# AN EVALUATION OF THE PATHS CURRICULUM IN THE CONTEXT OF THEORIES OF SOCIAL-EMOTIONAL DEVELOPMENT

by

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## Abstract

Experiencing trauma, particularly within the primary caregiving environment can have a negative effect on the development of social-emotional skills, particularly self-regulation in children. School success is dependent upon social-emotional skills making it important for schools to have programs that teach social-emotional skills. PATHS is a social-emotional learning program widely used in schools in Nova Scotia. The study examined whether PATHS is a good curriculum to use in schools with children who have experienced trauma using a framework based on research about social-emotional learning and the developmental needs of traumatized children identified by the Attachment Regulation Competency (ARC) model. In general, the PATHS curriculum introduces social-emotional skills in a manner that could be beneficial for all students, but additional supports would likely be needed to address the individual areas of competency and difficulty and build the necessary skills of children who have experienced trauma. Recommendations are about implementing PATHS in a real school environment.

# CHAPTER ONE: LITERATURE REVIEW

## Social-Emotional Learning

Social-emotional learning is important for promoting healthy functioning in children (Greenberg et al., 2003) and is the foundation of good mental health (Shulman, 2016). Strong social-emotional skills can positively affect academic performance (Durlak et al., 2011) and poor social-emotional skills can be a risk factor for adverse outcomes related to general functioning (January, Casey, & Paulson, 2011). Although, social emotional learning is widely studied there is no agreed upon definition. The definition created by the Collaborative for Academic, Social, and Emotional Learning (CASEL) is commonly referred to in research studies.

According to the Collaborative for Academic, Social, and Emotional Learning (CASEL), social-emotional learning (SEL) consists of the development and application of the knowledge, attitudes, and skills needed to understand and manage emotions, the ability to feel and show empathy, create and maintain positive relationships, set and achieve positive goals, and make responsible decisions (CASEL, 2013). Simply defined, social and emotional development is a child's ability to understand their own and others' feelings, control their own feelings and behaviours, and build relationships with other children and adults.

There are five core competencies of SEL: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (CASEL, 2013). Successful acquisition of these competencies requires learning many different skills that are developmentally based. CASEL describes the development of skills related to these

competencies across three age-levels: early childhood, middle childhood (elementary school-aged), and adolescence (see Table 1).

The five competencies are important in early life as they help children to function at home, at school, and in the community. The importance of social-emotional skills increases when children begin to spend more time with adults and other children outside of the home. These social-emotional skills help children to meet the demands of the classroom through helping them to be able to engage in learning and benefit from instruction (Denham, Brown, & Domitrovich, 2010). Social-emotional skills are

Table 1

*Development of Social-Emotional Skills by Age*

| | Early Childhood | Middle Childhood | Adolescence |
|---|---|---|---|
| Self-Awareness | ○ Learning Emotion vocabulary<br>○ Learning who are dependable people in one's life | ○ Learning values and morals<br>○ Developing personal goals<br>○ Understanding how one's brain works and learns<br>○ Understanding stress | ○ Understanding of one's own interests and career possibilities |
| Self-Management | ○ Managing anger, frustration and disappointment<br>○ Using calm technique<br>○ Turn taking<br>○ Being honest<br>○ Asking for help | ○ Organization<br>○ Planning ahead<br>○ Concentrating on a task<br>○ Managing anxiety<br>○ Dealing with embarrassment, failure, success, and envy. | ○ Developing courage<br>○ Managing mood swings<br>○ Learning how to navigate difficult conversations |

| | Early Childhood | Middle Childhood | Adolescence |
|---|---|---|---|
| Social Awareness | ○ Learning empathy<br>○ Being a good winner/loser<br>○ Learning and using manners<br>○ Reading emotional cues in others<br>○ Being kind<br>○ Responding to authority | ○ Learning to be responsible<br>○ Accepting differences<br>○ Dealing with peer pressure<br>○ Valuing others' strengths and differences<br>○ Understanding situational expectations | ○ Introducing acquaintances to each other<br>○ Understanding religious differences and gender<br>○ Maintaining a conversation |
| Relationship Skills | ○ Sharing<br>○ Initiating and joining play<br>○ Listening to others<br>○ Speaking with confidence<br>○ Asking questions | ○ Problem solving and working well with others<br>○ Repairing friendships<br>○ Respecting others<br>○ Managing conflict | ○ Motivating/persuading others<br>○ Giving feedback<br>○ Understanding gender differences |

| | Early Childhood | Middle Childhood | Adolescence |
|---|---|---|---|
| Responsible Decision-Making | ○ Following directions<br>○ Generating solutions to simple problems<br>○ Following rules<br>○ Accepting consequences of ones' choices | ○ Considering consequences and anticipating problems<br>○ Problem solving with others<br>○ Managing emotions during difficult problems<br>○ Dealing with peer pressure | ○ Standing up for your rights<br>○ Responding to persuasion<br>○ Dealing with contradictory messages |

Adapted from CASEL - Collaborative for Academic, Social, and Emotional Learning. (2017). *Social and emotional learning (SEL) competencies* Chicago, IL: Author. https://casel.org/wp-content/uploads/2017/01/Competencies.pdf

necessary to develop other skills such as self-control, sharing, following directions, paying attention, and identifying the emotions of self and others.

SEL competencies develop in a complicated set of interactions and settings from birth into adulthood. Relationships, social environments, informal interactions, and structured programs all influence social-emotional growth (Jones & Bouffard, 2012). The fundamentals of emotional development occur within a social context. A young child's world grows through the deep emotional connection with parents and caregivers (Shulman, 2016). A child's positive relationships with trusting and caring adults are the key to successful social-emotional development. According to attachment theory, relationships with supportive caregivers, portrayed through trust, responsiveness, and involvement, promote social-emotional development (Jennings & Greenberg, 2009). The importance of relationships continues into school because children do not learn alone but rather in collaboration with their teachers, peers, and families (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Therefore, schools have an important role to play in raising healthy children by fostering not only their cognitive development but also their social-emotional development.

Social-emotional skills are context dependent meaning an individual may have strong skills under one set of conditions but may need training and/or additional experience to demonstrate these skills in other conditions. Some examples of differing conditions would be school climate, school culture, interactions with adults or children, and the developmental needs of the child. For example, a child may have strong social-emotional skills when interacting with adults, but their social-emotional skills may be weaker with younger children or children their own age (Jennings & Greenberg, 2009).

Children are often expected to learn social-emotional skills in their home environment, but these skills can be taught through any nurturing and caring learning experience or environment including school. These skills are very malleable and can be developed in early childhood but also into middle childhood, adolescence, and adulthood (Schonert-Reichl, Kitil, & Hanson-Peterson, 2017). As students learn social-emotional skills, it is important that they have opportunities to practice and apply the skills in actual situations with peers and adults in school, with family, and within the community. It is beneficial for there to be partnerships between schools and families to ensure that there is consistency in the messages and experiences that children and adolescents receive in all settings (CASEL, 2013).

**SEL and Mental Health**

The field of SEL was developed in response to child development research, which showed the importance of enhancing social and emotional skills in children to promote healthy functioning and prevent the development of mental illness (Greenberg et al., 2003). As children move from infancy to early childhood, they quickly attain language, motor, and cognitive skills. During this time, children are also quickly developing social and emotional competences, and these skills are the foundation of good mental health (Shulman, 2016).

