

The Science of Learning and Development in Afterschool Systems and Settings



In the past decade, we have seen a significant value placed on efforts to support the whole child in school and in out-of-school time settings. Recently, there have been remarkable efforts in research, policy, and practice to explore and strengthen systems and settings that bolster whole-child efforts, including the Science of Learning and Development (SoLD) Alliance.

SoLD is a collaborative effort to combine findings from diverse areas of research, from neuroscience to human development, into an integrated science of learning and development—a body of work that can bolster the youth development field’s efforts in afterschool systems and settings to ensure that all young people have the opportunity to thrive.¹

Often, when research or policy efforts are geared toward K–12 education or other large systems, the youth development field modifies those efforts and learnings to apply to afterschool systems and settings. Optimistically, the fit works well with SoLD. In this brief, we describe the foundations of SoLD and explain how aspects of the current SoLD work align with afterschool systems and settings. This brief is the beginning of an exciting conversation about SoLD in afterschool.

In this brief, we:

- Present select findings from the SoLD efforts
- Describe three key takeaways from SoLD that are relevant and actionable for afterschool professionals
- Suggest practical applications in afterschool systems and settings
- Outline the elements of developmentally rich contexts that foster learning and healthy development
- Suggest practical applications in afterschool systems and settings

WHAT ARE AFTERSCHOOL SYSTEMS AND SETTINGS?

Systems: Afterschool systems support afterschool programs at the municipal or regional level. They provide centralized, organized technical assistance; provide career pathways for professionals; lead policy and communication efforts; and facilitate partnerships, fundraising, and evaluation. Examples of systems include Statewide Afterschool Networks and Affiliates, citywide and local intermediaries, child- and youth-serving agencies, and national federated and affiliate organizations.

Settings are the places (often in programs, but not always) where children and youth learn and develop. In this brief, we focus on afterschool settings.

About SoLD

CORE PARTNERS

- American Institutes for Research
- EducationCounsel
- Forum for Youth Investment
- Learning Policy Institute
- Populace
- Turnaround for Children

Recent publications² by the core SoLD partners (see textbox) focus an integrated, cross-disciplinary lens on (1) what we know about human development and (2) how to apply science-informed strategies to practice.

The SoLD research provides five findings that are relevant to all settings and systems, including youth development programs in afterschool:

SoLD FINDINGS

- Each young person has the potential to learn and thrive at every stage of life.
- Development of complex skills is a personalized journey.
- Development is malleable, from birth to early adulthood.
- Context is the defining influence on development.
- Integration is essential for, and accelerates, learning.³

The SoLD findings demonstrate the importance of settings and relationships for learning and development. One of these important settings is afterschool, with our focus on relationships, learning, and development.⁴ **The SoLD work emphasizes many of the same elements that we know are central to high-quality afterschool programs: supportive relationships that foster motivation and competence, opportunities for social and emotional learning, cultural competence and responsiveness, equity, connections to family and community, and identity-safe environments.** The science validates and reinforces what we know about how children and youth learn and develop within context, and it provides a sense of hope because we can harness this knowledge to design systems and settings that work for all children and youth.

In the sections that follow, we highlight three key takeaways from SoLD that are relevant and actionable for the youth development field in afterschool. We discuss the implications of each takeaway within the context of afterschool systems and settings.



Children and youth learn and develop best in relational settings. Improving the quality of settings and conditions for learning helps all children and youth.



Cultural competence and responsiveness are necessary for equity. Children and youth grow up in communities and cultures that should be reflected, respected, and celebrated.



Trauma and adversity affect development. But these effects can be mitigated or overcome by supportive relationships and settings.



Children and Youth Learn and Develop Best in Relational Settings

SoLD tells us that **children and youth learn and develop best in relational settings.** SoLD knowledge from across several disciplines indicates that:

- Warm, stable, responsive, and supportive relationships with adults and peers drive healthy development.⁵
- The brain and how we think and act are malleable throughout our entire lifespan.⁶
- Everyone follows a unique developmental pathway formed by context and experiences, as well as the meaning we make of these experiences.
- Cognitive, social, and emotional capabilities are fundamentally intertwined in their development, experience, and use.⁷

What Does This Mean for Afterschool Systems and Settings?

