Early Childhood Engagement

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Abstract

Children's experiences with formal group early learning experiences serve as an introduction to schooling and provide foundational experiences with cognitive, language, social, emotional, behavioral, and relational skills that start the trajectory to a successful transition to elementary school and beyond. Despite evidence supporting the benefits of early childhood engagement for learning and development, there is very little consistency in how early childhood engagement is defined and measured. This chapter summarizes the evidence on early childhood engagement, describes the myriad ways early childhood engagement has been defined, and highlights some potential options for measuring early childhood engagement.

High-quality experiences with early childhood education prompt positive and enduring outcomes for children, particularly for those children from households with economic disadvantage (García et al., 2016; McCoy et al., 2017; Ramey & Ramey, 2004; Weiland & Yoshikawa, 2013). Such experiences serve as a formal introduction to schooling for young children and provide foundational experiences with cognitive, language, social, emotional, behavioral, and relational skills that start the trajectory to a successful transition to elementary school and beyond (Ansari, 2018; Barnett, 1995; Han & Neuharth-Pritchett, 2021; Ledford et al., 2020). Longitudinal studies document the impact of early childhood experiences on the development of positive attitudes toward school and attendance patterns (Schweinhart et al., 2005; van Huizen & Plantenga, 2018; Wylie & Hodgen, 2012). Indeed, positive early childhood engagement might be a protective factor for children placed at risk by reducing problem behaviors and augmenting social skills that facilitate adjustment to the learning settings (Dominguez & Greenfield, 2009; McWayne & Cheung, 2009). Despite evidence supporting the benefits of early childhood engagement for learning and development, there is very little consistency in how early childhood engagement is defined and measured. Although a majority of studies on early childhood engagement has focused on the behavioral aspects of the construct, others have considered early childhood engagement to be multidimensional, including emotional, relational, and cognitive aspects. This chapter will summarize the evidence on early childhood engagement, describe the myriad ways early childhood engagement has been defined,

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and highlight some potential options for measuring early childhood engagement.

Longitudinal evidence of the impact of early childhood programs on students' use of special education services, retention, and graduation rates suggests that these settings are essential for setting children on a positive academic trajectory. For example, the High/Scope Perry Preschool Project suggests that children who were randomly assigned to the program spent significantly fewer years in special education programs and services compared with the control children (~1 year compared with 2.8 years, respectively). Additionally, program females completed more years of education than did nonprogram females (12.2 vs. 10.5, respectively); high school graduation or equivalence completion was also significantly higher for program females than nonprogram females. There were no differences in retention or graduation rates for program and nonprogram males (Schweinhart et al., 2005). Similarly, the Carolina Abecedarian early childhood program was associated with significantly higher education levels compared with the control group (e.g., 13.46 vs. 12.31 years, respectively), with women again benefiting more than men (Campbell et al., 2002; Campbell et al., 2012). Using follow-up data from studies examining the impact of infant and preschool programs on child development, Lazar et al. (1982) reported that children from low-income families were significantly more likely to meet basic school requirements, less likely to be retained a grade, and less likely to be referred to special education services than were children who did not attend early childhood programs. These studies provide clear evidence of the long-term benefits of early childhood education experiences for educational outcomes.

In 2021, conversations about the efficacy of early intervention, support for the early care and education workforce, and specific interventions such as universal prekindergarten for children have stimulated conversations about the quality of early childhood experiences and who accesses them (Austin et al., 2021; Eden, 2021; OECD, 2021; Shapiro, 2021). Disparities in early care and education experiences (Bernstein et al., 2014) and variations in the individual experiences that children have within these settings trigger questions about early childhood engagement experiences and their resultant impact on long-term schooling outcomes (Williford et al., 2013). In comparison to the robust evidence base on student engagement in the elementary through high school (Finn & Zimmer, 2012; Lindstrom et al., 2021) years, literature about early childhood engagement is more limited and often focused on readiness variables (e.g., literacy, language, and mathematics) and not specifically the construct of engagement (Aydogan, 2012; Ramey & Ramey, 2004).

Engagement Foundations

Many different perspectives on the development and developmental trajectories of young children have guided the work of scholars in early childhood education. For example, Bronfenbrenner's bioecological model (Bronfenbrenner, 2005) and the Process-Person-Context-Time (PPCT) framework have been modeled in numerous studies examining the interrelations among proximal processes, personal characteristics, contexts, and time to understand how children learn and in what contexts. By examining proximal processes which Bronfenbrenner (2005) noted as primary engines of development, scholars have been able to examine children's engagement in activities and interactions that occur on a relatively regular basis along with the resources, teachers, and peers in those settings (Downer et al., 2007). Other scholars have employed dynamic systems theories to help describe how the role of context including relationships, environment, and experience drives youth learning and development (Immordino-Yang et al., 2019; Lerner, 2018). Child agency and teacher and child beliefs also have been examined to assess how young children engage to develop their identities as learners and members of the learning community (Dweck, 2016). Still other scholars advocate for understanding what early learning experiences work for which children in which contexts (Finn, 1993; Shonkoff, 2017). For example, how might the

quality of a child's engagement with learning be directly related to pathways for learning (Lawson & Lawson, 2013)? Scholars have noted that children who engage in classrooms with positive and proactive involvement in learning reach higher academic outcomes than children who do not develop a proactive stance to engagement (Fredricks et al., 2004).

An emerging body of research in early childhood special education has also helped frame the way that student engagement might be operationalized in settings for young learners. For example, Finn's (1989) Participation-Identification Model suggests that both behaviors (i.e., participation) and emotions (i.e., feelings of belonging) are important for students' participation and long-term educational outcomes. He suggests it is the value of belonging which engages young children and that entry into school offers an opportunity to connect children to that feeling of belonging ultimately affecting successful participation, achievement, and identification with schooling. That is, long-term student engagement in schooling over time, combined with some level of academic success, can facilitate students' identification with school and subsequently their participation inside and outside of the classroom. This process likely begins with the earliest formative experiences with schooling (McCabe & Altamura, 2011; Mirkhil, 2010). Greenwood (1996) empirically tested a theoretical model in which the effects of instruction (e.g., exposure to materials or task quality) on student outcomes were indirect *through* student engagement. In other words, he tested whether the effects of instruction on student outcomes were not direct but instead mediated by student engagement; he found evidence to support this mediation, suggesting that the effects of instruction on student outcomes are indirect through student engagement. Ferholt and Rainio (2016) examined the role of play in children's engagement and concluded that play can serve as an important context for engaging young children. McWilliam and Bailey (1992) documented that higher levels of student engagement are strongly associated with improvements in learning across a number of developmental domains.

