

Promoting Social and Emotional Learning in Preschool

Programs and Practices that Work



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This issue brief, created by The Pennsylvania State University with support from the Robert Wood Johnson Foundation, is one of a series of briefs that addresses the need for research, practice and policy on social and emotional learning (SEL). SEL is defined as the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions.

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Executive Summary

Over the past 15 years, the U.S. has increasingly emphasized achievement tests as an index of school performance and in response, kindergartens have become increasingly academic in focus.¹ Preschools have responded to this shift, recognizing the need to better prepare children for the academic demands of kindergarten. This amplified emphasis on preschool academic learning has raised concerns that children’s social-emotional (SE) needs are being crowded out of preschool priorities, despite consensus that early social-emotional skills are an important component of school readiness and healthy child development.² Preschool SE skills include being able to get along and cooperate with others, manage strong feelings, focus attention, and persist at challenging tasks. These skills deserve focused attention during the preschool years because they are critical for long-term school and life success.^{3,4}

This brief summarizes what is known about effective preschool social-emotional learning (SEL) programs and practices based on high-quality, rigorous research studies that utilized randomized controlled designs. These studies demonstrate that evidence-based SEL programming produces positive impacts on children’s development of SE skills, enhancing their learning engagement, interpersonal relationships, behavioral adjustment, and school success. Proven SEL programs are particularly effective when they:

1. Improve teachers’ classroom management and the quality of teacher-student interactions;
2. Include SE skill-building for preschool students;
3. Integrate with academic enrichment programs;
4. Use professional development to promote high-fidelity implementation; and
5. Involve parents.

All children benefit from SEL programming, but the benefits are even greater for children with delays in SE skill development associated with early socioeconomic disadvantage. Effectively engaging parents in these efforts enhances impact.⁵ Future challenges include bringing SEL programs to scale while maintaining a high level of program quality, finding ways to more effectively and efficiently integrate evidence-based programming into preschool practice, engaging parents, and learning how to increase sustained gains that benefit children in the years after they enter kindergarten.

More U.S. children are attending preschool than ever before, providing new opportunities to support early learning and development.

Introduction

In many ways, kindergarten has become the new first grade. Over the past 15 years, public school goals for academic attainment in kindergarten have increased and kindergartens have become increasingly academic in focus.¹ More U.S. children are attending preschool than ever before, providing new opportunities to support early learning and development. As a result, kindergarten teachers increasingly expect children to learn basic knowledge about letters, numbers, and colors before they enter kindergarten.¹

However, many educators and researchers worry that a narrow focus on early academic knowledge and skills may actually undermine educational attainment, as well as a child's long-term school adjustment, by reducing the focus on a child's social-emotional development in the early school years.^{5,6} The concern is two-fold:

1. A primary focus on academics may be stressful for children, diminishing their self-efficacy, attitudes toward school, and academic motivation.²
2. Pursued dogmatically, a focus on academics fails to support and may even undermine SE skill development that children need to sustain a positive orientation toward and engagement in school and learning.⁶

In addition, SEL is itself an important component of healthy child development, and many recognize the important role schools play in supporting areas of development that are not strictly academic.⁷

Despite the increasingly academic focus of kindergarten, kindergarten teachers continue to believe in the importance of SE skills for learning. For example, 91 percent list "can follow directions" as a critical kindergarten readiness skill, 87 percent list "takes turns and shares", and 77 percent list "pays attention."¹ As of 2016, 49 of the 50 U.S. states had created SEL standards for the preschool years, reflecting a remarkable level of national consensus in support of teaching SEL in preschools.⁸

An extensive body of research validates these teachers' perceptions, showing that children's SE skills provide an essential foundation for social, behavioral, and academic success in school.⁴ New evidence also suggests that these skills link to better physical health. For example, improving SE skills promotes healthier lifestyles, reduces risky behavior such as substance use, and has been linked with lower BMI.^{9,10}

Kindergarten teachers report three important SEL skills needed for school readiness



Can follow directions



Takes turns and shares



Pays attention

Furthermore, the capacities to get along with others, follow classroom rules and routines, pay attention, and persist at challenging tasks predict greater enjoyment of school, fewer problem behaviors, and elevated rates of high school graduation and productive employment.³ Indeed, research on model programs, such as Perry Preschool, suggests that for children growing up in poverty, preschool may have its strongest impact on later well-being by boosting early SE skills, which are linked with later educational attainment, reduced risky behaviors, and better employment and health outcomes.¹¹

Unfortunately, many children enter kindergarten unprepared for the social-emotional and behavioral demands of school, as well as the academic demands. Children growing up in poverty are particularly likely to show delays in the social-emotional and self-regulation skills needed for school success, due in part to their heightened levels of stress and low levels of early learning support.¹² Not only do these delays in SE development impede learning, they also increase the risk for behavior problems and discipline difficulties in preschool and contribute to elevated rates of preschool suspension and expulsion.¹³ Almost half of preschool children are growing up in low-income families,¹⁴ creating a critical need to support SE development in preschool programs.