Afterschool systems support programs, so they can provide developmentally rich settings where all participants can thrive. Afterschool systems are designed to build capacity, provide resources, and guide quality improvement. The infrastructure that systems provide enables afterschool providers to offer high-quality afterschool programs with settings that are safe and supportive, allowing young people to create meaningful, mutually respectful relationships with each other and with adults, explore their interests, and engage in experiences that foster learning and development.⁸ In the following section we explore how settings foster learning and development in afterschool.

Afterschool settings promote physically and emotionally safe environments that allow youth and adults to form meaningful relationships. We know that relationships are key in supporting children and youth in their learning and development,⁹ and lessons from SoLD reinforce the importance of relationships and the key role peers and adults play in the learning and development of children and youth in afterschool settings.

Afterschool settings are diverse by design—they reflect the culture, context, and communities where they are situated.¹⁰ This intentional variation aligns with lessons learned from SoLD: that learning and development happens best in supportive contexts that are reflective of participants' culture and identity. We are striving as a field to ensure that afterschool settings offer identity-safe environments and that opportunities for learning and development (including identity development) reflect participants' lived experience. To do this, we need to emphasize afterschool professionals' social and emotional competencies, like empathy and self-awareness. We also need to provide them with the trainings and tools they need to respond to children and young people's development to ensure programs in afterschool settings are reflective of culture, contextually rich, and have developmental intentionality or fit.¹¹

WHAT IS DEVELOPMENTAL INTENTIONALITY?

Developmental intentionality or fit “captures the dynamic relationship between developmental outcomes, youth engagement, and intentionality in the philosophy, design, and delivery of program supports and opportunities for young people.”¹² The theory of developmental intentionality is built on three precepts: intentionality, engagement, and goodness of fit.

- **Intentionality:** Programs are most effective when we intentionally integrate long-term developmental outcomes into every aspect of the program, from how we design learning opportunities to how we interact with youth.
- **Engagement:** Youth are most likely to achieve desired developmental outcomes when they are actively engaged in their own learning and development.
- **Goodness of fit:** Youth engagement happens when there is a good fit between youth and the learning opportunities in which they participate.

SoLD, among other important research efforts, tells us that intentional opportunities for social and emotional learning (SEL) bolster learning and development in important ways that foster skill building and academic and life success.¹³ Largely as a result of a 2007 meta-analysis by Durlak and Weissberg,¹⁴ the youth development field has embraced SEL as an intentional practice. Afterschool systems are endeavoring to systemically support partnerships for SEL in afterschool settings.¹⁵ These initiatives uniquely bring together cross-sector partners (most often between K–12 and out-of-school time, and in some cases other service providers, such as mental health providers) to collaborate and align efforts toward supporting participants' SEL.

One promising systemic effort to bolster SEL is *SEL to the Core*,¹⁶ which promotes components of SEL practice in the National AfterSchool Association's Core Knowledge and Competencies for Afterschool and Youth Development Professionals, and includes information on intentional and embedded opportunities for SEL in afterschool settings. Other valuable resources on SEL in afterschool include AIR's *Social and Emotional Learning Practices Self-Reflection Tool for Afterschool Staff*¹⁷ a report from the Harvard Graduate School of Education and the Wallace Foundation called *Navigating Social and Emotional Learning from the Inside Out*,¹⁸ and a resource from the Partnership for Children and Youth on *The Key to Bringing Social and Emotional Learning to Life*.¹⁹



Cultural Competence and Responsiveness are Necessary for Equity

Culturally responsive environments contribute to equity by addressing institutional barriers (e.g., resource allocation) and interpersonal barriers (e.g., micro-aggressions) faced by culturally and linguistically diverse young people and their families. The barriers that young people face increase stress and negative thinking, take energy away from productive learning, and negatively impact health.²⁰ Adults who create culturally competent environments can combat these barriers and negative stereotyping, helping children and youth perceive themselves as being able to access and find success in a variety of scenarios, including school and life pathways.²¹ Culturally responsive approaches use cultural knowledge as a scaffold to connect existing knowledge to new knowledge,²² which increases motivation and interest in learning new things.²³

What Does This Mean for Afterschool Systems and Settings?

