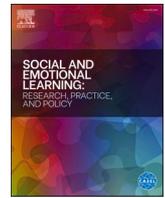




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Perspectives

Considering the “How” of SEL: A framework for the pedagogies of social and emotional learning

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ABSTRACT

For social and emotional learning (SEL) to be most effective, students must consistently access social and emotional knowledge and apply SEL skills across time and context. This article presents the Framework for the Pedagogies of SEL, which aims to theoretically articulate how teachers can support effective student SEL. We present an overview of how students acquire social and emotional knowledge, describe key processes of learning, and consider relations among culture, identity, and SEL to lay the foundation of the Framework for the Pedagogies of SEL. We then present the framework, which integrates three types SEL knowledge with five teaching practices or pedagogies of SEL. We then describe how the systematic application of these pedagogies of SEL might promote effective SEL and close with the need to support teachers' SEL implementation and considerations related to SEL instruction and student variability as well as the limitations of this article and conclusions.

Impact Statement: Social and Emotional Learning (SEL) is more than content; *how* SEL is taught also has powerful influences on its effectiveness. We apply principles of learning to how teachers can more effectively help students develop declarative, procedural, and conditional SEL knowledge using five pedagogies of SEL: *modeling* by narrating thoughts or demonstrating SEL behavior; *practice promotion* by having students repeat SEL information or behaviors; *elaboration* by providing nuanced SEL information; *transfer promotion* by discussing and helping students use SEL in varied situations; and *validation* by affirming diverse perspectives and experiences. By applying the pedagogies of SEL, teachers can improve the effectiveness of SEL in service of all students.

Introduction

Traditionally, approaches to designing, implementing, and studying social and emotional learning (SEL) have focused on the content of SEL instruction. However, like other forms of learning, SEL consists of the content of instruction *and* the pedagogical approaches educators use to convey that content. As sociocultural theory and information processing theory have documented, teaching and learning are complex sets of social interactions some of which involve processes that are intentional or unintentional and within or outside of awareness. Children develop social and emotional knowledge and skills by watching and interacting with others in their environment and they can internalize the patterns of behavior they observe and make sense of other's responses to their social and emotional behaviors to form their social and emotional understandings. Children also apply social and emotional knowledge they have already acquired to subsequent SEL opportunities. Much of this SEL

occurs without awareness within the family and community context, and the SEL children are repeatedly exposed to and the social and emotional behaviors they often engage in become strengthened in their social and emotional repertoire.

To develop a fuller account of how SEL affects students, it is important to better understand the “how” of SEL implementation. While the field has made important advances in understanding how the content of SEL and implementation factors such as readiness, fidelity, and quality impact SEL delivery and outcomes, we know much less about how the intended and unintended pedagogical approaches educators use impact such factors. If *how* SEL is taught influences the effectiveness of SEL, then providing theoretical clarity to the field has the potential to guide teachers in teaching social and emotional skills effectively to all students. In this paper, we apply information processing theory and sociocultural theory to develop a framework for understanding and studying pedagogies of SEL. We also give attention to how variability in

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student culture and identity relates to this framework.

Development of social and emotional knowledge

To understand how to better support student SEL in formal educational settings, it helps to consider (1) how children acquire social and emotional knowledge, and (2) how cognitive processes of learning apply to SEL.

Acquisition of social and emotional knowledge

Socialization

From birth, children develop social and emotional knowledge through the process of socialization. *Socialization* encompasses the ways people acquire knowledge, behavior patterns, and attitudes from the behaviors of others through observation, imitation, and social interaction (Bugental and Grusec, 2007; Cantor et al., 2019). Consider Kim, the youngest of four siblings who spent his early childhood at home. Kim frequently observed older siblings using force to get coveted toys and consistently imitated that behavior. Kim was not formally taught this social and emotional knowledge. Kim observed these social and emotional behavioral patterns and internalized them. Kim is largely unaware of his SEL since socialization occurs primarily without conscious awareness (Maxfield, 2018).¹

Children engage in and observe social and emotional behaviors and behavior patterns in specific contexts (e.g., situation, setting, person, emotion). This forms *associations* between what they observed or enacted and the contextual features of that experience (Robin et al., 2019). Recently when a peer had a sticker Kim wanted, Kim became envious and yanked the sticker out of the peer's hand. Not only did Kim's use of force originate from experiences at home with his siblings, his use of force was also strongly associated with his regulation of envy. Such associations among behaviors, context, and emotions form knowledge networks that enhance the later retrieval of associated knowledge (Schunk, 2012). When one piece of knowledge is retrieved or pulled out of memory (i.e., envy related to wanting something), associated knowledge (i.e., using force to get something) is automatically also retrieved (Alonso et al., 2020). That is, Kim had a strong association between envy and using force, which was triggered when he wanted the sticker the peer had.

Feedback

Students' knowledge is further shaped by how others respond to their social and emotional behaviors, which is also part of the socialization process. While Kim's use of force may be effective at home, how others at school respond to his use of force communicates to Kim that forceful behavior is not socially acceptable at school. The likelihood of Kim using force or pro-social skills increases or decreases depending on which of his behaviors are reinforced or punished by Mr. Roberts' responses (Schunk, 2012; Musser et al., 2018). Mr. Roberts removes Kim from peer interactions when Kim uses forceful behavior, an experience Kim finds aversive. Thus, Kim's forceful behavior is discouraged at school. When Kim tells and shows Mr. Roberts more pro-social behaviors he could have engaged in, Mr. Roberts gives praise and encourages Kim, reinforcing the behaviors he wants Kim to engage in. However, behavior management, which relies on feedback such as punishment and praise, will not provide Kim with the type of information he needs for effective SEL (Hattie & Timperley, 2007; Wisniewski et al., 2020). Mr. Roberts will need to give Kim additional, pertinent information for effective SEL.

Feedback is "information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or

understanding" in any content area, including SEL (Hattie & Timperley, 2007, p. 81). Feedback is especially important for supporting SEL since SEL involves the development of cognitive and motor skills (Wisniewski et al., 2020). Feedback for SEL, in contrast to responses for behavior management, contains useful information that supports aspects of students' learning, such as completing a task or product, engaging in a learning process, or practicing self-regulation (Hattie & Timperley, 2007; Wisniewski et al., 2020). Mr. Roberts will want to provide Kim feedback that will help him develop skills like making requests, accepting no, perspective taking, sharing, and delaying gratification so Kim will have a range of skills to draw on when he feels envious.

As another example: Ms. Gordon teaches middle school science and includes short SEL lessons in her classes. While teaching listening skills to support group work, Ms. Gordon told students to focus on the speaker, and after the speaker is finished, to repeat back what they heard in their own words. Ms. Gordon also told the students to make sure they were really listening and to notice and bring their attention back to the speaker if they were thinking about other things. Providing such task-specific feedback will support students to develop the nuance of effective listening, a critical social skill. Ms. Gordon will also have to attend to students' diverse experiences to promote effective SEL. Ms. Gordon suggested that students make eye contact to help them maintain concentration on the speaker and demonstrate interest. She acknowledged that this may be helpful for some students but not for others. Making eye contact may provoke anxiety for some students, decreasing their ability to concentrate on the speaker (Jaswal & Akhtar, 2019). Since the goal of SEL is to decrease the gap between students' current application of social and emotional knowledge and students' effective application of social and emotional knowledge in real-life situations, the intermediate goal of feedback in SEL is to incrementally increase and strengthen students' social and emotional knowledge (Kaminske et al., 2020; Wisniewski et al., 2020).

Related processes of learning

Large complex knowledge networks provide many access points to prior knowledge making retrieval of associated knowledge easier, and retrieval of isolated knowledge more difficult, to access (Alonso et al., 2020). Thus, a primary way to strengthen students' SEL knowledge is by building complex knowledge networks and supporting knowledge associations. Several learning mechanisms can be applied to help students strengthen their SEL knowledge.

Awareness

The effectiveness of SEL is influenced by students' attention and awareness. Students must *attend* or selectively focus on what they are learning while ignoring other information for SEL to happen (Maxfield, 2018). Whereas awareness requires attention—students can only be aware of what they attend to—attention does not require awareness because students can unconsciously attend to something without being aware of it (Lamme, 2003). For example, a student's attention is automatically directed by novelty or strong emotion without their awareness (Maxfield, 2018; Lamme, 2003; Immordino-Yang et al., 2018). Novelty and emotions motivate action and strengthen information storage and retrieval (Alonso et al., 2020; Cantor et al., 2019; Tyng et al., 2017). When Kim is distressed because he cannot have something he wants, emotion directs his attention and motivates him to act. Kim's limited attention is focused on the source of his emotions, which makes it difficult for Kim to attend to the teacher or to draw on previous SEL. In this way, unregulated emotions can interfere with academic performance and SEL, even if students possess the knowledge of how to regulate their thoughts and feelings (MacCann et al., 2020).

Attention can result in awareness or being conscious of and able to identify the object of attention (Maxfield, 2018). Whereas attention without awareness is efficient and automatic, acting with *conscious awareness* is intentional and thus slower and inefficient (Sun et al., 2001;

¹ Research indicates that awareness can also be unconscious (Maxfield, 2018). For the purposes of this paper, when we refer to awareness, we are only referring to conscious awareness.

