Converging Compassion Science with Prosocial Education: A Collaborative Model for Early Childhood

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Abstract

Compassion science is a compelling field of study from which a new paradigm for promoting prosocial and resilient behavior in young children is emerging. Although several health and human service institutions have integrated compassion science into their policies and practices, these benefits have yet to be widely adopted in early childhood education. Given the prevalence and detrimental effects that societal violence, domestic abuse, neglect, and social injustice have on children and adults alike, a robust model for converging compassion science with prosocial early childhood education is warranted. This article proposes a collaborative framework for promoting the science of compassion within the context of prosocial education and describes an instructional paradigm for enhancing social relationships by proliferating compassionate behaviors amongst stakeholders.

Keywords: Compassion Science, Compassion in Early Childhood, Compassion and Prosocial Education, Compassion and Social-Emotional Learning, Compassion Science and Stakeholders

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Stakeholders in early childhood education have long held a collective awareness of the profound impact early social interactions and relationships have on children's cognitive, social, and emotional development (Bronfenbrenner, 1979; Brownell & Drummond, 2020; Center on the Developing Child, 2020a, 2020b; Copple & Bredekamp, 2009; Trawick-Smith, 2018). In turn, there is widespread recognition of the pivotal role early childhood educators play in shaping and facilitating prosocial behavior in young children (Blewitt et al., 2018; Bradley, 2019; Brownell & Drummond, 2020). Although nomenclature and approaches vary across disciplines and settings (e.g., social-emotional learning, character-based education), a growing body of literature suggests a concerted effort amongst researchers, policymakers, and practitioners to prioritize early *prosocial education* that promotes prosocial behavior, moral reasoning, social skills, civic engagement, social-emotional learning, and character (Bergin, 2014, p. 51).

Despite the widespread consensus on the heightened need for and benefits of early prosocial education, stakeholders are faced with formidable challenges. First, it isn't clear how best to mitigate the pervasive and detrimental effects that adverse childhood experiences (ACE) and early life stressors (ELS) have on the development of prosocial behavior, social relationships, and overall development. Also, most stakeholders agree on the need to respond to the increasing institutional and curricular demands that have eroded opportunities for play and facilitated social interaction across early childhood settings. Finally, there is strong agreement on the need to adopt a less disparate approach to prosocial education considering these challenges to improve the developmental and educational trajectory of young children, as well as broader societal outcomes (Brady, 2016; Burchinal, 2002; Nguyen et.al., 2016; Van Hoorn et al., 2015).

Barriers to Prosocial Behavior in Young Children

Multi-year enrollment in early childhood programs has grown exponentially across the globe (78% of 3-year-olds, 87% of 4-year-olds) (Blewitt et al., 2018). Increased program enrollment across the most formative developmental years has necessitated closer scrutiny of policies and practices commonly adopted in these settings to promote children's early social, emotional, and cognitive development (Blewitt et al., 2018; Brownell & Drummond, 2020). This includes heightened concern for children at risk for developmental delays and those from historically marginalized, underserved populations with limited protective factors and/or access to systems of support (e.g., children living in poverty) (Brady, 2016; Center on the Developing Child, 2020b).

It is well documented that early exposure to ACE/ELS can result in structural changes to brain development, causing enduring and detrimental effects on children's cognition, learning, and behavior (Bogdan et al., 2012; Birn et al., 2017). Children who experience elevated and prolonged levels of ELS exhibit a wide range of maladaptive internalized and externalized behaviors that manifest early in life and intensify over time (Ambrose et al., 2010; Nguyen, Garnett et al., 2021; Treat et al., 2020). It is estimated that as many as 1 in 4 preschool-aged children have had one or more ACEs (e.g., maltreatment, abuse, neglect) that contribute to long-term learning and behavioral impairment in the absence of early and focused intervention (Litscomb et al., 2021). Further, CDC (2021) reports a direct relation between poverty and child abuse and neglect (i.e., rates of child abuse and neglect are 5 times higher in families with low socioeconomic status).

Contributing to the challenge is a proliferating focus on academic preparedness of young children during early childhood programs, with conflicting perspectives on the value of play. This early socialization to school readiness detracts from the emotional resiliency needed to overcome risk factors common to childhood (Ashiabi, 2007; Sciaraffa et al., 2018; Souto-Manning, 2017). Consequently, there is a persisting need to prepare early childhood practitioners to meet the intense, diverse academic and social-emotional needs of the growing population of children in their care (Sciaraffa et al., 2018), while also supporting their sense of self-efficacy and general well-being (Nguyen, Garnett et al., 2021). Given the complexity of these challenges, we propose a more interdisciplinary and collaborative approach to prosocial education and aim to turn attention to fields that have overcome similar institutional constraints by cultivating the science of compassion into daily practices.