In engagement work with older learners, one model of student engagement is operationalized as multidimensional and encompassing activities that are malleable, responsive to contextual features of the learning environment, and amenable to environmental change (Fredricks et al., 2004). This engagement model is divided into domains of behavioral engagement, emotional engagement, and cognitive engagement. Skinner and Pitzer (2012) define school engagement as students' involvement and interactions in school as measured both by quality and quantity of such engagement. Other scholars describe student engagement as a function of dynamic and joint processes in which the environment is a primary contributor in the students' lives within the classroom (Booren et al., 2012; Carto & Greenwood, 1985; Kontos & Keyes, 1999; Wang & Degol, 2014). Although the field is in general agreement about engagement as a meta-construct, what is clear from this literature is that engagement declines as students' progress across their P-12 academic careers (Ladd & Dinella, 2009; Marks, 2000; Wang & Eccles, 2012), although the patterns of decline are not the same across youth (Wylie & Hodgen, 2012). For example, Wang and Peck (2013) identified five patterns of behavioral (e.g., how often have you gotten schoolwork done on time?), emotional (e.g., I feel happy and safe in this school), and cognitive (e.g., how often do you try to relate what you are studying to other things you know about?) engagement, including highly engaged, moderately engaged, minimally engaged, emotionally disengaged, and cognitively disengaged. Importantly, there are differences in patterns of engagement across racial/ethnic backgrounds (Johnson et al., 2001; Wang & Eccles, 2013). Thus, understanding engagement's crucial role during the early years can guide future scholarship in establishing conditions that enhance children's connections to schooling, consistency of engagement, and the subsequent success over time for an array of developmental tasks that follow (Finn, 1989; Greenwood et al., 2002; Hojnoski & Missall, 2010; Mahatmya et al., 2012; Reschly & Christenson, 2012; Skinner et al., 2008a, 2008b).

Early Childhood Engagement

McWilliam and Casey (2008) employ a broad definition of early childhood engagement to encompass the amount of time children spend in developmentally appropriate interactions in various contexts in learning settings. Copple and Bredekamp (2006) characterized early childhood classrooms as spaces where child can explore and take advantage of learning opportunities that allow them to strengthen their connections with learning. Active participation in classroom routines and appropriate interactions also have been advanced as child engagement in early learning contexts (Bennett et al., 2011; Castro et al., 2017; McWIlliam & Bailey, 1992; Odom & Bailey, 2001). Ladd and Dinella (2009) found that children who develop stable patterns of behavioral (e.g., cooperative-resistant classroom participation) and emotional (e.g., relating to school) engagement at a young age acquire skills that allow them to weather more challenging engagement tasks (e.g., embracing the student role, responding to teacher's requests, and undertaking more complex school tasks) as they make the transition to elementary and secondary schools.

Studies have documented child engagement with classroom activities and routines and their relationship to later school achievement, school completion, social and emotional outcomes, motivation, and self-regulation (Bryan & Gast, 2000; Fredricks et al., 2004; Hamre & Pianta, 2001; Hojnoski & Missall, 2010; Mashburn et al., 2008; Noltemeyer et al., 2015; Vitiello & Williford, 2016; Williford et al., 2013; Zimmerman et al., 2020). For example, Ladd et al. (1999) found that children's cooperation and self-direction in kindergarten and first grade predicted school performance (where antisocial behavior influenced peer rejection which contributed to classroom participation which influenced achievement which accounted for 53% of the total indirect effect of antisocial behavior on achievement). Young learners' positive engagement with classroom activities and processes, observed by active play, motivation, persistence (i.e., more time on a task), and comfort with autonomy resulted in subsequent higher academic achievement and appropriate behaviors than children who did not exhibit those aspects of engagement (Fantuzzo et al., 2004; McClelland et al., 2000; McWayne & Cheung, 2009).

In addition to individual child variables, researchers have also focused on the role of various aspects of the settings in which learning and development take place (both inside and outside the classroom) in helping explain young children's engagement in school (Chien et al., 2010; Roper & Hinde, 1978; Prykanowski et al., 2018). For example, using the *Individualized Classroom Assessment Scoring System* (inCLASS; Downer et al., 2010), Vitiello et al. (2012) rated children on 10 dimensions of positive and negative engagement with teachers, peers, and tasks using (i.e., positive engagement the teacher, teacher communication, peer sociability, peer assertiveness, peer communication, engagement with tasks, self-reliance, conflict with teachers, conflict with peers, and behavioral control). Children were observed for 10 min and then rated using a seven-point Likert scale, with higher scores indicating more positive engagement on all but the conflict scales (higher scores indicated more negative engagement on these scales). Factor analyses revealed four broad dimensions: Positive engagement with teachers, which reflected positive, affectionate and confident interactions; positive engagement with peers, which reflected lower levels of rejection and higher levels of social acceptance; positive engagement with tasks, which reflected active engagement, sustained attention, motivation, persistence, and independence; and negative engagement, which was described as tense or conflictual interactions with teachers, peers, and tasks. With 283 preschool children (34–63 months; $M = 50.8$ months; SD = 6.5) drawn from 84 classrooms, the researchers observed children's engagement with teachers, peers, and tasks across the preschool program day. The authors found that engagement was a function of the type of activity and the learning partners with whom the children engaged. When children were engaged in free choice or outdoor time activity settings, engagement was found to be positive with both the tasks

and the peers with whom the children were learning. More teacher-directed or structured activities were positively related to engagement with teachers. The authors also noted that transitions during the program day were coupled with less positive engagement with teachers (e.g., more conflict and more tension). These findings provide important insight into the contextual variables that support student engagement. The age of the child was also connected with developmental markers such as a more advanced vocabulary, which enabled older preschoolers to have more positive engagement experiences with teachers during structured activities. The authors also found children with more developed self-regulation skills, marked by better behavioral control (e.g., patience, activity level and physical awareness), also had more positive engagement. Children in the study with a language other than English spoken at home had less engagement than those dual language learners whose parents reported speaking English at home. This study is one of few studies cautioning the field to consider the language barrier or other individual variables that might prohibit full engagement in early learning settings.

A recent review and meta-analysis conducted by Lindstrom et al. (2021) examined early childhood engagement with school and subsequent achievement. Beginning with an initial screening of 13,521 studies, the authors identified a final sample of studies (n = 21) and calculated 199 effects sizes from those data representing 9749 children on which engagement data had been collected. Measures of the quantity and type of engagement varied considerably across studies but most commonly included the *inCLASS* (Downer et al., 2010), the P*reschool Learning Behaviors Scale* (McDermott et al., 2002), the *Learning to Learn Scale* (McDermott et al., 2011), or the *Teacher Rating Scale of School Adjustment* (Ladd, 1992). The authors found that engagement, broadly described as orientation to and interaction with instructional materials and activities, peers, and teachers, was positively and significantly associated with achievement (r = 0.24). The authors found a small, positive relationship between children's early childhood engagement and their subsequent achievement where higher scores on academic engagement were related to higher scores on measures of achievement. Lindstrom and colleagues then explored potential moderators to examine variability across the 21 studies and noted that across the 21 studies that individual study-level factors (e.g., demographic variables, type of engagement measure, achievement content area) did not significantly predict the correlation between engagement and achievement. Thus, the authors suggested a critical need for studies that examine the causal relationship between young children's academic engagement and achievement, including studies that examine these constructs for young children with disabilities.

