Peer-Reviewed Article

Re-conceptualising empathy as a form of prosocial self-regulation in young children: Considering the Reggio Emilia approach as a catalyst for the development of prosocial ways of being

Sonia Mastrangelo, Meridith Lovell-Johnston, Kelsey Robson, and Norah Fryer

This position paper outlines the important role of self-regulation in helping young children develop their empathy skills. We contend that self-regulation practices need to be inherently embedded in early childhood education programs to help children develop reciprocal relationships that include empathy at the core. By applying a Reggio Emilia inspired approach to our understanding of empathy, we can begin to see the endless possibilities in this inquiry-driven model where the focus is not to "teach" empathy as a cognitive set of skills to be mastered, but rather to infuse empathy through natural interactions. This paper concludes with three vignettes drawn from the authors' experiences in international early childhood settings that demonstrate the powerful connections among empathy, self-regulation, and the development of prosocial skills.

Introduction

The benefits of self-regulation for the developing child are well documented in the literature (Shanker, 2012; Clinton, 2014) and research has overwhelmingly shown that self-regulation influences many facets of a young child's life including the abilities to follow instructions, participate in a group, take turns, and follow routines (Coelho et al., 2018). However, what appears to be underrepresented in the literature, and what we argue should be central to our early childhood programs, is a focus on prosocial

thinking and action (empathy), as the most important cornerstones of any early childhood program where self-regulation is embraced as the foundation and precursor to developing empathy in young children. In this article, we use the philosophy of the Reggio Emilia approach as a starting point to help us realise the endless possibilities to develop empathy that are available within an inquiry-driven model where the focus is not to "teach" empathy as a cognitive set of skills to be mastered, but rather to infuse empathy in the approach which honours children's voices, respects children's rights, and provides the environmental conditions for self-regulation and empathy to flourish.

Since research demonstrates that the human brain is wired for empathy (Beckes et al., 2012), why do some children fail to demonstrate prosocial behaviour? Why do others find it so difficult to soothe a fallen friend or to comfort a crying companion? Shanker (2015) argues that stress is interfering with children's ability to demonstrate empathy. In the life of a young child, stressors across the four domains (biological, emotional, cognitive, and social) can all have a multiplier effect, sending the child into a vicious stress cycle—thereby impeding their ability to demonstrate empathic gestures such as touching a shoulder, using a soothing voice to calm another (i.e. lending your calm), or giving a hug (creating a moment for oxytocin to develop). The ability to demonstrate empathic "ways of being" is predicated on our own sense of safety and security, therefore lending our calm through co-regulation also requires us to have the emotional energy to relate to another.

In Ontario, the Ministry of Education developed a Kindergarten Program (2016) with references to empathy made throughout the document. To describe the Ontario context, a full day, two year kindergarten program is part of the formal school system. Children enter kindergarten at age 4. Most classrooms have a certified teacher who holds a Bachelor of Education degree and an Early Childhood Educator who holds a college diploma focusing on development from birth through to early childhood. The Kindergarten classroom teacher along with the early childhood educator are encouraged to observe empathy in young children under the Self-Regulation and Well-Being frame of the program. Some of the observable empathic behaviours outlined in the curriculum document include:

- practicing kindness towards other people and all living things; showing concern for their well-being, acting with empathy and sympathy towards them, and practicing including others (pg. 63) and
- developing empathy for others, and acknowledging and responding to each other's feelings (e.g., tell an adult when another child is hurt/sick/upset; have an

> imaginary conversation with a tree or an insect; role-play emotions with dolls and puppets) (p. 164).

However, what happens when the child's stress load is too high? How might stress levels influence children's ability to practise empathy in their everyday interactions? Hopkins (2016) reminds us to look for the following signs of overload that might be impacting a child's ability to demonstrate empathic thinking and action:

- Chronic hyper-arousal
- Chronic hypo-arousal
- Heightened stress reactivity
- Increased sensitivity to pain (physical and emotional)
- Reduced ability to regulate negative emotions
- Negative bias
- Reduced ability to read affect cues or show emotions
- Reduced ability to hear human voice
- Blunted reward system
- Increased immune system problems

In essence, during a flight-or-fight response, digestion, cellular repair, immune system, and prefrontal cortex systems shut down. Stress turns off the very systems that enable humans to experience "cognitive empathy," not just being affected by, but also aware of, what someone else feels (Hopkins, 2016).