Role of Compassion in Prosocial Behavior

Compassion has been defined as an affective, cognitive, and behavioral process that compels one to internalize and alleviate another's suffering (Seppala et al., 2017). Rather than being inherent from birth, children can learn to behave in compassionate ways. Compassion is a skill that can be developed through experience and continuously shaped and reinforced (Volling et al., 2008). This process sets compassion apart from similar constructs that exemplify prosocial behavior. These constructs include (a) *empathy* (the recognition and sharing of another's feelings, physical condition, or suffering) (De Waal, 2008), (b) *sympathy* (a solely affective response that illustrates feelings of sorrow or concerns toward others) (Seppala et al., 2017), (c) *mindfulness* (the internal recognition of one's state of mind, or to become aware, accept, and appreciate situations as they occur) (Bishop et al., 2004), (d) *self-compassion* (compassion held for oneself to mitigate negative thoughts, pain, and suffering (Neff, 2003; Neff et al., 2020), (e) *altruism* (concern and caring about the feelings and happiness of others (Batson, 2011), and (f) *kindness* ("an essential quality or character that arises from sympathy or forbearance") (Merriam Webster Dictionary, 2004, pp. 400).

By this distinction, compassion is an observable, measurable behavior with an equally observable and commonly occurring environmental antecedent (i.e., instances in which a child observes the suffering of another) (Seppala et al., 2017). Based on this distinction, compassion is not merely a component of prosocial behavior but is also an inherently "teachable" skill. That is, compassion can be taught both in carefully contrived situations and in naturally occurring contexts in early childhood and other settings. Further, it is a skill that is amenable to the teach/model/practice paradigm, an evidence-based and developmentally appropriate practice for young children that is well-aligned with the instructional repertoire of many early childhood educators (Nguyen, Garnett et al., 2021).

Converging Compassion Science with Prosocial Education

For the past two decades, institutions of higher education (IHEs) have recognized the importance of incorporating compassion and related pro-social constructs into health and human service preparation programs (e.g., social work, psychology) (Nguyen, Garnett et al., 2021). This innovation has led to the adoption of several compassion-focused curricula aimed at promoting positive health outcomes for providers and their recipients of care in the medical and biological fields (Epstein et al., 2005; Gilbert, 2005, 2010, 2014; MacBeth & Gumley, 2012; Reddy et al., 2013; Strauss et al., 2016). Specifically, compassion science research has produced compelling evidence of effects on several physical, psychological, cognitive, emotional, and social function

measures in these disciplines (e.g., clinical outcomes, patient satisfaction, recovery from pathology) (Condon et al., 2013a, 2013b; Jazaieri et al., 2014; Pace et al., 2009, 2013; Reddy et al., 2013; Stellar et al., 2015).

Several early childhood researchers have called for a more intentional focus on compassion-based strategies that promote pro-social behavior (Eisenberg et al., 2015; Willis, 2016) as a means for preparing children "to become resilient, compassionate and academically successful in later school-aged years" (Willis, 2016, pp. 663). This notion, and the benefits of compassion science, however, have yet to be translated into common practice across early childhood settings (Nguyen, Garnett et al., 2021). Given the pervasive and enduring effects adverse childhood experiences and early life stressors have on children globally, and the compelling outcomes of integrating compassion science reported in health and human services disciplines, a robust model for converging compassion science with prosocial early childhood education is warranted and arguably long overdue.

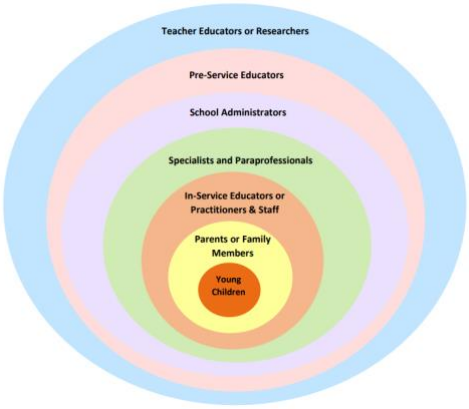
In the remainder of this article, we (a) provide an overview of the emerging construct of compassion science, (b) describe a collaborative model for promoting the science of compassion across early childhood stakeholders and settings, (c) recommend an instructional paradigm for enhancing social relationships by proliferating compassionate behaviors among stakeholders, and (d) discuss implications for future inquiry and practice.

A Collaborative Model for Promoting Compassionate Behavior in Early Childhood

A vast body of research has shown the indispensable role of social relationships and school-home collaborative practices that enhance student learning outcomes across developmental domains and promote family well-being (Berger & Riojas-Cortez, 2020; Center on the Developing Child, 2020a; Gonzalez-Mena, 2013; Nguyen, Darling et al., 2021; Strier & Katz, 2016; Turnbull et al., 2011). In this research, effective faculty, staff, and student interactions have been perceived to include some level of responsiveness, helpfulness, approachability, compassion, and understanding toward one another (Furnham & Chamorro-Premuzic, 2005; Paolini, 2015).

Given the detrimental effects stated in the previous section regarding the health and well-being of young children, there is a need to cultivate compassionate behaviors among *all* stakeholders. A conceptual model for this effort is summarized in Figure 1. This framework is based on social learning and ecological systems theories (Bandura, 1977; Blanchard et al., 2015; Bronfenbrenner, 1979).

