these shared conceptual features in Figure 1 to demonstrate the overlap. At the core, the focus of these shared foundational components is centered on creating a classroom environment in which rich, extended, positive interactions between and among adults and children are possible, and they reflect an ecological-transactional framework for approaching the facilitation of language and social-emotional behavior in the classroom (Chow, Cunningham, et al., 2020). They take into consideration the fact that in a classroom, children's learning is situated within a broader classroom ecology and that multiple features of the classroom context influence the opportunities for moments of teaching and learning. The strategies support teachers in (a) successfully setting up the physical and temporal environment to create predictable routines and support child engagement and play, (b) creating and sustaining responsive interactions across the day and nurturing, trusting relationships between adults and children.

Each intervention also has unique features designed to provide types of support that are specifically facilitative of either language

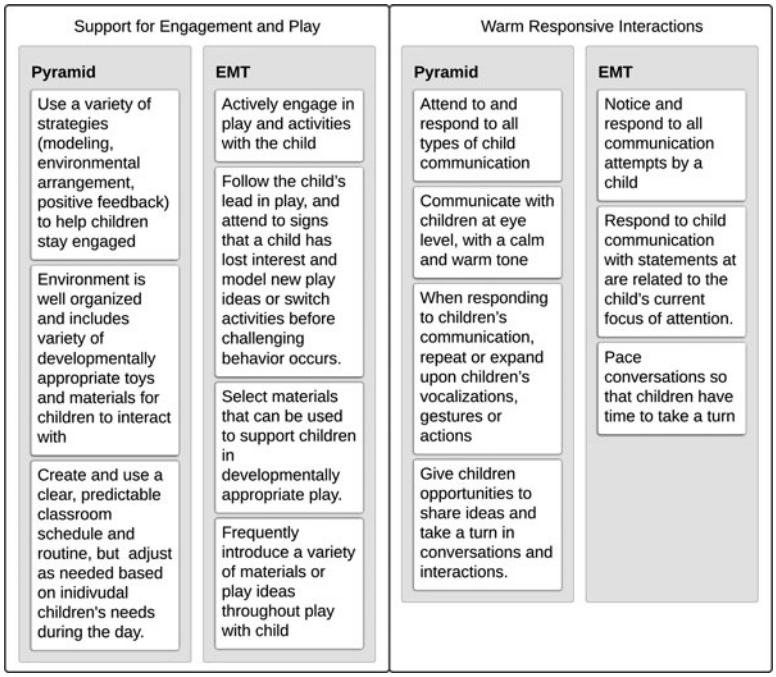

Figure 2. Shared conceptual features of Pyramid (Bigelow et al., 2019; Hemmeter, Fox, et al., 2021) and EMT practices (Kaiser & Hampton, 2017). EMT = Enhanced Milieu Teaching.

or social-emotional development. The Pyramid Model includes distinct behavior-focused strategies and components associated with teaching expectations, providing clear directions, responding appropriately to challenging behavior, and facilitating social-emotional skills. Enhanced Milieu Teaching includes distinct language-focused strategies and components associated with specific linguistic input (vocabulary and early sentences) and explicit modeling and elicitation strategies to facilitate child language use in social contexts.

As seen in the example strategies highlighted in Figure 3, the unique strategies and components of the Pyramid Model provide a system of support for teaching and supporting pivotal self-regulation skills, emotional literacy, and initiating and maintaining interactions with peers, laying the groundwork for future skills related to friendship, social problem solving, and emotional regulation and expression. They also provided a clear and evidence-based approach to responding to challenging behaviors when they occur and providing children with clear feedback on how to engage appropriately with peers, adults, and materials across the school day. The unique strategies and components of EMT focus on leveraging moments of joint engagement between adults and children within activities and routines and embedding specific linguistic support and modeling. Modeling specific, developmentally appropriate language while communicating with children about their actions and interests, using appropriate pacing, waiting for child turns, and responding to verbal and nonverbal communication attempts are core strategies. Responding to child language by expanding the child's utterances and recasting child language into more mature forms provide linguistically rich, contingent models following a developmental sequence. Judiciously implementing specific time delay and prompting strategies to elicit target-level child language and following through

with support can ensure successful communicative exchanges that can effectively supplement modeling.

Given the shared and unique features of the Pyramid Model and EMT, we use Figure 4 to demonstrate how core practices from both interventions can be sequenced to first establish an environmental context that allows the classroom to function smoothly and provide space and time for positive teacher–child interactions, support child engagement, and finally to embed support for language and social-emotional development into those interactions. Consistent with the conceptual model shown in Figure 1, the first phase of support focuses on environmental arrangement, building relationships between caregivers and children and communicating positive behavior expectations to set the stage for interactions. This is followed by targeted strategies for facilitating child play and engagement during play, routines, and activities in the classroom. Focusing initially on the use of these strategies will reduce challenging behavior and increase positive teacher–child interactions in service of both promoting social-emotional skill development *and* increasing the duration and frequency of sustained teacher–child interactions. For example, setting up the physical environment to have multiples of a toy or material available will allow for teachers and children to engage simultaneously. This may prevent children from exhibiting challenging behavior over access to a toy and allow teachers the opportunity to introduce play ideas through modeling. Doing so will set the stage for improving the quality of language support by creating more opportunities for teacher–child communication.