A variety of programs and practices are available for preschool teachers to support the development of early SE skills before children enter kindergarten. In the following sections, we review evidence-based programs and practices that have proven effective in promoting child SE skills and school success. The programs and practices vary in the number and type of SE skills they target.

Some focus primarily on *the interpersonal skills* associated with positive adaptive functioning in school – getting along with others, making friends, sharing, cooperating, taking turns and controlling aggressive behavior.¹⁵ Others place more emphasis on *intrapersonal skills*, including emotion regulation (e.g., identifying and managing emotions, and developing empathy)¹⁶ or cognitive control (e.g., focusing attention, flexible problem-solving).¹⁷ Other SEL programs are *comprehensive* and address all of these skills, using prescribed classroom activities along with a strong emphasis on professional development support for teachers.¹⁸

High stress and low levels of early learning support can prevent children who grow up in poverty from developing the social-emotional skills they need to succeed in school.



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Key Findings

Several evidence-based programs have proven effective in promoting critical SE skills during the preschool years.

Enriching early learning with SE programming promotes the self-regulation and social skills children need to gain the most benefit from schooling.¹⁹ Longitudinal research links early SE skills with a wide array of positive adult outcomes, including positive mental health, interpersonal relationships, educational attainment, civic engagement, productive employment, and physical health in later life.^{3,9,10,18} Rigorous randomized trials provide strong evidence that these skills can be promoted during the preschool years with the use of evidence-based programs.^{20,21,22}

Although more long-term follow-up studies are needed, building SE skills in preschool may have long-term benefits for all children, especially those growing up in disadvantaged circumstances.¹² Poverty is associated with heightened exposure to stressors (e.g., crowded and unsafe living conditions, low parent education, family instability, single-parenting, neighborhood crime, etc.) and with lower-quality school and early learning options, which together undermine positive SE development.²³ Providing children with preschool SEL may build their resilience to cope with stressors as they get older.²⁴

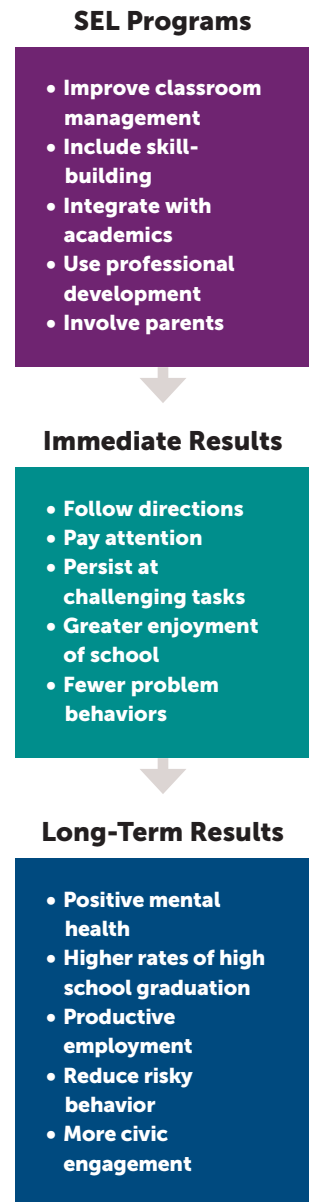
As noted below, effective programs vary in their approach, with differential emphasis on SE skill domains (e.g., social-behavioral, emotional, self-regulatory skills) and varying levels of teacher professional development and explicit in-class lessons. However, they have in common an intentional and intensive focus on teaching practices that support SE skill acquisition. Several resources provide updated reviews for practitioners and policymakers on evidence-based SEL programs, including the *Blueprints for Healthy Youth Development*,²⁵ the *National Registry of Evidence-based Programs and Practices (NREPP)*,²⁶ and the *Collaborative for Academic, Social, and Emotional Learning Guide*.²⁷

Promoting positive classroom management and improving teaching quality supports SE growth.

Teachers influence preschoolers' SE skills through their classroom rules and expectations, the quality of their interactions with students, and the strategies they use to encourage desired behaviors and discourage aggressive or disruptive behaviors.²⁸ Programs that help teachers set clear expectations, attend to and praise positive behaviors, provide emotional support, and set limits in non-punitive ways foster improved social behavior.

For example, the *Incredible Years Teacher Training Program (IYTTP)*²⁹ provides teachers with monthly workshops focused on key concepts for positive classroom management, videotape reviews, group discussions, and consultation around teacher examples and practices. Four randomized-controlled studies have shown that *IYTTP* produces significant decreases in classroom behavior problems.^{29,30,31,32} In two of these studies, children also showed improvements in learning behaviors and emotional skills.^{31,33}

Effective SEL programs have positive impacts



Another example is the *BEST in CLASS* program which provides teachers with in-class coaching to help them apply positive behavioral management strategies with students exhibiting challenging behaviors. An initial randomized trial documented improved classroom management, more positive student-teacher interactions, and reductions in child problem behaviors.³⁴ By providing teachers with positive management strategies, these programs seek to enhance their capacity to help children with challenging behaviors, thereby reducing the risk of preschool suspensions or expulsions.