Figure 1
Collaborative Early Childhood Model for Promoting Compassionate Behaviors of All Stakeholders



Social learning theory posits that children acquire various skills and behaviors by consistent observations, interactions, and imitations from the external environments and other individuals. As stated in a four-step behavioral sequence by Bandura (1977), an individual: notices something in the environment, remembers what was noticed, produces a corresponding behavior, and receives a consequence (e.g., reinforcement or punishment) that alters the likelihood that the behavior will emerge again.

The premise of social learning and ecological systems theory supports the interconnectedness between overlapping contexts (i.e., microsystem, mesosystem, exosystem, macrosystem, and chronosystem) starting from the child at the central layer, and then "branches out" to outer layers, such as immediate families, other individuals or professionals, community organizations, or governmental agencies (i.e., collaborations between various involved stakeholders) that directly influence the child's behavior (Bronfenbrenner, 1979). In short, for the potential increase in social relationships and the successful cultivation of compassionate behavior, this prosocial skill needs to be regularly taught, modeled, and practiced by all involved stakeholders (see Figure 2). The following sections emphasize: (a) related neuroscience and the suggested instructional paradigm in the context of prosocial education, (b) emerging five elements of compassion and the specific role of each stakeholder, and (c) a collaborative model for all stakeholders.

An Instructional Paradigm for Promoting Compassionate Behavior

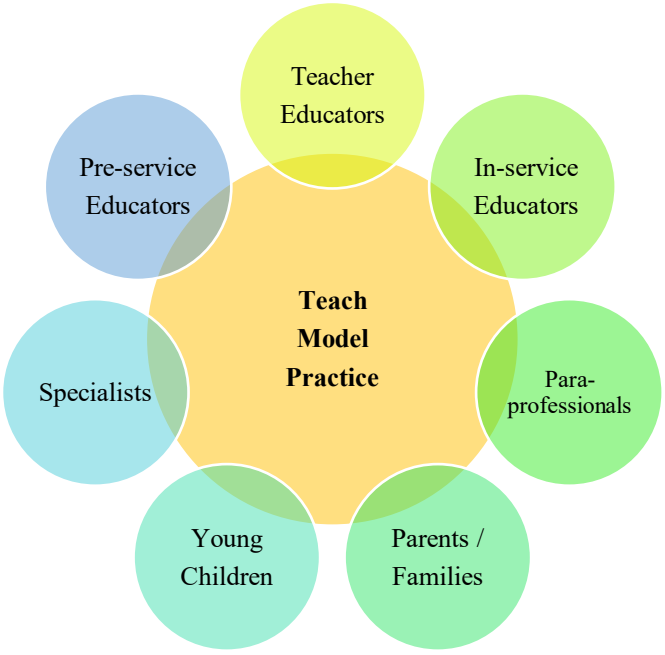
The ability of young children to develop foundational brain circuits (to learn and focus, to filter distractions, and to process incoming information) is analogous to having a complex "air traffic control system" that manages daily busy arrivals and departures (i.e., countless motoric and cognitive tasks) of various flights on multiple runways (Center on the Developing Child, 2020b; National Scientific Council on the Developing Child, 2011, 2021). In neurotypical brain development, the "air traffic control system" metaphor is referred to as executive function (i.e., a collection of skills that assist children to focus and process information from their external environments, monitor errors, and adjust plans of action). From birth, human genes produce over a million synapses (neuronal connections) per second. During these incremental periods of neuronal connections and development, it is the consistent observations and emulations from one

another (i.e., the consistent teaching, modeling, and practicing compassionate behaviors between stakeholders) that guide children's brain construction and proliferate the complexity of the brain architecture and its related functions throughout the lifespan (Kushnir et al., 2010; National Scientific Council on the Developing Child, 2021; Poeppel et al., 2020). Further, in longitudinal investigations using magnetic resonance imaging (MRI) during the last three decades, various studies reveal that our genes provide an initial blueprint to assist children with the early and subsequent acquisition of social skills from their surrounding environments (Poeppel et al., 2020). Additionally, evidence from recent findings in neuroscience extends our understanding of foundational skill acquisition to causes, mechanisms, and leverage points that can enhance children's learning (Bogdan et al., 2012; Howard-Jones, 2014; Poeppel et al., 2020).

Nguyen, Garnett, and colleagues (2021) previously illustrated the 3-component instructional paradigm (i.e., teach/model/practice) to describe how to embrace and cultivate compassionate minds in early childhood classrooms. Based on (a) the premise of prosocial education, (b) evidence regarding learning processes and how brain circuitry works, and (c) the tenets of social learning and ecological system theories, compassionate behaviors should be specifically taught, modeled, and practiced by all related stakeholders. That is, the more opportunities are provided to children, and the earlier prosocial skills (such as compassionate behavior) are introduced to children or between stakeholders, the more likely an increased number of neuronal connections are involved that – in turn - will lead to a rise in efficiency, density of circuitry, and speed of learning for these individuals (Ambrose et. al., 2010; Mosier, 2013; National Scientific Council for the Developing Child, 2021). Figure 2 illustrates the significance of the 3-component instructional paradigm.