Maxfield, 2018). Deliberate and explicit learning—that is, learning with conscious awareness—is particularly effective for acquiring new social and emotional knowledge and re-learning socialized or implicit knowledge (Schunk, 2012; Sue et al., 2019). Mr. Roberts' students have been playing four-square on the playground, and there have been scuffles about who gets a ball. Mr. Roberts had students engage in role-play to learn the skill of turn-taking explicitly. Similarly, Mr. Roberts had his students imagine what they would say if someone else got the last ball before sending the students out to recess. Such visualization (a.k.a., mental imagery) has not only been successful with athletes to improve performance but visualization has also been used in therapy to increase skills application in daily interactions (Saulsman et al., 2019; Simonsmeier et al., 2021). However, learning a skill is not enough to ensure future use.

Repetition

Whether SEL occurs with or without awareness, knowledge is forgotten over time unless it is reinforced (Benjamin & Tullis, 2010). Memory is strengthened when new information is stored and retrieved (Tyng et al., 2017). Thus, a primary way to strengthen knowledge is through *repetition*. Observation, visualization, and enactment can all serve as forms of repetition since the same knowledge networks are used during each of these processes (Iacoboni, 2009). Patterns that are repeatedly observed and behaviors that are repeatedly enacted or visualized strengthen that knowledge; all of which can lead to automatization with enough repetition (Ericsson, 2006; Sun et al., 2001; Taguchi, 2011). In our example, Ms. Gordon could promote repetition by using curious questioning. Ms. Gordon uses curious questioning as part of her science instruction to encourage students to be curious about each other's perspectives. The class brainstormed questions, which Ms. Gordon had the students review before cooperative work. Similarly, Mr. Roberts had students repeat prosocial behaviors by having students role play and visualize sharing and expressing their needs with words.

Knowledge is only strengthened through repetition if the original knowledge is successfully retrieved through a reminder (Tyng et al., 2017). Identical reminders (e.g., reading through the list of curious questions) and reminders close in time (e.g., remembering the steps of problem-solving immediately after reciting them) will strengthen knowledge less than a weakly associated reminder or remembering information after a longer period (Benjamin & Tullis, 2010; Taylor & Rohrer, 2010). Ms. Gordon's student Lowen spent the afternoon with a family friend during the last week of summer. The friend asked Lowen questions about his opinions on the state of the world. Ms. Gordon taught the curiosity lesson mid-year. By this time, Lowen could only recall that he had spent time with the family friend—the curious questions the friend asked him were difficult for him to remember. During the lesson, Remy recited a list of “annoying” questions her grandparents regularly ask. This list helped Lowen remember how the family friend expressed curiosity; it served as an effective reminder. Lowen's knowledge about curious questioning was likely strengthened more because Remy's list of questions reminded Lowen of the friend's questions, which he had forgotten. If Ms. Gordon had taught the curious questioning lesson during the first week of school, the friend's questions would have been easy for Lowen to remember. In addition to reminders, contextual factors also influence the acquisition and strength of SEL knowledge.

Context

Access to knowledge is supported by associations within and to the context. *Context* includes all environmental and social information that is associated with SEL knowledge, including emotions (Barrett, 2017; McGaugh, 2004). This is why learning is often context-dependent; it is easier to access knowledge in a similar context, with the same or similar people, or in a similar emotional state to the one in which learning took place (Immordino-Yang, 2019). Though Kim has formed strong associations between feeling envy and forceful behavior, as Kim develops

effective and prosocial behaviors in the classroom, Kim will form new and more productive associations between such feelings and his social response behaviors, particularly in the classroom.

Culture, identity, and SEL

Socialization is a culturally dependent process, arising out of students' perspectives and prior knowledge connected to family, community, and socioeconomic viewpoints and their racial, ability, gender, and other identities (Bugental & Grusec, 2007; Jagers et al., 2019; Ramos & Kiyama, 2021; Rappolt-Schlichtmann et al., 2024). At times, students' cultural values and expectations may not align with those of the classroom, resulting in a cultural mismatch (Barnes & McCallops, 2019; Dee, 2005; La Salle et al., 2020). Teacher-student cultural misalignment can hamper the effectiveness of SEL since students' understanding of what to do *and* relational understandings of why to do it must align with delivered SEL instruction for students to successfully apply their SEL (Gagnier et al., 2022).

How teachers, peers, family, and community members respond to behavior can also *subtly* negate, discourage, affirm, or support SEL. The parenting literature points to the deleterious effects of invalidation on children, which include difficulties with emotion regulation and interpersonal relationships, as well as increased suicide ideation and impulsivity (Musser et al., 2018; Vanwoerden et al., 2021). *Invalidation* occurs when the behaviors of others or what others say delegitimize or make inconsequential what makes sense or is legitimate to the child (Cardona et al., 2021). Emotions and experiences are inherently valid, as are many preferences and opinions. When a student receives a response that invalidates their emotions, or when their experiences are rarely legitimized or validated, they may suppress associated emotions rather than learning what the emotions signal and how to manage them effectively.

Because children and adolescents are more emotionally vulnerable or easily threatened than adults, when a student experiences invalidation, they may internalize it more intensely and severely than adults may realize (Immordino-Yang et al., 2019; Zeman et al., 2006). Thus, “This is easy; you've been doing it for three years” may seem like an innocent statement to Ms. Gordon, but it may be invalidating to a student who is finding the science content difficult. Similarly, Mr. Roberts may think that saying “Don't cry, it's not a big deal” to Kim will calm and reassure Kim. However, Mr. Roberts may inadvertently be invalidating Kim if, for Kim, the experience was of consequence. Additionally, Kim may then reject or suppress these emotions, infringing on his ability to engage in learning (Gross, 2015).

Students who perceive that aspects of their identities are invalidated may reject or incorporate these invalidated identities in harmful ways, much like they might reject invalidated emotions (Pellegrino, 2020; Cardona et al., 2021). If Mr. Roberts says “Big boys don't cry” to Kim, Kim may subsequently reject aspects of himself that he associates with being ‘girly’ or feminine. The risk of invalidation and lack of validation can be particularly high for students with marginalized identities where aspects of their gender, racial, cultural, or other identity may be more likely to be ignored, minimized, dismissed, or stigmatized.² These forms of perceived invalidation, including microaggressions and micro-invalidations, can contribute to minority stress and discourage SEL (Sue et al., 2007). When Ms. Gordon, who is white, says “Use an inside voice like the other students” to a student, this may seem like a neutral statement to her. However, this could conflict with what is conventional (e.g., speaking energetically) in a student's home culture—which may result in perceived invalidation and feelings of shame. Similarly, “Look at me when I am talking to you” may appear as a harmless statement to

² In this paper, we are referring to less extreme forms of invalidation; more extreme forms of invalidation (i.e., victim-blaming, abuse, system-level invalidation) also contribute to minority stress (Cardona et al., 2021).

Ms. Gordon, who is also neurotypical. However, for some students, avoiding eye contact may be necessary for managing a disability (Jaswal & Akhtar, 2019). Alternately, making eye contact with someone in authority may conflict with what is conventional in a student's home culture (Hillary, 2020). In both cases, demanding eye contact could result in stressful dissonance for a student.

The experience of invalidation may also result from a lack of validation. When a student does not have their identities validated, they may reject these aspects of themselves (Cantor et al., 2019; Cardona et al., 2021; Sue et al., 2007). Ms. Gordon comes from a middle-class background and her family always took at least one trip during the summer. When Ms. Gordon asked students where they went during the summer, she may have inadvertently invalidated students who did not or could not go anywhere during the summer. For example, Lowen's family is low-income and runs a restaurant. Lowen spends much of his time, including the summer, working at the restaurant to help his family manage financially. Though Ms. Gordon does not directly invalidate Lowen's experience, by phrasing her query this way, Lowen may feel that he cannot bring his socioeconomic-related identity into the classroom. Thus, validation may also help students feel seen and understood rather than invisible or ignored (Cardona et al., 2021).

Ms. Gordon and Mr. Roberts need a systematic approach to teach SEL effectively; an approach that aligns with how students learn and the nature of SEL, and that scaffolds students' learning toward effective SEL while affirming students' emotions, experiences, and identities. We aim to provide such a systematic approach with the Framework for the Pedagogies of SEL.

The Framework for the Pedagogies of SEL

The Framework for the Pedagogies of SEL reflects how the nature or types of social and emotional knowledge intersect with the pedagogies of SEL. We first discuss three types of SEL knowledge: declarative, procedural, and conditional. Then we present five pedagogies of SEL: modeling, practice promotion, transfer promotion, elaboration, and validation. We conclude this section by considering how the pedagogies of SEL can be used systematically to support effective SEL.