The majority of infants reach emotional developmental milestones successfully as a result of their biological disposition and a good-enough caregiving environment that supports their mental health (Shulman, 2016). Shulman (2016) has suggested that social-emotional skills may act as protective factors and reduce the probability of developing a mental illness. Early social-emotional skills include empathizing and reading others'

emotions, demonstrating pro-social behaviour, exhibiting interest in social play, acquiring self-regulatory mechanisms, and understanding self in relation to others. Adverse child, parent, and family interactions are a risk factor for negative outcomes in infant and early childhood mental health. These adverse familial interactions can contribute to developmentally inappropriate aggression in children.

Tantrums are a common part of toddlerhood but the prevalence of tantrums should diminish as the child develops other behavioural and self-regulation strategies. Physical aggression and tantrums usually peak at age three (Alink et al., 2006) and decline in the early preschool years (Tremblay et al., 2005). The decline in aggressive behaviour may be due to increased inhibitory control and self-regulatory strategies, the ability to understand others' feelings, and the ability to use language to negotiate interpersonal challenges. Tantrums and aggression can become pathological problems in childhood. This is more likely to happen for children who experienced less than optimal caregiver responsiveness or did not have their emotional needs met when they were infants (Shulman, 2016). An infant who has their emotional needs met learns that life is predictable and negative emotions are temporary. When a caregiver uses strategies to help soothe the infant, then the infant learns to use these strategies independently to help regulate their own emotions and inhibit their own behavioural responses. The infant learns to self-soothe when possible but also knows if they are unable to self-soothe, their reliable caregiver will help them to regulate their emotions. When a child is able to self-soothe and regulate their emotions, they can behave age appropriately and inhibit behaviours not appropriate within a setting. Inhibition of behaviour is a building block for social-emotional development in the first years of life and without this ability a child may

exhibit more tantrums and aggression. When the emotional needs of an infant are not met, the infant may not develop the ability to inhibit their own behaviour appropriately.

**SEL and School Behaviour**

Social-emotional skills can help or hinder a child's academic engagement, work ethic, commitment, and ultimately school success (Durlak et al., 2011). Poor social-emotional skills adversely affect performance in a classroom, but they are also a risk factor for other adverse outcomes related to general functioning (January, Casey, & Paulson, 2011). Children who show less pro-social behaviour have more difficulty forming and maintaining positive relationships with peers and adults which can create and maintain a cycle of behavioural and relational difficulties (Birch & Ladd 1998).

Some children with less-developed pro-social skills may show more aggressive or overactive behaviour. These behaviours can lead to higher levels of conflict and lower levels of closeness in teacher-child relationships in kindergarten and first-grade. Children in the early grades who had difficulties with pro-social behaviour also show increased levels of aggressive behaviour by the end of the school year (Birch & Ladd 1998; Doumen et al., 2008). Teacher–child conflict and aggressive behaviour in children who lack pro-social skills both show high stability from the first months of kindergarten if there is no intervention. For this reason, it is important for social-emotional skills interventions to begin when children start school (Doumen et al., 2008).

**Teachers' Social-Emotional Competence**

Teachers must have a general understanding of social and emotional development, what skills are developmentally appropriate for students at each grade level, and how they relate to academic learning. It is important for teachers to have a

broad knowledge of social-emotional learning and associated pedagogy in order to model adaptive social-emotional skills in their behaviour and interactions with the students. If teachers do not have a pedagogical understanding of SEL they may inadvertently model behaviours that contradict the social-emotional skills they are trying to teach. School officials must question the false assumption that all educators naturally possess sufficient and equal levels of social-emotional competence. Just as children have varying levels of social-emotional competence, so too do adults (including teachers). Teachers need to be given opportunities to develop their own social-emotional skills so they can build their self-awareness and self-regulation skills to ensure they are modeling developmentally appropriate behaviours.

Jones, Bouffard, and Weissbourd (2013) found that teachers' social-emotional competence strongly influences the learning environment as well as the level of integration of SEL into schools and classrooms. It is not enough for the teacher to have knowledge of SEL; they must also have strong social-emotional competence (Schonert-Reichl, 2017). Teachers must understand that the behaviour they model teaches social-emotional concepts and skills as much, if not more than, the curriculum does. Socially and emotionally competent teachers know how to manage their emotions and their behaviour and also how to manage relationships with others even when emotionally aroused by challenging situations. They can set limits in a classroom that are firm but respectful without being rigid and can embrace the uncertainty that arises when students are given the opportunity to solve problems independently (Jennings & Greenberg, 2009).

Jennings and Greenberg (2009) propose that teachers with greater social-

emotional competence will be more effective in teaching a SEL curriculum because they are good role models for desired social-emotional behaviour and they create a more positive classroom climate. Socially and emotionally competent teachers have high self-awareness giving them the ability to recognize their own emotions and capabilities. They can use this knowledge to help motivate themselves and others (Jennings & Greenberg, 2009). Socially and emotionally competent teachers also have high social awareness. Their ability to recognize and understand the emotions of others helps them to build supportive relationships with students, parents, and colleagues, understand different perspectives, and use their skills to effectively diffuse conflict situations (Jennings & Greenberg, 2009).

It is important to acknowledge that there are many factors that may affect a teacher's social-emotional competency. Within the school these factors could include colleague and administrative support, in-service opportunities, school climate and work demands. Personal relationships and level of stress in their personal life might also affect a teacher's social and emotional competency within the classroom (Jennings & Greenberg, 2009).

**Social-Emotional Competence and Teacher Stress**

Research shows that teaching is one of the most stressful professions (Montgomery & Rupp, 2005). Teachers can experience stress when a situation is emotionally challenging and they have a limited ability to change or improve it (Schonert-Reichl, 2017). The stress can increase when a teacher has limited options for self-regulation during a situation that provokes a strong emotional reaction (Jennings & Greenberg, 2009). An example of an emotionally challenging experience is trying to

manage dysregulated children who are feeling angry, anxious, or sad. When a teacher becomes highly aroused due to an emotional situation in a class they often lack the support that would be required to allow them to leave the room or take a few minutes to themselves to calm down because they need to stay in the situation to supervise the students in question.

Having to cope with students' negative emotional responses is a major stressor for teachers (Montgomery & Rupp, 2005). A teacher's ability to manage the stressful situations that arise in their classroom is influenced by individual characteristics such as personality, demographics, personal life stressors, and social-emotional competence. When teachers lack the social-emotional competence to handle classroom challenges, they experience emotional stress, which can have an adverse effect on job performance. This emotional stress can lead to less effective classroom management, a suboptimal class climate, emotional exhaustion, a lack of feeling of personal accomplishment, and eventual burnout (Jennings & Greenberg, 2009). Teachers who report higher levels of stress also tend to have more students with mental health problems in their class (Oberle & Schonert-Reichl, 2016).

Strong social-emotional competence helps teachers manage stressful events that arise during the school day and helps them to model healthy reactions to these events (Jennings & Frank, 2015). Improvements in classroom climate, through strong social-emotional competence of the teacher, may enhance teacher enjoyment, efficacy of teaching, and commitment to the profession, which may reduce teacher burnout. When teachers identify themselves as mastering social and emotional challenges, they report teaching to be more enjoyable, identify themselves as more effective teachers, and are

better able to cope with the complex demands of teaching (Sutton & Wheatley, 2003).