Once foundational engagement and relationship building strategies are in place, the focus of coaching can transition to increasing specific strategies for teaching social-emotional and language skills *within* interactions. For language development, the focus is on delivering targeted linguistic support strategies during moments of high child engagement created using the foundational positive behavior and nurturing relationship strategies. For social-emotional development, this includes targeted strategies for teaching skills related to emotional regulation, social problem solving, and emotion expression, as well as peer interactions and emergent friendship skills. Across both domains, the implementation of these strategies is embedded in interactions already occurring throughout

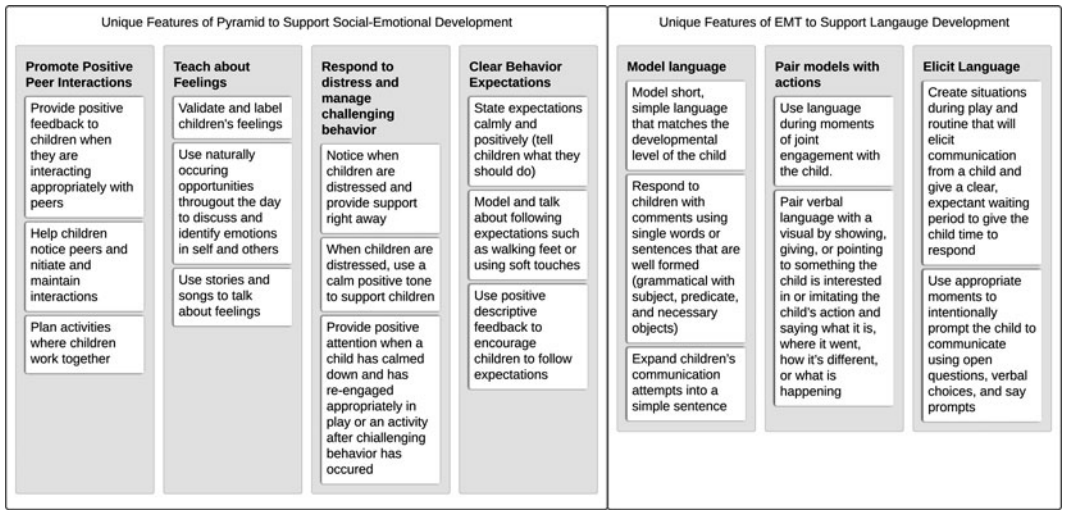

Figure 3. Examples of practices unique to the primary interventions: Pyramid (Bigelow et al., 2019; Hemmeter, Fox, et al., 2021) and EMT (Kaiser & Hampton, 2017). EMT = Enhanced Milieu Teaching.

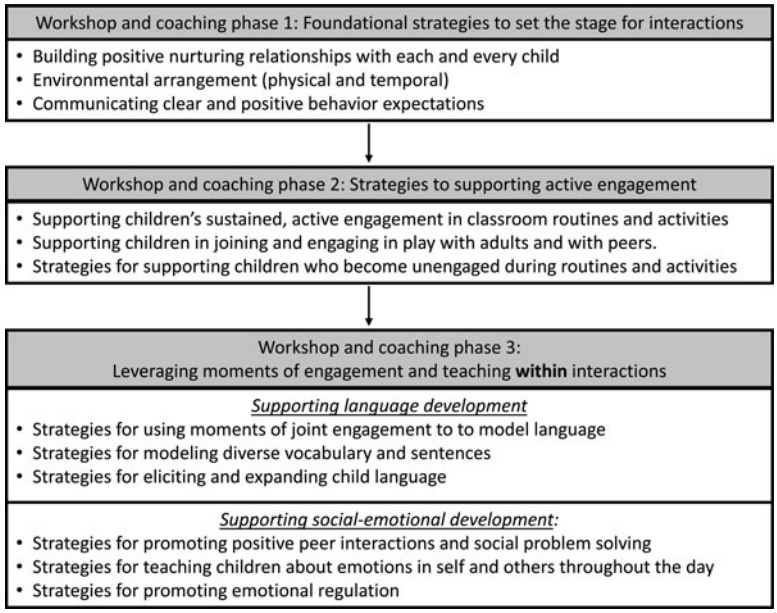

Figure 4. Sequence of support within the blended intervention model.

the school day (e.g., play, routines, book reading, mealtime, small group activities). As such, teachers can feasibly focus on and use both types of strategies simultaneously, once the foundational features of interaction are in place. For example, during play, teachers might help children notice and respond to one another by modeling commenting on two peers block structures. During those models of social interaction with a peer, a teacher can use principles of EMT to guide what linguistically is included in that model (e.g., modeling a simple sentence such as "Micah's tower is tall!"). Similarly, during a moment in which a child is upset or asking for help, a teacher can respond using EMT principles and expanding the child's language to a simple sentence or single label, while also utilizing Pyramid strategies of explicitly naming and validating feelings to facilitate emotional literacy.