Figure 2

3-Component Instructional Paradigm for Promoting Compassionate Behaviors Across Stakeholders and Settings



Further, from a neuroscience perspective, healthy brain development depends on both early and subsequent meaningful interactions and experiences. However, brain development also

relies on how frequently a particular gene can be “expressed” or “activated” to execute a certain task, to acquire learning strategies, or to increase overall productivity (Champagne, 2010; Kirschner, 2017; Lupien et al., 2009; Meaney, 2010; Moeller et al., 2018; National Scientific Council on the Developing Child, 2011; Yale Center for Emotional Intelligence, 2021). For instance, it would seem illogical for teacher educators or school administrators to expect novice early childhood educators to show mastery in embracing and cultivating compassionate behaviors with young children if they have not been taught, modeled, and practiced compassionate social skills during their teacher preparation programs. The following section focuses on the emerging five elements of compassion and the recommended collaborative model for stakeholders to promote compassion at all levels and within various settings.

The word compassion originates from the Latin root compati, meaning “to suffer with” (Seppala et al., 2017; Strauss et al., 2016). In past and existing literature, the word was first depicted as the ability to recognize the pain and suffering of others, to have feelings toward another person’s suffering, and the determination to take actions to mitigate the suffering of others (Goetz et al., 2010). Strauss et al. (2016) conducted a meticulous examination of the various constructs and definitions of compassion, including quality ratings of nine existing measures of compassion. As a result, Strauss et al. recommended a definition of compassion with five major elements based on: recognizing suffering; understanding the universality of pain and suffering in human experience; feeling empathy toward the person who is suffering and connecting with the distress (emotional resonance); tolerating uncomfortable feelings from the person who is suffering (e.g., distress, anger, fear) and becoming more open and accepting toward the suffering person; and taking actions to alleviate the suffering of others.

Table 1 illustrates the collaborative model of how each related stakeholder can use the 3-component instructional paradigm, the emerging definition of compassion science, and Bandura’s four-step behavioral sequences to teach young children to master the pro-social skills of compassion during daily routines.

Table 1
Instructional Paradigm to Promote Compassionate Behaviors for All Stakeholders

Element	Related Stakeholders' Roles / Strategies
Recognize suffering	• Teach/model/practice compassionate behaviors between related stakeholders to recognize their own feelings of suffering and the same feelings in others (*affective empathy*). (*Bandura's step one of four behavioral sequences: notice something in the environment)* *Compassion behavior* (Jazaieri, 2018)
Understand the universality of pain & suffering in human experience	• Teach/model/practice compassionate behaviors between related stakeholders to acknowledge and recall their own difficulties and suffering, and that of others as part of the overall human experience. (*Bandura's step two of four behavioral sequences: the individual remembers what was noticed)* *Compassion behavior* (Jazaieri, 2018)
Feel empathy and connect with the distress (emotional resonance)	• Teach/model/practice compassionate behaviors between related stakeholders to "feel the pain", difficulties, or suffering (cognitive empathy) of their own and others. Learn how to express sensitivity to themselves and others. Place themselves in the others' situations or perspectives. (*Bandura's step 3 of four behavioral sequences: the individual produces a corresponding behavior)* *Compassion behavior* (Jazaieri, 2018)
Tolerate uncomfortable feelings of the suffering person (e.g., distress, anger, fear) and become accepting	• Teach/model/practice compassionate behaviors between related stakeholders to tolerate and accept the uncomfortable feelings in response to "witnessing" pain and suffering of their own and others. (*Bandura's step 4 of four behavioral sequences: the environment or individual deliver a consequence that alters the likelihood the behavior will emerge again)*

		Compassion behavior (Jazaieri, 2018)
Motivation to act to alleviate the suffering and pain	• Teach/model/practice compassionate behaviors and creating compassion visualizations between related stakeholders to take actions (actively) to alleviate their own and other's pain, suffering, or difficulties (motivational empathy). Offer real solutions to help themselves and others.	*Compassion behavior; Compassion visualizations* (Jazaieri, 2018)

Note: Adapted from Nguyen et al., 2021; Jazaieri et al., 2018; Strauss et al., 2016.

Collaborative Roles of Stakeholders

As seen in the previous section and Table 1, stakeholders should consider using the instructional paradigm (teach/model/practice) in conjunction with four other supplemental components: (a) five elements of compassion science, (b) Bandura's four-step behavioral sequences, (c) compassion behavior (through the acts of caring, understanding, and forgiving), and (d) compassion visualizations to embrace and cultivate compassionate behaviors with one another during daily routines. By adhering to the instructional paradigm (i.e., intentionally for direct instruction, activating prior knowledge, scaffolding skills, reviewing, and retaining acquired skills), the knowledge and skills of compassion that stakeholders acquire will come from each other's teaching, while being steadily modeled by all involved stakeholders. Further, stakeholders will gain ample opportunities to practice the recently acquired skills and knowledge of compassion with one another. This instructional paradigm should be used to guide stakeholders for each of the following five elements of compassion and the four supplemental components in Table 1 and Figure 2.