Behavioral Engagement

The majority of studies on early childhood engagement have focused on the behavioral aspects of the construct. Within the construct, behavior is typically defined as compliance by following the rules in the early learning setting (Finn, 1993; Finn & Rock, 1997). Another component of the construct is participating in the learning activity by devoting attention to the work and persisting with the task even when the task is challenging (Finn et al., 1995; McWilliam et al., 2003). Early childhood studies have relied primarily on observation of these behaviors given the developmental constraints of collecting data, such as surveys, which would be developmentally inappropriate for young children in most cases. Further, the behavioral aspects of engagement are important to measure given that poor engagement is predictive of poor attention, poor impulse control, lack of persistence, navigating transitions, challenges in school readiness, and overall poorer long-term academic success (Bierman et al., 2008; Bierman et al., 2009; Bohlmann & Downer, 2016; Raver, 2002). Examining positive aspects of behavior, such as task engagement, persistence, and interest, has been shown to be related to children's regulation and overall engagement in activity settings (e.g., classrooms, schools, and out of school contexts)

and positive peer acceptance (Downer et al., 2010; Hughes & Kwok, 2006; Raver et al., 2011).

Emotional Engagement

Fredricks et al. (2004) describe emotional engagement as reactions, both positive and negative, to teachers, peers, academics, and school that facilitate connectedness and belonging in a learning environment and a child's willingness to participate in that environment. By focusing on measuring social and emotional competencies, Bierman et al. (2008) supported Head Start teachers in the use of evidence-based practices in fostering social and emotional competencies and early language and literacy skills for the four-year-olds within their Head Start REDI study. Designed to help children increase participation, attention, emotional understanding, and social problem-solving, the authors implemented the Preschool PATHS Curriculum (Domitrovich et al., 2007), which encouraged friendship skills, emotional understanding and emotional expression skills, self-control, and problem-solving skills like conflict resolution and negotiation skills. Results from this intervention study supported the direct intervention of teaching social-emotional competencies and language skills with young children ultimately influencing their level of learning engagement at school, marked by self-regulation, learning motivation and involvement, and compliance. Studies documenting these types of interventions promote opportunities for teachers to support young children in forming a positive perception and liking for school as well as a sense of belonging. Such connections also support fewer concerns with behavior and increased activity engagement (Raver, 2002).

Another influential study on early childhood student engagement was conducted by Williford et al. (2013) and examined emotional engagement within a sample that included a high number of Hispanic children. The authors noted that in environments where children could engage positively with teachers and peers, outcomes included increases in compliance with classroom activities, gains in executive function (e.g., tapping a pencil once when the research assistant tapped twice (Pencil Tap task) or sorting toys into bins without playing with them (Toy Sort task; Smith-Donald et al., 2007), and gains in emotion regulation (e.g., is a cheerful child; displays appropriate negative affect in response to hostile, aggressive, or intrusive play using the Emotion Regulation Checklist; Shields & Cicchetti, 1997). The authors also found that positive peer and teacher/child engagement supported children's task orientation (e.g., completes work; functions well event with distraction) and decreased dysregulation. Another finding from the study centered on benefits for children who engaged more negatively in the classroom. For those children, higher positive engagement with teachers was related to greater reductions in dysregulation. A similar effect was found for children when they were less negatively engaged in classroom activities and more positively engaged with peers. The authors highlighted the importance of the children's positive interactions with peers and teachers and those interactions promote emotional engagement in preschool classrooms.

Other work on emotional engagement with young learners has centered on the role of helping children to establish an orientation to formal learning settings and engagement with social partners such as peers and teachers (Buhs & Ladd, 2001; Buhs et al., 2006; Ledford et al., 2020). For example, Early et al. (2010) note that Latino and African American children experience less time in free choice activity settings than their White peers. Studies have also focused on development of a mindset and other emotional connections that foster identification with and engagement in school (Finn, 1989; Ladd et al., 2000; Stipek, 2002; Trentacosta & Izard, 2007; Voelkl, 1997). Finally, studies have also focused on the role of the teacher and their interpersonal connections to children as variables that influence children's emotional engagement (Ladd et al., 1999; Skinner & Belmont, 1993; Valeski & Stipek, 2001).

Relationships

A solid body of evidence supports relationship connections between young children and their teachers and engagement with school (Fuhs et al., 2013; Hamre & Pianta, 2001; Ladd & Dinella, 2009) with engagement operationalized as classroom participation, school liking, peer relationships, and affective and cognitive processes. Young children's orientation to and interactions with teachers and peers directly influence engagement (Ledford et al., 2020; McWilliam & Bailey, 1992). In a study examining 1364 children from birth to sixth grade, O'Connor and McCartney (2007) found that children who had higher-quality relationships with their teachers demonstrated higher levels of classroom engagement (i.e., engagement in learning and engagement in the classroom) than their peers who had lower-quality relationships with their teachers; in turn, engagement predicted achievement (Sobel's $z = 2.88$, $p < 0.01$).

Searle et al. (2013) conducted a study that demonstrated the influence of adult-child relationships on hyperactivity and inattention in preschool and subsequently how the quality and strength of these relationships might improve child behavioral (e.g., effort, attention, and persistence) and cognitive (e.g., preference for challenge, flexible problem solving) engagement. In particular, more positive adult–child relationships (marked by high levels of closeness and low levels of conflict) were associated with lower levels of hyperactivity and inattention ($R^2 = 0.21$ for parent-child relations and $R^2 = 0.37$ for teacher-child relations); in turn, lower hyperactivity and inattention was associated with higher classroom behavioral and cognitive engagement ($R^2 = 0.23$). These findings prompt internal working models of success and thus facilitate a connection of belonging and eagerness to learn. Other scholars have noted the importance of healthy relationships and the impact of conflictual relationships on long-term engagement in school (Birch & Ladd, 1997; Hamre & Pianta, 2001; Hughes et al., 2006; Ladd et al., 1999; Mantzicopoulos & Neuharth-Pritchett, 2003; Roorda et al., 2011). For example, Hughes et al. (2006) predicted first graders' peer acceptance, classroom engagement, and school belonging as a function of teacher support. The authors found that teacher-student support predicted peer acceptance and classroom engagement. Pianta et al. (1997) found similar outcomes when examining the transition from preschool to kindergarten on the engagement attributes of frustration tolerance and work habits. Within the special education literature, recent work has highlighted concerns in assessing and identifying opportunities and barriers in engagement (Adolfsson et al., 2018).