**Teachers and Relationships**

Attachment theory was developed based on research about parent-child relationships, but it has also been applied to understand the importance of interactions between teachers and young students (Williford & Sanger Wolcott, 2015). A warm and supportive teacher-student attachment is theorized to provide the student with the emotional support necessary to engage in the learning environment and gain academic, behavioural, and social-emotional skills (Pianta, 1999). Supportive relationships with teachers can help children feel safe and provide them with the social support necessary to thrive socially, emotionally, and academically. Merritt, Wanless, Rimm-Kaufman, Cameron, and Peugh (2012) suggest that an emotionally supportive relationship with a teacher that includes warmth, encouragement, and comfort can improve children's social behaviours and self-regulatory skills, and reduce behaviour problems.

Emotionally supportive teachers are warm and kind, sensitive to social and emotional needs, and thoughtful in their responses to children. They do not use controlling behaviours or sarcastic language, criticize students, or use punishment driven forms of discipline. When children are feeling angry or are misbehaving, an encounter with an adult who is rigid and punitive will likely make the behaviour problems worse. A teacher who listens to the student's perspective and offers warmth and support is more likely to be able to calm the student (Merritt, Wanless, Rimm-Kaufman, Cameron, & Peugh, 2012). Regardless of socioeconomic risk, children who are in more emotionally supportive classrooms show lower levels of aggression and more behavioural self-control than students in less supportive classes. Students who perceive their teachers as being

caring and respectful and providing emotional support are less likely to misbehave in class (Bear & Watkins, 2006).

Students in all grades can benefit from teacher support, but for younger children teacher support is especially important because experiences with their teacher can affect future relationships with teachers and peers (Jennings & Greenberg, 2009). Roorda, Koomen, Split, and Oort (2011) reported that positive teacher-student relationships were extremely important for children who were academically at risk, particularly academically at-risk students from disadvantaged economic backgrounds, and children with learning difficulties. Positive relationships can be especially important for children who display behaviour problems because these children are more likely to have a history of conflictual relationships with their teachers.

Research indicates that students' supportive relationships with their teachers promote positive long-term developmental outcomes, including improved academic outcomes and reduced problem behaviour (Williford & Sanger Wolcott, 2015). When students feel they have an inadequate or conflictual relationship with a teacher it can lead the student to have a dislike or fear of school and to feel alienated and disengaged (Jennings & Greenberg, 2009). Furthermore, the student may feel less motivated to behave pro-socially (Birch & Ladd, 1998). Although changing the teacher-student relationship has been shown to affect long-term academic and behavioural outcomes, less experimental work has explicitly measured how teacher-student interventions affect children's development of SEL skills (Williford & Sanger Wolcott, 2015).

Teachers identify social-emotional skills as an avenue to improve relationships with students. Ninety-four percent of teachers in an American survey predicted teaching

social-emotional skills would probably or definitely improve relationships between teachers and students (Bridgeland, Bruce & Hariharan, 2013). Students who have high quality relationships with their teacher are more likely to ask for help to solve interpersonal problems and actively engage in their learning (Williford & Sanger Wolcott, 2015). When there are high-quality teacher-student relationships, students use their teacher as a resource to solve problems, engage more actively in learning activities, and better navigate the demands of school. When teachers perceive an emotional connection with students they are more responsive to the students and better able to help their students with their problems and concerns (Williford & Sanger Wolcott, 2015).

Interventions that focus directly on the quality of teacher-student relationships may be a helpful additional or alternative intervention to skills-training approaches. Hughes, Cavell, and Wilson (2001) found that when a teacher has more positive interactions with a student, the student's classmates might be more likely to view the student and their behaviour in a positive light. Teachers are more likely than other students to control their level of conflict and provide support to challenging children. Although the teacher may still need to correct these children's behaviours, the teacher could also ensure that they model positive regard for the student through positive comments and interactions. School policies that pay close attention to cultivating relationships between parents and teachers can also help to enhance social-emotional skills and reduce negative interactions between teachers and students (Doumen et al., 2008).

**Classroom Management**

Bridgeland et al. (2013) reported that 57% of teachers believe poor student

behaviour is at least somewhat of a problem. Teachers who work in schools where there is little emphasis on SEL are more likely to report behaviour problems than teachers who work in schools with more emphasis on SEL programs. The majority of teachers who reported behaviour as a problem in their classroom believe that SEL would improve student performance.

A teacher who has a high level of social-emotional skills can develop supportive teacher-student relationships. These relationships give the teacher a better understanding of the contributing factors for students' challenging behaviour making them more likely to show concern and empathy and more likely to teach the student self-regulating techniques rather than reacting punitively. Teachers with strong social-emotional skills show more effective classroom management strategies. They are more likely to be proactive in managing students' behaviour because they understand the dynamics of the classroom's conflict situations (Jennings & Greenberg, 2009).

Social-emotional skills likely influence teachers' classroom organization and management. Imposing rules on students rather than helping students to self-regulate is often easier for teachers. Helping students to self-regulate requires the teacher to have strong social-emotional skills to observe, understand, and respond respectfully and effectively to student behaviours (Jennings & Greenberg, 2009). Discipline problems during the school day take teachers away from teaching to deal with behaviour, which can lead to more teacher exhaustion and more difficulty managing the classroom as a whole (Milkie & Warner, 2011).

Teachers are constantly modeling social-emotional skills for their students both intentionally and unintentionally. Students watch their teachers and notice how they

manage their frustrations and maintain control of themselves and the classroom. Students also learn from the way teachers handle students who have weaker social-emotional skills (Jones et al., 2013). When teachers model sensitive responses, the other students in the class can learn how to help their classmates who feel upset or angry. A teacher who is sensitive and responsive to their students may implicitly teach behavioural self-control through their interactions with students. This positive environment can make students feel better understood and result in less aggressive behaviour (Merritt et al., 2012).

**SEL and Teaching Environment**

Classrooms can be stressful places for children because they often face new and difficult demands (Milkie & Warner, 2011). In addition to the stress, they also lack the autonomy to opt out of difficult demands within the classroom. A child's interactions with their teacher are one of the main aspects of the school experience. In classrooms with warm teacher-child relationships, children are more willing to take risks with academic material and persist at difficult tasks (Merritt et al., 2012). In contrast, teachers who assume that student failures are a result of laziness or deviance, rather than academic or emotional need, are unlikely to provide the instructional or emotional support needed (Sutton & Wheatley, 2003).

Teachers do much more than deliver curriculum. They set the tone for the whole classroom through building supportive relationships, designing appropriate lessons, implementing behavioural guidelines, and helping students navigate conflict situations. They are always juggling the social-emotional dynamic of their students to try to meet all of the needs of all of the students in their class (Jennings & Frank, 2015). Teachers are role models who continuously induce and respond to the emotional reactions of their

students (Jennings & Greenberg, 2009). Social-emotional skill development can only happen in a safe, caring, supportive, and well-managed environment that supports students' development through teacher modeling and student practice (Schonert-Reichl, 2017).