Teacher Educators or Researchers

Stakeholders should learn to identify (i.e., recognize suffering as the first element of compassion, Bandura's first behavioral sequence-noticing something in the environment) and convey their feelings, to be considerate of others' feelings (affective empathy) or sufferings, and to use compassionate behavior as a strategy to mitigate the existing difficulties, pain, or sufferings of oneself and others (Bandura, 1977; Jaizaieri, 2018; Strauss et al., 2016). For example, pre-service educators can be presented with contrived scenarios to identify instances of suffering using weekly supplemental videos, naturally occurring in-class situations, and discussions/lecture notes from their teacher educators.

When presented with situations where they or other pre-service educators experience difficulties, possible questions for teacher educators to use (teach, model, and practice) during weekly lectures include (i.e., noticing something in the environment):

- I noticed that you have been absent from the last few class meetings. Is everything ok?
- How may I help you with questions, concerns, assignments, or missing lectures?
- In your interpretation, what is a compassionate act?

- How do you feel when you are being compassionate with your friends in class or with other human beings?
- Would you like to be treated with compassion all the time?
- As prospective early childhood educators, how do you plan to assist (i.e., take concrete actions) your friends or other human beings in various settings when you know they are in trouble or experience problems with their students?

Additionally, teacher educators should facilitate (teach, model, and practice) weekly conversations with pre-service educators in a respectful, professional manner, and let them take turns to lead various class discussions (e.g., bridging educational theories or course contents with daily practical implications to help them recognize and alleviate existing stress, difficulties, or suffering) and options in terms of responses and their interpretations (e.g., how should each of them attempt to assist themselves and other pre-service educators with course-related items or ordinary social issues in daily routines?). Simmonds (2014) asserted that our prior acquired experiences set orderly pathways for what information enters the individual's consciousness and greatly affect how the brain incrementally processes information. That is, through mutual social experiences, both teacher educators and pre-service educators acquire the use of consistent teaching, modeling, and practicing from one another. This learning typically starts with teacher educators. As educators progress, they learn to identify daily issues or difficulties, and exhibit foundational compassionate behaviors toward one another.

School Administrators

Stakeholders should be taught to acknowledge and learn to recall their difficulties or suffering- and that of others- as part of the overall daily human experience (i.e., understanding the universality of pain and suffering in human experience as the second element of compassion, Bandura's second behavioral sequence-remembers what was noticed). They also learn to use compassion behavior as a strategy to actively engage in the acts of alleviating the difficulties, pain, or suffering of oneself and others. For instance, school administrators can pick up the foundational work of teacher educators from teacher preparation programs previously described to communicate and convey uneasy feelings, various types of suffering or stress with themselves and their in-service educators or staff; this becomes a natural part of their lived experience with the use of compassion behavior to help one another to lessen the existing difficulties, stress, or suffering (Bandura, 1977; Jazaieri, 2018; Strauss et al., 2016) during scheduled staff meetings.

In their previous published work, Nguyen, Garnett, et al. (2021) described mindful breathing as a helpful strategy to alleviate uneasy feelings or daily stress and to enhance mental concentration among young children. Similarly, school administrators might implement this approach to assist themselves, their in-service educators, and staff. Mindful breathing is also known to advance brain integration, heighten compassionate responses to suffering, generate a calming effect to reduce stress, elevate self-awareness and productivity, and reciprocate to the focused attention to live fully and acknowledge the surrounding environments in the present moments (Condon et al., 2013a; Frazer & Stathas, 2015; Gregoski et al., 2011; Harris, 2017; Hawn, 2011; Jennings, 2015; Nhat, 1991). For example, a school routine such as a monthly faculty meeting may have administrators, in-service educators, and staff sit with their eyes closed, or focus on a specific object, relax their bodies in a comfortable position, keep their backs upright, and repeat the inhale and exhale tasks in an orderly sequence (e.g., 3 seconds to inhale, hold breath for 2 seconds, and a relaxed exhale for 4 to 5 seconds). School administrators

can use this approach as "break-in" exercise routines lasting from 4-6 minutes before or in between faculty meetings.

Further, school administrators can provide directions for in-service educators and staff to relax their minds and bodies throughout (i.e., before, during, after) these short but critical mindful breathing sessions. It is also critical for school administrators to illuminate with in-service educators and staff that experiencing hardships, daily stress, or suffering is a natural part of the day-to-day human experience. That is, the more frequently they are taught, modeled, and practiced by the school administrators (i.e., or with one another) to use mindful breathing to mitigate daily stress (e.g., work or family responsibilities), the more likely these professionals will develop resilience to endure daily stressors. Birn et al. (2017) and Bogdan et al. (2012) asserted that individuals prone to consistently high levels of stress (i.e., particularly with early life stress) without timely intervention or relaxation routines that serve as external stimuli to stimulate the brain's architecture) are at a higher risk for developing subsequent behavioral issues that result in a negative impact on work-related tasks and productivity. Further, formal on-campus training programs or periodic and structured professional development opportunities with well-trained guest speakers or ambassadors in compassion science can be helpful for in-service educators, staff, and school administrators to: (a) learn about their own emotions (e.g., angry, sad, happiness, anxiety, hurtful), (b) participate in whole and small discussions to share learning experiences, (c) enhance their own self-regulation, (d) participate in guided meditation to improve awareness, (e) engage in listening and communicative exercises to build compassionate interactions, and (f) further acknowledge daily difficulties as part of the human experience (Center for Compassion and Altruism Research and Education, 2020; Center for Contemplative Science and Compassion-Based Ethics, 2020; Center for Mindful Self Compassion, 2020; Gilbert, 2014). Compassion skills serve as valuable knowledge for school administrators to cultivate (teach, model, and practice) the foundational seeds of compassion (i.e., acknowledging their suffering as part of the overall human experience) for themselves and their in-service educators and staff.