Early Childhood Engagement Measurement

Although scholars and practitioners have robust data from older students on engagement, measurement of engagement within the early childhood years and in the transition to the primary grades of school can be challenging (Fredricks & McColskey, 2012). As Janosz (2012) notes, longitudinal studies beginning in early childhood are needed to "disentangle the relations between engagement, motivation, and other biopsychosocial aspects of the child and adolescent development (p. 700)." Lam et al. (2012) note the importance of examining both indicators and facilitators of engagement that provide insight into the features and contextual factors that influence student engagement. Mahatmya et al. (2012) advocate for an ecological approach to the study of early childhood engagement which would allow for an examination of person-environment fit, the inclusion of context in engagement examinations, and an opportunity to assess contextual synchrony across transition to elementary school. Although high-quality measures for direct observation such as the BOSS-EE, inCLASS and CLASS (Downer et al., 2010; Gettinger & Walter, 2012; Pianta et al., 2008) have been developed and are incorporated in engagement studies, challenges arise in accessing engagement perceptions from children themselves (Lynch & Cicchetti, 1991; Lynch & Cicchetti, 1992). As Pianta, Hamre, and Allen (2012) note "relationships

between teachers and students reflect a classroom's capacity to promote development, and it is precisely in this way that relationships and interactions are the key to understanding engagement (p. 366)." Thus, it is important to consider opportunities to collect child feedback to further examine context for engagement. As cited in other work that centers on belongingness (Finn, 1989), young children's formative experiences in early childhood settings facilitate competence and connection with others. Two measures have been developed which provide a mechanism for young children to share the relationships and engagement with teachers in classrooms, thus adding a dimension to measurement of engagement that can provide unique insights into the starts of developmental trajectories that lead to successful school completion.

Young Children's Appraisals of Teacher Support (Y-CATS). Developed with a sample of children who attended the Head Start program, the Young Children's Appraisals of Teacher Support (Y-CATS) assessment (Mantzicopoulos & Neuharth-Pritchett, 2003) examines children's perceptions of their relationships with their teachers on the constructs of warmth, conflict, and autonomy. Based in attachment theory, Y-CATS taps into children's internal working models of their interactions with their teachers that set the stage for relationship schemas from children's earliest of experiences with schooling and which might influence their perceptions as they make the transitions throughout elementary and secondary school (Howes, Phillipsen, & Peisner-Feinberg, 2000; Pianta, 1999; Pianta et al., 1995).

Y-CATS employs a developmentally appropriate assessment strategy, item formats, and concrete materials that remove concerns associated with verbal expression and information processing abilities (Martin, 1986; Measelle et al., 1998). The measure allowed children to respond to dichotomous items using concrete materials (postcards, a mailbox, and a trashcan). The original scale was developed with data from 364 children enrolled in Head Start with a sample of 187 females and 177 males with a racial/ethnic distribution of 78% White, 18.5% African American, and 2.2% Latino. Three subscales comprised the overall measure and included: (a) 14 items on children's perceptions of their teachers' acceptance, support, and encouragement [e.g., *My teacher tells me I am smart. My teacher answers my questions.*]; (b) 9 items on the children's perceptions of their teachers' support for choice and autonomy in the activity settings [e.g., *My teacher lets me do activities that I want to do. My teacher lets me play with the kids I choose.*]; and (c) 8 items assessing children's perceived conflict and negativity in the relationship with their teacher [e.g., *My teacher tells me I do not try hard enough. My teacher gets angry with me.*]. Children place postcards for the items on which they agree in a mailbox and items on which they disagree in a trash can. Examiners assure the children that the responses they share would not be relayed to their teachers.

Concurrent validity for the Y-CATS was established along with measures of achievement (Kaufman Assessment Battery for Children-Achievement Battery [Kaufman & Kaufman, 1983] & Woodcock-Johnson-Revised [Woodcock & Johnson, 1990]), problem behaviors and social skills (Conners' Teacher Rating Scale [Conners, 1990], Social Skills Rating System [Gresham & Elliott, 1990]), and student–teacher relationships (Student Teacher Relationship Scale [Pianta & Nimetz, 1991]). Results from an exploratory factor analysis indicated that a three-factor solution best reflected the data, with subscales that included Warmth, Conflict, and Autonomy. Negatively worded autonomy items loaded on the conflict subscale instead of the autonomy subscale suggesting that teachers who discourage autonomy and choice might be perceived by children as negative and as conflict-provoking. In agreement with other early childhood studies (Birch & Ladd, 1997), analyses based on gender also revealed that males reported more conflictual relationships with their teachers than did females.

This tool presents an interesting opportunity to gather data from young children as engagement is measured. Coupled with observational data and measures of relationship quality provided by teachers, the tool can add to a more

complete picture of a core feature of engagement. Further, Y-CATS can help with a more robust picture of some of the earliest experiences in school for young children.

Student Engagement Instrument-Elementary Version 2 (SEI-E2). The Student Engagement Instrument (SEI; Appleton et al., 2006) is a well-established student self-report measure examining cognitive and affective engagement of students in secondary (grades 6–12) schooling contexts. The SEI is comprised of five factors that include Control and Relevance of Schoolwork, Future Goals and Aspirations, Teacher-Student Relationships, Peer Support for Learning, and Family Support for Learning. The tool has been used in numerous student engagement studies including those that measure academic achievement, school attendance, suspensions, high school completion, and college attendance and persistence (Appleton et al., 2006; Fraysier et al., 2020; Lovelace et al., 2014; Waldrop et al., 2019). An adaptation of the scale was validated with 1943 elementary school students in 2012 who were in third through fifth grade and consisted of 36 items assessing cognitive (19 items) and affective engagement (14 items) (SEI-Elementary Version; Carter et al., 2012). A confirmatory factor analysis revealed a four-factor solution, differing from the original SEI, and included the scales of Teacher-Student Relationships, Peer Support for Learning, Future Goals and Aspirations, and Family Support for Learning. Items from the Control and Relevance of Schoolwork scale were omitted from the SEI-E.

A recent study further examined the SEI-Elementary Version by extending the collection of data on a modified tool with 1416 first and second-grade children (Wright et al., 2019). The Student Engagement Instrument-Elementary Version 2 (SEI-E2) is another potentially viable assessment tool that allows early childhood educators and researchers to assess engagement from children's perspectives. With data gathered from children who qualified for free- or reduced-price lunch meals (50%) and who were racially and ethnically diverse, a three-point scale was used with response choices of no, maybe, yes, for first graders and both the three-point and five-point scale for second graders. Of the second graders, 391 completed the three-point scale and 336 completed the five-point scale. The SEI-E2 tool again provided a more developmentally appropriate way to gather children's perceptions by using facial expressions to pictorially guide children to complete the 24 response choices. Survey items were read aloud to the children during administration. Although preliminary in its continued downward extension of the original SEI measure, confirmatory factor analysis suggested that the items on the SEI-E2 for first-grade ratings and the second-grade five-point ratings had the same factor structure as the SEI-Elementary Version but some concerns with reliability in the first-grade responses. This preliminary work also suggests continuity in the SEI as a measure that can capture engagement of students from a young age through transition to college.