**Schools Role in Social-Emotional Development**

Social-emotional learning is sometimes called the missing piece in education because while it is linked to school success, it had not been given much attention nor had SEL related learning outcomes been explicitly stated in curriculum documents until recently (Schonert-Reichl, et al., 2017). Due to limited time and resources, the focus of school has traditionally been on academic performance rather than social-emotional development (Durlak et al., 2011). In the past, children learned social and emotional skills from their families and communities. These skills are now often not being taught at home, so it is an area of potential growth for children and needs to be taught in schools (Bridgeland et al., 2013). Children spend a significant amount of time in school and schools have an important role to play not only in the healthy development of cognitive skills but also social-emotional skills. Schools have to prepare students for the complex, global community where there is a need for social-emotional skills such as problem-solving, critical thinking, communication, collaboration, and self-management (Schonert-Reichl et al., 2017).

**SEL Program Implementation**

Jones and Bouffard (2012) claim SEL programs are rarely implemented in schools in a meaningful and sustained manner nor are they embedded into the everyday interactions of students, educators, and staff. Social-emotional learning needs to be

integrated into everyday interactions to be effective. Schools cannot meaningfully teach social-emotional skills in disjointed time blocks in the school schedule. Social-emotional skills develop through real life social challenges that create real life teaching opportunities. It is important for students to not only learn about social-emotional skills through curriculum but also to have opportunities to practice and apply the skills in actual situations. Teachers need to model these skills and make it a priority to recognize students when they use these skills effectively. School administrators need to support the implementation of SEL programs through modeling the language and practices established in the classroom throughout the school and by providing the staff with the necessary professional development (Kam, Greenberg, & Walls, 2003).

The quality of the SEL program implementation is dependent upon a school's preparation and staff members' commitment to training and implementation. When school districts are committed to high-quality program implementation, the SEL programs are more effective (Durlak et al., 2011). Poor program implementation can undermine a program's success, which results in less of an effect on student outcomes and targeted skills (CASEL, 2013; Durlak & DuPre, 2008).

Some problems with implementation of SEL programing in schools may come from the different ways that researchers and teachers think about these programs. Researchers consider them interventions. Therefore, they place a high priority on fidelity (i.e., consistency of program delivery). Teachers view the programs as curriculum. A teacher's focus is on meeting the needs of the students in the class, which may mean modifications to the curriculum without consideration about importance of program fidelity. Teachers can be taught to implement programs with greater fidelity when they

are given training prior to implementation and when they receive ongoing support (Jennings & Frank, 2015).

Not all intervention programs are equally successful in improving the social-emotional skills of children. It is important that school staff is given the information needed to make an informed decision before implementing a new SEL program. The school staff needs to consider what program would best fit the needs of their school and identify their intended goals of the program. It is also important for the staff to be given the tools to evaluate the program to ensure it will be beneficial in the long term (Wandersman & Florin, 2003).

Research has been conducted to determine characteristics of effective SEL programs. School staff could use this information to help them evaluate programs and decide which program would be best for their school. January et al. (2011) found school interventions that are longer in duration and use experiential approaches, such as role-play, are more effective. Recommended principles of effective SEL programing include: continuity and consistency to develop social-emotional skills; interdependence among social, emotional, and academic skills; development of social-emotional skills in social contexts; and classrooms and schools operating as systems (Jones & Bouffard, 2012). Durlak et al (2011) discuss the four recommended practices related to social-emotional skill development that form the acronym SAFE. The program should include skill progression (sequenced), role-play and active learning (active), sufficient time for learning to occur (focused), and clear and specific learning goals (explicit).

**SEL and Pre-service Teaching Training/Professional Development**

Pre-service teacher training and in-service teacher professional development focused on social-emotional learning helps teachers to understand the key SEL concepts and theories. Teachers could benefit from learning about a variety of components of SEL. These include: the developmental process of social-emotional skills and the needs of students at different ages; the relationship among emotion, cognition, and behaviour; how to develop effective and caring classroom management; and how to create lesson plans that integrate SEL principles and meet the social-emotional needs of the students in their class (Jennings & Greenberg, 2009; Schonert-Reichl, Hanson-Peterson, & Hymel, 2015). When teachers understand the development of social-emotional skills, they are better able to design and implement learning opportunities for students that enhance social, emotional, and academic competence and outcomes (Rimm-Kaufman & Hamre, 2010).

Unfortunately, teachers are often not given training about SEL. Most teacher education programs spend little to no time teaching pre-service teachers the knowledge and skills they need to foster students' social-emotional skills (Jennings & Greenberg, 2009; Jones & Bouffard, 2012;) or cultivating pre-service teachers' own social-emotional competence and well-being (Schonert-Reichl et al., 2015). An American survey found that SEL training for in-service teachers is also lacking in many schools but that the majority of teachers reported being interested in receiving further SEL training. The teachers most interested in more SEL training were those with fewer than ten years experience. These teachers will be teaching for many more years and can share their SEL skills and knowledge with students throughout the remainder of their career. This would make SEL training for younger, interested teachers, a particularly good investment for

school boards (Bridgeland et al., 2013).

SEL curricula are primarily focused on teaching students social-emotional skills and do not provide explicit instruction to promote the social-emotional literacy of the teachers (Jennings & Greenberg, 2009). Educators typically receive minimal training and support for implementation of SEL programs and how to effectively support students' social-emotional development. SEL programs focus on building the social-emotional skills of the students, but the professional development for teachers varies in terms of what is mandatory, recommended, or optional in order to be able to implement the program (Jennings & Frank, 2015). The lack of pre-service and in-service training to support teachers in learning about SEL and enrich teachers' social-emotional skills demonstrates that the educational system assumes teachers have the social-emotional knowledge and skills to teach SEL curriculum, create a nurturing learning environment, be emotionally responsive to students, model emotional regulation, and handle the challenging behaviours of disruptive students (Jennings & Greenberg, 2009).

Staff members other than teachers, such as bus drivers, cafeteria staff, and playground monitors, receive even less SEL training and support even though these individuals interact with children during social times when there is a higher demand on the students to use effective social-emotional skills and strategies (Jones & Bouffard, 2012). School psychologists can be used as a resource to help teachers and other staff members understand how their daily interactions with children support development of social behaviours and give feedback on ways to establish and maintain warm and responsive schools (Merritt et al., 2012).

**SEL Benefits**

Durlak et al. (2011) conducted a meta-analysis of 213 school-based SEL programs involving 270,034 kindergarten through high school students. These school based social-emotional programs were found to have positive effects on targeted social-emotional skills and attitudes about self, others, and school. These effects include gains in social-emotional skills, attitudes, positive social behaviour, and academic performance, as well as, reduced student disruption and emotional distress. Sklad, Diekstra, De Ritter, Ben, and Gravesteijn (2012) conducted a meta-analysis of school based social, emotional, and/or behavioural programs and concluded that these programs resulted in improvements in social and emotional skills, positive self image, prosocial behaviour, and academic achievement and they were also associated with a reduction in or prevention of antisocial behaviour and mental health disorders.

Taylor, Oberle, Durlak, and Weissberg (2017) reviewed 82 school-based SEL interventions involving 97,406 kindergarten to high school students. The studies included in this meta-analysis collected follow-up outcomes ranging from 6 months to 18 years post intervention. They found that the SEL interventions reviewed in their study had benefits affecting positive and negative indicators of well being. There was significant improvement in social-emotional skills, positive attitudes, pro-social behaviour, and academic performance. These programs also protected against the development of problems such as conduct problems, emotional distress, and drug use. Enhanced skills in students, rather than attitudes about SEL, predicted long-term follow-up effects. Significant positive effects continued to be demonstrated for almost four years following program participation. A subset of the studies collected data up to 18 years post

intervention. These studies reported positive outcomes such as improving future social relationships, increasing high school graduation rates and college attendance, and reducing later negative outcomes such as arrests or clinical disorders. These types of outcomes have small effect sizes but show practical advantages of the intervention. Effect sizes were generally modest even for the most promising SEL interventions. They may be negatively affected by a wide variation in implementation quality including spending the necessary time on SEL programming in schools (Jones & Bouffard, 2012).