Specialists and Paraprofessionals

Stakeholders should be introduced to "feel the pain", difficulties, or suffering (cognitive empathy) of their own and others. Feeling empathy and connecting with the distress or emotional resonance is the third element of compassion and represents Bandura's third behavioral sequence-the individual produces a corresponding behavior. This assists stakeholders to continue to use compassion behavior as a strategy to seek solutions to mitigate existing pain, difficulties, or suffering for themselves and others (Bandura, 1977; Jaizaieri, 2018; Strauss et al., 2016). Specialists and paraprofessionals can build on the work of both teacher educators and school administrators to keep working with their in-service educators or practitioners, school administrators, and young children. For example, during daily interactions, these stakeholders can be presented by specialists and paraprofessionals (teach, model, and practice) with other contrived situations that would assist them in identifying instances of hardships, stress, or suffering and work with each other and themselves to improve empathic behaviors (i.e., an individual produces a corresponding behavior). When presented with situations where other in-service educators, school administrators, and young children are experiencing difficulties or stress, possible questions for specialists and paraprofessionals to use during daily routines (i.e., with consistent praise for their efforts and to facilitate various conversations to provide these

stakeholders the opportunities to share their thoughts regarding the need to convey empathy toward others):

- How often do you express compassion to yourself and others (i.e., children, in-service educators, or school administrators)?
- Have you seen (lately) a compassionate act between in-service educators, school administrators, staff, or children?
- When you are being compassionate to yourself or other professionals, how do you feel?
- Can you share a time that you were compassionate to yourself or other professionals?
- When was the last time you took actions to mitigate stress, difficulties, or suffering for yourself and other professionals?

During the past 19 years since its establishment, prominent researchers from the Center on the Developing Child (2020a) have emphasized that excessive activation of stress response systems affects the brain and other organ systems in various ways (i.e., the lack of cognitive empathy). That is, when any of these stakeholders feel threatened or stressed, their bodies immediately prepare to act by increasing their heart rates, blood pressures, and stress hormones (e.g., cortisol) (i.e., the individual produces a corresponding behavior). Further, when stress response systems are triggered with consistent and supportive social relationships, these physiological fluctuations are "leveled out" and brought back to baseline levels. Conversely, if the stress responses are highly elevated and prolonged in nature without any supporting social relationships, other biological systems can become abruptly overloaded or drastically impaired. In other words, these specialists and paraprofessionals should attempt to work with in-service educators, school administrators, and young children in a collaborative approach to promote empathy that would serve as an incremental catalyst to help their physiological fluctuations remain relatively stable (Center on the Developing Child, 2020b; Lupien et al., 2009).

Parents and Families

Stakeholders should be familiar with and learn to tolerate uncomfortable feelings of their own and the suffering of others. This involves tolerating uncomfortable feelings of the suffering person (such as distress, anger, or fear) as the fourth element of compassion. This incorporates Bandura's fourth behavioral sequence-an individual delivers a consequence that alters the likelihood the behavior will emerge again. At this level, compassion behavior has become a continued strategy to actively alleviate existing difficulties, stress, or suffering of their own and others (Bandura, 1977; Jaizaieri, 2018; Strauss et al., 2016). For example, parents and caregivers should be guided (or taught), modeled, and practiced by in-service educators or classroom practitioners (i.e., an individual delivers a consequence that increases the chance for the reoccurrence of behavior) on how to endure their daily stress, the stress of taking care of their children, and learn to accept the existing hardships or difficulties. Effective collaborative practices between in-service educators and parents or families are well established in the literature, and these practices are as consequential as the acquisition of skills in any of the five elements of compassion (Berger & Riojas-Cortez, 2020; Blanchard et al., 2015; Turnbull et al., 2011). In-service educators might consider using the subsequent framework to develop functional collaborations with families to promote the fourth element of compassion along with the other four related components. Nguyen, Darling, and colleagues (2021) suggested a separate

three-component framework (i.e., effective bidirectional communication, rapport and trust, and empathy) for building connections among families, young children, and primary educators. First, to heighten bidirectional communication, in-service educators should consider the following strategies with families or parents (See Table 1 from Nguyen, Darling et al., 2021 for detailed descriptions):

- Be clear and succinct in all forms of communication (clarity).
- Listen responsively to families' expressed concerns (active listening skills).
- Become familiar with language variations, customs, and backgrounds (become aware and sensitive to cultural and linguistic differences).
- Respond to families' concerns promptly (timely response to concerns).

