

Innovation in Strategies and Practices to Promote Social and Emotional Skills



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This issue brief, created by The Pennsylvania State University, is one of a series of briefs that addresses the future needs and challenges 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. This is the second series of briefs that address SEL, made possible through support from the Robert Wood Johnson Foundation. The first set synthesized current SEL research on early support for parent engagement and its effects on child outcomes; SEL in infancy/toddlerhood, the preschool years, the elementary school period, and middle-high school timeframes; and how SEL influences teacher wellbeing, health equity, and school climate. Learn more at prevention.psu.edu/sel.

Executive Summary

This brief describes social and emotional skills and their role in enhancing academic success and positive behavior among students, highlighting in particular the decades of research documenting the effectiveness of school-based prevention and intervention programs in building these important skills. Despite the breadth and rigor of this work, there remain substantial barriers to implementing such programs and bringing them to scale. The authors discuss three innovative approaches to promoting social and emotional skills that respond to some of the challenges with implementation and scaling: non-curricular, modularized approaches (e.g., SEL Kernels), teacher/adult-focused approaches (e.g., CARE/CALM for Teachers), and integrated, technology-based SEL interventions. Social and emotional skills are foundational to academic success, mental health, and participation in a civil society, but implementing SEL programming at scale requires innovative approaches and partnerships that support all actors in the educational ecosystem. The authors recommend simplifying and localizing SEL programming, supporting teachers and other adults in promoting social and emotional skills, deploying technology creatively, and engaging in long-term, reciprocal research-practice partnerships to advance the evidence of these innovative approaches.



Introduction

What do we know about social and emotional skills and competencies?

Students learn more and classrooms are more effective when children and youth have the skills to identify and manage emotions, focus their attention, successfully navigate relationships with peers and adults, persist in the face of difficulty, develop a positive self-concept, and problem-solve effectively.^{1,2} One common approach to building these skills and habits has been school-based prevention and intervention programs.³ Schools throughout our history have been identified as an important context for building social, emotional, behavioral, and character-related competencies. Students spend a substantial amount of time in schools, the social environment of schools provides many “teachable moments” and rests on influential relationships, and these skills are associated with academic success.⁴

Accumulating over the past several decades, a broad and rich body of evidence from experimental studies⁴⁻⁶ and several meta-analyses⁷⁻¹⁰ shows that high-quality school-based programming focused on SEL impacts students’ academic achievement and school-related behavior in both the short and long term.

Social and emotional learning (SEL) refers to the process through which individuals learn and apply a set of social, emotional, behavioral, and character skills required to succeed in schooling, the workplace, relationships, and citizenship.

SEL Promotes Improvements for Students in:¹¹⁻¹³

- Behavioral and mental health
- Executive functioning
- Teacher-reported grades and standardized test scores
- College entry and completion
- Physical health
- Reduced criminal behavior

SEL Promotes Improvements in Learning Environments:¹⁴⁻¹⁷

- Safer and more supportive culture and climate
- Effective classroom management with positive relationships
- Reduced classroom disruptions and behavior problems
- Increased school engagement and attendance
- Reduced teacher stress and burnout

Interest in SEL is high among educators¹⁸, amplified by increased concerns about children’s social emotional development, mental health, and wellbeing following the COVID-19 pandemic.¹⁹ SEL is important for all students but may have special benefits for low-income or otherwise vulnerable students, including those facing the disruption and uncertainty tied to the pandemic, because children’s social and emotional skills are sensitive to the negative effects of stress and trauma.²⁰ Importantly, research indicates that SEL programs can buffer children from some of the negative effects of adversity, serving as important protective factors in the face of negative life events or chronic stressors. Some studies find that SEL programs have their largest impacts among students who face the greatest number of risks or who start school behind their peers academically or behaviorally.^{21*}

What does SEL typically look like in schools? Most approaches are curricular, meaning they take the form of pre-packaged, scripted programs that include structured, sequential lessons. Often such programs include a number of other elements such as professional development, training, and sometimes coaching, culture and climate supports, and strategies to connect with and engage families and communities.²² With many components to supplement the curriculum itself, some programs could even be described as comprehensive or systemic, aligning with the Collaborative for Academic, Social, and Emotional Learning’s notion of [systemic SEL](#). Even with the additional components, the core of the vast majority of programs is the curriculum that is delivered to students in classrooms. Despite the great promise of structured and sequenced SEL curricula designed for schools, our field continues to face a number of inter-related barriers that undermine efforts to effectively take such programs to scale, including insufficient resources and infrastructure support.