The development of empathy from infancy to early childhood

Empathy is an affective response that develops from understanding others' emotional states or conditions and, in essence, becoming attuned to or experiencing an affective state that is congruent with the others' state, typically motivating prosocial behaviour (Decety et al., 2018; Thompson & Gullone, 2003). More specifically, empathy is defined as "an affective response that stems from the apprehension or comprehension of another's emotional state or condition and is similar to what the other person is feeling or would be expected to feel in the given situation (e.g., feeling sad when viewing someone else who is sad)" (Spinrad et al., 2022, p. 255). Empathy includes not only understanding of others' emotional states, but also the formation of an emotional connection, ability to see the other's situation from his or her point of view, and the

motivation to act on that understanding. Emotional/affective empathy (empathic concern) develops in infancy, but it is not until approximately age 4 that it begins to mature and grow to include cognitive empathy, which is associated with executive functioning (Decety et al., 2018) and effortful cognitive control (Hinnant & O'Brien, 2007). Both connect to the previous discussion of self-regulation, although this connection of concepts is researched infrequently (Willis, 2016). From a self-regulation perspective, children would be co-regulated by the emotional state of other children and adults around them and would utilise their self-regulation strategies to act in ways that benefit both themselves and others.

Behavioral neuroscience has recently begun to empirically examine the development of empathy (Eres et al., 2015; Decety et al., 2018). This research builds on earlier developmental work that relied on observation or adult reports of children's prosocial behavior. As a result, we are gaining new insights into how emotional and cognitive empathy are processed by the brain during tasks designed to elicit passive or active empathetic responses. For example, children who score higher on general empathy scales also show stronger brain activity when they perceive their [friends] to be in pain or when observing others' emotional expressions (Dapretto et al., 2006; Eres et al., 2015; Singer et al., 2004). Mirror neuron structures "communicate" with the emotional brain and have led Iacoboni (2008) to state that, "these results clearly support the idea that mirror neuron areas help us understand the emotions of other people by some form of inner imitation" (p. 119). Gallese (2006) and Iacoboni (2008) stress the importance of mirror neurons as the first stage of an empathic resonance. To become aware of an empathic experience, Siegel (2007) reveals that it is important for the prefrontal regions to become engaged and reflect on the visceral sensory-motor sensations and shifts on the emotional signals processed by the limbic system.

Researchers suggest that empathy, and particularly the more mature form of cognitive empathy, requires the blurring of self and other representations (Beckes et al., 2012) whereby the brain achieves shared intentionality (Tomasello & Carpenter, 2007). "Shared intentionality refers to the sharing of psychological states between individuals and is intimately connected to joint attention, cooperative communication, collaborative action and instructed learning" (p. 676). For example, a teacher who recognises the distress of a child who just lost their dog might get down on the floor at eye level, soothe the child through a calm voice, and adopt an empathetic stance by acknowledging the child's sadness and engaging in activities that might help the child, such as drawing a picture of the dog or a favourite memory of the dog. The teacher might then proceed to share the experience of when the teacher's own dog passed away. In

this example, shared intentionality is demonstrated through reciprocal activities around the common experience of losing a loved pet.

There is some debate in the research over whether the capacity for empathy increases or stays stable over time and whether genetics or environment is a larger factor in the development of empathy, especially as it is expressed through prosocial behaviour in children (Decety et al., 2018). The implication of this debate is that although empathy occurs naturally as a product of interactions in infancy, it could be nurtured or diminished through interacting with supportive or harmful environments. For example, childhood trauma or even high levels of parental stress (Walker & Cheng, 2007) or depression (Gündüz et al., 2015) could negatively affect children's empathy and resulting behaviour, but the effect of negative experiences could be mitigated through positive experiences and modeling, such as through establishing bonds with animals (Thompson & Gullone, 2003).

Co-regulation as a precursor to self-regulation and the development of empathy

Empathic behaviour needs to be repeatedly modelled by caring, respectful adults and encouraged in children through everyday interactions. Developing empathy is a gradual process that begins in the home environment and in many ways is highly dependent upon the quality of emotional awareness expressed by the caring adults. So, can empathy be taught? We argue that empathy is not learned in young children by teaching it as an explicit skill; rather, it is supported continuously in everyday actions and interactions from an early age that are modeled through co-regulatory experiences. Co-regulation is "what happens when a caregiver regulates a child's (or other person's) behaviour and feelings through interactive, bi-directional signals: soothing words, adjusting their tone of voice, facial expressions, body language, and gestures" (Shanker, 2023, para 2). An example is when an educator soothes a crying student by providing consoling words, a gentle touch, or a comfort object. Once in school, young children have the opportunity to share their empathic responses (if they are regulated) and if they have had the opportunity to receive empathic responses by their caregivers and teachers.