**Who Benefits from SEL?**

Social-emotional skills have the potential to enhance positive development for all youth and the goal of school-based approaches is to reach all students rather than targeting specific subgroups. SEL programs have been demonstrated to be of benefit to students in preschool, elementary school, middle school, and high school, although few studies have examined effectiveness in high school populations (Durlak et al., 2011). January et al. (2011) found that interventions with preschoolers and kindergarteners were more effective than interventions with other grades suggesting early intervention could help prevent negative behaviour and increase positive outcomes. There is an additional peak in effectiveness in early adolescence when social needs are different from those in childhood. Young adolescents become more aware of social relationships and want these relationships to be positive so they may have more interest in SEL interventions at that time and their interest may help to make these interventions more effective (January et al., 2011).

Multiple meta-analyses have found social-emotional programs to be beneficial for children from a variety of nations and cultural contexts (Sklad et al., 2012;Taylor et al.,

2017) and with varying socioeconomic status (January et al., 2011; Taylor et al., 2017). Although SEL programs have been found to be effective for students with varying demographics it does not mean that all programs will be effective for all students.

**Economics of Social-Emotional Learning**

When implementing new programing in schools there is often concern about the cost. Most SEL programs do have up-front costs such as program materials, teaching time, and training time, but research shows that participating students and society can benefit from the long-term cost savings achieved by SEL programs. The monetary benefit of SEL programs differ among interventions depending on the goals of the program and the measurability of the benefits; however, Belfield et al. (2015) found that on average for every dollar invested in SEL interventions there was an economic return of eleven dollars. This economic return occurs through individual and societal benefits including increases in social competence, academic gains, improvements in mental health and bullying prevention. Saving the economy money through the reduction of alcohol and drug use, delinquency, aggressive behaviour and sexually risky behaviour also contributes to the economic return of SEL interventions. It is also possible that schools without a focus on social-emotional skills would incur greater costs due to the need for heightened security and greater student support.

One of the difficulties with studying the financial impact of SEL program is most monetized outcomes (e.g. increases in wages, payment of taxes) or reductions in the need for public expenditure (e.g. reducing the likelihood of committing a crime) do not occur until adulthood. As a result, there is usually a long period of time between the implementation of the intervention and most observable economic benefits from an

effective elementary school SEL program (Jones, Greenberg, & Crowley, 2015). The full economic value of SEL has not yet been established. The actual benefits may be considerably higher than estimated as not all of the benefits of SEL programs can be fully measured and converted into monetary measures of their benefits (Belfield et al., 2015).

**PATHS**

One SEL curriculum that is commonly used in Nova Scotia is PATHS. PATHS stands for Promoting Alternative THinking Strategies. It is a curriculum designed to help with the development of self-control, positive self-esteem, emotional awareness, and interpersonal problem solving. The curriculum consists of 119 lessons and was designed to be used with elementary age children with the purpose of enhancing social and emotional competence and understanding in children and creating a caring prosocial environment in the classroom (Kusche & Greenberg, 1994).

The foundation of the PATHS Curriculum is a theoretical model called the ABCD (Affective-Behavioral-Cognitive-Dynamic) Model of Development. According to the ABCD Model of Development, individuals are most likely to reach their potential when there is a developmental integration of feelings (and emotional language), behavior, and cognitive processes. The ABCD Model proposes that to fully understand one's own behaviors, those of another person, or interpersonal interactions, it is necessary to consider emotions, thoughts, and communication skills (Kusche & Greenberg, 1994).

The curriculum has six volumes that cover four conceptual units: readiness and self-control unit, feelings and relationships unit, problem solving unit and supplementary lessons unit. All of the units consist of one volume with the exception of the feelings and relationships unit, which consist of three volumes. Each new unit builds hierarchically

upon and reinforces the learning from preceding lessons. The five major conceptual domains of the program are: self-control, emotional understanding, building self-esteem, relationships, and interpersonal problem solving. All of the conceptual domains have a variety of sub goals that depend on the developmental level and needs of the children receiving instruction. PATHS is created to be flexible so that teachers can use their own teaching styles and discretion. The curriculum is developmentally appropriate and lets the teacher pace the lesson based on the needs of their students. When PATHS was created, attempts were made for it to be sensitive to all ethnicities and cultures but the creators acknowledge that adaptations may be necessary, at times (Kusche & Greenberg, 1994).

The focus of the PATHS Curriculum includes helping to create the dynamic relationship between cognitive-affective understanding and real-life situations. The curriculum is created to encourage children to feel internally motivated to make responsible decisions because they understand why it is important. It helps the children to develop an internal instead of external basis for self-control, interpersonal interactions, and decision making. The program creators claim when PATHS lessons are taught and become a regular part of the school day, teachers focus less time and energy on correcting children's behaviour (Kusche & Greenberg, 1994). PATHS has been shown to be effective as a prevention and an intervention program in special needs and general education classrooms (Greenberg, Kusché, Cook, and Quamma, 1995).

## Trauma

One factor that can have a strong negative impact on an individual's social-emotional skills is the experience of trauma. The American Substance Abuse and Mental Health Services Administration (SAMHSA) defines psychological trauma as something

that “results from an event . . . or set of circumstances . . . experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, or spiritual well-being” (2014, p. 7). The experience of trauma is subjective. One individual may experience an event as traumatic while another person would not view it in the same way. People have different internal and external resources and challenges that influence whether a potentially traumatic event has a lasting impact. When the amount of stress experienced by an individual exceeds the individual’s ability to cope or understand the emotions needed for that experience, the result would be psychological trauma (Blaustein & Kinniburgh, 2010).

Psychological trauma can be classified as simple trauma or complex trauma with each affecting the individual differently. Simple trauma involves experiencing events that are perceived as having the potential to cause serious injury or death. Simple trauma can be overwhelming and painful, but it is usually due to a single incident such as a car accident, house fire, or hurricane. In contrast, complex trauma generally includes multiple events that occur over a longer period of time. Experiences related to complex trauma are often chronic and occur in childhood or adolescence. Complex trauma is most often interpersonal in nature, meaning it happens within a trusted relationship (Australian Childhood Foundation, 2010). Complex trauma most often occurs within the family unit or within the primary caregiving environment. Experiences related to child maltreatment including emotional, physical, or sexual abuse, neglect, and witnessing domestic violence might result in complex trauma. Ongoing negative experiences related to parental mental illness or poverty, or the loss of a significant caregiver can also result in complex trauma.

Negative experiences can be particularly damaging to young children when they are happening within the family because family is meant to be a source of safety and stability in a child's life (Cook, Blaustein, Spinazzola, & van der Kolk, 2003).