Multifaceted & Long-Standing Barriers

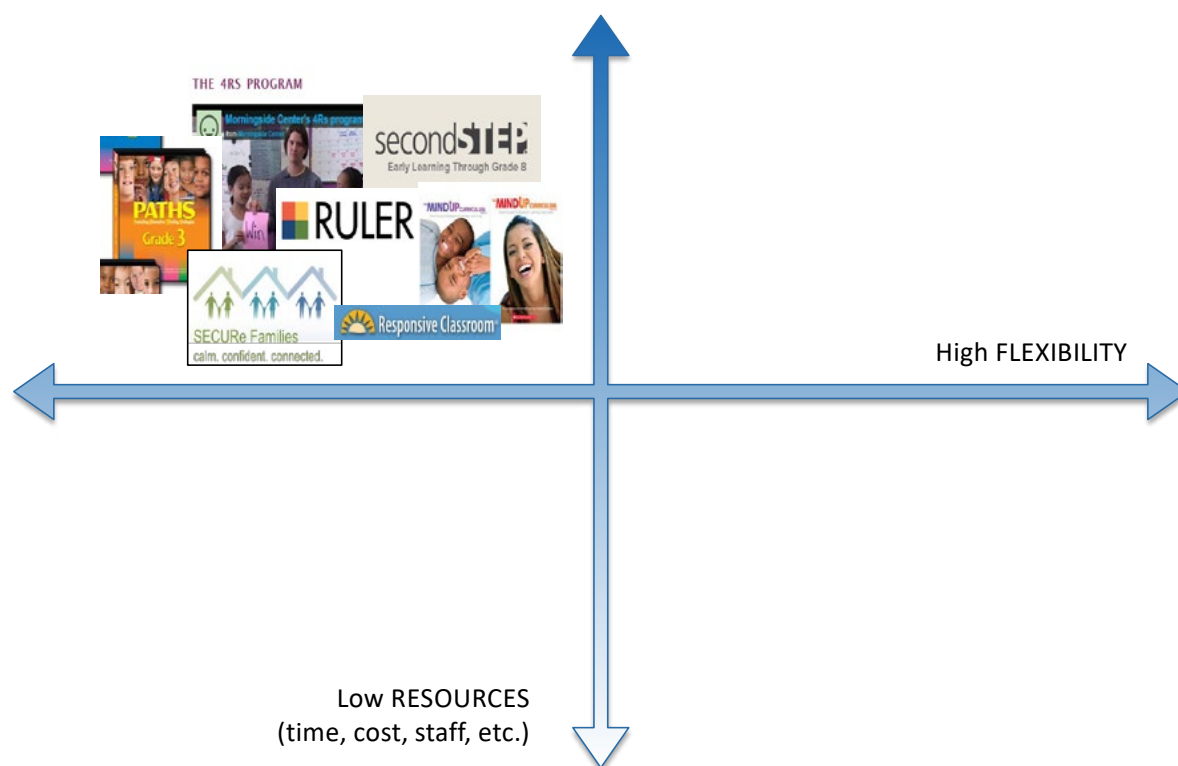
Resources: There is a lack of financial, personnel, and structural resources necessary to (a) adopt and implement SEL curricula in a manner consistent with the original implementation model, and (b) sustain implementation over time.^{23,24}

Accountability: Few schools use data to guide decision-making about the selection, implementation, or ongoing assessment of the programs and strategies they use. Schools thus struggle to select and use programs most suited to their contexts and to the specific challenges they are facing, to monitor results, and to hold themselves accountable to their vision for progress.

Relevance: The prescribed scope/sequence of a program may not align with the current challenges faced by teachers and often does not provide supports for implementing lesson concepts in real-time “teachable moment” situations or for transferring skills from the lessons to daily life.^{3,25}

Across barriers, two key dimensions surface as particularly salient: resource demands (e.g., time, cost, staff needs) and flexibility/adaptability. Figure 1 shows that current SEL approaches typically fall in a quadrant characterized by high resource needs and low flexibility/adaptability, highlighting the need for additional solutions that are flexible and respond to varying resource demands. Furthermore, the challenges described above, and the dimensions below, highlight the need for choice – or a range of options that enable teachers and school administrators to select the type of approach that aligns with available resources and offers the desired amount of flexibility.