Second, in building effective initial rapport and trust with families, in-service educators should be:

- Respectful and friendly (approachable);
- flexible and have an open-door policy (accessibility);
- proactive and positive in all interactions/communications (optimistic).

Third, in line with the objective of the fourth element of compassion and promoting foundational empathy, in-service educators should also:

- Place themselves in the family member's place or perspective and ask, " What would I do in a similar situation? (genuine care)
- Be sensitive toward families' difficulties and offer concrete solutions or assistance (sensitivity).

Further, during daily interactions (e.g., teacher-parent conferences or daily drop-off and pick-up periods) with in-service educators, parents or families can be presented with contrived scenarios to develop their awareness and ability to modify their feelings and to observe hardships or unstable emotional states (such as anger or distress from their children or other family members). The aim is to become able to accept these various feelings as tolerable, routine experiences (Nguyen, Garnett et al., 2021). Possible questions for in-service educators to use with families during these frequent and routine interactions include:

- I have not had the chance to speak with you lately. Is everything ok with you, your work, and your child (i.e., your student in class) at home?
- If I may ask, when you know or observe that you, your child, or another person is stressed out or not happy, what do you do to understand, alleviate, and accept the frustrations of yourself, your child, or the other person?
- Please know that I am willing and available to assist you. Could you please let me know via email, phone calls, or notes so that I can arrange a time at your convenience to work with you as soon as we can?
- I know it is difficult to handle various issues all at once and by yourself. If you can, could you prioritize your daily schedules or issues and attempt to tackle them one at a time?

Then, provide concrete examples for families to understand the importance of solving daily issues in an organized and systematic manner, and to put their experiences to the test with concrete actions.

Young Children

Finally, the last type of stakeholder should be taught, modeled, and practiced by their parents or family members on how to mitigate their own and families' stress, pain, and suffering (i.e., act to alleviate suffering and pain as the fifth element of compassion) through the continued use of compassion behavior and compassion visualizations (Jaizaieri, 2018; Strauss et al., 2016). For instance, in a home environment or public settings (e.g., during a family road trip), family members can routinely engage with their children to create mental images or to practice visualizing compassionate images that are relevant to them (e.g., an image of a young child picking up an injured insect and placing it on a dry place on higher ground; or using a YouTube video to illustrate compassionate acts. Through these simple scaffoldings of lived and concrete social experiences (i.e., Vygotsky's zone of proximal development; Vygotsky, 1978), young children begin to develop and scaffold their thought processes and skills (e.g., sparing the lives of these helpless creatures, being kind toward other humans). Further, in terms of children's incremental development, it is going to be a daunting task for family members to teach or expect this rather complex behavior (compassion) to be exhibited by their young children without scaffolding these skills in humane education during their early developmental years (see Jalongo, 2014, for a fuller description of humane education in early childhood).

Further, skills acquired from these foundational humane acts of kindness seamlessly set up the crucial stage for young children to learn to identify, understand, and develop the early seeds of empathy, compassion, and respect for all living things; this is humane education (Jalongo, 2014; Nguyen, Garnett et al., 2021). It is worth noting that family members also benefit from these mutual interactions (e.g., the proud feelings of raising a capable and compassionate child). Possible prompts for family members to use during the scenarios with children include:

- Close your eyes and in your mind imagine you or someone else being compassionate to yourself or toward others.
- Can you recall a time that you or someone else did something kind or compassionate for yourself or others?
- Do you feel happy when your compassionate words or acts helped other people become less stressed?
- In your head, think of when you last felt motivated to do something to help yourself or others.
- How often did you help yourself and others to overcome difficulties or stressful situations?

After the children have had sufficient opportunities to learn from family members to generate these visual images in their minds, they should be prompted to use these visualizations and transfer them into their diaries. Finally, family members can then participate in various discussions with their children in different settings to share and validate together the various versions of their own compassion visualizations.

Implications for Future Inquiry and Practice for All Early Childhood Stakeholders

The model for promoting compassion science in early childhood is advocated, in part, based on research coming from various disciplines in medicine and the health sciences (Bogdan et al., 2012; Fox et al., 2010; Pace et al., 2009; Poehlmann-Tynan et al., 2019). The model also incorporates long-standing theoretical frameworks that influence family, social relationships,

interactions, and child development (Bandura, 1977; Bronfenbrenner, 1979). And, like many initiatives in education, the model draws its face validity from pragmatic efforts of practitioners and the logic of curriculum design. However, an instructional model for teaching compassion to young children also shares a common shortcoming with many other educational initiatives; to date, incorporating compassion into early childhood through an instructional model lacks a body of robust research to support the practice.

The proposition that compassion is an actionable set of human behaviors will be a stretch for some educators. To date, there has been no cogent research agenda into the efficacy of adopting an instructional model for compassion science in early childhood, and only Nguyen, Garnett et al. (2021) have directly called for increased research attention for this model. This mirrors the growth in other areas of education where advances occurred with little consensus on what constitutes a research basis for the discipline (Brady, 2021; Grossman & McDonald, 2008; Kuh & O'Donnell, 2013). Under these circumstances, the field relies on program reviews, evaluations, correlational studies, administrative data, and research reviews that often are not specific to student learning (Whitehurst, 2012). Like the literature and studies they review, all contribute to a general understanding of an issue (e.g., compassion), but few specifically address the learning context (e.g., the efficacy of an instructional model for compassion).