Types of SEL knowledge

The end goal of SEL is for students to consistently access pertinent SEL knowledge (e.g., steps of social problem solving, emotion vocabulary) and use learned social and emotional behaviors in authentic ways across time and context (e.g., in the classroom, in the home, with siblings, with peers; Kaminske et al., 2020). The most basic type of SEL knowledge that must be acquired is declarative knowledge. *Declarative knowledge* is the facts of SEL such as SEL-related vocabulary or the steps or features of an SEL skill (Schunk, 2012). Procedural knowledge is slightly more sophisticated. *Procedural knowledge* is how-to knowledge and is reflected in the ability to use social and emotional skills. The most sophisticated type of knowledge is conditional knowledge. *Conditional knowledge* is the integration and application of declarative (i.e., what, why) and procedural (e.g., how) knowledge simultaneously. Conditional SEL knowledge is the goal of effective SEL (Kaminske et al., 2020). These types of SEL knowledge must be collectively supported to achieve the end goal of SEL and for SEL to be effective.

To illustrate the three types of SEL knowledge, let us consider Kim. Like many of his peers, Kim has difficulty sharing. In anticipation, Mr. Roberts had the class recite and role-play how to respond (i.e., take a deep breath and use their words) when a peer has something they want. Despite this, Kim slapped and yanked the sticker out of a peer's hand. When Mr. Roberts asked Kim what he should have done, Kim said, "Take a deep breath and use my words." Kim developed the *declarative knowledge* needed for this SEL skill: Kim was able to recall the words, definitions, or steps involved (Ellis, 2010; Schunk, 2012; Sun et al., 2001). Although Kim demonstrated he could act out the behavior when

he was calm, he was unable to enact these SEL skills at the time when he was feeling envious. Ergo, Kim had developed the *procedural knowledge* needed for these SEL skills: he could produce the behaviors and words. However, Kim has yet to develop the *conditional knowledge* needed to effectively use this SEL skill in an applicable context. Kim has thus not fully achieved the end goal of SEL. This scenario reflects a common conundrum for teachers: How to support students' SEL so students apply what they have learned in school to real-life situations (Pellegrino, 2020; Schwartz et al., 2005). For this reason, our Framework for the Pedagogies of SEL considers the type of SEL knowledge being targeted by particular pedagogies of SEL that may promote effective SEL (Fig. 1).

Pedagogies of SEL

The *pedagogies of SEL* are practices teachers use to intentionally teach SEL. We propose five pedagogies for the field to consider, expand, and refine in the service of operationalizing and improving the quality of SEL and its effectiveness as part of our Framework for the Pedagogies of SEL (e.g., Cipriano, Strambler, et al., 2023; Durlak et al., 2011). How each pedagogy is enacted to teach the three types of SEL knowledge—declarative, procedural, and conditional—reflects the previously described processes of SEL—socialization, feedback, awareness, repetition, and context. The first three pedagogies of SEL—modeling, practice promotion, and transfer promotion—each have sub-pedagogies related to the three types of knowledge as depicted in Fig. 1 and described next. Whereas the latter two pedagogies—elaboration and validation—reflect more universal pedagogies. The pedagogies of SEL are summarized in Table 1.

Modeling

Modeling is when others in the environment enact SEL behaviors that demonstrate effective interactions, learning, engagement, or responses, including those that are internal (e.g., thoughts; see also, Table 1). Modeling is central to SEL given that students gain much of their social and emotional knowledge through observation (Fatahi et al., 2022; Zimmerman, 2013). Students learn the norms for acceptable and unacceptable emotions and ways of behaving in the classroom from their teachers and peers (Zimmerman, 2013). There are two primary ways teachers can intentionally use modeling to promote SEL: explicit and implicit modeling (Fig. 1, first row). *Explicit modeling* is when the teacher draws students' attention to what they are modeling and often takes the form of narration and demonstration (McLeod et al., 2017). *Narration* is when the teacher verbally describes invisible behaviors (e.g., self-talk, perceptions, emotions) to students, providing them with declarative information (Fig. 1, first row and column). Ms. Gordon narrated the steps for identifying feelings (e.g., "Get your sticky note" while taking it off the table, "put it on the poster; today I am feeling nervous" as she placed it on the corresponding place on the chart) before the first Monday check-in. When it was time to share, Ms. Gordon said, "I am feeling nervous because the principal is coming to observe me this week, and I always feel nervous when someone is watching me." Mr. Roberts makes invisible behaviors—her thoughts and emotions—visible to the students by narrating her thinking (Zimmerman, 2013).

Demonstration is when the teacher shows students social and emotional behaviors, giving them procedural information (Fig. 1, first row, second column). Mr. Roberts used both narration and demonstration to teach his students how to take a deep breath. First, Mr. Roberts announced what they were teaching, drawing students' attention, and encouraging them to become aware of their learning. Then, Mr. Roberts provided declarative information by narrating, "We're going to practice taking a deep *belly* breath using a pinwheel to help us be able to think straight when we're upset." Mr. Roberts used novelty to draw their students' attention by emphasizing "belly" and using a pinwheel. Next, Mr. Roberts demonstrated social and emotional behavior; he took a big, exaggerated breath, resting his hand on his belly to show the students how his belly lifts, and blowing the pinwheel—again using novelty

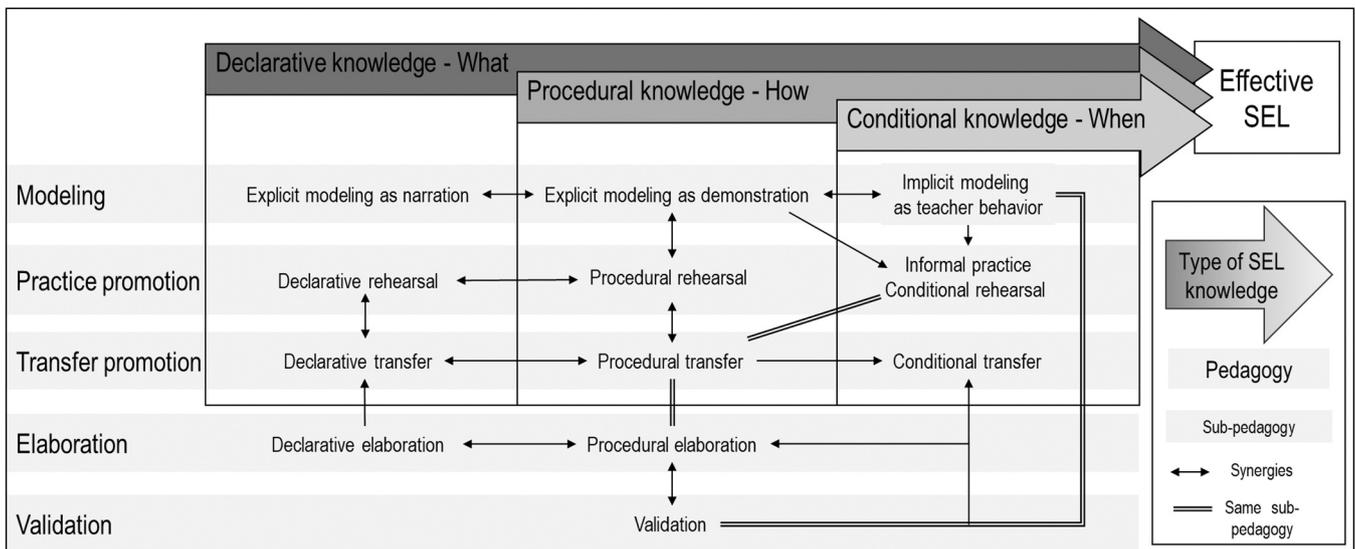


Fig. 1. Integration of the pedagogies of SEL and types of SE knowledge.

Table 1
Five Pedagogies of Social and Emotional Learning.

Pedagogy	Examples
Modeling: Enacting SEL behaviors that demonstrate effective interactions, learning, engagement, or responses, including those that are internal (e.g., thoughts).	Demonstrating SEL strategies (e.g., acting out skill). Expressing emotions effectively. Engaging in effective social interaction (e.g., validation). Showing emotional vulnerability. Narration and sharing thoughts as they arise (e.g., think aloud, self-talk).
Practice promotion: Providing opportunities for students to repeatedly engage in SEL behaviors.	Rituals (e.g., mindful moments, pain in body vs. feelings check-in) and routines (e.g., feelings check-in). Rehearsal (e.g., recitation of SEL acronym). Behavior practice (e.g., role-play). Imaginary practice (e.g., visualization). Opportunities to respond (e.g., choral responding).
Transfer promotion: Supporting or providing opportunities for students to consider and apply SEL with multiple people, across multiple contexts, and in different emotional states.	Brainstorming situations where SEL skills are applicable. Practicing skills with multiple people or in multiple situations. Visualizing using skill in another context. Support using skill in the moment (e.g., cueing student). Integrating SEL into content areas (e.g., feelings check-in before large writing assignment).
Elaboration: Providing, or eliciting from students, meaningful and nuanced information about the social and emotional context, concepts, or content.	Context/background through discussion, drawing, or writing (e.g., storyboarding). Social/emotion/mind/mental states talk (e.g., storytelling). Questioning to illuminate nuance (e.g., identifying cause, emotion, physical experience, behavior, after-effect). Recasting, paraphrasing, or extending (e.g., reflective listening).
Validation: Engaging in behaviors that make space for, demonstrate interest in, or legitimize diverse preferences, perspectives, emotions, ideas, and opinions.	Treating all emotions as understandable and legitimate. Acknowledgment (e.g., talking stick, reflective listening). Eliciting multiple perspectives (e.g., point of view). Holding space for perspectives of those not present. Wait time, pauses (allowing students to respond fully). Providing true choice.

through exaggeration—to provide procedural information. Explicit modeling is well suited to demonstrate a behavior for students to copy before a role-play or to show or remind students of a routine.