In summary, this blended model begins with introducing strategies designed to increase engagement and support positive child behavior and social-emotional skills during classroom routines and activities and then moves to specific use of language teaching strategies. This intentional sequencing of coaching will increase the likelihood that teachers will learn and use more advanced language support strategies with greater consistency and higher fidelity because they will learn these effective strategies in the context with high levels of child engagement, fewer interrupted interactions, and less challenging behavior in the classroom. This will theoretically result in a higher dosage of linguistic support strategies.

ADDITIONAL CONSIDERATIONS FOR IMPLEMENTATION

Several considerations must be taken into account when planning how to implement this model in classroom settings. It is important to note that the blended approach described here is designed as a Tier 1 or universal intervention. As such, it includes strategies that are designed to be supportive of learning and development for each and every child, with a focus on skills needed to counter persistent delays by specifically targeting social-emotional skill and language development. The strategies are designed to

be implemented in response to children's behaviors, initiations, and communication and therefore can be used with all children. Within toddler classrooms, children are likely to have different needs based on their age and development. Therefore, it is critical to consider how to support teachers in implementing these class-wide practices while still attending to individual differences and allowing for differentiation. To do so, we assert that initial training must incorporate support for teachers in understanding (1) the developmental trajectory and expectations associated with each domain of learning and how the strategies that they choose to implement with children may differ and evolve based on children's development; (2) how diversity in cultural, ethnic, racial, and linguistic backgrounds of the children in their classroom shapes children's development, and how to leverage that diversity as an asset and strength of individual children (Falk & Souto-Manning, 2020; NAEYC, 2019; Zwahr, Davis, Aviles, Buss, & Stine, 2007). Understanding how to promote assets of children and their families who have historically been marginalized is vital to improving teachers' cultural competence and promoting inclusive classrooms. Coaching and PD must be situated within the context of comprehensive support for teachers in designing culturally responsive early childhood spaces and recognizing and challenging their personal implicit biases related to gender, race, language, culture, and ethnicity that may influence how they distribute their language and attention within the classroom (Davis, Perry, & Rabinovitz, 2020; Falk & Souto-Manning, 2020; NAEYC, 2019). Doing so can help ensure that children are receiving quality, supportive opportunities for learning with their teachers and peers that are responsive to their own unique needs, interests, and strengths.

Although the proposed model does not yet address coordination between childcare and home settings and caregivers, the language and social-emotional interaction strategies that are the essential components of this model derive from observations of caregiver–child interactions during the toddler years. The language support strategies have been taught to caregivers of toddlers (see Heidlage et al., 2020; Walker et al., 2020, for a review), and the Pyramid Model framework strongly emphasizes the importance of relationships with families and promoting use of strategies to build social-emotional development at home (Hemmeter, Ostrosky et al., 2021). An important addition to the proposed model would be providing caregivers with opportunities to learn the strategies used in the childcare classroom through informal caregiver groups or more extensive individual training. Implementing a common set of interaction strategies to support language and social-emotional development across home and childcare could have important benefits, especially for children at risk for language and social emotional delays. Given that few studies have examined childcare–home coordinated strategies to support development, this would be an exciting and important area for research.

CONCLUSION

There is a critical need for an integrated approach to supporting toddlers' development across language and social-emotional developmental domains. Such integration is especially needed for toddlers who have or may develop early language and/or social-emotional delays; young children with language delays and emergent behavior challenges are at high risk for persistent language deficits, challenging behavior, delayed social competence, and limited school readiness. In this article, we presented a blended approach that builds on the common social interactional foundations implicit in both types of interventions. This model emphasizes the importance of providing developmental support for co-emergent language and social skills within the unique context of toddler classrooms. We posit that merging social-emotional and language interventions into a single model is parsimonious and comprehensive. A combined classroom intervention, addressing these critical, related

developmental domains, has the potential to have significant positive effects on the developmental trajectories of toddlers. We contend that the blended intervention approach has the potential to produce greater positive outcomes for children that would exceed those outcomes resulting from classroom interventions addressing only a single domain for this population of young children. Experimental research is needed to validate this theory-driven blended intervention model. Outcomes should be examined in terms of teacher implementation, child outcomes across both domains, and teachers' perceptions of the feasibility and acceptability of the approach. Specific attention must be paid to measurement of the global classroom environment in terms of features that support children's learning opportunities and features of specific teacher–child interactions that are facilitative of language growth and social-emotional development.

This model has implications for more efficient PD, which is of particular importance, given the need for increased training and support for teachers in toddler classrooms (Austin, 2018; Zwahr et al., 2007). Given the integrated and comprehensive nature of the blended intervention, the level of training and resources needed to provide PD for implementation of the blended intervention will likely be less than parallel independent training to support language and social-emotional development separately.

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