FIGURE 1.
Current SEL Needs, by Quadrant



SEL curricula are an important option, but there is a need and an opportunity to design, deliver, and test other approaches that reflect different combinations of resource intensity and flexibility/adaptability. Overall, [schools and other learning settings need a continuum, or variety of approaches](#), ranging from those that are comprehensive and universal (described above), to those that are grounded in simpler routines and structures for school staff and students to use daily, and/or regular activities and school-wide efforts to promote respectful culture.³

Next, we describe three types of innovations that offer options to build such a continuum of approaches to SEL for schools and other learning settings:

- Non-curricular, modularized approaches (SEL Kernels)
- Teacher/adult-focused approaches (CARE/CALM for Teachers)
- Integrated, technology-based SEL interventions (e.g., with an academic focus, EF + Math Family Playlists).

SEL Kernels

Kernels are thought to represent the underlying “active ingredients” of a program or intervention, or the hypothesized core practices that generate changes in outcomes.²⁶ Some new efforts in SEL involve identifying, isolating, and testing the elements of effective practice. The concept is not unlike other efforts to “deconstruct” programs and interventions to elevate the features or components that are likely to account for their effects (e.g., work on identifying and advancing core components).^{27,28} SEL Kernels, a concept developed by the EASEL Lab at Harvard, takes a similar approach – identifying the practices common to effective SEL curricula (e.g., routines for physiological self-regulation) – but is oriented toward generating strategies that can be designed and implemented on their own. Overall, they are strategies intended to be low-cost, targeted, and to represent some of the essential “active ingredients” in effective prevention programs.²⁹ The EASEL Lab identified and adapted SEL Kernels from a database of routines and strategies commonly used by evidence-based SEL programs to support specific SEL skills (information about the EASEL Lab and its work with Kernels is shown in Figure 2).^{6,22}

Kernels are expected to address many of the barriers described above. Unlike more comprehensive and time-intensive programs, SEL Kernels are intended to be taught and used quickly, are adaptable to specific age groups, can be used across a wide array of settings (such as home, school, or afterschool), and are designed with supports to enable educators to select and adapt the strategies that best fit the needs and goals of their specific students. Indeed, these goals are very similar to those described in the core components approach.²⁷ As a result, Kernels are hypothesized to be more feasible to implement than comprehensive programs, potentially increasing uptake, impact, and sustainability over time.

Over the last 5–10 years, the EASEL Lab has worked with human-centered designers and behavioral insight experts to conduct field testing and design research that informs the content, design, format, framing, and delivery mechanisms for SEL Kernels in different contexts. We have collaborated with local educators, parents/caregivers, ministry of education officials, humanitarian agencies, and others to refine SEL Kernels for multiple age groups and cultural contexts, including U.S. preschool, elementary, and middle school contexts and out-of-school-time settings; caregivers in Educare in the U.S.; early childhood centers in Brazil; and educational settings for refugees and internally displaced youth in Nigeria.

Across these projects and contexts, SEL Kernels take a relatively simple form. They include clear information about the specific skill targeted (e.g., emotion vocabulary), a brief script for the activity (e.g., a script for a Feelings Circle [see Figures 2 and 3]), information about what must happen in the activity and what can be adapted, and a set of sample debrief questions for after the activity (see illustration below). These core structures represent the essence of SEL practice, and high-quality instructional work more generally. The task is clear and explicit; adults and children/youth are given a chance to learn something and practice it together; the group can discuss what happened afterward and debrief how it went, building connection and support among the group; and there are clear ideas for adaptation and extension.

Kernels target knowledge, skills, and competencies within five domains of SEL:

- Cognitive skills
- Emotion processes
- Social skills
- Character/values
- Mindsets

An important next step in research and development of the SEL Kernels will involve the careful evaluation of their implementation fidelity and impact on student outcomes when compared with more comprehensive curriculum-based approaches that have established empirical validity. Additional research is needed to determine whether there are trade-offs that schools need to consider when comparing comprehensive curriculum-based programs and flexible, “kernelized” approaches.