Future Directions

Evidence suggests that early childhood education and high-quality experiences that children have during preschool can be very influential for a host of subsequent academic, social, behavioral, and school completion outcomes (Camilli et al., 2010; Jimerson et al., 2000; McCoy et al., 2017). Despite this evidence, there remain areas of inquiry that should be expanded to provide a richer understanding of early childhood engagement. First, there is a need for better measurement of student engagement during early childhood. For example, tools that allow us to account for children's own perceptions of their engagement experiences in early childhood settings might place the field in a better place to document engagement at the earliest point in a student's academic trajectory (Mantzicopoulos & Neuharth-Pritchett, 2003). Recent work on tools that can include children's perceptions will allow us to better document school transitions and provide potential opportunities for both supporting children and their teachers through interventions designed to facilitate positive engagement. Second, longitudinal studies examining not just

the etiology of student engagement from early childhood through adolescence (and into adulthood) but also whether and how student engagement evolves over time and across settings are essential for developing effective programs and practices that enhance student engagement. Cognizant that engagement is a process that occurs over time, understanding the initial experiences that children have in early childhood can help the field understand the role of the context, activity settings, and connections with peers and teachers that facilitate students' sense of belonging across the school years. Finally, as is evident by the many definitions of student engagement described in the preceding pages, engagement is a multidimensional construct, commonly comprised of emotional, behavioral, relational, and cognitive aspects (not to mention the instructional activities that facilitate these aspects of student engagement). As such, additional research that simultaneously considers the multiple domains of engagement in early childhood should be carried out. This work would help inform effective practices both inside and outside of the classroom and could serve to provide the field with a more coherent or consistent definition of student engagement.

References

Adolfsson, M., Sjoman, M., & Bjorck-Akesson, E. (2018). ICF-CY as a framework for understanding child engagement in preschool. *Frontiers in Education, 3*, 36. https://doi.org/10.3389/feduc.2018.00036

Ansari, A. (2018). The persistence of preschool effects from early childhood through adolescence. *Journal of Educational Psychology, 110*(7), 952–973.

Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the student engagement instrument. *Journal of School Psychology, 44*, 427–445. https://doi.org/10.1016/j.jsp.2006.04.002

Austin, L. J. E., Whitebook, W., & Williams, A. (2021). *Early care and education is in crisis: Biden can intervene*. Center for the Study of Child Care Employment, University of California, Berkeley. https://cscce.berkeley.edu/underfunded-and-broken-the-u-s-child-care-system

Aydogan, C. (2012). *Influences of instructional and emotional classroom environments and learning engagement on low-income children's achievement in the prekindergarten year*. Doctoral thesis, Vanderbilt University.

Barnett, W. S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *The Future of Children, 5*, 25–50. https://doi.org/10.2307/1602366

Bennett, K., Reichow, B., & Wolery, M. (2011). Effects of structured teaching on the behavior of young children with disabilities. *Focus on Autism and Other Developmental Disabilities, 26*(3), 143–152. https://doi.org/cnqh4x

Bernstein, S., West, J., Newsham, R., & Reid, M. (2014). *Kindergarteners' skills at school entry: An analysis of the ECLS-K*. Mathematica Policy Research.

Bierman, K. L., Domitrovich, C. E., Nix, R. L., Gest, S. D., Welsh, J. A., Greenberg, M. T., & Gill, S. (2008). Promoting academic and social-emotional school readiness: The head start REDI program. *Child Development, 79*, 1802–1817.

Bierman, K. L., Torres, M. M., Domitrovich, C. E., Welsh, J. A., & Gest, S. D. (2009). Behavioral and cognitive readiness for school: Cross-domain associations for children attending Head Start. *Social Development, 18*, 305–323.

Birch, S. H., & Ladd, G. W. (1997). The teacher-child relationship and children's early school adjustment. *Journal of School Psychology, 35*, 61–79. https://doi.org/10.1016/S0022-4405(96)00029-5

Bohlmann, N. L., & Downer, J. T. (2016). Self-regulation and task engagement as predictors of emergent language and literacy skills. *Early Education and Development, 27*(1), 18–37. https://doi.org/frsc

Booren, L. M., Downer, J. T., & Vitiello, V. E. (2012). Observations of children's interactions with teachers, peers, and tasks across preschool classroom activity settings. *Early Education and Development, 23*(4), 517–538.

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Sage Publications.

Bryan, L. C., & Gast, D. L. (2000). Teaching on-task and on-schedule behaviors to high-functioning children with autism via picture activity schedules. *Journal of Autism and Developmental Disorders, 30*, 553–567. https://doi.org/dngxqp

Buhs, E. S., & Ladd, G. W. (2001). Peer rejection as an antecedent of young children's school adjustment: An examination of mediating processes. *Developmental Psychology, 37*, 550–560. [PubMed: 11444490].

Buhs, E. S., Ladd, G. W., & Herald, S. L. (2006). Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement? *Journal of Educational Psychology, 98*, 1–13. https://doi.org/fm2ndt

Camilli, G., Vargas, S., Ryan, S., & Barnett, W. S. (2010). Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers College Record, 112*(3), 579–620.

Campbell, F. A., Pungello, E. P., Burchinal, M., Kainz, K., Pan, Y., Wasik, B. H., … Ramey, C. T. (2012). Adult outcomes as a function of an early childhood educational program: An abecedarian project follow-up. *Developmental Psychology, 48*(4), 1033.

Campbell, F. A., Ramey, C. T., Pungello, E., Sparling, J., & Miller-Johnson, S. (2002). Early childhood education: Young adult outcomes from the abecedarian project. *Applied Developmental Science, 6*(1), 42–57.

Carter, C., Reschly, A. L., Lovelace, M. D., Appleton, J. J., & Thompson, D. (2012). Measuring student engagement among elementary students: Pilot of the elementary student engagement instrument. *School Psychology Quarterly, 27*, 61–73.

Carto, J. J., & Greenwood, C. R. (1985). Eco-behavioral assessment: A methodology for expanding the evaluation of early intervention programs. *Topics in Early Childhood Special Education, 5*(2), 88–104.

Castro, S., Granlund, M., & Almqvist, L. (2017). The relationship between classroom quality-related variables and engagement levels in Swedish preschool classrooms: A longitudinal study. *European Early Childhood Education Research Journal, 25*(1), 122–135. https://doi.org/10.1080/1350293X.2015.1102413

Chien, N. C., Howes, C., Burchinal, M., Pianta, R. C., Ritchie, S., Bryant, D. M., et al. (2010). Children's classroom engagement and school readiness gains in prekindergarten. *Child Development, 81*, 1534–1549. https://doi.org/10.1111/j.1467-8624.2010.01490.x

Conners, C. K. (1990). *Conners' rating scales: Manual*. Multi-Health Systems.