An advantage of explicit modeling is that students are more likely to be aware of the intended learning, making it easier for them to draw on that learning later. However, explicit modeling may be ineffective when a student’s attention is focused on some other content (e.g., a dispute with a peer) or their emotional experience because the student will not have the capacity to consciously attend to the explicit modeling. In such situations, the teacher can still use intentional modeling that does not require students’ conscious awareness.

Teachers can model behaviors intentionally without drawing students’ attention or without aiming to make students aware of their learning through implicit modeling. *Implicit modeling* is when the teacher intentionally uses social and emotional behaviors but does not draw students’ attention to this behavior (Fig. 1, first row, third column). When students have a conflict, Ms. Gordon intentionally asks each

student, “How are you doing?” and “What do you think about ...?” to gain insight into what students are thinking and feeling. Ms. Gordon also intentionally practices validating students’ emotions and experiences and engages in problem-solving with them when needed. By consistently and internationally modeling curious questioning, validation, and problem-solving in her class, her students have the opportunity to engage in SEL without their conscious awareness. Recently, Ms. Gordon overheard Cameron ask Remy, “How are you doing?” Remy answered, “I bet Ms. Stanley wouldn’t even listen to what happened and won’t let me re-do the math my mom threw in the recycling.” Cameron responded with validation, “Sounds like you’re worried,” and followed up with support to solve the problem by asking, “Why do you think she won’t let you re-do it?” Cameron’s validating and problem-solving behavior may reflect observational learning on Cameron’s part, from Ms. Gordon’s implicit modeling.

The teacher must consistently and frequently model the desired social and emotional procedural knowledge for modeling to be effective

since students will be more likely to imitate the phrases and behaviors to which they are exposed repeatedly (Sun et al., 2001). Routines and rituals are particularly well suited for implicit modeling because routines and rituals increase the likelihood of repeated exposure throughout the school day, week, and year.

Practice promotion

Practice promotion involves the teacher intentionally providing students opportunities to engage in SEL behaviors (Fig. 1, second row). This results in students storing, retrieving, and engaging in SEL, which when repeated develops automatic and efficient retrieval and use (Fridland, 2019). There are three types of practice promotion—declarative rehearsal, procedural rehearsal, and informal practice. *Rehearsal* involves recalling or repeating a particular social and emotional piece of information (i.e., *declarative rehearsal*) or behavior (i.e., *procedural rehearsal*) with awareness (Fig. 1, second row, first and second column; McLeod et al., 2017; Schunk, 2012; Trninc, 2018).³ Ms. Gordon uses declarative rehearsal when she has students read the list of curious questions before doing cooperative work. Didactic instruction, songs, and handouts are SEL activities well-suited for declarative rehearsal, and games and role-plays are activities well-suited for procedural practice (Jones et al., 2017).

Conditional knowledge can be promoted with practice in two ways: through informal practice and conditional rehearsal. *Informal practice* is when students repeatedly engage in SEL behaviors without their attention being drawn to what they are learning, providing opportunities for observational learning (Fig. 1, second row, third column). Like implicit modeling, rituals and routines are particularly effective activities because they promote the regular, informal practice. Alongside implicit modeling (i.e., “How are you doing?”, “What do you think about...”), Ms. Gordon prompts students with, “Did you ask about their perspective?” to support perspective-taking when there is student conflict. This consistent prompting results in students’ engaging in informal practice by encouraging them to repeatedly use perspective-taking without requiring students to be consciously aware of that SEL. Though practice strengthens SEL knowledge, more is needed to encourage students to apply SEL in real-life situations.

Transfer promotion

Transfer is the application of previously learned knowledge in a novel way or different context from the way and context the original learning took place (Hajian, 2019). *Transfer promotion* is when the teacher supports or provides opportunities for students to consider or apply declarative and procedural SEL knowledge across different contexts (e.g., people, places, situations, physical or emotional states) to support the development of conditional SEL (Day & Goldstone, 2012; Schunk, 2012).⁴ There are three types of transfer promotion: declarative transfer, procedural transfer, and conditional transfer. Teachers can promote *declarative transfer* by providing opportunities for students to consider other contexts or situations where SEL could be applied (Fig. 1, third row, first column). When Mr. Roberts did this, Paz said she could use the breathing and sharing skills with her twin on the playground or at home, and Kim mentioned he could use it with his biggest brother who is too big to take things away from. Such declarative transfer intends to make students aware of other situations in which an SEL skill might be useful to make it more likely that they use it in such a situation. However, talking about transferring SEL skills is insufficient to support students’

generalization of those skills (Schwartz et al., 2005). For this, students need to use social and emotional skills in various contexts.

Procedural transfer is using social and emotional skills in contexts (e.g., with people, in settings) different from the context they were learned (Fig. 1, third row, second column). If a student has used a skill with various classmates and in various areas of the school (e.g., recess, library, gym, music), there are more diverse contextual associations to draw on later, bridging students’ declarative and procedural knowledge. Mr. Roberts had the students imagine taking a deep breath to clear their heads and using their words to express their needs in a possible recess situation. Since the same neural pathways are involved during visualization as during use, Mr. Roberts is helping students bridge procedural and conditional knowledge through visualization (Iacoboni, 2009). Ideally, procedural transfer extends beyond the school setting. Ms. Gordon emailed each guardian a feelings chart like the one she uses in class, with suggestions about how parents can use the chart to encourage the students to share about their school day. Because students’ SEL knowledge is associated with these familiar materials and directions, Ms. Gordon hopes to increase the likelihood that students will draw on the associated SEL knowledge at home.

These efforts get students closer to the end goal of SEL: for students to transfer skills to real-life situations or conditional transfer (Kaminske et al., 2020). *Conditional transfer* results from teacher actions that support students in using SEL skills in applicable situations (Fig. 1, third row and column). Conditional transfer must include supporting students to use skills in real-life situations, for example, when they are emotionally aroused or in a challenging situation (Pellegrino, 2020). Conditional transfer often involves co-regulation where another person (e.g., teacher, peer) helps the student use a skill at the moment when it is applicable. Mr. Roberts and the other teachers co-regulate by providing students with cues (e.g., exaggerating a deep breath) to remind students to take a deep breath when they get upset. Cuing and coaching are two ways teachers can support students in translating declarative and procedural social and emotional knowledge into conditional knowledge (Goldstone & Day, 2012). Transfer promotion across emotional states is particularly difficult because an aroused emotional state can decrease students’ ability to access previously learned SEL knowledge (Immordino-Yang et al., 2019). This is the primary challenge Mr. Roberts faces with Kim. When Kim is upset, Kim has a hard time accessing his SEL. At times, Mr. Roberts takes an exaggerated deep breath or hands Kim a pinwheel to cue Kim to take a deep breath when upset. Such cues may help Kim access previous SEL. If Kim does take a deep breath, it helps develop an association between being upset and taking a deep breath. Conditional transfer is possibly the most important yet hardest part of SEL. Thankfully, we can offer teachers two more pedagogies to support their student’s SEL.

Elaboration

Elaboration is when the teacher provides or elicits from students meaningful and nuanced information about social or emotional knowledge (Schunk, 2012; Veenman et al., 2005). Elaboration is another way to support retrieval through association (Darling-Hammond et al., 2020; Pellegrino, 2020; Veenman et al., 2005). It is particularly helpful to students for teachers to help them link new social and emotional knowledge to their life experiences as well as cultural and prior knowledge (Barnes and McCallops, 2019; Cardona et al., 2021). There are two types of elaboration: declarative and procedural. *Declarative elaboration* is where language is used to elaborate on SEL concepts (Fig. 1, fourth row, first column). Ms. Gordon asks students to describe why they feel the way they do during a Monday feelings check-in. Remy said she felt mad because her mom gave her sister a ride to school after missing the bus, but when she misses the bus, she must ride her bike to school. Ms. Gordon asked the rest of the class if they have had such experiences. Ms. Gordon then facilitated a conversation that encompassed envy, jealousy, fairness, and double standards. This type of elaborative conversation supports the development of nuanced and

³ Technically, another form of practice promotion is conditional rehearsal. However, conditional rehearsal is the same as procedural transfer, so we discuss it in the transfer section.

⁴ Note that transfer can be thought of as the extension of practice promotion since procedural practice could also be viewed as conditional rehearsal. We classify and describe procedural practice as transfer since it reflects the accepted definition of transfer.

varied knowledge networks linked to students' experiences (Doherty et al., 2003). It would take more repetition for students to be able to recall the definition of envy through rehearsal; and even if the students could recite it, their understanding would be limited because it would be isolated knowledge.