It is difficult to report a prevalence rate for children who have experienced trauma because so many different kinds of events can be traumatic and many factors contribute to whether an event is perceived to be traumatic. Accurate statistics about complex trauma, which can have the most lasting effect, can be particularly difficult to determine because complex trauma commonly occurs within the family unit and is often not reported. The 2014 General Social Survey in Canada found that one-third of individuals aged 15 and older reported experiencing some form of child maltreatment before age 15. In this survey, child maltreatment was defined as physical and/or sexual abuse by someone aged 18 or older, and/or witnessing violence by a parent or guardian against another adult. This rate is even higher in what Statistics Canada referred to as Aboriginal people where 40% reported experiencing childhood physical and/or sexual abuse. Only 7% of individuals who reported experiencing maltreatment as a child indicated that they had contact with either the police or child protection services about the abuse (Statistics Canada, 2017). In Felitti et al.'s (1998) Adverse Childhood Experience Study, which examined stressors experienced prior to age 18, 52% of respondents reported experiencing at least one traumatic stressor and 6% reported experiencing four or more traumatic stressors. These stressors include psychological, physical, or sexual abuse; violence against the mother figure in the household; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned (Felitti et al., 1998). Exposure to complex trauma in childhood carries an enormous cost to society.

Although in many ways the costs are inestimable, the repercussions of childhood trauma may be measured in medical costs, mental health utilization costs, societal cost (e.g., incarceration, child protection services, loss of productivity etc.), and the psychological toll on its victims (Cook et al., 2003).

A child's family plays an important role in how a child adapts after a traumatic event. Some factors that affect the child's response include whether the family environment was part of the victimization and how the parent(s) respond to the traumatic event or disclosure. Family support is a key factor in how the child adapts to the experience of trauma and can enhance or impede a child's ability to successfully move past the trauma. The reactions of children to painful events are largely determined by how calm or stressed their parents are. If a parent does not acknowledge that the trauma occurred then the child feels the need to also act as if it did not happen. When the caregiver does not believe the child then the child is not protected from a reoccurrence. This lack of safety prevents the child from properly understanding the event and finding a way to cope with the event leaving the child feeling helpless and hopeless (Cook et al., 2003).

Children who have experienced trauma can have a lot of emotional and behavioural challenges that can present in variety of ways. One child who has experienced trauma may appear to be sad and have low self-esteem while another may be avoidant, anxious, and clingy. Yet another child could have difficulty with perspective taking and boundaries. Other children present as emotionally dysregulated, inattentive, impulsive, aggressive, and oppositional. A child who has experienced trauma could have delayed language skills or have difficultly processing information, remembering

information, and problem solving which makes learning difficult (Cook et al., 2003). These are just a few of the countless ways that a child who has experienced trauma may act. Many of the behaviours exhibited by a traumatized child are also consistent with symptoms of mental health diagnoses. This may be a reason why children who have experienced traumatic events are more likely to have higher numbers of mental health diagnoses (Porche, Costello & Rosen-Reynoso, 2016). A few of the most common diagnoses given to children who have experienced trauma are: Depression, Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), Conduct Disorder, Generalized Anxiety Disorder and Separation Anxiety Disorder (Cook et al., 2003).

A common diagnosis for adults who have experienced traumatic events is Posttraumatic Stress Disorder (PTSD). The DSM-5 diagnostic criteria for Posttraumatic Stress Disorder (PTSD) require the individual to have been exposed to an actual or threatened death, serious injury, or sexual violence. As a result of this traumatic exposure the individual has some intrusion symptoms, which can include unwanted upsetting memories, nightmares, flashbacks, or psychological distress after exposure to internal or external reminders, and physiological reactions after exposure to an internal or external reminder. After the trauma the individual tries to avoid memories, thoughts, or feelings, or external reminders that could invoke distressing memories, thoughts, or feelings. The individual may have negative cognitions and mood symptoms that begin or worsen including: inability to remember important features of the event; persistent and exaggerated negative thoughts and assumptions about oneself, others, or the world; persistent and distorted thoughts about the cause of the traumatic event that leads them to

blame themselves or others; persistent negative affect; decreased interest in activities; feeling detached from others; and persistent difficulty experiencing positive emotions. The individual may experience changes in arousal and reactivity that begin or worsen after the trauma. These include: irritable behaviour and verbal or physical aggression, risky or self-destructive behaviour, hypervigilance, heightened startle response, difficulty with concentration, and sleep disturbances. The diagnostic criteria for PTSD in children age 6 or under are similar to the PTSD criteria mentioned above with a couple of variations. The traumatic event does not need to happen directly to the child for the child to be diagnosed with PTSD. The event could have happened to their parent or caregiver and the child witnessed the event or learned about the event after it occurred. In children of all ages repetitive play about themes of the trauma or trauma-specific reenactment during play could be classified as an intrusion symptom even if the memory does not appear to be distressing to the child (American Psychiatric Association, 2013).

The DSM-5 diagnostic criteria for Posttraumatic Stress Disorder (PTSD) are similar to the SAMHSA definition of psychological trauma. In that both require a traumatic event to have occurred and long lasting adverse effects are present as a result of the trauma. Although a PTSD diagnosis may be given to adults and children who have experienced a traumatic event, many researchers and clinicians who work with traumatized children note this diagnosis does not consider the additional developmental effects of chronic trauma on children. These researchers and clinicians believe there is not currently a psychiatric diagnosis that adequately describes the many difficulties traumatized children may experience (Blaustein & Kinniburgh, 2010; van der kolk, 2014).

Mental health diagnoses are often made because a child exhibits behaviours that are consistent with the symptoms of one or more diagnoses. These diagnoses often account for a small aspect of the child's behavior but do not explain all of their trauma related behaviours. Without collecting an in-depth background history, a clinician may be unaware of the trauma background that could have contributed to the development of these behaviours. Collecting this type of background history can be very time consuming and sometimes does not happen for a variety of reasons. These reasons include, but are not limited to, the clinician not asking the right questions, a caregiver, such as an adoptive parent, not knowing all of the child's history, or a parent who is reluctant to share all of the relevant information.

A diagnosis, even if it is not all encompassing, can be helpful because it gives an explanation for some of the child's behaviours and may make it more likely the child will receive potentially helpful treatment. The diagnosis may not explain all of the symptoms but treatment, such as medication to help alleviate the symptoms, may not be accessible without a formal diagnosis. A diagnosis can also create some clarity for parents and/or school staff who are searching for a way to better understand the child's behaviour. Treatment based on the diagnosis may help to lessen some of the behaviours. A disadvantage of a diagnosis that does not examine alternate explanations, such as trauma, as the cause of the behaviours, is that the core difficulties experienced by traumatized children might not be addressed. When underlying trauma related issues cause the symptoms that lead to the diagnoses there can be long-term health effects. Adults who reported early traumatic events are more likely to have poor mental and physical health (Statistics Canada, 2017) and are at increased risk to develop drug and alcohol addictions

(Dube et al., 2003).

**Trauma and the Brain**

The brain is made of four main parts: brainstem, limbic system, diencephalon, and cortex. The brainstem regulates the basic life sustaining functions, such as body temperature, heart rate, respiration, and blood pressure. The diencephalon and limbic system are responsible for emotional responses, controlling our stress, and helping us make social connections. The top of the brain is the cortex. This part of the brain controls complex human functions such as language, abstract thinking, and deliberate decision-making. These regions develop sequentially in utero and throughout childhood starting with the brainstem. The development of the higher, more complex brain regions of the cortex is dependent upon the proper development of the lower, simpler regions of the brainstem, diencephalon, and limbic system (Perry & Szalavitz, 2006). Early trauma can affect how these simpler levels of the brain work, which then affects the development of the skills in the higher regions of the brain.