Copple, C., & Bredekamp, S. (2006). *The basics of developmentally appropriate practices in early childhood programs*. National Association for the Education of Young Children.

Dominguez, X., & Greenfield, D. (2009). Learning behaviors mediating the effects of behavior problems on academic outcomes. *NHSA Dialog, 12*, 1–17.

Domitrovich, C. E., Cortes, R., & Greenberg, M. T. (2007). Improving young children's social and emotional competence: A randomized trial of the preschool PATHS curriculum. *Journal of Primary Prevention, 28*, 67–91.

Downer, J. T., Booren, L. M., Lima, O. K., Luckner, A. E., & Pianta, R. C. (2010). The Individualized Classroom Assessment Scoring System (inCLASS): Preliminary reliability and validity of a system for observing preschoolers' competence in classroom interactions. *Early Childhood Research Quarterly, 25*(1), 1–16.

Downer, J. T., Rimm-Kaufman, S. E., & Pianta, R. C. (2007). How do classroom conditions and children's risk for school problems contribute to children's behavioral engagement in learning? *School Psychology Review, 36*(3), 413–432.

Dweck, C. (2016). *Mindset: The new psychology of success*. Ballantine.

Early, D. M., Iruka, I. U., Ritchie, S., Barbarin, O. A., Winn, D. C., et al. (2010). How do pre-kindergarteners spend their time? Gender, ethnicity, and income as predictors of experiences in pre-kindergarten classrooms. *Early Childhood Research Quarterly, 25*, 177–193.

Eden, M. (2021, February). *The drawbacks of universal pre-k: A review of the evidence*. Manhattan Institute for Policy Research.

Fantuzzo, J., Perry, M., & McDermott, P. (2004). Preschool approaches to learning and their relationship to other relevant classroom competencies for low-income children. *School Psychology Quarterly, 19*(3), 212–230.

Ferholt, B., & Rainio, A. P. (2016). Teacher support of student engagement in early childhood: Embracing ambivalence through playworlds. *Early Years, 36*(4), 413–425. https://doi.org/10.1080/09575146.2016.1141395

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*, 117–142.

Finn, J. D. (1993). *School engagement and students at risk*. National Center for Education Statistics.

Finn, J. D., Pannozzo, G. M., & Voelkl, K. E. (1995). Disruptive and inattentive withdrawn behavior and achievement among fourth graders. *Elementary School Journal, 95*, 421–454.

Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology, 82*, 221–234.

Finn, J. D., & Zimmer, K. S. (2012). Student engagement: What is it? Why does it matter? In S. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement*. Springer. https://doi.org/10.1007/978-1-4614-2018-7_5

Fraysier, K., Reschly, A. L., & Appleton, J. J. (2020). Predicting postsecondary enrollment and persistence with secondary student engagement data. *Journal of Psychoeducational Assessment, 38*, 882–899. https://doi.org/10.1177/0734282920903168

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*, 59–109.

Fredricks, J. A., & McColskey, W. (2012). The measurement of student engagement: A comparative analysis of various methods and student self-report instruments. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 763–782). Springer.

Fuhs, M. W., Farran, D. C., & Nesbitt, K. T. (2013). Preschool classroom processes as predictors of children's cognitive self-regulation skills development. *School Psychology Quarterly, 28*, 347–359. https://doi.org/10.1037/spq0000031

García, L., Heckman, J. J., Leaf, D. E., & Prados, M. J. (2016). *The life-cycle benefits of an influential early childhood program*. NBER Working Paper No. 22993 December 2016 JEL No. C93,I28,J13

Gettinger, M., & Walter, M. J. (2012). Classroom strategies to enhance academic engagement time. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 653–674). Springer.

Greenwood, C. R. (1996). The case for performance-based instructional models. *School Psychology Quarterly, 11*(4), 283–296. https://doi.org/b4hqzz

Greenwood, C. R., Horton, B. T., & Utley, C. A. (2002). Academic engagement: Current perspectives on research and practice. *School Psychology Review, 31*, 328–349.

Gresham, F. M., & Elliott, S. N. (1990). *Social skills rating system: Manual*. American Guidance Service.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher–child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*(2), 625–638. https://doi.org/fcr7xg

Han, J., & Neuharth-Pritchett, S. (2021). Predicting students' mathematics achievement through elementary and middle school: The contribution of state-funded pre-kindergarten program participation. *Child & Youth Care Forum, 50*(4), 587–610. https://doi.org/10.1007/s10566-020-09595-w

Hojnoski, R. L., & Missall, K. N. (2010). Social development in preschool classrooms: Promoting engagement, competence, and school readiness. In M. R. Shinn & H. M. Walker (Eds.), *Interventions for achievement and behavior problems in a three-tier model including RTI* (pp. 703–728). National Association of School Psychologists.

Howes, C., Phillipsen, L. C., & Peisner-Feinberg, E. (2000). The consistency of perceived teacher–child relationships between preschool and kindergarten. *Journal of School Psychology, 38*(2), 113–132. https://doi.org/10.1016/S0022-4405(99)00044-8

Hughes, J. N., & Kwok, O. (2006). Classroom engagement mediates the effect of teacher–student support on elementary students' peer acceptance: A prospective analysis. *Journal of School Psychology, 43*, 465–480. https://doi.org/10.1016/j.jsp.2005.10.001

Hughes, J. N., Zhang, D., & Hill, C. R. (2006). Peer assessments of normative and individual teacher–student support predict social acceptance and engagement among low-achieving children. *Journal of School Psychology, 43*, 447–463.

Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. R. (2019). Nurturing nature: How brain development is inherently social and emotional, and what this means for education. *Educational Psychologist, 54*(3), 185–204. https://doi.org/10.1080/00461520.2019.1633924

Janosz, M. (2012). Part IV commentary: Outcomes of engagement and engages as an outcome: Some consensus, divergences, and unanswered questions. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 695–706). Springer.

Jimerson, S., Egeland, B., Sroufe, L. A., & Carlson, B. (2000). A prospective longitudinal study of high school dropouts examining multiple predictors across development. *Journal of School Psychology, 38*, 525–549. https://doi.org/10.1016/S0022-4405(00)00051-0

Johnson, M. K., Crosnoe, R., & Elder, G. H., Jr. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education, 2001*, 318–340.

Kaufman, A. S., & Kaufman, N. L. (1983). *The Kaufman assessment battery for children*. American Guidance System.

Kontos, S., & Keyes, L. (1999). An ecobehavioral analysis of early childhood classrooms. *Early Child Research Quarterly, 14*, 35–50. https://doi.org/10.1016/S0885-2006(99)80003-9

Ladd, G., & Dinella, L. M. (2009). Continuity and change in early school engagement: Predictive of children's achievement trajectories from first to eighth grade? *Journal of Educational Psychology, 101*(1), 190–206. https://doi.org/10.1037/a0013153

Ladd, G. W. (1992). *The teacher rating scale of school adjustment*. University of Illinois.