Outcomes

Implementation and outcome data across a number of observational and quasi-experimental studies showed that:

- A strategy-based approach to SEL was a feasible and positive experience for students, teachers, and staff that produced positive outcomes for students.
- Teachers on average used at least one strategy a day, completed the activities within a 15-minute SEL block, and were able to select and tailor strategies to address challenges specific to their classrooms.
- Program-wide, students improved across 13 cognitive, social, and emotional skills (e.g., executive function, self-regulation, empathy, emotion knowledge, conflict resolution, collaboration).
- Student self-esteem increased and the number of playground conflicts decreased.

Program Experience

Findings from focus groups with teachers and administrators at one program site (Bailey et al., 2019) indicate that teachers felt their relationships with students improved substantially over the summer as a result of the Kernels, which helped them engage in mutual sharing and growth. As one teacher described, “[Kernels] gave us a lot of concrete ways to build relationships with students...I think it allowed them to become comfortable with us quickly.”

In addition, teachers reported feeling comfortable adapting the Kernels. For example, this teacher describes how their use of the Feelings Circle Kernel evolved over time.

“We added a component each week. The first week we just let them say how they were feeling, or say it with their hands if they didn’t want to speak, and they were allowed to repeat feelings. The next time we did it, we challenged them [not to] repeat a feeling that someone else already said...try to think of a different word that means the same thing. And this week, we added on the expression they would make if they were feeling that way... They got a lot better at their feelings vocabulary throughout the summer.”

Teachers also found ways to incorporate Kernels throughout the day:

“For 7th grade, the focus on perspective taking was really poignant in how connected it was to the ELA curriculum... [That’s] what we were working on during our Brain Break and in class in terms of, ‘What is your perspective? What could be someone else’s perspective? Why is it important to acknowledge and ask for other people’s perspectives?’ That really melded so well to the curriculum.”

SEL for Teachers

Traditionally in school settings SEL programs have been offered primarily to students and have been implemented in ways similar to other curricular programs (e.g., a formal curriculum with training and materials). However, innovations that support SEL for adults within the school system are growing, driven primarily by concern for teacher wellbeing, burnout, and stress, and in a small number of cases a desire to improve teacher performance or improve teacher recruitment and retention. All of these factors have at their core a need to address teacher stress and burnout. Even prior to the pandemic, 46% of teachers reported high levels of daily stress, making teaching one of the most stressful professions – tied with nursing.³⁰ The task demands of teaching - changing curricular content, compliance with local, state, and federal standards and policies, preparing students for standardized tests, and meeting the social and emotional demands of the classroom contribute to teacher perceived stress and burnout.^{31,32} Not surprisingly, the pandemic has exacerbated the already high levels of teacher stress - with one in four teachers reporting that they plan to leave the profession within a year.³³

Policy and program recommendations to recruit and retain a talented and engaged teaching workforce often include calls for teacher wellbeing and mental health interventions.^{33,34} Schools are addressing this by offering programs and resources that include digital wellness apps and websites, webinars, wellness days, onsite workshops and wellness programs - each with varying degrees of evidence or research backing them. A recent meta-analysis of SEL interventions for teachers demonstrated specific effects on reducing teachers' exhaustion and increasing their sense of personal accomplishment.¹⁷ In fact, some SEL programs have adapted their approach to professional development and training by focusing on adults (i.e., leadership, educators) first, ensuring their social and emotional competencies and wellbeing are addressed before carrying that work into the classroom. [The RULER program](#), for example, starts professional development and training with school teams who then, in turn, work with their leadership and staff for an entire year before introducing RULER to students.





Another approach, mindfulness-based interventions (MBIs), has a growing body of evidence supporting its benefit across critical domains including teacher stress reduction, improved wellbeing, prosocial behaviors, and performance.³⁵⁻³⁸ While research is emerging in this area, a recent review of teacher MBI research found multiple studies that assessed the impact of MBIs on teacher, student, and classroom outcomes.^{39,40} Results indicated increases in teacher mindfulness, and reductions in burnout, as well as in feelings of stress, anxiety, and depression.

Several of the MBI studies included in both reviews were evaluations of the Cultivating Awareness and Resilience in Education (CARE) program. CARE is innovative in several ways: (1) it focuses on the teacher directly, (2) it has rigorous research establishing impacts on both individual- and classroom-level outcomes, and (3) it provides flexibility and responsiveness in delivery modalities to meet the needs of schools while maintaining fidelity to the content and methods.