The teacher-provided examples and scenarios can elaborate by illustrating common and not-so-common experiences and the associated vocabulary and skills. Teachers can elicit elaboration from students by asking open-ended questions that delve deeper into the students' thinking and experiences (Pellegrino, 2020). The use of books with diverse characters and perspectives makes it more likely that every student will be able to relate to and be exposed to different perspectives and experiences, which helps students make personal connections to the SEL content and learn about important differences. Non-linguistic activities, such as producing or observing art, can also be used to activate and extend social and emotional knowledge through *procedural elaboration* (Fig. 1, fourth row, second column). For the feelings check-in after winter break, Ms. Gordon incorporated SEL into a lesson on polymers. The students made sculptures of colorful polymer clay to reflect their experiences over break. The next day, Ms. Gordon had them look at each other's finished sculptures silently so they could notice how they experienced each other's representations before discussing what the sculptures represent. This activity allowed students to get a glimpse into others' emotional experiences without the need for words that might not adequately describe their experience. This activity provided students with an opportunity to develop non-linguistic aspects of their knowledge networks. Note that conditional rehearsal or procedural transfer can also be thought of as elaborated procedural rehearsal (Fig. 1, double line).

Validation

Validation is the "intentional, proactive affirmation of students" and involves the teacher engaging in behaviors that make space for, demonstrate an interest in, or legitimize the identities, perspectives, emotions, ideas, and opinions of their students (Fig. 1, fifth row; Rendón Linares & Muñoz, 2011, p. 12). Validation can be expressed verbally and behaviorally by the teacher and thus reflects a form of implicit modeling (Fig. 1, double line). When teachers use validation alongside co-regulation, validation can also be part of conditional transfer. Validation includes communicating to students that their preferences, descriptions, emotions, and experiences are understandable and attributing students' emotions to those experiences (Musser et al., 2018). This may help students develop a clearer understanding of their own experiences, emotions, preferences, ideas, and identities, which may support students in developing confidence in their perceptions and capabilities.

Validation includes accepting all types of emotions, particularly negative emotions, even if students' behavioral expression of these emotions is hurtful, harmful, or dangerous, such as when Kim hit his friend when feeling envious about the sticker. Mr. Roberts can tell Kim that it is ok and normal to want what other people have, but it is not okay to hit other people. Mr. Roberts could also tell a story about a time he felt envy and how he managed that emotion to illustrate the acceptance of envy. Accepting negative emotions includes welcoming negative emotions into the classroom, giving students opportunities to express them, and supporting students to work through these emotions. Validation can involve acknowledging the complexity of students' challenges and their limited power to overcome them (Musser et al., 2018). Ms. Gordon's use of curious questions is a form of validation. Mr. Roberts decided to start asking students "Can you tell me what is going on for you?" to increase validation after a professional development with Ms. Gordon about curious questioning. Rather than responding to students by trying to calm them (e.g., "It's okay," "Don't cry"), Mr. Roberts now aims to validate them (e.g., "I hear that you're very frustrated," "Sharing is really hard"). Importantly, this type of validation can occur in the context of disciplining a student for unacceptable behavior.

Validation can also play an important role in supporting students' sense of belonging and their motivation and ability to learn in

educational settings, particularly for those who have historically been marginalized (e.g., students of color, those from low-income backgrounds, those with a disability, and English language learners; Andrade, 2021; Darner, 2019; Rendón Linares & Muñoz, 2011; Malone & Horowitz, n.d.). Sue et al. (2019) suggest: (1) validating students' experiential reality, (2) showing that they value them as a person, (3) affirming their group identity, (4) supporting and encouraging them, and (5) reassuring them that they are not alone. In line with this, Mr. Roberts has also decided to reassure students about their emotional experiences by saying things like, "Everyone feels mad or sad sometimes" and "Everyone needs to cry sometimes." Mr. Roberts aims to provide the students the opportunity to express, explore, and reflect freely on their experiences (Immordino-Yang et al., 2019).

Systematic use of the pedagogies of SEL

We hypothesize that optimal SEL arises out of a system of coordinated, well-implemented pedagogies that maximize their synergy and systematically support student SEL. In this section, we speculate on how the described pedagogies of SEL might be strategically used to promote effective SEL. Since much of the long-term aim of SEL is for students to enact skills related to interacting pro-socially and being able to effectively identify, express, and regulate emotions in applicable settings—even when emotions run high—this section focuses on how to develop students' conditional SEL knowledge.

Connecting declarative, procedural, and conditional SEL knowledge

Teachers can use the pedagogies of SEL to support student learning by linking declarative, procedural, and conditional social and emotional knowledge (Cardona et al., 2021). When students draw on declarative SEL knowledge to develop procedural SEL knowledge, this can strengthen their association, synergistically supporting effective SEL (Fig. 1, type of knowledge arrows, top of figure). Mr. Roberts began with explicit modeling and narration to teach students belly breathing and sharing skills. Then, he had students describe varied situations (i.e., elaboration) in which they could use the skills (i.e., declarative transfer), practice the skills (i.e., procedural rehearsal) with several peers (i.e., procedural transfer), visualize using the skills (i.e., procedural transfer) and use the skills on the playground where other teachers were also available to support them (i.e., conditional transfer). Mr. Roberts also incorporated validation and implicit modeling by affirming students' experiences as they applied these skills in real-life situations.

Similarly, when Ms. Gordon first taught the feelings check-in, she began by demonstrating the behaviors while narrating internal processes (i.e., explicit modeling). Then, Ms. Gordon had students recall (i.e., declarative rehearsal) and enact (i.e., procedural rehearsal) the steps of the feelings check-in (Sun et al., 2001; Sato & McDonough, 2019). Ms. Gordon sent home materials and directions to support students in using these skills at home to promote procedural transfer. She used elaboration to help students connect personal experiences to emotion concepts, supported students' declarative transfer, and validated their experiences by acknowledging the variety of experiences they shared.

In addition to systematically linking the types of SEL knowledge, Mr. Roberts can also use pedagogies of SEL to progressively support SEL knowledge development. It is more important that students learn to consider others' perspectives (i.e., procedural knowledge) than it is for them to recall the questions for doing so (i.e., declarative knowledge). Mr. Roberts may want to use co-regulation by prompting students in the moment, especially since younger students have reduced memory capacity. Procedural knowledge acquisition may be similarly prioritized for students who have limited cognitive resources because of a disability or experience of stress or trauma (Calvo & Gutiérrez-García, 2016). Alternatively, materials that contain declarative knowledge (e.g., posters) could be used to decrease the cognitive load and promote procedural knowledge.

Cuing and prompting are particularly helpful ways to support

conditional transfer. In real-life situations, students' attention may be on their emotional experience, which leaves fewer cognitive resources for accessing their declarative SEL knowledge (e.g., problem-solving steps). The adults at Mr. Roberts' and Ms. Gordon's school support all students in using belly breaths and other SEL skills at recess and lunch. The teachers across the classrooms consistently offer younger students a pinwheel or provide them with sentence starters to help them express how they feel in words, to decrease reliance on declarative knowledge. The teachers across the classrooms consistently take exaggerated breaths or ask older students about the skills they might use to help them access their SEL.

Connecting SEL content

For SEL instruction to be effective, students need to form associations between social, emotional, and cognitive skills as they are inherently interconnected (Jones et al., 2017). This can involve helping students explore the nuance of social, emotional, and cognitive processes through elaboration. After a cooperative work session, Ms. Gordon asked, "How does it feel when someone really listens to what is going on for you?" Through open-ended questioning, Ms. Gordon helped students realize that being listened to, a prosocial skill, can help them feel better, an emotion regulation skill. Thus, the students learned an *additional* SEL skill—having others listen as a form of emotion regulation—and they learned how to use *multiple* SEL skills synergistically.

During their Monday feelings check-in, Ms. Gordon could discuss self-regulation strategies like problem-solving and belly breathing when discussing negative emotions. Ms. Gordon could discuss perspective-taking (e.g., "What do you think someone wants when they're feeling sad?") with emotional self- and co-regulation strategies (e.g., "Not only can you help yourself feel better by talking things through with a friend, you can also help a friend feel better by listening and problem solving with them."). Supporting students to form associations between SEL skills means that, when a student attempts to or uses one SEL skill, other related skills become available as they are simultaneously retrieved from connected knowledge networks. This instantly increases the repertoire of SEL skills available to the student at any moment, increasing the likelihood that the student will access a skill that might be useful in a situation.

Continuum of sophistication

We posit that each of the pedagogies of SEL encompasses a *continuum of sophistication* from simple, easily implemented to more complex, nuanced, and difficult-to-implement sub-pedagogies. If Ms. Gordon had provided a simple definition of envy, this would have resulted in less sophisticated elaboration than a conversation about different situations when students felt envious or jealous, and how this relates to fairness, worry about relationships, and double standards. Similarly, when Mr. Roberts had students discuss the types of situations belly breathing could be useful in (i.e., declarative transfer), this was less sophisticated than having students visualize themselves using the skill (i.e., procedural transfer), or cuing students to use it during a peer conflict (i.e., conditional transfer; Schwartz et al., 2005). Using the concept of sophistication rather than quality acknowledges that different sub-pedagogies of SEL may be more or less applicable depending on the situation. Teachers must teach so much more than SEL, so they cannot always take the time to elaborate regarding SEL. However, when Mr. Roberts offers a narrow definition of how a character is feeling during a read-aloud focused on story structure, he ensures the repetition of an SEL concept without infringing on other learning.