Skill-based SEL programs combined with professional development for teachers optimize SE growth.

Although focusing on classroom management and teaching quality can improve student outcomes, including skill-focused SEL programming in preschool classrooms as well creates additional benefits.²² Such programs promote social, emotional, and self-regulation skills through short lessons in which teachers present skill concepts with stories, pictures, and puppets. Children discuss and practice the skills in role play or planned activities.

Teachers support children to use the skills in their everyday interactions, and teachers strengthen these skills by praising their efforts and providing corrective feedback.²⁰ This approach has proven effective in teaching children cooperative problem-solving skills and strategies for resolving peer conflicts, which in turn, reduce impulsive behaviors in the classroom and promote frustration tolerance and active learning.^{35,36}

Similarly, SEL lessons have proven effective at helping students learn to recognize and communicate about emotions, giving children the language and self-regulation skills they need to manage strong feelings and control aggression.^{16,17} For example, students who received the *Emotions-Based Prevention Program*³⁷ in a randomized trial showed improved emotion knowledge, less negative emotional expression, less aggressive behavior, and improved social competence.

Some programs have used strategically designed, socio-dramatic play and physical activities to promote self-regulation skills and help children learn to control their attention and inhibit impulsive behavior.^{17,38} For example, in the *Red Light, Purple Light* program, children play games to practice self-control, such as "Simon Says."^{39,40} In the *Tools of the Mind* program, teachers help foster complex pretend play and boost interpersonal negotiation skills in children.⁴¹ An initial quasi-experimental study suggested considerable potential for this approach.^{42,43} However, three recent randomized trials suggest that it is difficult to implement with high fidelity and intensity, and it produced no effects on SE skills, behavioral adjustment, or academic skills.^{31,44,45}

In general, SEL programs promote benefits in the skill domains that they target. While the programs above focused on one or two specific SEL skills, a growing set of studies support the effectiveness of *comprehensive* SEL programs, which combine multiple skill-based lessons and activities to promote skills in multiple SEL domains. A good example is the *Preschool PATHS Curriculum*.⁴⁶ *PATHS* includes classroom lessons on social skills,



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Some programs have used play and physical activities to promote self-regulation skills, help children learn to control their attention, and inhibit impulsive behavior.

emotional knowledge, self-control, and social problem-solving. In addition, teachers receive training in strategies to foster positive classroom management and help children use the skills throughout the day.

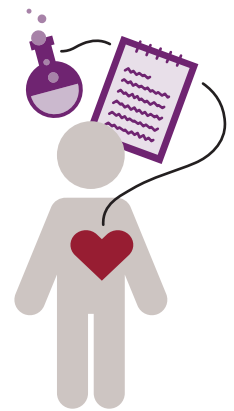
Preschool PATHS has been evaluated in four randomized trials. In an initial trial, it promoted gains in child emotion knowledge and on teacher and parent ratings of social competence.⁴⁷ In a second study, when combined with a literacy intervention (the *Head Start REDI Program*), children improved in emotion knowledge and social problem-solving skills, were more actively engaged in learning, and showed reductions in teacher-rated aggression.^{48,49} In a third study, *Preschool PATHS* was combined with a web-based professional development program, *MyTeachingPartner (MTP)*,⁵⁰ and produced improvements in teacher-rated social competencies. Finally, *Preschool PATHS* was evaluated in a national randomized study, the *Head Start CARES* project. It produced heightened levels of emotion knowledge and social problem-solving skills, and improved social competence as rated by teachers as well as stronger learning behaviors.³¹

Other comprehensive SEL preschool programs have shown a similar pattern of benefits. For example, *Al's Pals* produced improvements on teacher-rated child social skills and reductions in problem behaviors.⁵¹ In another study, the *Dinosaur School Social Skills and Problem Solving Program*, in combination with the *Incredible Years Teacher Training* program, led to greater social-emotional competence, better social problem-solving skills, and less aggression.⁵²

Preschools should harness the power of integrated SEL and academic enrichment programs.

In the early childhood literature, “play-based” preschools that focus on SEL are often pitted pedagogically against “academically-oriented” preschools. Research is making it clear that this is a false dichotomy. During early childhood, growth in academic skill is positively associated with growth in SEL skills. A meta-analysis of SEL interventions focused on older children found that SEL interventions produce gains in both SEL skills and academic achievement.¹⁸ And evaluations of multi-component interventions, such as the *Head Start REDI* program, have shown that growth in SEL skills during preschool makes unique contributions to achievement in kindergarten.⁵³ High-quality, preschool academic enrichments tend to be play-based⁵⁴ and are likely to promote cognitive self-regulation skills (one aspect of SEL) as well as academic gains.⁵⁵

Emerging research also shows that the key to long-term benefits for all children, including closing the school readiness gap that affects children growing up in poverty, is the combination of a preschool focus on SE skill development *and* cognitive enrichment.⁵⁶ For this reason, preschools should focus on integrated programming that prepares children effectively for the academic demands of elementary school, and develops and nurtures their SE skills. To address these dual needs requires the intentional and strategic implementation of specific programs and practices. Emerging research shows that these developmental goals are not competing but intertwined. When evidence-based academic and social-emotional programming are integrated, children enter school well-positioned to succeed, with social-emotional benefits that extend well into the later school years and beyond.^{20,21,22}



During early childhood, growth in academic skill is positively associated with growth in SEL skills.