These recent studies of SEL interventions designed to support teachers are significant because they suggest:

- Schools can support teachers with new forms of professional development that reduce occupational stress and promote wellbeing.
- Such interventions can positively impact teachers' pedagogy, thereby improving classroom quality.
- These programs may also improve student engagement in the classroom.

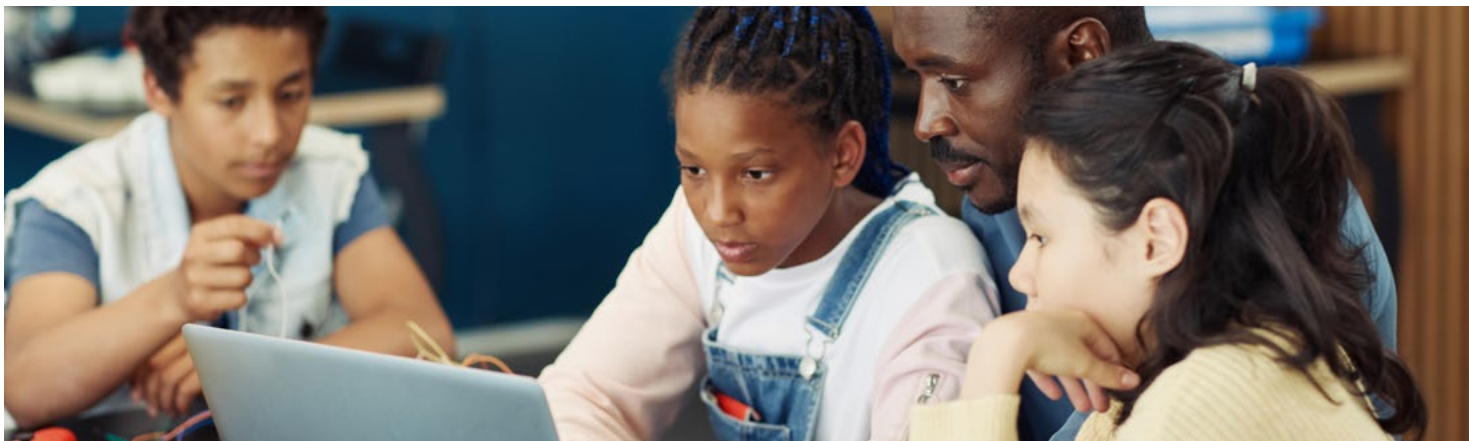
In addition, using a systems approach to understand and address the complexity of interactions between teachers and their organizational environments may yield even more innovative approaches. Specifically, approaches that address the dynamic interactions between policies, power dynamics, resource allocation, and mental models may yield important advancements for supporting teachers' wellbeing and performance.³⁷

Interventions that Integrate SEL & Technology

Increasingly, technology is being incorporated into education in ways that “complement and extend the learning experience.”⁴¹ When done well, technology can help facilitate more streamlined, personalized, and interactive learning experiences, and research shows that educational technology can lead to positive outcomes across a wide variety of subject areas.^{42,43} The COVID-19 pandemic, with its resulting pivot to remote and hybrid learning and increases in youth experiences of trauma and stress, presented an important opportunity to explore how remote and digital technology can support student SEL, both during the pandemic and beyond.

Digital SEL programming has the potential to address many ongoing challenges in the field, including (a) reducing the burden of implementation by offering asynchronous, automated, and extended learning opportunities; (b) providing more accessible and personalized content via self-pacing, student choice/self-directed learning, and customizable platforms; (c) streamlining data collection and progress monitoring in ways that make it easier to connect one-on-one with students and respond with relevant, personalized support; and (d) providing opportunities to bridge SEL across home-school settings via platforms that engage and connect students, teachers, and families via interactive homework platforms, behavioral nudges such as text message reminders, or multilingual feedback systems.^{48,49}

Despite this, there is little research on the intersection of SEL and technology or the impact of educational technology on SEL outcomes.⁵⁰ While many SEL programs and organizations use technology to support program delivery, professional development, and evaluation/progress monitoring, few SEL strategies designed and intended for students incorporate technology in any meaningful way, and most investments and advancements in the educational technology space have focused on academic content such as math and literacy rather than SEL-related competencies. Suggestions for addressing this challenge have included calls for digital SEL, to be integrated rather than compete for time with academic subjects, and for new iterations of existing educational technology to begin incorporating a focus on social and emotional skills alongside their original academic content.^{41,49} Several SEL programs are exploring this type of novel approach. For instance, Zoo U uses a virtual environment to teach elementary students social and emotional skills through problem-solving and has demonstrated outcomes for both social skills and adaptive behaviors.⁵¹ Ripple Effects was designed to deliver a highly tailored virtual SEL learning environment for middle and high school students. Both programs follow recommendations for developmentally sequenced content, audio and visual guidance, opportunities to get support in the game environment, and mechanisms for feedback, reinforcement, and improvement.