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Empathy is an innate capacity that needs to be both nurtured and maintained throughout the lifespan because it helps us build relationships that are mutually supportive and enjoyable. According to Tantum (2018), humans are social beings who have innate connections between their brains that use specific networks to carry non-verbal communication—likened to a "wifi connection" between two people who are "in sync" with one another. From the research on the interbrain (Tantum, 2018), we know that infants learn to identify and regulate their dyadic interactions through co-regulation. Humans are connected by an automatic and ongoing interplay of non-verbal communication which they are often unaware of and which enhances individual understanding of empathy, social communication, and group behaviour (Tantum, 2018).

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Schore (1994) has conducted seminal research on the importance and power of co-regulation for the development of self-regulation (which in turn can set the foundation for the development of a child's sense of self) and on being able to sense the feelings of others. Co-regulation is the ability to listen, support and effectively engage a person through shared interactions which are calm and regulating for both (Shanker, 2012). For example, educators soothe a distressed child, actively scaffold their learning, and participate in ongoing reciprocal interactions that include emotional exchanges and verbal and non-verbal communication which all contribute to a child's development of self-regulation. To become a partner in co-regulation, the adult must become deeply self-aware of their own level of emotional functioning to allow the child to develop what feeling safe feels like. For example, children who are transitioning to a preschool setting for the first time would benefit from educators who are able to co-regulate the child and support them through the anxiety of leaving their families and entering an unfamiliar environment. This may involve the use of drama and puppets to share a story about changing environments and leaving the comfort of home to join a group of friends at school.

Discussion: Connections between Reggio, self-regulation, and empathy

We argue that the philosophies and pedagogical methods of the Reggio Emilia approach have a natural connection to the concepts of self-regulation and empathy. The Reggio Emilia approach places a strong emphasis on the social and emotional development of young children to set the foundation for lifelong learning (Moreno et al., 2018). The philosophy of the Reggio Emilia approach is influenced by a social constructivist theory where knowledge is developed socially and is constructed through reciprocal exchanges between the children and adults in the setting (Hewett, 2001). It is through these social exchanges that children explore and develop their self-regulation and empathetic skills. By building reciprocal relationships with their peers and adults in the Reggio setting, children have agency to explore these skills in their daily explorations.

An emphasis on collaboration in the Reggio Emilia approach supports the development of self-regulation and empathy through group work and projects. Krechevsky and Mardell (2007) describe the use of group work in the Reggio setting as providing the children opportunities to learn how to listen to others, acknowledge and respect diverse points of view, collaborate with peers to solve problems, and interpret and understand the world in complex ways. By working with their peers in group settings, the children can place themselves in their peers' shoes. They can explore different points of view and develop an understanding of how others process the world around them. Group work also encourages children to work together with peers to solve complex problems.

The child-centered nature of the Reggio Emilia approach enables children to develop their self-regulation and develop empathy by directing their own learning and experiences in the classroom. By exploring the classroom setting, children can interact with their peers, leading to the progression of their social and emotional development (Arnott, 2018). Hong et al. (2017) examined the use of Reggio Emilia inspired learning groups and the development of relationships through collaborative play between children with and without special needs. Among the social and cognitive benefits reported, the development of greater empathy for the children with special needs was seen as a key benefit. Eisenberg (2010) observed a relationship between self-regulation and empathy-related responses in young children. When they felt safe with their peers and educators, children were more likely to take the necessary risks to advance their learning in the environment. Through the development of self-regulation, children are able to develop empathy for others, all living things, and the environment.

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The Reggio Emilia approach emphasises trusting relationships with children and their families to support children's self-regulation (Gandini, 2011). Self-regulation research highlights the need for supportive adults to help children co-regulate (Shanker, 2015). The following beautiful sentiment was shared by a parent and demonstrates the power of empathy and self-regulation in the development of personal identity and relationships with others.