Ladd, G. W., Birch, S. H., & Buhs, E. S. (1999). Children's social and scholastic lives in kindergarten: Related spheres of influence. *Child Development, 70*, 1373–1400.

Ladd, G. W., Buhs, E. S., & Seid, M. (2000). Children's initial sentiments about kindergarten: Is school liking an antecedent of early classroom participation and achievement? *Merrill-Palmer Quarterly, 46*, 255–279.

Lam, S., Wong, B. P. H., Yang, H., & Liu, Y. (2012). Understanding student engagement with a contextual model. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 403–420). Springer.

Lawson, M., & Lawson, H. (2013). New conceptual frameworks for student engagement research, policy, and practice. *Review of Educational Research, 83*, 432–479. https://doi.org/10.3102/0034654313480891

Lazar, I., Darlington, R., Murray, H., Royce, J., Snipper, A., & Ramey, C. T. (1982). Lasting effects of early education: A report from the Consortium for Longitudinal Studies. *Monographs of the Society for Research in Child Development, 47*, i–151.

Ledford, J. R., Zimmerman, K. N., Severini, K. E., Gast, H., Osborne, K., & Harbin, E. R. (2020). Brief report: Evaluation of the noncontingent provision of fidget toys during group activities. *Focus on Autism and Other Developmental Disabilities, 35*, 101–107. https://doi.org/ggxg86

Lerner, R. M. (2018). *Concepts and theories of human development* (4th ed.). Routledge. https://doi.org/10.4324/9780203581629

Lindstrom, E. R., Chow, J. C., Zimmerman, K. N., Zhao, H., Settanni, E., & Ellison, A. (2021). A systematic review and meta-analysis of the relation between engagement and achievement in early childhood research. *Topics in Early Childhood Special Education, 41*(3), 221–235. https://doi.org/10.1177/02711214211032720

Lovelace, M. D., Reschly, A. L., Appleton, J. J., & Lutz, M. E. (2014). Concurrent and predictive validity of the student engagement instrument. *Journal of Psychoeducational Assessment, 32*(6), 509–520. https://doi.org/10.1177/0734282914527548

Lynch, M., & Cicchetti, D. (1991). Patterns of relatedness in maltreated and non-maltreated children:

Connections among multiple representational models. *Development and Psychopathology, 3*(2), 207–226.
Lynch, M., & Cicchetti, D. (1992). Maltreated children's reports of relatedness to their teachers. *New Directions for Child Development, 57*, 81–107.
Mahatmya, D., Lohman, B. J., Matjasko, J. L., & Farb, A. F. (2012). Engagement across developmental periods. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 45–63). Springer.
Mantzicopoulos, P., & Neuharth-Pritchett, S. (2003). Development and validation of a measure to assess head start children's appraisals of teacher support. *Journal of School Psychology, 41*, 431–451. https://doi.org/10.1016/j.jsp.2003.08.002
Marks, H. M. (2000). Student engagement in instructional activity: Patterns in elementary, middle, and high school years. *American Educational Research Journal, 37*, 153–184.
Martin, R. P. (1986). Assessment of the social and emotional functioning of preschool children. *School Psychology Review, 15*(2), 216–232.
Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., … Howes, C. (2008). Measures of classroom quality in prekindergarten and children's development of academic, language, and social skills. *Child Development, 79*(3), 732–749. https://doi.org/brbr9f
McCabe, P. C., & Altamura, M. (2011). Empirically valid strategies to improve social and emotional competence of preschool children. *Psychology in the Schools, 48*(5), 513–540.
McClelland, M. M., Morrison, F. J., & Holmes, D. H. (2000). Children at-risk for early academic problems: The role of learning-related social skills. *Early Childhood Research Quarterly, 15*, 307–329.
McCoy, D. C., Yoshikawa, H., Ziol-Guest, K. M., et al. (2017). Impacts of Early childhood education on medium- and long-term educational outcomes. *Educational Researcher, 46*(8), 474–487. https://doi.org/10.3102/0013189X17737739
McDermott, P. A., Fantuzzo, J. W., Warley, H. P., Waterman, C., Angelo, L. E., Gadsden, V. L., & Sekino, Y. (2011). Multidimensionality of teachers' graded responses for preschoolers' stylistic learning behavior: The Learning-To-Learn Scales. *Educational and Psychological Measurement, 71*(1), 148–169.
McDermott, P. A., Leigh, N. M., & Perry, M. A. (2002). Development and validation of the preschool learning behaviors scale. *Psychology in the Schools, 39*(4), 353–365.
McWayne, C., & Cheung, K. (2009). A picture of strength: Preschool competencies mediate the effects of behavior problems on later academic and social adjustment for head start children. *Journal of Applied Developmental Psychology, 30*, 273–285.
McWilliam, R. A., & Bailey, D. B. (1992). Promoting engagement and mastery. In D. B. Bailey & M. Wolery (Eds.), *Teaching infants and preschoolers with disabilities* (2nd ed., pp. 229–256). Merrill.
McWilliam, R. A., & Casey, A. M. (2008). *Engagement of every child in the preschool classroom*. Brookes Publishing.
McWilliam, R. A., Scarborough, A. A., & Kim, H. (2003). Adult interactions and child engagement. *Early Education and Development, 14*, 7–27.
Measelle, J. R., Ablow, J. C., Cowan, P. A., & Cowan, C. P. (1998). Assessing young children's views of their academic, social, and emotional lives: An evaluation of the self-perceptions scales of the Berkeley Puppet Interview. *Child Development, 69*(6), 1556–1576.
Mirkhil, M. (2010). 'I want to play when I go to school': Children's views on the transition to school from kindergarten. *Australasian Journal of Early Childhood, 35*(3), 134–139.
Noltemeyer, A. L., Ward, R. M., & Mcloughlin, C. (2015). Relationship between school suspension and student outcomes: A meta-analysis. *School Psychology Review, 44*(2), 224–240. https://doi.org/f8ctv6
O'Connor, E., & McCartney, K. (2007). Examining teacher–child relationships and achievement as part of an ecological model of development. *American Education Research Journal, 44*(2), 340–369. https://doi.org/dnw96h
Odom, S. L., & Bailey, D. B. (2001). Inclusive preschool programs: Classroom ecology and child outcomes. In M. J. Guralnick (Ed.), *Early childhood inclusion: Focus on change* (pp. 253–276). Brooks.
OECD. (2021). *Family database*. https://www.oecd.org/els/family/database.htm
Pianta, R. C. (1999). *Enhancing relationships between children and teachers*. American Psychological Association.
Pianta, R. C., Hamre, B. K., & Allen, J. P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom interactions. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 365–386). Springer Science + Business Media. https://doi.org/10.1007/978-1-4614-2018-7_17
Pianta, R. C., LaParo, K. M., & Hamre, B. K. (2008). *Classroom assessment scoring system manual: Pre-K*. Brookes.
Pianta, R. C., & Nimetz, S. L. (1991). Relationship between children and teachers: Associations with classroom and home behavior. *Journal of Applied Developmental Psychology, 12*, 379–393.
Pianta, R. C., Nimetz, S. L., & Bennett, E. (1997). Mother-child relationships, teacher-child relationships, and school outcomes in preschool and kindergarten. *Early Childhood Research Quarterly, 12*, 263-280–280.
Pianta, R. C., Steinberg, M. S., & Rollins, K. B. (1995). The first two years of school: Teacher-child relationships and deflections in children's classroom adjustment. *Development and Psychopathology, 7*, 295–312.
Prykanowski, D. A., Martinez, J. R., Reichow, B., Conroy, M. A., & Huang, K. (2018). Brief report: Measurement of young children's engagement and problem behavior in early childhood settings.