At the system level, the fields of youth development and afterschool have successfully created competencies and standards that allow variation in afterschool settings; this variation allows the individual setting to reflect the interests, identities, and cultures of its participants. This ability to reflect and be a part of participants' lived experience is critical for promoting culture and equitable practices. Those same standards also explicitly call for afterschool professionals to be proficient in cultural competence and equitable practices. For example, the National AfterSchool Association identifies “cultural competency and responsiveness” as a core competency for afterschool and youth development professionals.²⁴

Likewise, we are starting to see policies emerge in afterschool programs that hold promise for organizational practices that may foster cultural competence, most notably through policies that promote diversity and inclusion. One example is intentional hiring practices that ensure that afterschool professionals reflect the communities and cultures of program participants.²⁵ Another established afterschool practice involves matching programming to the interests and needs of participants; this results in afterschool settings that appeal to and celebrate diverse interests, identities (including age), and cultures.²⁶ And in some afterschool settings, adults practice cultural competence by cultivating “brave spaces” where youth can understand and navigate the impacts of power, inequity, and oppression.²⁷

At a programmatic level, afterschool settings provide opportunities for young people to practice and demonstrate agency and leadership and to share and celebrate their identity. Afterschool professionals can work with families and communities to ensure that different cultures are reflected and highlighted within the program. For example, deeply rooted in the afterschool field is the idea of supporting opportunities for young people to have voice related to their program and community and choice in participating in activities and content. However, we sometimes give lip service to “voice and choice” without meaningfully scaffolding the skills that help participants successfully exercise their voice and make choices—such as self-awareness, decision making, and relationship skills. If these skills are carefully scaffolded, we can build mutually respectful relationships with youth and then get out of their way (while being there for them), so that they can employ their skills to exercise their voice and make meaningful choices. The SoLD findings validate us as a field and provides us an additional push to be more intentional about meaningfully integrating voice and choice to ensure all participants have authentic opportunities to explore their interests, elevate their strengths, and build their skills in ways that work well for them.²⁸

Despite these promising policies and practices for integrating culturally relevant and responsive activities into afterschool settings, there remains an opportunity for afterschool professionals to be more intentional about strategies in program design and implementation, staffing, and evaluation. Examples include recruiting diverse youth, planning activities that celebrate identities and cultures, hiring diverse staff, and providing professional development focused on cultural competence and responsiveness. To create culturally competent settings, adults must:²⁹

- Include and respect the diverse perspectives and cultural identities of children and youth
- Provide culturally relevant materials
- Acknowledge and celebrate diversity
- Recognize the unique strengths of each young person, and the strengths of the cultural groups that the young person identifies with
- Understand the impacts of racism, inequality, prejudice, and stereotypes on young people's ability to flourish

Trauma and Adversity Affect Development

Just as developmentally rich contexts enhance brain development, developmentally unsuitable contexts and related stressors hinder development. When these stressors are combined with other risk factors, such as unstructured or low-quality learning environments, they can set off a cascade of developmental challenges and negative interactions with adults and peers.³⁰ Children and youth facing adversity can find it more difficult to develop the foundational cognitive, social, and emotional competencies that are necessary for self-regulation and learning,³¹ and can develop negative biases against themselves and others that negatively affect relationships.³² But these effects can be mitigated or overcome through relationships and settings that foster resilience.

All young people are vulnerable to the unwanted effects of chronic and unbuffered stress on development, and are responsive to contextual assets that foster resilience. This sensitivity to inputs makes it important to ensure that they experience relationships and settings that foster resilience: the characteristics that make relationships and contexts developmentally rich are the same ones that can buffer the effects of chronic stress.

Adults provide the best support to young people who face adversity when:

- They are informed about and attuned to the effects of trauma
- They have the capacity to address a range of basic needs and provide opportunities to foster social and emotional growth

What Does This Mean for Afterschool Systems and Settings?