High-fidelity implementation of SEL programs is key to their success.

The fidelity of program implementation refers to the degree to which teachers deliver the program in the way the program developers intended.⁵⁷ It includes the amount of the program that is delivered, the degree to which teachers follow program guidelines, and the quality of teacher-child interactions during lessons and throughout the classroom day.^{57,58} High-quality implementation predicts benefits for children.^{58,59}

In addition, high implementation delivery of an evidence-based SEL program during its first year of use increases the likelihood that teachers will sustain the program and deliver it with high quality in subsequent years.⁶⁰ In the randomized evaluations described in this brief, multiple strategies were used to help teachers implement with high fidelity. These included the use of detailed manuals and guidelines, and ongoing coaching and consultation, as well as initial workshop training.

Including parents in preschool social-emotional development efforts can add value.

Social-emotional development is heavily influenced by the quality of relationships children have with their parents.⁶¹ Recognizing the potential benefits of including parents, several SEL programs (*Preschool PATHS*, *Al's Pals*) include information sheets and suggestions for parent-child activities. In addition, a few studies have examined the utility of offering more intensive parent interventions to parallel classroom SEL programs.

For example, adding a formal parent component to an SEL classroom model in Head Start led to decreased child problem behavior at home, but only for the sub-set of children with elevated problems.²⁹ Adding a parent program to the *Head Start REDI* model showed additional benefits beyond the classroom intervention, including sustained effects in social and peer competence as well as academic performance in second grade.⁶²

Similarly, *ParentCorps* uses a combination of parent discussion groups, teacher-led friendship sessions, and teacher-focused professional development support during preschool. The program has shown to produce gains in child mental health and academic performance in second grade. *ParentCorps* also showed improved physical health among children with high behavioral risk at baseline (e.g., reduced obesity and sedentary behavior).^{63,64} It should be noted that these studies were typically able to recruit only 30% to 50% of the eligible parent sample and are more costly per child than classroom programs. Nonetheless, they suggest considerable potential and the need for additional research to explore options for parent involvement in preschool-based SEL programs.

Future Research Needs

The results described in this brief are highly promising, and show that evidence-based SEL programming can be implemented effectively in current preschool settings, promote social-emotional development, and enhance child learning engagement and school success. At the same time, additional research in the following areas is needed to build on these studies and inform efforts to maximize benefits for all children.

Gain a better understanding of the critical elements and amount of exposure needed to promote sustained growth in SE skills.

Current pressures to prioritize cognitive development and academic school readiness in prekindergarten may motivate programs to use less extensive SEL programs and/or provide less intensive professional development and coaching than provided in the context of the proven programs described above. Correspondingly, some experts have argued from a conceptual standpoint that SEL strategies might be identified and integrated throughout the school day in the form of daily routines and reminders, without the need for a formal SEL curriculum.⁶⁵

However, it is likely that simply reducing the scope or intensity of SEL programming below the levels used by these proven programs will reduce benefits to children.⁶⁶ Research suggests that the amount of SEL programming children receive, as well as the amount of professional development support teachers receive, are two important factors predicting the degree of child benefits.⁵⁹ Current research suggests that promoting substantial and lasting gains in child SE skills requires strategic and intensive efforts, and is not easily accomplished by smaller investments such as providing a teacher workshop or increasing time for play.⁶⁷

On the other hand, preschools are rightly concerned about the burden that intensive programming places on their budgets and personnel. For this reason, research is needed to determine the specific SEL program elements and level of exposure that are needed to achieve positive and sustained outcomes. More knowledge regarding the critical features promoting optimal outcomes could guide program developers in streamlining SEL program design.

In addition, future research is needed to identify the most effective and efficient strategies for delivering professional development supports to teachers, and helping them become proficient at supporting children’s SEL throughout the day. One promising strategy involves the use of technology to improve the accessibility of high-quality coaching⁶⁸ but more research on its efficacy is needed.

Sustained SEL program benefits are dependent on two factors



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Amount of SEL skill training children receive



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Amount of professional support teachers receive

Determine how to scale across the range of early childhood learning programs.

Studies described in this brief demonstrate that model programs can achieve considerable success. However, evaluation trials have often been limited to contexts like Head Start or public prekindergarten that follow a “school-like” schedule with regular hours and routines to support child engagement in learning activities. Yet there is considerable variability in the structure of preschool programs.