Relatedly, some ways of implementing the pedagogies of SEL may be supportive in some situations and detrimental in others. Elaboration may couple well with declarative transfer since students would learn about many different and varied situations in which an SEL skill could be applied. However, elaboration may impede SEL when the teacher is focusing on supporting a student in using an SEL skill during a peer conflict (i.e., conditional transfer) because the student's attentional

capacity is restricted by emotional arousal and the conflict itself. It would be unhelpful for Mr. Roberts to use high-sophistication elaboration when a student is trying to cope with a peer conflict during recess. Though elaboration may facilitate a deep understanding of the applicability of skills in life, using elaboration when a student is upset on the playground would tax the student's attention and might hinder their application of SEL. Doing so would reflect poor quality SEL implementation. Thus, the sophistication of pedagogies does not reflect higher or lower quality. Rather, quality is when the sophistication of the pedagogy supports the content and type of knowledge being developed by the SEL.

These scenarios also reflect a paradox. Essential aspects of SEL are often *not* learned best in the context in which they are most needed. Students learn best when they are content, calm, or relaxed, and struggle to learn when they are distracted by their emotions (Barrett, 2017). Explicit modeling, practice promotion, declarative and procedural transfer promotion, and sophisticated elaboration are thus ideal sub-pedagogies for supporting new SEL in the predictable classroom setting. In contrast, implicit modeling, conditional transfer, and validation are more appropriate sub-pedagogies for helping students apply SEL in emotionally charged or novel situations.

Discussion and implications

SEL involves students learning a broad range of interconnected social and emotional content. Though the field has established what content may comprise SEL, and some attention has been paid to the practices teachers use to deliver SEL to students, little focus has been placed on the processes of SEL. This article advances the field's understanding by going beyond SEL content and student skill development to deeply consider how students develop three different types of social and emotional knowledge—procedural, declarative, and conditional—and then presents five pedagogies of SEL that teachers can employ to facilitate SEL. Throughout this article, we have presented examples of how students learn and how teachers might apply the pedagogies of SEL to support effective SEL. Yet, we have minimally acknowledged that teachers' unintentional behaviors also result in student SEL and that teachers come from and are influenced by a variety of cultural socializations. Thus, we begin this discussion by considering how to support teachers in their own SEL and to develop their use of the pedagogies of SEL as well as how aspects of teachers' SEL instruction intersect with student variability to influence the pedagogies of SEL.

Supporting teachers' SEL implementation

To teach SEL, teachers need both social and emotional declarative, procedural, and conditional knowledge (a.k.a. content knowledge) as well as *pedagogical* content knowledge, which includes specific pedagogical strategies for delivering SEL (Kleickmann et al., 2013; Waajid et al., 2013). Socialization processes not only apply to students; these processes also apply to teachers. Teachers have developed implicit associations through their own socialization experiences. Just like their students, teachers have learned more and less effective social and emotional skills in which they automatically engage. Additionally, teachers have implicitly learned behaviors that may be inconsistent with the pedagogies of SEL (e.g., invalidation) and teacher's behaviors may be more engrained and resistant to change. Considering this, teacher education and professional development related to SEL need to include a focus on developing teachers' social and emotional competence (i.e., conditional knowledge) and their knowledge of how to deliver SEL (i.e., pedagogical content knowledge) as well as supporting them to avoid applying unproductive SEL content and pedagogical content knowledge. SEL frameworks have focused on the first of these, and the present Framework for the Pedagogies of SEL contributes to the second. Teacher mindfulness interventions, which often integrate adult SEL, may be effective because they also address the third (Klingbeil & Renshaw,

2018).

Mindfulness is “the awareness that emerges through paying attention on purpose, in the present moment” without judgment (Kabat-Zinn, 2003). The awareness that emerges can be thought of as in-the-moment-reflection, where the teacher has the opportunity to respond in a way that is intentional rather than automatic or reactive. Simultaneously, this mindful awareness includes approaching situations with non-judgment, which means teachers cultivate compassion for themselves (and their students) when they react to or behave in ways that do not promote SEL. Thus, mindfulness may serve as both SEL content *and* as a mechanism that supports teachers in re-learning SEL content and SEL pedagogical content knowledge so they can implement SEL more effectively. Future research would benefit by focusing on these three teacher-learning areas as well as their inter-relations.

SEL instruction and student variability

Students’ conditional knowledge is especially effective in supporting SEL when it relates to the types of situations students experience and to their identity. Some student experiences will not be familiar to the teacher and as a result, the teacher may provide SEL opportunities that are more accessible to students whose experiences are similar to their own. Elaboration will only increase the accessibility of SEL if it relates to students’ experiences. Additionally, given student motivation impacts their engagement in learning, not all teacher-provided opportunities will be engaged with equally. Culturally, students bring diverse beliefs and expectations to learning tasks (Richland et al., 2012) and teachers who provide SEL opportunities that intentionally motivate students across individual and cultural differences (e.g., by using validation) are more likely to experience successful learner engagement and agency (Durlak et al., 2011; Jagers et al., 2019).

Additionally, socialization results in associations related to identity, such as race and gender, as much for teachers as they do for students (Glock et al., 2019; Scott et al., 2019). The variety and nature of teachers’ friendships and experiences (or lack thereof) with diverse others may influence their implicit associations (Aberson et al., 2004). While research has found little evidence of a link between implicit bias and explicit behaviors, there is evidence that biases manifest through subtle signal influences or “cues that communicate negative expectations about a child’s racial-ethnic group” (Cipriano, Schlichtmann, et al., 2023; McKown, 2013, p. 1121).

Because of implicit biases, teachers may unintentionally and without awareness communicate differential performance expectations by providing more acknowledgment to students they have higher expectations of and less acknowledgment for those they have lower expectations of (Glock et al., 2019; Scott et al., 2019). Ironically, lower expectations may also result in the teacher promoting or engaging in less elaboration, offering fewer access points from which students can make rich connections and form effective associations (Pellegrino, 2020). In contrast, supplying depth and breadth in instruction and discussions through elaboration offers multiple pathways to learning and increases students’ overall motivation to achieve, making it more likely for students to succeed in the classroom regardless of identity or ability (Durlak et al., 2011; Pellegrino, 2020; Rappolt-Schlichtmann et al., 2024).

Limitations

We acknowledge that the pedagogies of SEL presented in this paper may not be the best or the only pedagogies applicable to SEL. We provided an overview of five pedagogies of SEL. Each pedagogy has extensive literature outside of SEL that includes much more nuanced conceptualizations and categorizations (e.g., for transfer see Kaminske et al., 2020; for practice see Trninic, 2018). Other pedagogies or other applications of these pedagogies may better address the content and learning processes of social and emotional skills acquisition in the classroom. For example, the pedagogies of SEL may be enhanced by a

consideration of alternative learning approaches, such as participatory or embodied learning (Hayashi et al., 2022; Hedges & Cullen, 2012). Some of the evidence presented in this article was based on constructed tasks, which do not reflect the complexity of classroom environments (Benjamin & Tullis, 2010; Hattie & Timperley, 2007; Taylor & Rohrer, 2010). Though there is evidence that pedagogies are applicable across content, the most effective application of these pedagogies may be different for SEL than for other content; and the most effective application of these pedagogies will be dependent on the type of SEL being fostered (Wisniewski et al., 2020). The literature for these and other pedagogies should be mined further to inform how pedagogies apply to improving SEL. We also do not consider the influence of student development on the application of these pedagogies (Immordino-Yang et al., 2019). How these pedagogies are effectively applied in early childhood classrooms will differ from how they are applied in elementary or secondary classrooms. Learning and brain science will need to inform how the pedagogies of SEL can be strategically used at different stages of student development (Immordino-Yang et al., 2018). Most importantly, the field must produce empirical evidence for how these and other pedagogies are best applied to SEL across students’ educational trajectories.

Conclusions

SEL is more important than ever with students facing the aftereffects of family loss, limited school support, and economic hardship due to the COVID-19 pandemic, alongside chronic and increasingly escalated identity group tensions across the United States. Supporting students’ SEL is an evidence-based approach to mitigating these problems by enhancing students’ social and emotional skills, resiliency, and academic success (Cipriano, Strambler, et al., 2023; Blewitt et al., 2018). This article focused on how to optimally teach SEL, including what may support and what may detract from effective SEL. Weissberg et al. (2015) suggests improving the quality of SEL by focusing on the components represented by the content and context of SEL. This article extends this important work by proposing a Framework for the Pedagogies of SEL and exploring an important contextual contributor to not just the quality, but the effectiveness of SEL: teaching practices in the classroom. We illustrated how the pedagogies of SEL align with principles of student learning and how teachers might use them strategically and systematically to support students in acquiring and applying SEL skills in their lives.