To examine the benefits of cultivating compassion among young children and extending the benefits beyond early childhood years, we propose a 3-component framework for research that will drive practice, policy, future legislation, and funding decisions for future research. An organized research agenda should target (a) intervention research, (b) impact studies, and (c) policy studies that specifically address the range of stakeholders who interact with young children. Each research typology should include attention to the 5 elements of compassion behavior and include the full range of stakeholders.

Intervention Research

Because the model lives within an instructional context, there will be a need to pursue intervention research that targets curriculum and instruction questions. For example, as children develop, it is likely that certain instructional strategies will become more or less effective in promoting learning of compassion behaviors. The range of developmentally appropriate instructional practices should be pursued to see which strategies might be more efficacious for promoting the different clusters of compassion behavior (e.g., recognition vs tolerance), and for different levels of learning (e.g., initial acquisition vs retention over time). Because compassion behavior is a relatively novel idea, educators will need to gain some sense of behavioral norms for these newly learned behaviors. For example, there is no consensus currently on how much compassion might be expected among 3-year-olds vs 6-year-olds, or for feeling empathy for humans vs other mammals vs other living things.

Impact Studies

Impact studies frequently incorporate correlational designs based on secondary data sets and archival reviews. In early childhood, these secondary analyses might include interdisciplinary data sets from language specialists, health care providers, and other stakeholders. The research objective often is to search for impact predictors of variables that are difficult to manipulate in intervention studies. Other studies administer survey measures to understand the impact of events on specific individuals (other young children, teachers, families), or on broader audiences including legislators or teacher groups. Methods often include

"investigative reporting" along with a range of qualitative research methods that focus on the impact of children learning compassion behaviors. Researchers who conduct impact studies frequently describe their work as "telling a story." These might include in-depth ethnographies or a series of case studies to understand "everyday stories." Impact studies to better understand compassion science could be designed for both large and small venues. For example, by targeting the fifth level of compassion behavior (motivation to act), a story can be told of the impact of teaching this on individual children who participate in the instruction; conversely, a school-wide study would evaluate the impact of school-wide curriculum delivery on long-term discipline referrals and incidents of violence within the school.

Policy Studies

In contrast to impact studies (with a research focus on individuals or localized groups), policy studies typically examine the impact of events on broader outcomes, such as changes in staffing or funding policies in a school or district. Research methods for policy studies often include retrospective studies, economic analyses, simulated modeling studies, or longitudinal studies. These studies might be used to influence accreditation activities, legal and regulatory initiatives, program sustainability studies, and cost–benefit analyses. Policy research might be used to empower individual teachers to implement curriculum changes in their classrooms or could have a district-wide or broader emphasis.

Implications for Practice

Applying an instructional model for compassion to early childhood cannot rely on research alone. Given the paucity of research, and the relatively unknown nature of compassion as a set of behavioral skills, teaching compassion to young children is clearly in its infancy. To become an efficacious developmentally appropriate practice will require five obvious actions.

- Stakeholders in early childhood will need to gain a clear understanding of the concepts and terminology of compassion science;
- Stakeholders will need to see and hear demonstrations of "compassion in action" so they can gain a clear understanding of responses to pain that might not be in their current repertoires;
- Stakeholders will need to have the opportunity to explore small- and large-scale teaching interactions – both as learner and as teacher;
- Stakeholders will need to have opportunities to obtain constructive feedback on their own professional development in learning compassion; and finally
- Stakeholders will need opportunities to think, reflect, ponder, and otherwise test and change their own perceived gains as "students of compassion."

A Conclusion Regarding Compassion

In recent years, there have been increases in concern that we are seeing a diminution of civility in everyday life. Many citizens have begun to fear that once dependable social institutions are experiencing an uncivil transition. In response to this, some educators have called for an explicit pivot toward promoting and integrating compassion science with prosocial education, starting with young children and the stakeholders in early childhood education. In this article, we proposed an active model for heightened social relationships by integrating compassion science into early childhood as a means for creating more civil and compassionate actions in society. We described the instructional model defining compassion as a set of

teachable and learnable behaviors. We also summarized a 3-strategy approach to building a research agenda to guide this transition.

Our own commitment to the transition to compassion is both personal and professional. We are in the initial stages of adopting the research agenda to conduct a series of interventions that will guide early childhood practice. This includes conducting studies with stakeholders to gain a fuller understanding of their knowledge, skills, and attitudes about compassion. Next, we intend to conduct subsequent studies to investigate whether there are changes in knowledge and skills because of low- and high-impact interventions to teach these sets of behaviors. For all of our studies, we intend to examine the impact of the findings on stakeholders and to influence early childhood policies in positive ways. Finally, we will continue to learn to embrace compassion in our own everyday lives.

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