An important next step is to understand what changes in curriculum, training, and ongoing support will be necessary to scale up SEL programs for the wider range of center-based programs and preschool teachers. This includes research to understand what kind of program approaches might be effective with mixed age and younger preschool children, as well as the 4-year-olds that are a focus of most of the studies described in this brief.

It also includes research examining effective strategies for providing the professional development needed by preschool teachers and child-care providers who have low levels of formal education and training, including a high-school degree without additional training. Finally, more research is needed to determine how best to reach out and engage parents effectively in coordinated home-school partnerships that promote child SE development.⁵

Establish the longer-term benefits of SEL preschool programming.

Recent re-analyses of early model preschool programs such as Perry Preschool and Abecedarian Program suggest that early gains in SEL skills may account for the long-term program benefits of high-school graduation, employment, and reduced crime.⁶⁹ However, relatively few preschool SEL programs have collected follow-up data to determine how preschool SEL programming affect later child outcomes. The few that exist have produced mixed findings with some showing no lasting benefits,^{31,70} or benefits only for children who entered higher-quality elementary schools.⁷¹

In contrast, two follow-up studies have produced more promising, long-term benefits. In one national study, teachers indicated significantly lower rates of expected grade retention for kindergarten students who had received Preschool PATHS.³¹ In the Head Start REDI project, the combination of a language and literacy intervention along with PATHS, revealed sustained social-emotional benefits in kindergarten, second grade, and third grade.^{60,72,73} When a synchronized parent program was added to the classroom REDI program, additional academic benefits sustained through second grade.⁶²

Comprehensive, SE skill-building programs, along with classroom lessons and specific teaching strategies, may provide a stronger foundation for coping with the demands of elementary school than a program that focuses primarily on external control during preschool. This is because the explicit instruction approach may more effectively promote children’s internal capacities to monitor and cope with social challenges.²² However, no study has yet compared the long-term value of a comprehensive skill-building SEL curriculum with an effective classroom management program. More longitudinal follow-up studies are needed to better understand the nature of sustained SEL program impact.

Preschool SEL programming has the potential to reduce the school readiness gap associated with growing up in low-income homes and communities, when exposure to adversity is elevated and child care and preschools are often poorly resourced.

Conclusions and Implications

To promote school readiness, preschools need to focus strategically and intentionally on fostering social-emotional development. This includes providing time for play and social interaction in preschool, and building upon these opportunities for social-emotional learning by using evidence-based SEL programming. Programs that focus on a single domain, such as emotions or cognitive regulation, tend to have discrete and limited effects. Comprehensive SEL models that focus on multiple domains – social-behavioral, emotional, and cognitive self-regulatory skills and processes – are more likely to produce broader improvements. This is probably because these dimensions of social-emotional functioning are interdependent developmentally, and reinforce each other over time. It is important to note that although most programs use lesson-based curricula, they also emphasize the critical role that supportive teacher-child interactions play in fostering social-emotional growth.

As the number of states with publicly funded prekindergarten programs increase and the prevalence of four- and five-year-olds attending center-based early childhood programs continues to increase in the U.S., classroom level SEL programs have the potential to reach and benefit most children. For that to happen, the early childhood learning programs must increase the use of evidence-based SEL programs.

Normatively, social-emotional development progresses rapidly between the ages of 3-6, children are dependent upon and generally highly responsive to adult input and support, and the parts of the brain that support cognitive self-regulation are particularly influenced by environmental input.²⁴ Therefore, it may be particularly valuable to provide SEL support during the preschool years. In addition, SEL programming during preschool has the potential to reduce the risk for the negative cascade of academic, behavioral, and peer failures that is often initiated when children enter school with under-developed social and self-regulation skills.⁷⁴ Preschool SEL programming has the potential to reduce the school readiness gap associated with growing up in low-income homes and communities, when exposure to adversity is elevated and child care and preschools are often of low quality.