Our Framework for the Pedagogies for SEL lays the groundwork for future research to explore which combination of pedagogies is best in what SEL situations (e.g., explicit instruction, integrating SEL into academic content), and exploring how teacher practices may relate to implicit bias. By extension, future research would benefit from examining how teacher SEL practices, including their use of the pedagogies of SEL, may exacerbate or alleviate academic student disparities.

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References

- Aberson, C. L., Shoemaker, C., & Tomolillo, C. (2004). Implicit bias and contact: The role of interethnic friendships. *The Journal of Social Psychology, 144*(3), 335–347. <https://doi.org/10.3200/SOCP.144.3.335-347>
- Alonso, A., van der Meij, J., Tse, D., & Genzel, L. (2020). Naive to expert: Considering the role of previous knowledge in memory. *Brain and Neuroscience Advances, 4*. <https://doi.org/10.1177/2398212820948>
- Andrade, L. M. (2021). “The War Still Continues,” Part II: The Importance of Positive Validation for Undocumented Students One Year After Trump’s Presidential Victory. *Journal of Hispanic Higher Education, 20*(1), 3–16. <https://doi.org/10.1177/1538192718823186>
- Barnes, T. N., & McCallops, K. (2019). Perceptions of culturally responsive pedagogy in teaching SEL. *Journal for Multicultural Education, 13*(1), 70–81. <https://doi.org/10.1108/JME-07-2017-0044>
- Barrett, L. F. (2017). *How Emotions are Made: The Secret Life of the Brain*. Pan Macmillan.
- Benjamin, A. S., & Tullis, J. (2010). What makes distributed practice effective? *Cognitive Psychology, 61*(3), 228–247. <https://doi.org/10.1016/j.cogpsych.2010.05.004>
- Blewitt, C., Fuller-Tyszkiewicz, M., Nolan, A., Bergmeier, H., Vicary, D., Huang, T., ... Skouteris, H. (2018). Social and emotional learning associated with universal curriculum-based interventions in early childhood education and care centers: A systematic review and meta-analysis. *JAMA network open, 1*(8). <https://doi.org/10.1001/jamanetworkopen.2018.5727>
- Bugental, D. B., & Grusec, J. E. (2007). Socialization processes. *Handbook of Child Psychology, 3*. <https://doi.org/10.1002/9780470147658.chpsy0307>
- Calvo, M. G., & Gutiérrez-García, A. (2016). Cognition and stress. *Stress: Concepts, Cognition, Emotion, and Behavior* (pp. 139–144). Elsevier. <https://doi.org/10.1016/B978-0-12-800951-2.00016-9>
- Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2019). Malleability, plasticity, and individuality: How children learn and develop in context. *Applied Developmental Science, 23*(4), 307–337. <https://doi.org/10.1080/10888691.2017.1398649>
- Cardona, N. D., Madigan, R. J., & Sauer-Zavala, S. (2021). How minority stress becomes traumatic invalidation: An emotion-focused conceptualization of minority stress in sexual and gender minority people. *Clinical Psychology: Science and Practice, 28*(2). <https://doi.org/10.1037/cps0000054>
- Cipriano, C., Schlichtmann, G., Riley, J., Naples, L., & Eveleigh, A. (2023). Supporting Transformative SEL Implementation with a Collaboratory for Equity and Inclusion. In K. Schonert-Reichel, M. Strambler, & S. Rimm-Kaufman (Eds.), *Social and Emotional Learning in Action: Creating Systemic Change in Schools*. Guilford Press.
- Cipriano, C., Strambler, M. J., Naples, L. H., Ha, C., Kirk, M., Wood, M., Zieher, A., Eveleigh, A., McCarthy, M., Funaro, M., Ponnock, A., Chow, J. C., & Durlak, J. (2023). The state of evidence for social and emotional learning: A contemporary meta-analysis of universal school-based SEL interventions. *Child Development, 94*(5), 1181–1204.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>
- Darner, R. (2019). How can educators confront science denial? *Educational Researcher, 48* (2019), 229–238. <https://doi.org/10.3102/0013189x19849415>
- Day, S. B., & Goldstone, R. L. (2012). The import of knowledge export: Connecting findings and theories of transfer of learning. *Educational Psychologist, 47*(3), 153–176. <https://doi.org/10.1080/00461520.2012.696438>
- Dee, T. S. (2005). A teacher like me: Does race, ethnicity, or gender matter? *American Economic Review, 95*, 158–165. (<https://www.jstor.org/stable/4132809>).
- Doherty, R. W., Hilberg, R. S., Pinal, A., & Tharp, R. G. (2003). Five standards and student achievement. *NABE Journal of Research and Practice, 1*(1), 1–24.
- 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*(1), 405–432. <https://doi.org/10.1111/j.1467-8624.2010.01564.x>
- Ellis, R. (2010). Second language acquisition, teacher education and language pedagogy. *Language teaching, 43*(2), 182–201. <https://doi.org/10.1017/S0261444809990139>
- Ericsson, K. A. (2006). The influence of experience and deliberate practice on the development of superior expert performance. *The Cambridge handbook of expertise and expert performance, 38*(685–705), 2, 2.3.
- Fatahi, N., Park, C., Curby, T. W., Zinsler, K. M., Denham, S. A., Moberg, S., & Gordon, R. A. (2022). Promoting Preschoolers’ Social and Emotional Competencies Through Emotion-Focused Teaching. *Early Education and Development, 1–20*. <https://doi.org/10.1080/10409289.2022.2133319>
- Fridland, E. (2019). Longer, smaller, faster, stronger: On skills and intelligence. *Philosophical psychology, 32*(5), 759–783. <https://doi.org/10.1080/09515089.2019.1607275>
- Gagnier, K.M., Okawa, A., & Jones-Mason, S. (2022). *Designing and Implementing Social Emotional Learning Programs to Promote Equity*.
- Glock, S., Kovacs, C., & Pit-ten Cate, I. (2019). Teachers’ attitudes towards ethnic minority students: Effects of schools’ cultural diversity. *British Journal of Educational Psychology, 89*(4), 616–634. <https://doi.org/10.1111/bjep.12248>
- Goldstone, R. L., & Day, S. B. (2012). Introduction to “new conceptualizations of transfer of learning. *Educational Psychologist, 47*(3), 149–152. <https://doi.org/10.1080/00461520.2012.695710>
- Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological inquiry, 26*(1), 1–26. <https://doi.org/10.1080/1047840X.2014.940781>
- Hajian, S. (2019). Transfer of learning and teaching: A review of transfer theories and effective instructional practices. *IAFOR Journal of education, 7*(1), 93–111.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81–112. <https://doi.org/10.3102/003465430298487>
- Hayashi, A., Liew, J., Aguilar, S. D., Nyanamba, J. M., & Zhao, Y. (2022). Embodied and social-emotional learning (SEL) in early childhood: Situating culturally relevant SEL in Asian, African, and North American contexts. *Early Education and Development, 33* (5), 746–763. <https://doi.org/10.1080/10409289.2021.2024062>
- Hedges, H., & Cullen, J. (2012). Participatory learning theories: A framework for early childhood pedagogy. *Early Child Development and Care, 182*(7), 921–940. <https://doi.org/10.1080/03004430.2011.597504>
- Hillary, A. (2020). Neurodiversity and cross-cultural communication. *Neurodiversity Studies: A New Critical Paradigm, 91–107*.
- Iacoboni, M. (2009). Imitation, empathy, and mirror neurons. *Annual Review of Psychology, 60*, 653–670. <https://doi.org/10.1146/annurev.psych.60.110707.163604>
- Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. (2018). *The Brain Basis for Integrated Social, Emotional, and Academic Development: How Emotions and Social Relationships Drive Learning*. Aspen Institute. (<https://www.aspeninstitute.org/publications/the-brain-basis-for-integrated-social-emotional-and-academic-development/>).
- Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. R. (2019). Nurturing nature: How brain development is inherently social and emotional, and what this means for education. *Educational Psychologist, 54*(3), 185–204. <https://doi.org/10.1080/00461520.2019.1633924>
- Jagers, R. J., Rivas-Drake, D., & Williams, B. (2019). Transformative social and emotional learning (SEL): Toward SEL in service of educational equity and excellence. *Educational Psychologist, 54*(3), 162–184. <https://doi.org/10.1080/00461520.2019.1623032>
- Jaswal, V. K., & Akhtar, N. (2019). Being versus appearing socially uninterested: Challenging assumptions about social motivation in autism. *Behavioral and Brain Sciences, 42*, Article e82. <https://doi.org/10.1017/S01400525x18001826>
- Jones, S. M., Brush, K., Bailey, R., Brion-Meisels, G., McIntyre, J., Kahn, J., & Stickle, L. (2017). *Navigating SEL from the inside out: Looking inside & across 25 leading SEL programs: A practical resource for schools and OST providers (Elementary School Focus)*. New York, NY: The Wallace Foundation, Issue.
- Kabat-Zinn, J. (2003). Mindfulness-Based Interventions in Context: Past, Present, and Future. *Clinical Psychology: Science and Practice, 10*(2), 144–156. <https://doi.org/10.1093/clipsy/bpg016>
- Kaminske, A. N., Kuepper-Tetzl, C. E., Nebel, C. L., Sumeracki, M. A., & Ryan, S. P. (2020). Transfer: a review for biology and the life sciences. *CBE—Life Sciences Education, 19*(3), es9. (<https://doi.org/10.1187/cbe.19-11-0227>).
- Kleickmann, T., Richter, D., Kunter, M., Elsner, J., Besser, M., Krauss, S., & Baumert, J. (2013). Teachers’ content knowledge and pedagogical content knowledge: The role of structural differences in teacher education. *Journal of Teacher Education, 64*(1), 90–106. <https://doi.org/10.1177/00224871124603>
- Klingbeil, D. A., & Renshaw, T. L. (2018). Mindfulness-based interventions for teachers: A meta-analysis of the emerging evidence base. *School Psychology Quarterly, 33*(4), 501–511. <https://doi.org/10.1037/spq0000291>
- Lamme, V. A. (2003). Why visual attention and awareness are different. *Trends in Cognitive Sciences, 7*(1), 12–18. [https://doi.org/10.1016/S1364-6613\(02\)00013-X](https://doi.org/10.1016/S1364-6613(02)00013-X)
- MacCann, C., Jiang, Y., Brown, L. E., Double, K. S., Bucich, M., & Minbashian, A. (2020). Emotional intelligence predicts academic performance: A meta-analysis. *Psychological Bulletin, 146*(2), 150. <https://doi.org/10.1037/bul0000219>
- Malone, A.S., & Horowitz, S. (n.d.) The state of learning disabilities: Inspiring innovation. *National Center for Learning Disabilities*. Unpublished manuscript.
- Maxfield, L. (2018). Toward an understanding of attention and awareness. *Journal of Singing, 75*(2), 197–200.
- McGaugh, J. L. (2004). The amygdala modulates the consolidation of memories of emotionally arousing experiences. *Annual Review of Neuroscience, 27*, 1–28. <https://doi.org/10.1146/annurev.neuro.27.070203.144157>
- McKown, C. (2013). Social equity theory and racial-ethnic achievement gaps. *Child Development, 84*(4), 1120–1136. <https://doi.org/10.1111/cdev.12033>
- McLeod, B. D., Sutherland, K. S., Martinez, R. G., Conroy, M. A., Snyder, P. A., & Southam-Gerow, M. A. (2017). Identifying common practice elements to improve social, emotional, and behavioral outcomes of young children in early childhood classrooms. *Prevention Science, 18*(2), 204–213. <https://doi.org/10.1007/s11121-016-0703-y>
- Musser, N., Zalewski, M., Stepp, S., & Lewis, J. (2018). A systematic review of negative parenting practices predicting borderline personality disorder: Are we measuring biosocial theory’s ‘invalidating environment’? *Clinical Psychology Review, 65*, 1–16. <https://doi.org/10.1016/j.cpr.2018.06.003>
- Pellegrino, J. W. (2020). Sciences of learning and development: some thoughts from the learning sciences. *Applied Developmental Science, 24*(1), 48–56. <https://doi.org/10.1080/10888691.2017.1421427>
- Ramos, D., & Kiyama, J. M. (2021). Tying it all together: Defining the core tenets of funds of knowledge. *Educational Studies, 57*(4), 429–449. <https://doi.org/10.1080/00131946.2021.1904932>
- Rappolt-Schlichtmann, G., Cipriano, C., Robinson, K., & Boucher, A. (2024). Universal Design for Social and Emotional Learning. In T. E. Hall, K. H. Robinson, & D. Gordon (Eds.), *Universal Design for Learning in the Classroom: Practical Application* (2nd ed., pp. 113–134). Guilford Press.
- Rendón Linares, L. I., & Muñoz, S. M. (2011). Revisiting validation theory: Theoretical foundations, applications, and extensions. *Enrollment Management Journal, 2*, 12–33.