Behavioral Disorders, 44(1), 53–62. https://doi.org/10.1177/0198742918779793

Ramey, C. T., & Ramey, S. L. (2004). Early learning and school readiness: Can early intervention make a difference? *Merrill-Palmer Quarterly, 50*(4), 471–491. https://doi.org/10.1353/mpq.2004.0034

Raver, C. C. (2002). Emotions matter: Making the case for the role of young children's emotional development for early school readiness. *Social Policy Report, 16*, 3–18.

Raver, C. C., Jones, S. M., Li-Grining, C., Zhai, F., Bub, K., & Pressler, E. (2011). CSRP's impact on low-income preschoolers' preacademic skills: Self-regulation as a mediating mechanism. *Child Development, 82*, 362–378.

Reschly, A. L., & Christenson, S. L. (2012). Jingle, jangle, and conceptual haziness: Evolution and future directions of the engagement construct. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 3–19). Springer.

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher-student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research, 81*(4), 493–529.

Roper, R., & Hinde, R. A. (1978). Social behavior in a play group: Consistency and complexity. *Child Development., 49*, 570–579.

Schweinhart, L. J., Montie, J., Xiang, Z., Barnett, S. W., Belfield, C. R., & Nores, M. (2005). *Lifetime effects: The high/scope perry preschool study through age 40*. High/Scope Press.

Searle, A. K., Miller-Lewis, L. R., Sawyer, M. G., & Baghurst, P. A. (2013). Predictors of children's kindergarten classroom engagement: Preschool adult-child relationships, self-concept, and hyperactivity/inattention. *Early Education & Development, 24*(8), 1112–1136.

Shapiro, A. (2021). The benefits of prekindergarten programs: Strong findings and open questions. *Phi Delta Kappan, 103*(2), 8–13.

Shields, A., & Cicchetti, D. (1997). Emotion regulation among school-age children: The development and validation of a new criterion Q-sort scale. *Developmental Psychology, 33*, 909–916.

Shonkoff, J. P. (2017). *Building a system for science-based R&D that achieves breakthrough outcomes at scale for young children facing adversity*. Center on the Developing Child, Harvard University.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effect of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*, 571–581.

Skinner, E. A., Furrer, C., Marchand, G., & Kindermann, T. (2008a). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology, 100*, 765–781. https://doi.org/10.1037/a0012840

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2008b). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement, 69*, 493–525. https://doi.org/10.1177/0013164408323233

Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 21–44). Springer.

Smith-Donald, R., Raver, C. C., Hayes, T., & Richardson, B. (2007). Preliminary construct and concurrent validity of the Preschool Self-Regulation Assessment (PSRA) for field-based research. *Early Childhood Research Quarterly, 22*, 173–187.

Stipek, D. (2002). Good instruction is motivating. In A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation*. Academic Press.

Trentacosta, C. J., & Izard, C. E. (2007). Kindergarten children's emotion competence as a predictor of their academic competence in first grade. *Emotion, 7*(1), 77–88.

Valeski, T. N., & Stipek, D. (2001). Young children's feelings about school. *Child Development, 73*, 1198–2013.

van Huizen, T., & Plantenga, J. (2018). Do children benefit from universal early childhood education and care? A meta-analysis of evidence from natural experiments. *Economics of Education Review, 66*, 206–222. https://doi.org/10.1016/j.econedurev.2018.08.001

Vitiello, V., & Williford, A. P. (2016). Relations between social skills and language and literacy outcomes among disruptive preschoolers: Task engagement as a mediator. *Early Childhood Research Quarterly, 36*, 136–144. https://doi.org/f8ssgv

Vitiello, V. E., Booren, L. M., Downer, J. T., & Williford, A. (2012). Variation in children's classroom engagement throughout a day in preschool: Relations to classroom and child factors. *Early Childhood Research Quarterly, 27*(2), 210–220. https://doi.org/10.1016/j.ecresq.2011.08.005

Voelkl, K. E. (1997). Identification with school. *American Journal of Education, 105*, 204–319.

Waldrop, D., Reschly, A. L., Fraysier, K., & Appleton, J. J. (2019). Measuring the engagement of college students: Administration format, structure, and validity of the Student Engagement Instrument-College. *Measurement and Evaluation in Counseling and Development, 52*, 90–107. https://doi.org/10.1080/07481756.2018.1497429

Wang, M. T., & Degol, J. (2014). Stay engaged: Current knowledge and future directions of student engagement research. *Child Development Perspectives, 17*, 24–29.

Wang, M. T., & Eccles, J. S. (2013). School context, achievement motivation, and academic engagement: A longitudinal study of school engagement using a multidimensional perspective. *Learning and Instruction, 28*, 12–23.

Wang, M., & Peck, S.C. (2013). Adolescent educational success and mental health vary across school engage-

ment profiles. *Developmental Psychology, 49*(7), 1266–1276. https://doi.org/10.1037/a0030028

Wang, M.-T., & Eccles, J. S. (2012). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence, 22*, 31–39.

Weiland, C., & Yoshikawa, H. (2013). Impacts of a prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development, 84*(6), 2112–2130.

Williford, A. P., Whittaker, J. E., Vitiello, V. E., & Downer, J. T. (2013). Children's engagement within the preschool classroom and their development of self-regulation. *Early Education & Development, 24*(2), 162–187. https://doi.org/10.1080/10409289.2011.628270

Woodcock, R. W., & Johnson, M. B. (1990). *Woodcock – Johnson psycho-educational battery-revised*. DLM Teaching Resources.

Wright, A. G., Reschly, A. L., Hyson, D., & Appleton, J. J. (2019). *Measuring student engagement in early elementary school*. Manuscript under review.

Wylie, C., & Hodgen, E. (2012). Trajectories and patterns of student engagement: Evidence from a longitudinal study. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 585–599). Springer.

Zimmerman, K. N., Ledford, J. R., Gagnon, K. L., & Martin, J. L. (2020). Social stories and visual supports interventions for students at risk for emotional and behavioral disorders. *Behavioral Disorders, 45*(4), 207–223. https://doi.org/fjbr