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References

- Bassok, D., Latham, S., & Korem, A. (2016). Is kindergarten the new first grade? *AERA Open*, 1, 1–31. <http://ero.sagepub.com/content/spero/2/1/2332858415616358.full.pdf>
- Stipek, D. (2006). No child left behind comes to preschool. *Elementary School Journal*, 106, 455–466.
- Jones, D.E., Greenberg, M., & Crowley, M. (2015). Early social-emotional functioning and public health: The relationship between kindergarten social competence and future wellness. *American Journal of Public Health*, 105, 2283–2290.
- Denham, S.A., & Burton, R. (2003). *Social and emotional prevention and intervention programming for preschoolers*. New York: Kluwer-Plenum.
- Bierman, K.L., Morris, P.A., & Abenavoli, R.M. (2016). *Parent engagement practices improve outcomes for preschool children*. Edna Bennett Pierce Prevention Research Center, Pennsylvania State University.
- Huffman, L.R., & Speer, P. (2000). Academic performance among at-risk children: The role of developmentally appropriate practices. *Early Childhood Research Quarterly*, 15, 167–184.
- Battistich, V., Watson, M., Solomon, D., Lewis, C., & Schaps, E. (1999). Beyond the Three Rs: A broader agenda for school reform. *The Elementary School Journal*, 99, 415–432.
- Collaborative for Academic, Social, and Emotional Learning. (2016). *State scan scorecard project*. Retrieved November 11, 2016 from <http://www.casel.org/state-scan-scorecard-project>.
- Bavarian, N., Lewis, K.M., Acock, A., DuBois, D.L., Yan, Z., Vuchinich, S.,... Flay, B.R. (2016). Effects of a school-based social-emotional and character development program on health behaviors: A matched-pair, cluster-randomized controlled trial. *Journal of Primary Prevention*, 37, 87–105.
- Moffitt, T.E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R.J., Harrington, H.,... Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences*, 108, 2693–2698.
- Heckman, J.J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 312, 1900–1902.
- Blair, C., & Raver, C.C. (2012). Child development in the context of adversity: Experiential canalization of brain and behavior. *American Psychologist*, 67, 309–318.
- Gilliam, W.S., & Shahar, G. (2006). Preschool and child care expulsion and suspension: Rates and predictors in one state. *Infants and Young Children*, 19, 228–245.
- National Center for Children in Poverty. (2011). Basic facts about low-income children, 2009. Retrieved December 21, 2012 from http://nccp.org/publications/pub_975.html
- Bierman, K.L., & Erath, S.A. (2006). Promoting social competence in early childhood: Classroom curricula and social skills coaching programs. In K. McCartney & D. Phillips (Eds.), *Blackwell handbook on early childhood development* (pp. 595–615). Malden, MA: Blackwell.
- Izard, C.E. (2002). Translating emotion theory and research into preventive interventions. *Psychological Bulletin*, 128, 796–824.
- Greenberg, M.T. (2006). Promoting resilience in children and youth: Preventive interventions and their interface with neuroscience. *Annals of the New York Academy of Science*, 1094, 139–150.
- Durlak, J.A., Weissberg, R.P., Dymnicki, A.B., Taylor, R.D., & Shellinger, K.B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82, 405–432.
- McClelland, M.M., Acock, A.C., & Morrison, F.J. (2006). The impact of kindergarten learning-related skills on academic trajectories at the end of elementary school. *Early Childhood Research Quarterly*, 21, 471–490.
- Bierman, K.L., & Motamedi, M. (2015). Social-emotional programs for preschool children. In J. Durlak, C. Domitrovich, R. P. Weissberg, T. Gullotta, & P. Goren (Eds.), *The handbook of social and emotional learning: Research and practice* (pp. 135–150). New York: Guilford.
- McClelland, M. M. (2016, April). The state of the science on SEL interventions in early childhood/preschool. *Future of Children Author Conference on Social Emotional Learning*, Princeton University, New Haven, CT. (under review)
- Schindler, H.S., Kholoptseva, J., Oh, S.S., Yoshikawa, H., Duncan, G.J., Magnuson, K.A., & Shonkoff, J.P. (2015). Maximizing the potential of early childhood education to prevent externalizing behavior problems: A meta-analysis. *Journal of School Psychology*, 53, 243–263.
- Evans, G.W., & Kim, P. (2013). Childhood poverty, chronic stress, self regulation, and coping. *Child Development Perspectives*, 7, 43–48.
- Blair, C., & Raver, C.C. (2015). School readiness and self-regulation: A developmental psychobiological approach. *Annual Review of Psychology*, 66, 711–731.
- Mihalic, S.F., & Elliott, D.S. (2015). Evidence-based programs registry: Blueprints for healthy youth development. *Evaluation and Program Planning*, 48, 124–131.