> Self-liberation or trust in the self as a human being—a real person—can provide us with an invisible cloak of warmth and love which can be available anytime we need it, and as such it becomes part of the psychological nutrients required for the journey 'to experience love, empathy, and hope' through and within our many systems of interacting and relating to other people.

Final thoughts: Reflections on self-regulation and empathy in action at Reggio Emilia

By way of conclusion, we leave readers with some examples of self-regulation and empathy in action as observed during trips to Reggio Emilia, Italy, by the first and third authors, Sonia and Kelsey, as part of their participation in research study tour groups. The purpose of these trips was not to study self-regulation or empathy explicitly, but to observe interactions among children in Reggio schools. The trips helped clarify the connections between self-regulation and empathy for our authors and we feel they are important to share so that readers can understand the link between the Reggio approach and the development of empathy in young children, from a self-regulation perspective.

On a recent visit to a Reggio preschool in Italy, Sonia observed and documented the following interaction:

> Two children were about to embark on [constructing] a clay masterpiece. The atelierista (an educator with an arts background) had just finished a rich conversation with the children about structures and free-standing buildings

> in their community. The children had sketched their ideas onto paper and were ready to create a three-dimensional clay representation of their city. As the two children picked up the set of wooden handles connected by what appeared to be a thin wire, they began to slice through a chunk of clay. Back and forth, they methodically sliced through the rectangular slab. At one point they were stuck and couldn't cut through the remaining clay. One child released the handle and put pressure on the wire to finish the cutting. As a result, he cut himself and at the first sight of his blood, he began to cry inconsolably. His friend immediately dropped her side of the handles and ran to assess the situation. Rather than approaching the teacher who was several feet away working with another group on a different project, she quickly scanned the room, ran to the tissue box, and proceeded to apply tissue directly to the wound. She then consoled her friend by saying, "Starai bene…è solo un piccolo taglio. Ti sentirai meglio subito dopo aver messo una benda su di esso. Una volta mi sono tagliato su un pezzo di carta e sembrava proprio così." (Translation: Don't worry. You'll be okay. It is just a little cut. You will feel better once I put a bandage on it. One time I also cut myself like this on a piece of paper.) Her words were followed by a gentle pat on her friend's back.

The 4-year-old girl did not deem it important to notify the teacher about her friend's injury, but instead demonstrated empathy in her response of care and concern. She proceeded to soothe her friend in a gentle voice and with a kind gesture (patting the shoulder). Additionally, she tried to bring her friend back to calm by sharing her similar experience (cutting her finger on paper) and reassuring him that all would be well again. There is a wonderful freedom in Reggio classrooms where children are invited to explore the possibilities for learning, engage with a variety of rich materials, exercise independence through choices, and co-construct their learning alongside the capable and curious peers in their environment. Inquiry-based learning, a foundational element of Reggio classrooms, beautifully lends itself to the development of self-regulation because children are given multiple opportunities to develop a wide repertoire of skills in small groups. In a Reggio environment, children are observed taking risks, exploring, asking questions, seeking answers, working on projects with groups of peers (thereby providing extensive opportunities for empathy to develop), dramatising/role playing (thereby providing opportunities to place oneself in another's shoes—also contributing to the development of empathy) and, most importantly, are seen moving about freely, accessing different spaces within their schools.

On a second visit to a nearby Reggio preschool, situated close to the Loris Malaguzzi Center, Sonia was engaging with a child and his friend who were collaborating on a piece of artwork together. The following was documented:

> As she probed and asked questions about the elements of their collaborative piece, she noticed a frown on one child's face, indicating perplexity at her accent (she was speaking in a Molisan dialect, a region in central Italy). She paused to excuse herself for her "broken Italian" and the four-year-old boy responded, "No need to apologise. It really is okay and you are doing fine. My parents are Neopolitan too so I understand. You should hear them speak! They sound a little different from you. I can at least understand you, but I can't really understand them when they begin conversing in the town dialect. You're okay and besides I don't speak English so thank you for speaking in Italian." She smiled and thanked the young boy for his understanding and she proceeded to explain that she was Canadian (not from Naples), which fascinated this youngster who assumed that Canadians only spoke English. The conversation led to a rich dialogue about Italian immigration to Canada that had occurred in the 1960s.