One SEL innovation in the early stages that incorporates both academic and SEL content is the EF + Math Family Playlist project, a proposal to integrate an SEL Kernel designed to build executive function and self-regulation skills (Brain Games) into the existing Family Playlist platform, a digital homework system that builds essential math skills while simultaneously promoting connections between home and school and increasing family engagement in learning. The core idea behind the EF + Math Family Playlist project between the EASEL Lab and PowerMyLearning is to create a dynamic, integrated approach to building essential math and executive function skills in tandem via technology. It expands on an existing online and mobile-friendly math-focused, family-oriented platform to integrate short executive function-focused [SEL games](#) to foster executive function and math skills in an integrated and simultaneous manner. These new technology-enabled interventions provide exciting opportunities for teachers and students. As with all innovations, additional research is needed to establish both the efficacy and the effectiveness of these novel approaches.

SEL and the Advent of AI and Other Simulation Processes

A review of innovations in social and emotional learning would not be complete without acknowledging the recent applications of artificial intelligence (AI) and related simulation systems and processes in K-12 education. AI involves the use of computer-based large language models to simulate cognitive functions normally accomplished with the human mind. Popular and scholarly literatures have recently offered a host of considerations on the use of ChatGPT and other AI programs in EdTech initiatives and in teachers' blending of these technologies with traditional education practices. Several articles have focused on the potential impacts of, and concerns about, implementing AI for SEL in classrooms.⁵²⁻⁵⁵

Perspectives on blending AI and SEL have been mixed. School districts are unsure about introducing new systems without evidence-based evaluations of impacts on K-12 students and work/life skills. Other school districts, due to funding, staffing issues, or both, cannot begin to consider using AI in classrooms. Several recent examinations have focused on concerns expressed by teachers and school districts about short- and long-term impacts of AI on academic outcomes, workplace preparation, and SEL. In a recent opinion piece in K-12 Dive, CASEL CEO Aaliyah Samuel and Pathways Initiative Chairman Stan Litow point out that "social and emotional skills require human interactions that AI will never fully replicate. While AI may one day be able to display surface-level empathy and creativity, it cannot replace the deep introspection or meaningful connections that create successful teams and thriving workplaces."⁵³

Specific AI programs have been the focus of several examinations. For example, in an exploration of the ways in which one popular AI program, ChatGPT, could enhance SEL, Fraciewicz⁵² cited several possibilities, including as a tool that could help teachers and parents teach SEL skills – “it can be used to help students practice their communication skills, such as how to express their feelings and respond to others . . . and help students practice their problem-solving skills, such as how to work through conflicts and how to resolve disagreements.”⁵² Yet other authors have expressed concerns about replacing human-to-human interactions in favor of computer-based ones that may not foster the social and emotional skills expected by peers and adults, which include adaptability, problem-solving, interpersonal interactions and awareness, and empathy.⁵³ The expansion of AI in educational settings is becoming an important area for researchers, educators, policy makers, and others who are also focused on the impacts of social media on K-12 students in the short and long term, especially as it influences relationships and community.

The use of new AI and related machine-learning tools in the K-12 classroom is a phenomenon that will continue to be scrutinized by parents and school districts, as well as other stakeholders concerned about both young adult and workplace outcomes. Clearly, there is a need to carefully study the effects of AI intervention with randomized controlled trials (RCTs) and other evaluation methodologies.

Looking to the Future

In order to bring SEL programming to scale we must (1) simplify and localize, (2) support all actors in the educational eco-system, (3) creatively deploy technology for delivery and access, and (4) engage in long-term, reciprocal research-practice partnerships.