The brainstem and the limbic system help to modulate the body's stress response. The limbic system is also associated with attachment and memory. When the brainstem and amygdala, a part of the limbic system, become oversensitive due to repeated reinforcement of the neural pathways, they are more likely to perceive neutral stimuli as dangerous, which will result in stress hormones being released more easily. The amygdala works quickly, automatically, and unconsciously to look for danger in the environment. Due to how quickly the amygdala works, it assesses information in a way that is more generalized and less accurate than the cortex (van der Kolk, 2014). The hippocampus is a part of the limbic system that is responsible for memory. Traumatic

memories stored in the hippocampus are usually made of emotions, images, or state-dependent memories such as unpleasant sensations. When memories are stored in this way it makes them easy to be overgeneralized and broadly associated with new experiences that remind the individual of the past traumatic event (Ziegler, 2011). A traumatized person may be reminded of a past traumatic experience by a facial expression, loud noise, smell, touch, or physical proximity to others. These memories can be triggered by experiences that are similar to a past traumatic experience through generalization (Howard, 2013). When this generalization is made, the amygdala triggers the secretion of stress hormones and stress emotions that increase blood pressure, heart rate, and oxygen intake which prepares the body for fight or flight (van der Kolk, 2014). The individual will present as emotionally dysregulated when stress hormones are released. Even though there may be no visible threat to other people, the individual's mind and body have perceived a threat and react as if there is a threat in the environment. When the amygdala is activated in this way the cortex, or thinking part of the brain, cannot be accessed making it difficult for a dysregulated child to calm down or regulate their emotions (Australian Childhood Foundation, 2010).

The brain constantly monitors what is going on within an individual and what is going on in the environment around them even if the individual is not aware of this monitoring. When the brain recognizes some kind of sensory input as dangerous, despite the brain possibly being wrong due to overgeneralization, it causes subtle unconscious changes within the body and the brain. The individual will feel the same visceral sensations that they felt during the original event. If the brain is always unconsciously reacting to perceived threats then stress hormones are constantly being over produced

causing physical problems like sleep disturbances, headaches, and oversensitivity to touch or sound (van der Kolk, 2014).

The midline structures of the brain can also be negatively affected by the stress encountered due to trauma. These structures are involved in self-awareness. These structures take in information from the rest of the body to give a physical sense of where the person's body is in space, recognize sensations from their body, take in sensory information, and co-ordinate emotions and thinking. These areas of the brain have been shown to have almost no activation in individuals who have experienced trauma (van der Kolk, 2014). Their brains no longer recognize body cues and sensations because they have learned to feel unsafe in their bodies through constantly being bombarded with visceral warning signals. They have unconsciously learned to numb these gut feelings and thus numb their self-awareness and bodily awareness. When an individual cannot identify their own physical sensations they are not able to know how their body feels or what their body needs (van der Kolk, 2014). Self-regulation is dependent upon understanding how the body feels. When an individual cannot sense what is going on in their body, they have trouble identifying their own emotional state. When an individual cannot identify their own emotional state, it also makes it difficult to understand other people's emotional states. Without the ability to identify the emotional state of themselves or others it is difficult for them to appropriately respond to stress and choose an appropriate response (Tishelman, Haney, Greenwald O'Brien, & Blaustein, 2010). As a result, traumatized individuals often become detached or excessively angry and are unable to articulate what is upsetting them.

When a child's brain is regularly in a stress-activated mode their prefrontal cortex

can be underdeveloped. The prefrontal cortex controls executive functioning so an underdevelopment of this area of the brain can result in impaired executive functioning skills such as planning, organizing, delaying response, and controlling behaviour (Mezzacappa, Kindlon, & Earls, 2001). The underdevelopment of the prefrontal cortex contributes to the difficulties children who have experienced trauma may have in thinking about consequences of their behaviour before they act even when they are not dysregulated.

**Trauma and Neuroplasticity**

The brain rapidly grows in utero and during the first four years of life and continues to grow at a slower rate throughout childhood and adolescence (Perry & Szalavitz, 2006). The rapid brain growth in early childhood puts young children at risk for lasting effects of trauma because trauma can affect how the brain develops. A child's brain is very malleable which allows the child's brain to organize so the child can quickly learn, communicate, and feel, but the malleability also makes the young brain susceptible to trauma (Howard, 2013). The experiences happening in early childhood shape the development of the brain and affect how the brain and consequently the individual will react to situations in the future due to neuroplasticity. Neuroplasticity means that the development of pathways in the brain is use dependent. Neural pathways develop and become stronger through repeated use. Pathways that are not used become weaker. When neurons repeatedly fire together, a default pathway is created and makes the same response more likely to occur again in the future (van der Kolk, 2014). In a non-stable home environment, the healthy neural pathways may not receive the repeated reinforcement needed to survive, but the non-helpful connections may be strengthened by

the child being in a state of high arousal and trying to regulate anxiety (Howard, 2013).

Neuroplasticity helps to explain why the stress response from the amygdala can be triggered more easily in a child who has experienced ongoing trauma. The neural pathways needed to create this response have been continually activated which has strengthened the pathway and makes it more likely that this pathway will be used again in the future. The opposite is true for pathways in the brain that would elicit a calm response. These pathways have not been used as often so are weaker and slower. This makes the path less likely to be used in future situations.

The malleability of the young brain due to neuroplasticity that makes the brain susceptible to changes due to trauma also primes the brain to be changed in positive ways through a good environment and strong interventions. When a child's environment is safe and the child is taught alternate strategies to keep themselves calm in stressful situations, the brain's neural pathways can be rewired. Strong interventions can actually counteract or reverse damage that has been done to the brain due to trauma.

**Effects of Trauma on Development**

Complex trauma in childhood is associated with negative outcomes and risks but since trauma affects each child differently, it is important to understand the child's unique set of skills and deficits. At different developmental stages, different experiences can be traumatic based on a child's ability to understand the experiences. The presentation of trauma symptoms will also differ based on the age of the child and the skills normally acquired during that stage of childhood. It is common for traumatized children to have deficits related to the skills the child would learn at the age when the traumatizing event occurred. The child's brain is focusing its resources on safety and survival, so the child

may not have the available resources to develop the skills normally mastered at that age resulting in developmental skills gaps (Ziegler, 2011). The developmental deficits commonly associated with trauma in childhood are related to intrapersonal, interpersonal, self-regulatory, and neurocognitive competencies. Intrapersonal competencies include skills related to development of a sense of self, self- esteem, and self-worth. Interpersonal skills help individuals to successfully build and navigate relationships with others. The ability to recognize and modulate emotions and physiological experiences are regulatory competencies also known as self-regulation skills. Neurocognitive competencies are executive functioning skills and other cognitive skills that allow an individual to interact with the world (Blaustein & Kinniburgh, 2010). Deficits in these competencies can manifest as emotional dysregulation, depressive symptoms, anxiety, difficulties with attention, academic difficulties, behavioural changes, and physical symptoms such as difficulty sleeping and eating (The National Child Traumatic Stress Network, 2010).