The youth development and afterschool programs began as an effort to provide sanctuaries for children and youth as a way to ensure their safety and allow them to create positive relationships.³³ At its core, our overall afterschool system is built to promote resilience and thriving, provide protective factors, and elevate assets that can buffer and overcome the effects of trauma and adversity.³⁴ We have evolved as a field to be more intentional in how we foster resilience, promote skill building,³⁵ and prepare young people for their unique futures. Now is the time to look inward at our combined history and our current charge as a field. We have embraced the SEL movement wholeheartedly, and the SoLD findings provide validation that what we do

well—provide contextually rich environments with deep, mutually beneficial relationships—can mitigate and overcome the effects of trauma.

We need to invest in systems that ensure all afterschool professionals have the development opportunities and tools they need regarding healing-centered engagement, trauma-informed practice, SEL, and the capacity to be culturally responsive and trauma-sensitive. Providing these professional learning opportunities and tools will ensure that afterschool professionals are equipped to create opportunities for exploration, learning, and development, as well as the conditions that support the diverse needs of young people. Additionally, afterschool professionals can connect with mental health partners and other community and educational supports to ensure participants have developmentally rich opportunities and that their needs are being met. While doing so, we must remember not to revisit implementation challenges of the past, but to keep building. Many of us remember the quote from Karen Pittman and Merita Irby of the Forum for Youth Investment: “Problem free is not fully prepared, and fully prepared is not fully engaged.”³⁶ Now that we understand the full impact of trauma on development, we must not go back to a prevention mentality, but use this rich body of information from SoLD to build more and better opportunities for young people to thrive.

Developmentally Rich Contexts Applied to Afterschool Settings

Our knowledge from SoLD does not make us change the finish line for some children and youth, it just underlines the importance of making sure we are providing opportunities and supports for children and youth throughout their learning and development that “fit” with their interests and needs. The SoLD work reinforces our understanding of the key elements of contexts that set young people up to thrive. These key elements are well aligned with high-quality afterschool systems and settings:³⁷

- ✔ **Supportive environmental conditions that foster strong relationships and community as well as conditions for learning.** Supportive environments are caring, culturally responsive learning communities. The conditions for learning include the experience of physical, emotional, and identity safety; connectedness; and engagement and challenge.
- ✔ **Structured opportunities that support motivation, competence, and self-directed learning and development.** These opportunities include engaging, scaffolded activities that support young people in combining their past knowledge and experiences with what they are currently experiencing and learning. Rich learning environments provide intentional opportunities for children and youth to practice and apply new skills, reflect on program activities, receive ongoing support, and provide feedback.
- ✔ **Integrated SEL that fosters important skills, habits, and mindsets.** SEL includes explicit and embedded—but always intentional—facilitation, modeling, and opportunities for youth to practice skills related to self-awareness, responsible decision-making, social awareness, and relationships.³⁸ Youth should also have opportunities that foster a growth mindset and a sense of agency. These skills and competencies foster resilience and a sense of responsibility toward the community.
- ✔ **Individualized supports that enable healthy development, respond to individual needs, and address learning barriers.** These supports include integrated physical and mental health and social supports. To be responsive to the needs of children and youth, multi-tiered systems include academic, health, and social supports, with universal supports for children and youth to develop their social and emotional skills and personalized resources to address and course-correct developmental pathways that prevent young people from thriving.

Summary and Action Steps

The findings from SoLD add to our understanding of youth development in afterschool settings and systems. Afterschool programs facilitate the learning and development of children and youth by creating physically and emotionally safe³⁹ and inclusive environments,⁴⁰ providing healthy and positive relationships with adults and peers,⁴¹ providing opportunities to actively engage in skill building,⁴² and providing staff with the supports necessary to create and sustain developmentally supportive environments.⁴³ Afterschool professionals can intentionally create settings that provide opportunities for children and youth—including those who experience trauma and adversity—to thrive.