- Jobli, E.C., Gardner, S.E., Hodgson, A.B., & Essex, A. (2015). The review of new evidence 5 years later: SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP). *Evaluation and Program Planning*, 48, 117–123.
- Collaborative for Academic, Social, and Emotional Learning. (2014). *2015 CASEL guide: Effective social and emotional learning programs – Preschool and elementary school edition*. Chicago, IL: Author.
- Webster-Stratton, C., & Herman, K. (2010). *Disseminating Incredible Years series early-intervention programs: Integrating and sustaining services between home and school.* *Psychology in the Schools*, 47, 36–54.
- Webster-Stratton, C., Reid, M.J., & Hammond, M. (2001). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child & Adolescent Psychology*, 30, 283–302.
- Morris, P., Lloyd, C., Millenky, M., Leacock, N., Raver, C.C., & Bangser, M. (2013). *Using classroom management to improve preschoolers' social and emotional skills: Final impact and implementation findings from the Foundations of Learning Demonstration in Newark and Chicago*. Retrieved September 28, 2016 from http://www.mdrc.org/sites/default/files/using_classroom_management_full_report_for%20web_rev2-11.pdf
- Morris, P., Matterna, S.K. Castells, N., Bangser, M., Bierman, K., & Raver, C. (2014). *Impact findings from the Head Start CARES demonstration: National evaluation of three approaches to improving preschoolers' social and emotional competence.* OPRE Report 2014-44. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Raver, C.C., Jones, S.M., Li-Grining, C., Zhai, F., Metzger, M.W., & Solomon, B. (2009). Targeting children's behavior problems in preschool classrooms: A cluster-randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 77, 302–316.
- Raver, C.C., Jones, S.M., Li-Grining, C., Zhai, F., Bub, K., & Pressler, E. (2011). CSRPs' impact on low-income preschoolers' preacademic skills: Self-regulation as a mediating mechanism. *Child Development*, 82, 362–378.
- Conroy, M.A., Sutherland, K.S., Algina, J.J., Wilson, R.E., Martinez, J.R., & Whalon, K.J. (2015). Measuring teacher implementation of the BEST in CLASS intervention program and corollary child outcomes. *Journal of Emotional and Behavioral Disorders*, 23, 144–155.
- Shure, M. B. (1992). *I Can Problem Solve: An interpersonal cognitive problem-solving program: Kindergarten and primary grades*. Champaign, IL: Research Press.
- Shure, M. B., & Spivack, G. (1982). Interpersonal problem-solving in young children: A cognitive approach to prevention. *American Journal of Community Psychology*, 10, 341–355.
- Izard, C.E., King, K.A., Trentacosta, C.J., Morgan, J.K., Laurenceau, J.P., Krauthamer-Ewing, E.S., & Finlon, K.J. (2008). Accelerating the development of emotion competence in Head Start children: Effects on adaptive and maladaptive behavior. *Development and Psychopathology*, 20, 369–397. doi: 10.1017/S0954579408000175
- Blair, C. (2002). School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist*, 57, 111–127.
- Schmitt, S.A., McClelland, M.M., Tominey, S.L. & Acock, A.C. (2015). Strengthening school readiness for Head Start children: Evaluation of a self-regulation intervention. *Early Childhood Research Quarterly*, 30, 20–31.
- Tominey, S.L. & McClelland, M.M. (2011). Red light, purple light: Findings from a randomized trial using circle time games to improve behavioral self-regulation in preschool. *Early Education & Development*, 22, 489–519.
- Bodrova, E., & Leong, D.J. (2007). *Tools of the Mind: The Vygotskian approach to early childhood education* (2nd Ed.). Upper Saddle River, N.J.: Prentice-Hall.
- Barnett, W.S., Jung, K., Yarosz, D., Thomas, J., Hornbeck, A., Stechuk, R., & Burns, S. (2008). Educational effects of the Tools of the Mind curriculum: A randomized trial. *Early Childhood Research Quarterly*, 23, 299–313.
- Diamond, A., Barnett, W.S., Thomas, J., & Munro, S. (2007). Preschool program improves cognitive control. *Science*, 318, 1387–1388.
- Clements, D.H., Sarama, J., Unlu, F., & Layzer, C. (2012, March). The efficacy of an intervention synthesizing scaffolding designed to promote self regulation with an early mathematics curriculum: Effects on executive function. Paper presented at the meeting of the Society for Research in Educational Effectiveness, Washington, D.C.
- Wilson, S.J., & Farran, D.C. (2012, March). Experimental evaluation of the Tools of the Mind Preschool Curriculum. Paper presented at the meeting of the Society for Research in Educational Effectiveness, Washington, D.C.
- Domitrovich, C.E., Greenberg, M.T., Cortes, R., & Kusche, C. (1999). *Manual for the Preschool PATHS Curriculum*. University Park, PA: The Pennsylvania State University.
- 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.