Sonia felt safe and secure to express herself freely with this young child because he provided the reassurance she needed that she was "doing fine" despite her self-consciousness. Throughout the trip, she was extremely self-conscious about communicating in her second language; however, the empathy, care, and compassion demonstrated by this child gave her a newfound confidence. She proceeded to share the story with his teacher who exclaimed, "That's Giacomo. He's kind, considerate, and very understanding. He reassures everyone around here."

On her trip to Reggio, Kelsey observed the following interaction:

> Two children were playing in the piazza of the school (the entrance/large meeting point in a school) near a large set of stairs. One of the children, Pietro, showed fear and resistance to climb the stairs due to what looked like a challenge with his mobility, more specifically the movement of his legs. He would approach the stairs and then turn back. This happened several times, and one could immediately understand that he was in the process of developing the courage to climb the stairs. The other child, Salvatore, who seemed to have a very close connection to his peer, noticed him struggling. Instead of leaving his friend and continuing to climb the stairs, he turned

> around and went back to help him. Salvatore started to interact with his friend and then proceeded to walk up a few stairs, continuously turning back in what looked like a game of tag. This made Pietro laugh and attempt to chase after his friend by climbing a few of the stairs. When Pietro started to get close, Salvatore would run up a few more stairs, but never too far that Pietro lost interest in the game. This game of tag continued until both boys reached the top of the stairs, sharing smiles and laughter.

Kelsey witnessed this interaction while viewing a video played by two Reggio educators exploring the inclusion of children with special needs in the learning environment. The close connection shared between the two boys was evident throughout their interactions. Although there was a language barrier that prevented the third author from understanding their verbal interactions, she could feel the amount of trust they had in each other by observing their body language. Salvatore noticed Pietro struggling and took it upon himself to help his friend overcome his fear. He did this by turning the fearful activity into an enjoyable one by making it a game for Pietro. Salvatore interacted in such a caring, nurturing, and enjoyable way that helped Pietro overcome his fear so that he could explore the possibilities inherent in climbing stairs.

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AUTHOR PROFILE

Sonia Mastrangelo, PhD, Associate Professor, Lakehead University, Orillia Canada

Dr. Sonia Mastrangelo is Assistant Dean and Associate Professor in the Faculty of Education at Lakehead University in Orillia, Ontario, Canada. Her areas of research include developmentally appropriate practice, self-regulation, critical disability studies, inclusive education, autism spectrum disorders, and cognitive-developmental systems theory. She is editor of the Journal of Applied Self-Regulation and Director of Research at the Applied Self-Regulation Knowledge Network. She holds multiple federally-funded research grants and has been engaged in international research collaborations with UNESCO, the Bahrain Society for Children with Behavioral and Communication Difficulties, and the Universidade do Sul de Santa Catarina in Brazil. Further information about Dr. Mastrangelo's research and publications can be accessed here: https://www.lakeheadu.ca/users/M/smastran

Email: smastran@lakeheadu.ca

Meridith Lovell-Johnston, PhD, Associate Professor, Lakehead University, Orillia Canada

Dr. Meridith Lovell-Johnston received her PhD in Education with a focus on Language and Literacy, in 2014 from the University of Alberta. She is an Associate Professor in the Faculty of Education at Lakehead University in Orillia, Ontario. Dr. Lovell-Johnston's areas of research include early childhood literacy development, instruction, and assessment, as well as educational technology. Dr. Lovell-Johnston's recent projects are in the area of humanizing online learning for adult learners and self-regulation and literacy for children in remote communities.

Kelsey Robson, PhD, Contract Lecturer, Lakehead University, Orillia, Canada

Kelsey Robson PhD, RECE. Dr. Robson's research interests include early childhood education, quality early learning approaches and environments, and child participation and voice in research. She has worked in various early learning settings and kindergarten programs in Ontario, Canada and is currently working as a contract lecturer at Lakehead University and the University of New Brunswick, instructing courses in the field of early education.

Norah Fryer, Rangi Ruru Early Childhood Education College, Christchurch, New Zealand

Norah Fryer is an advocate for teachers, children, and families. She is a retired faculty member of the Rangi Ruru Early Childhood Education College of Christchurch. For over forty years, she has been a member of teaching teams who have collectively had the courage to think differently, imagine, invent and try out different ways of supporting learners. Norah has discovered that the true meaning of holistic development is to value the uniqueness in everyone. Norah Fryer currently resides in Auckland.