The SoLD work underscores the importance of key concepts that we as a field must continue to learn about, emphasize, and practice intentionally:

- Support adult practice through continuous quality improvement and professional development, especially as it relates to collaborative partnerships with other settings, services, and systems to provide developmentally rich opportunities and to meet the unique needs of all young people.
- Design, implement, staff, and evaluate programs in ways that meaningfully integrate and celebrate culture, identity, and diversity—with an emphasis on authentic youth voice and choice.
- Invest in systems that promote professional development to provide afterschool professionals the learning opportunities and tools they need for healing-centered engagement, trauma-informed practice, and SEL. Doing so will help us to better support children and youth affected by trauma or adversity, and will help us develop partnerships with communities and education systems that will let us provide additional supports to young people.

Endnotes

- 1 Science of Learning and Development Alliance. (n.d.). About the initiative. Retrieved from <https://soldinitiative.org/about/>
- 2 Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2018). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science*, doi:10.1080/10888691.2017.1398649; Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2019). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, doi:10.1080/10888691.2018.1537791; Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2017). *Science of learning and development: A synthesis*. Washington, DC: American Institutes for Research; Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2018). Drivers of human development: How relationships and context shape learning and development. *Applied Developmental Science*, doi:10.1080/10888691.2017.1398650
- 3 Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2018). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science*, doi:10.1080/10888691.2017.1398649; Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2019). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, doi:10.1080/10888691.2018.1537791; Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2017). *Science of learning and development: A synthesis*. Washington, DC: American Institutes for Research; Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2018). Drivers of human development: How relationships and context shape learning and development. *Applied Developmental Science*, doi:10.1080/10888691.2017.1398650
- 4 National Commission on Social, Emotional, & Academic Development. (2018). *From a nation at risk to a nation at hope*. Retrieved from http://nationathope.org/wp-content/uploads/2018_aspen_final-report_full_webversion.pdf
- 5 Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press; Siegel, D. J. (2012). *The developing mind: How relationships and the brain interact to shape who we are* (2nd ed.). New York, NY: Guilford Press; Li, J., & Julian, M. M. (2012). Developmental relationships as the active ingredient: A unifying working hypothesis of “what works” across intervention settings. *The American Journal of Orthopsychiatry*, 82(2), 157–166; Institute of Medicine & National Research Council. (2015). *Transforming the workforce for children birth through age 8: A unifying foundation*. Washington, DC: National Academies Press; Center on the Developing Child. (2016). *From best practices to breakthrough impacts: A science-based approach to building a more promising future for young children and families*. Cambridge, MA: Harvard University, Center on the Developing Child.
- 6 Fischer, K. W., & Bidell, T. R. (2006). Dynamic development of action, thought, and emotion. In R. M. Lerner (Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th ed., pp. 313–399). New York, NY: Wiley; Rose, T., & Fischer, K. (2009). *Dynamic development: A Neo-Piagetian approach*. In U. Müller, J. I. M. Carpendale, & L. Smith (Eds.), *The Cambridge companion to Piaget* (pp. 400–422). Cambridge, UK: Cambridge University Press.
- 7 Ford, D. L., & Lerner, R. M. (1992). *Developmental systems theory: An integrative approach*. Newbury Park, CA: Sage; Overton, W. F. (2015). Processes, relations and relational-developmental-systems. In W. F. Overton & P. C. M. Molenaar (Eds.), *Handbook of child psychology and developmental science: Vol. 1. Theory and method* (7th ed., pp. 9–62). Hoboken, NJ: Wiley.
- 8 Hall, G., Yohalem, N., Toleman, J., & Wilson, A. (2003). *How afterschool programs can most effectively promote positive youth development as a support to academic achievement: A report commissioned by the Boston After-School for All Partner*. Wellesley, MA: National Institute on Out-of-School Time.
- 9 Bocarro, J. N., & Witt, P. A. (2018). The power of people: The importance of relationship-based programming. In P. A. Witt & L. L. Caldwell (Eds.), *Youth development principles and practices in out-of-school time settings*. Urbana, IL: Sagamore-Venture.
- 10 Eccles, J., & Gootman, J. (Eds.). (2002). *Community programs to promote youth development*. Washington, DC: National Academies Press.
- 11 Walker, J., Marczak, M. S., Blyth, D., & Borden, L. M. (2005). Designing youth development programs: Toward a theory of developmental intentionality. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after school and community programs* (pp. 399–418). Lawrence Erlbaum Associates. doi:10.4324/9781410612748
- 12 Walker, J., Marczak, M. S., Blyth, D., & Borden, L. M. (2005). Designing youth development programs: Toward a theory of developmental intentionality. In J. L. Mahoney, R. W. Larson, & J. S. Eccles (Eds.), *Organized activities as contexts of development: Extracurricular activities, after school and community programs* (pp. 399–418). Lawrence Erlbaum Associates. doi:10.4324/9781410612748
- 13 Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, 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; CASEL. (2019). *What is SEL?* Retrieved from <https://casel.org/what-is-sel/>; Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2018). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science*, doi:10.1080/10888691.2017.1398649; National Commission on Social, Emotional, & Academic Development. (2018). *From a nation at risk to a nation at hope*. Retrieved from http://nationathope.org/wp-content/uploads/2018_aspen_final-report_full_webversion.pdf