- Richland, L. E., Stigler, J. W., & Holyoak, K. J. (2012). Teaching the conceptual structure of mathematics. *Educational Psychologist*, 47(3), 189–203. <https://doi.org/10.1080/00461520.2012.667065>
- Robin, J., Garzon, L., & Moscovitch, M. (2019). Spontaneous memory retrieval varies based on familiarity with a spatial context. *Cognition*, 190, 81–92. <https://doi.org/10.3102/0013189x19891955>
- La Salle, T. P., Wang, C., Wu, C., & Rocha Neves, J. (2020). Racial mismatch among minoritized students and white teachers: Implications and recommendations for moving forward. *Journal of Educational and Psychological Consultation*, 30, 314–343. <https://doi.org/10.1080/10474412.2019.1673759>
- Sato, M., & McDonough, K. (2019). Practice is important but how about its quality? Contextualized practice in the classroom. *Studies in Second Language Acquisition*, 41(5), 999–1026. <https://doi.org/10.1017/S0272263119000159>
- Saulsman, L. M., Ji, J. L., & McEvoy, P. M. (2019). The essential role of mental imagery in cognitive behaviour therapy: What is old is new again. *Australian Psychologist*, 54(4), 237–244. <https://doi.org/10.1111/ap.12406>
- Schunk, D. H. (2012). *Learning Theories an Educational Perspective*. Pearson Education, Inc.
- Schwartz, D. L., Bransford, J. D., & Sears, D. (2005). Efficiency and innovation in transfer. *Transfer of learning from a modern multidisciplinary perspective*, 3, 1–51. https://web.stanford.edu/~danls/Efficiency%20and%20Innovation%204_2004.pdf
- Scott, T. M., Gage, N., Hirn, R., & Han, H. (2019). Teacher and Student Race as a Predictor for Negative Feedback During Instruction. *School Psychology*, 34(1), 22–31. <https://doi.org/10.1037/spq0000251>
- Simonsmeier, B. A., Andronic, M., Buecker, S., & Frank, C. (2021). The effects of imagery interventions in sports: A meta-analysis. *International Review of Sport and Exercise Psychology*, 14(1), 186–207. <https://doi.org/10.1080/1750984X.2020.1780627>
- Sue, D. W., Alsaïdi, S., Awad, M. N., Glaeser, E., Calle, C. Z., & Mendez, N. (2019). Disarming racial microaggressions: Microintervention strategies for targets, White allies, and bystanders. *American Psychologist*, 74(1), 128. <https://doi.org/10.1037/amp0000296>
- Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: implications for clinical practice. *American Psychologist*, 62(4), 271. <https://doi.org/10.1037/0003-066X.62.4.271>
- Sun, R., Merrill, E., & Peterson, T. (2001). From implicit skills to explicit knowledge: A bottom-up model of skill learning. *Cognitive science*, 25(2), 203–244. https://doi.org/10.1207/s15516709cog2502_2
- Taguchi, N. (2011). Teaching pragmatics: Trends and issues. *Annual Review of Applied Linguistics*, 31, 289–310. <https://doi.org/10.1017/S0267190511000018>
- Taylor, K., & Rohrer, D. (2010). The effects of interleaved practice. *Applied Cognitive Psychology*, 24(6), 837–848. <https://doi.org/10.1002/acp.1598>
- Trninić, D. (2018). Instruction, repetition, discovery: Restoring the historical educational role of practice. *Instructional Science*, 46(1), 133–153. <https://doi.org/10.1007/s11251-017-9443-z>
- Tyng, C. M., Amin, H. U., Saad, M. N., & Malik, A. S. (2017). The influences of emotion on learning and memory. *Frontiers in Psychology*, 8, 1454. <https://doi.org/10.3389/fpsyg.2017.01454>
- Vanwoerden, S., Byrd, A. L., Vine, V., Beeney, J. E., Scott, L. N., & Stepp, S. D. (2021). Momentary borderline personality disorder symptoms in youth as a function of parental invalidation and youth-perceived support. *Journal of Child Psychology and Psychiatry*. <https://doi.org/10.1111/jcpp.13443>
- Veenman, S., Denessen, E., van den Akker, A., & Van Der Rijt, J. (2005). Effects of a cooperative learning program on the elaborations of students during help seeking and help giving. *American Educational Research Journal*, 42(1), 115–151. <https://doi.org/10.3102/00028312042001115>
- Waajid, B., Garner, P. W., & Owen, J. E. (2013). Infusing Social Emotional Learning into the Teacher Education Curriculum. *International Journal of Emotional Education*, 5(2), 31–48.
- R.P. Weissberg J.A. Durlak C.E. Domitrovich T.P. Gullotta Social and Emotional Learning: Past, Present, and Future J.A. Durlak C.E. Domitrovich R.P. Weissberg T.P. Gullotta Handbook of Social and Emotional Learning Research and Practice 2015 New York 3 19.
- Wisniewski, B., Zieher, K., & Hattie, J. (2020). The power of feedback revisited: A meta-analysis of educational feedback research. *Frontiers in psychology*, 10, 3087. <https://doi.org/10.3389/fpsyg.2019.03087>
- Zeman, J., Cassano, M., Perry-Parrish, C., & Stegall, S. (2006). Emotion regulation in children and adolescents. *Journal of Developmental & Behavioral Pediatrics*, 27(2), 155–168. <https://doi.org/10.1097/00004703-200604000-00014>
- Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational psychologist*, 48(3), 135–147. <https://doi.org/10.1080/00461520.2013.794676>