Simplifying and localizing requires identifying the essential elements of any program or practice and distilling them into a practice that aligns with the values, assets, needs, practices, and resources of a particular setting or context. The scaling becomes less about increasing use of a particular strategy or practice, and more about making use of a process that preserves the essential, active ingredients of a particular intervention while adapting “flexible” elements to meet setting demands.⁵⁶ A different option is to create and evaluate a variety of strategies in larger numbers of schools, attend to what schools actually take up, the processes whereby they make their decisions, their approaches to implementation, and the impact of the strategies themselves. Those strategies that are commonly taken up, implemented well, and that indicate some evidence of impact, can be legitimately considered “scalable.” This general idea certainly applies to SEL, just as it does to other important instructional domains in schools (reading, math, science, civics, etc.). Finally, insights from behavioral science⁵⁷ can be used to identify specific barriers to implementation, inform the design of targeted supports to minimize barriers, and ultimately improve uptake and engagement with SEL approaches.⁵⁷ Designing programs and practices that use established behavioral strategies such as goal-setting, gamification, breaking information down into smaller more digestible chunks, and sending regular “nudges” via text may help improve uptake and implementation.



Supporting all actors in the educational eco-system requires investing in adults. Even though most programs target student skills and outcomes, adults play an integral role in SEL program or strategy implementation, modeling SEL skills, and forming warm, reciprocal relationships with students. Furthermore, after the tumult of the COVID-19 pandemic and other global stressors, educators are experiencing high levels of burnout and mental health challenges.⁵⁸⁻⁶⁰ Yet, educators receive very little support for their own social and emotional health and wellbeing and minimal explicit professional development supports to cultivate and routinize SEL practices in their classrooms and schools (e.g., training and coaching). However, systemic SEL that addresses teachers within their broader environment could offer effective and efficient mechanisms for improvement.

Deploying technology creatively and responsibly provides myriad opportunities for innovation, and integration. As the EF + Math Family Playlists idea suggests, technology provides opportunities for meaningful integration with academic content, enables connections across adults and settings, and can rapidly provide actionable and data-driven insights. As with all innovation, and perhaps especially with technology, the field of SEL must take care to ensure that innovations are additive, responsible, and promote the types of interactions, skills, and habits we care about with attention to potential unintended consequences,⁶¹ including, and perhaps especially, in the context of social media which is increasingly understood to offer both opportunity for young people to connect and grow, but also substantial peril as it has been linked to increasing rates of depression and anxiety.⁶²

Engaging in long-term, reciprocal research-practice partnerships represents an important avenue for the continuous improvement, evaluation, and evidence-based innovation of SEL approaches across grades and over time. As illustrated in the ongoing 10-year partnership between the EASEL Lab and partners in Bridgeport, CT, long-term partnerships can provide opportunities for innovation, and sustainable work, in the context of a trusting relationship with ongoing feedback cycles, responsive adaptation, and high-quality data on uptake and effectiveness.

Conclusion and Next Steps

This brief highlights the importance of social and emotional skills for academic success and positive behavior among students and acknowledges the effectiveness of school-based programs, but notes the challenges in implementing them at scale. The authors propose three innovative approaches to addressing these challenges that emphasize the need for simplified and localized SEL programming, support for teachers and adults, creative use of technology, and long-term research-practice partnerships. The innovations described here are, of course, not the only examples of innovation in SEL, or in the educational sector more generally. There is currently tremendous need for social and emotional supports among children and the adults who care for them and approaches that vary from the more traditional curricula to those that can be implemented in other ways and settings are vital. The key to making this work effective is to continue to engage in processes of continuous learning and productive adaptation. The more traditional approaches noted here are steeped in decades of evidence. As we move forward with innovation, we need to build a similar body of knowledge for these critical adaptations that are designed to meet clear gaps and needs in the field. What we can do is build data and evidence gathering into the process of adaptation and innovation itself – gathering information about the specific, and likely local, challenges at play, co-designing with partners in the field, and using data in iterative short-term cycles to drive ongoing tweaking and development as well as knowledge about the efficacy of any one strategy. These characteristics are hallmarks of the decades of research in SEL generally,² and should be applied as we build out the body of options needed now.



Endnotes

- * How trauma and adversity impact social and emotional skill development was the focus of a previous brief in this series
- ** The application of behavioral insights (BI) to program design has been associated with improved implementation across a range of programs and outcomes – from reduced gang violence to increased recycling rates;⁴³ for examples of BI in education, see Bailey et al.,²¹ Cortes et al.,⁶⁴ Hanno,⁶⁵ and Weijers et al.⁶⁶

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