- 14 Durlak, J. A., & Weissberg, R. P. (2007). *The impact of after-school programs that promote personal and social skills*. Retrieved from <https://files.eric.ed.gov/fulltext/ED505368.pdf>
- 15 Partnership for Children and Youth. (n.d.) *The key to bringing social-emotional learning to life*. Retrieved from <https://www.partnerforchildren.org/resources/2019/1/29/the-key-to-bringing-social-emotional-learning-to-life>
- 16 National AfterSchool Association & American Institutes for Research. (n.d.). *SEL to the core: Building from foundational youth development to support social and emotional learning*. Retrieved from <https://naaweb.org/sel-to-the-core>
- 17 American Institutes for Research. (2015). *Social and emotional learning practices: A self-reflection tool for afterschool staff*. Retrieved from <https://www.air.org/resource/social-and-emotional-learning-practices-self-reflection-tool-afterschool-staff>
- 18 Jones, S., Brush, K., Bailey, R., Brion-Meisels, McIntyre, J., Kahn, J., Nelson, B., & Stickle, L. (2017). Navigating SEL from the inside out: Looking inside & across 25 leading SEL programs. Retrieved from <https://www.wallacefoundation.org/knowledge-center/Documents/Navigating-Social-and-Emotional-Learning-from-the-Inside-Out.pdf>
- 19 Partnership for Children and Youth. (n.d.). *The key to bringing social-emotional learning to life*. Retrieved from <https://www.partnerforchildren.org/resources/2019/1/29/the-key-to-bringing-social-emotional-learning-to-life>
- 20 Artilles, A. J., Kozleski, E. B., Trent, S. C., Osher, D., & Ortiz, A. (2010). Justifying and explaining disproportionality, 1968–2008: A critique of underlying views of culture. *Exceptional Children*, *76*(3), 279–299; LeBrón, A. M. W., Schulz, A. J., Mentz, G., & White Perkins, D. (2015). John Henryism, socioeconomic position, and blood pressure in a multi-ethnic urban community. *Ethnicity & Disease*, *25*(1), 24–30; Pennington, C. R., Heim, D., Levy, A. R., & Larkin, D. T. (2016). Twenty years of stereotype threat research: A review of psychological mediators. *PLoS ONE*, *11*(1), e0146487; Solórzano, D., Ceja, M., & Yosso, T. (2000). Critical race theory, racial microaggressions, and campus racial climate: The experiences of African American college students. *Journal of Negro Education*, *69*, 60–73.
- 21 Ambrose, S. A., & Lovett, M. C. (2014). Prior knowledge is more important than content: Skills and beliefs also impact learning. In V. A. Benassi, C. E. Overson, & C. M. Hakala (Eds.), *Applying science of learning in education: Infusing psychological science into the curriculum* (pp. 7–19). Durham, NH: University of New Hampshire, College of Liberal Arts.
- 22 Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York, NY: Teachers College Press; Hammond, Z. (2016). *Culturally responsive teaching and the brain: Promoting authentic engagement and rigor among culturally and linguistically diverse students*. Thousand Oaks, CA: Corwin
- 23 Aronson, B., & Laughter, J. (2016). The theory and practice of culturally relevant education: A synthesis of research across content areas. *Review of Educational Research*, *86*(1), 163–206.
- 24 National AfterSchool Association. (2011). *Core knowledge and competencies for afterschool and youth development professionals*. Retrieved from <https://naaweb.org/images/NAA-CoreComp-Infographic.pdf>
- 25 Loeper, R. (2019). Extending a mighty hand: Outreach and retention strategies to help our least supported youth. In S. Hill and F. Vance, *Changemakers! Practitioners advance equity and access in out-of-school time programs*. Urbana, IL: Sagamore-Venture
- 26 Henriquez, A. & Bueno, S. (2019). Engaging immigrant families in out-of-school time activities. In S. Hill and F. Vance, *Changemakers! Practitioners advance equity and access in out-of-school time programs*. Urbana, IL: Sagamore-Venture.
- 27 McGee, M. (2019). Critical youth development: Living and learning at the intersection of life. In S. Hill and F. Vance, *Changemakers! Practitioners advance equity and access in out-of-school time programs*. Urbana, IL: Sagamore-Venture
- 28 Outley, C., Brown, A., Gabriel, M. G., & Sullins, A. (2018). The role of culture in out-of-school time settings. In P. A. Witt & L. L. Caldwell (Eds.), *Youth development principles and practices in out-of-school time settings*. Urbana, IL: Sagamore-Venture
- 29 Berman, S., Chaffee, S., & Sarmiento, J. (2018). The practice base for how we learn: *Supporting students' social, emotional, and academic development*. Washington, DC: National Commission on Social, Emotional, and Academic Development, The Aspen Institute.
- 30 Blair, C., & Diamond, A. (2008). Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure. *Development & Psychopathology*, *20*(3), 899–911; Portilla, X. A., Ballard, P. J., Adler, N. E., Boyce, W. T., & Obradović, J. (2014). An integrative view of school functioning: Transactions between self-regulation, school engagement, and teacher–child relationship quality. *Child Development*, *85*(5), 1915–1931.
- 31 Center on the Developing Child. (2016). *From best practices to breakthrough impacts: A science-based approach to building a more promising future for young children and families*. Cambridge, MA: Harvard University, Center on the Developing Child.
- 32 Fischer, K. W., & Bidell, T. R. (2006). Dynamic development of action, thought, and emotion. In R. M. Lerner (Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th ed., pp. 313–399). New York, NY: Wiley.