- 48 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.
- 49 Bierman, K.L., Nix, R.L., Greenberg, M.T., Blair, C., & Domitrovich, C.E. (2008). Executive functions and school readiness intervention: Impact, moderation, and mediation in the Head Start REDI Program. *Development and Psychopathology, 20*, 821-843.
- 50 Hamre, B.K., Pianta, R.C., Mashburn, A.J., & Downer, J. (2012). Promoting young children's social competence through the Preschool PATHS Curriculum and MyTeachingPartner professional development resources. *Early Education and Development, 23*, 809-832.
- 51 Lynch, K.B., Geller, S.R., & Schmidt, M.G. (2004). Multi-year evaluation of the effectiveness of a resilience-based prevention program for young children. *The Journal of Primary Prevention, 24*, 335-353.
- 52 Webster-Stratton, C., Reid, M.J., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: Evaluation of the Incredible Years teacher and child training programs in high-risk schools. *Journal of Child Psychology and Psychiatry, 49*, 471-488.
- 53 Nix, R.L., Bierman, K.L., Domitrovich, C.E., & Gill, S. (2013). Promoting preschool social-emotional skills with the Head Start REDI Program enhances academic and behavioral outcomes in Kindergarten. *Early Education and Development, 24*, 1000-1019.
- 54 Clements, D.H., & Sarama, J. (2014). Play, mathematics, and false dichotomies. Retrieved from <http://preschoolmatters.org/2014/03/03/play-mathematics-and-false-dichotomies/>
- 55 Weiland, C., & Yoshikawa, H. (2013). Impacts of a prekindergarten program on children's mathematics, language, literacy, executive function, and emotional skills. *Child Development, 84*, 2112-2130.
- 56 Snow, K. L., & Pizzolongo, P. (2014). Not yesterday's kindergarten [Weblog post]. Retrieved from <http://www.naeyc.org/blogs/gclarke/2014/02/not-yesterday%E2%0999skindergarten>
- 57 Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W.B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research, 18*, 237-256.
- 58 Mattera, S., Lloyd, C.M., Fishman, M., & Bangser, M. (2013). A first look at the Head Start CARES demonstration: Large-scale implementation of programs to improve children's social-emotional competence. OPRE Report 2013-47. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Retrieved September 28, 2016 from http://www.mdrc.org/sites/default/files/a_first_look_at_head_start_cares_fr.pdf
- 59 Zhai, F., Raver, C.C., Jones, S.M., Li-Grining, C.P., Pressler, E., & Gao, Q. (2010). Dosage effects on school readiness: Evidence from a randomized classroom-based intervention. *Social Service Review, 84*, 615-655.
- 60 Bierman, K.L., Sanford DeRousie, R.M., Heinrichs, B., Domitrovich, C.E., Greenberg, M.T., & Gill, S. (2013). Sustaining high quality teaching and evidence-based curricula: Follow-up assessment of teachers in the REDI project. *Early Education and Development, 24*, 1194-1213.
- 61 Bernier, A., Carlson, S.M., & Whipple, N. (2010). From external regulation to self-regulation: Early parenting precursors of young children's executive functioning. *Child Development, 81*, 326-339.
- 62 Bierman, K.L., Heinrichs, B.S., Welsh, J.A., Nix, R.L., & Gest, S.D. (2016). Enriching preschool classrooms and home visits with evidence-based programming: Sustained benefits for low-income children. *Journal of Child Psychology and Psychiatry*.
- 63 Brotman, L.M., Dawson-McClure, S., Kamboukos, D., Huang, K., Calzada, E.J., Goldfeld, K., & Petkova, E. (2016). Effects of ParentCorps in prekindergarten on child mental health and academic performance: Follow-up of a randomized clinical trial through 8 years of age. *JAMA Pediatrics*.
- 64 Brotman, L.M., Dawson-McClure, S., Huang, K., Theise, R., Kamboukos, D., Wang, J., Ogedegbe, G. (2012). Early childhood family intervention and long-term obesity prevention among high-risk minority youth. *Pediatrics, 129*, e621-e628.
- 65 Jones, S.M., & Bouffard, S.M. (2012). Social and emotional learning in schools: From programs to strategies. *Social Policy Report, 26*(4), 3-22.
- 66 Lonigan, C.J., Phillips, B.M., Clancy, J.L., Landry, S.H., Swank, P.R., Assel, M., ... School Readiness Consortium. (2015). Impacts of a comprehensive school readiness curriculum for preschool children at risk of educational difficulties. *Child Development, 86*, 1773-1793.
- 67 Lillard, A.S., Lerner, M.D., Hopkins, E.J., Dore, R.A., Smith, E.D., & Palmquist, C.M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin, 139*, 1-34.
- 68 Pianta, R.C., Mashburn, A.J., Downer, J.T., Hamre, B.K., & Justice, L.M. (2008). Effects of web-mediated professional development resources on teacher-child interactions in pre-kindergarten classrooms. *Early Childhood Research Quarterly, 23*, 431-451.
- 69 Heckman, J., & Kautz, T. (2013). Fostering and measuring skills: Interventions that improve character and cognition. In J. Heckman, J.E. Humphries, & T. Kautz (Eds.), *The myth of achievement tests: The GED and the role of character in American life* (pp. 341-430). Chicago, IL: University of Chicago Press.
- 70 Li-Grining, C.P., & Haas, K. (2010, March). Academic outcomes of the Chicago School Readiness Project in first grade: Do children's approaches to learning mediate treatment effects on academic skills? Paper presented at the Spring Conference of the Society for Research on Educational Effectiveness, Chicago, IL.
- 71 Zhai, F., Raver, C.C., & Jones, S. (2012). Academic performance of subsequent schools and impacts of early interventions: Evidence from a randomized controlled trial in Head Start settings. *Children and Youth Services Review, 34*, 946-954.
- 72 Bierman, K.L., Nix, R.L., Heinrichs, B.S., Domitrovich, C.E., Gest, S.D., Welsh, J.A., & Gill, S. (2014). Effects of Head Start REDI on children's outcomes one year later in different kindergarten contexts. *Child Development, 85*, 140-159.
- 73 Nix, R.L., Bierman, K.L., Heinrichs, B.S., Gest, S.D., Welsh, J.A., & Domitrovich, C.E. (2016). The randomized-controlled trial of Head Start REDI: Sustained effects on developmental trajectories of social-emotional functioning. *Journal of Clinical and Consulting Psychology, 84*, 310-322.
- 74 Bierman, K.L. (2004). Peer rejection: Developmental processes and intervention strategies. New York: Guilford.