- 33 LeMenestrel, S. M., & Lauxman, L. A. (2011). Voluntary youth-serving organizations: Responding to the needs of young people and society in the last century. *Journal of Youth Development, 6*(3), 137–152.
- 34 Perkins, D. F., Caldwell, L. L., & Witt, P. A. (2018). Resiliency, protective processes, promotion, and community youth development. In P. A. Witt & L. L. Caldwell (Eds.), *Youth development principles and practices in out-of-school time settings*. Urbana, IL: Sagamore-Venture.
- 35 Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, 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.
- 36 Pittman, K. J., & Irby, M. (1996). *Preventing problems or promoting development: Competing priorities or inseparable goals* [Online]. Retrieved from <http://www.iyf.org>
- 37 Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2019). Implications for educational practice of the science of learning and development, *Applied Developmental Science*, doi:10.1080/10888691.2018.1537791
- 38 CASEL. (2019). *What is SEL?* Retrieved from <https://casel.org/what-is-sel/>
- 39 Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology, 45*(3–4), 294–309.
- 40 Lerner, R., & Lerner, J. (2011). *The positive development of youth: Report of the findings from the first seven years of the 4-H study of positive youth development*. Medford, MA: Tufts University, Institute for Applied Research in Youth Development; Chevy Chase, MD: National 4-H Council.
- 41 Hall, G., Yohalem, N., Toleman, J., & Wilson, A. (2003). *How afterschool programs can most effectively promote positive youth development as a support to academic achievement: A report commissioned by the Boston After-School for All Partner*. Wellesley, MA: National Institute on Out-of-School Time.
- 42 Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology, 45*(3–4), 294–309.
- 43 Moroney, D. A., & Devaney, E. (2017). The readiness of the out-of-school time workforce to intentionally support participants' social and emotional development: A review of the literature and future directions. *Journal of Character Education, 13*(1).

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