In early childhood, the attachment relationship is foundational for healthy development. Babies and young children have little to no ability to self soothe. Consistent and sensitive responses by the caregiver provide experiences of co-regulation through which early regulation skills are learned (Schore, 2002). Through co-regulation, babies and young children learn to tolerate uncomfortable emotions, understand that emotions do not last forever, and develop strategies to calm themselves. When a child receives inconsistent or inadequate co-regulation due to trauma, a child does not learn to self-soothe and they learn emotions are frightening. They do not learn more sophisticated self-regulation strategies that are part of normal development so they must rely on less age appropriate ways to deal with emotions such as crying or other emotional outbursts when

they feel dysregulated (Blaustein & Kinniburgh, 2010). The impaired ability to self-regulate at a developmentally expected level may be one the most significant difficulties of a traumatized child and can explain much of their behaviour. Part of their inability to self-regulate is due to them having difficulty accurately identifying their emotional state and understanding the emotional state of others. When an individual cannot identify their emotional state or those of others, it makes it difficult to choose an appropriate response (Tishelman et al., 2010). The skill deficit may not be noticeable when the child is calm, but the child may react more intensely and in a way more consistent with a younger child when they are overstressed and upset (Ziegler, 2011).

In the teenage years, individuals who have experienced trauma often lack normally developed strategies to deal with difficulties and the strong emotions that are a part of adolescence put them at particular risk. If they have not developed the more sophisticated strategies to regulate their emotions, they rely on primitive coping strategies which puts them at risk of choosing more dangerous coping strategies (e.g., substance use, unsafe sexual relationships), negative peer affiliation, or isolating themselves from all peer interaction. A part of adolescence is the creation of a more complex understanding of self-identity and the healthy separation from caregivers. The opinions of peers become more important. Teens who have experienced trauma and have negative self-perceptions may assume others are examining them in the same ways they are examining themselves leading to self-consciousness and negative self-identity. Without the support of a healthy caregiving relationship they can experience considerable distress and seek comfort from unhealthy sources (Blaustein & Kinniburgh, 2010).

**Trauma and School**

School-based functioning can be strongly affected by traumatic exposure. More than half of adults who reported experiencing four or more traumatic stressors (e.g., abuse or neglect; violence against the mother figure in the household; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned) prior to age 18 reported having learning or behavioural problems while in school compared to only 3% of those who reported experiencing zero traumatic stressors (van der Kolk, 2014). Children who have experienced trauma are more frequently referred for special education services and have a higher rate of disciplinary referrals and suspensions than their peers (Shonk & Cicchetti, 2001). In school, children who have experienced trauma may react to circumstances in ways that are unacceptable to peers and adults. If those interacting with these students are not aware of their trauma history, these students can be labeled as lazy, disinterested, or lacking cognitive ability due to behaviour that presents as disengagement with teachers and academics. As previously discussed, children who exhibit trauma response behaviour in school are also more likely to be diagnosed with mental health conditions (Tishelman et al., 2010). Students with more diagnoses are less likely to be engaged in school, more likely to repeat a grade or be on an Individual Education Plan (IEP; Porche et al., 2016). These children can have huge gaps in their learning from regular physical absences from school due to poor attendance but also can miss a substantial amount of instructional time due to regularly being removed from the class or due to suspension from school for behavioural concerns. These children may also be cognitively absent from school. They are physically in class but are not cognitively engaged due to the stress response that takes the thinking part of the brain

offline (Howard, 2013).

Early childhood trauma affects the building blocks that help children to be successful in school. Children and teenagers who have experienced trauma can find the academic demands of school very challenging for a variety of reasons. Stress levels may contribute to challenges with memory, attention span, concentration, expressive and receptive language, and logic based problem solving which all affect academic performance (Australian Childhood Foundation, 2010). Despite having the same ability to learn, two children can have very different levels of success in school. A calm child would be better able to focus on the verbal information in the lesson and engage in abstract thinking and learning than a child who is dysregulated (Perry & Szalavitz, 2006) helping the calm child be more successful in school. When children are struggling with academics because their brain is not calm enough to learn, they may not be able to perform at the same academic level as their peers. These children may behave poorly to avoid academic work that is too difficult for them to complete and to avoid feeling embarrassed by their peers about their lack of academic ability (Howard, 2013).

In addition to cognitive ability, school success is also dependent upon the ability to manage emotions and frustration levels, regulate behavior, control impulses, and build relationships. Children who have experienced trauma may have difficultly in one or more of these areas (Blaustein & Kinniburgh, 2010). Children who have not learned successful interpersonal and communication skills from their earliest caregivers often have difficulty developing and managing meaningful relationships with peers and teachers (Anthonysamy & Zimmer-Gembeck, 2007). These children often want to control their environment which can lead to behaviour that is perceived as selfish and controlling of

their peers. Their tendency to be on high alert for danger can also result in misunderstanding facial expressions, body language, and voices, which can lead to fights and disagreements. Children who have experienced trauma may also be uncomfortable with the close physical proximity to others that is a part of childhood friendships. Children who have experienced trauma can also be particularly sensitive to feeling shameful. Fear of being shamed can cause them to act poorly if they experience this shame in relation to how a peer or adult interacts with them (Howard, 2013).

Children who have experienced trauma may interpret unpredictability and chaos as normal and actually feel fearful in a calm school environment. They believe that chaos is inevitable so they create chaos through defiant or destructive behaviour. This helps them to feel more in control and comfortable but can be very disruptive to the learning environment. These children can also have an overactive stress system, which makes them look for danger in benign situations. This makes them more likely to overreact to the smallest potential sign of danger (Perry & Szalavitz, 2006). This overreaction can be a hyperarousal or hypoarousal response. A hyperaroused response can include biting, kicking, spiting, yelling, knocking over furniture, or running from the class or school. A hypoaroused response includes having a blank look, curling up the body to appear smaller, crying for help, or acting younger than their chronological age. In both situations, the student is often unable to use language to explain themself, calm themself, or resolve a conflict. Considerable time and support may be needed to calm down. Either type of response could occur when a child is overwhelmed at school, but a hyperaroused response is more likely to be detected in school due it its disruptive nature (Howard, 2013).

The school environment can have advantages and disadvantages for children who have experienced trauma. It can act as a buffer for children because it can be a safe and supportive environment that nurtures the child's abilities, helps increase their confidence, and helps to promote healing and coping. On the other hand, it can be a trigger for traumatic reactions when staff and peers misinterpret the child's behaviour, which reinforces negative interpretations the child has about themself, increases the child's vulnerabilities, and creates obstacles to make success more difficult for the child (Tishelman et al., 2010).

It is important to also consider a child's difficulties in school could be unrelated to trauma, that trauma could be one of many contributing factors, or that trauma could be the cause of most of the difficulties a child is experiencing in school. The school should consider trauma as a hypothesis when appropriate, but trauma should not be the only possible explanation considered when other factors may better explain the child's behaviour (Tishelman et al., 2010).

**Trauma Interventions and Teachers**

Many teachers are aware of the high level of trauma exposure in their students, but the teachers believe they lack the relevant knowledge about trauma and mental health issues to provide students with the additional support they need (Alisic, 2012). Teachers have stated that they need more professional training about trauma. They also recognize the need for trauma informed programs to be implemented in schools because many students need more support than is currently possible in a regular classroom (Baweja et al., 2016).

It would be a worthwhile investment for teachers to learn more about attachment

theory and the effects of trauma on children. Adults who understand these concepts work more effectively with these students because they are more understanding about the importance of building a relationship with the student. Trauma informed adults are also more resilient when the traumatized child verbally targets them while dysregulated. They know not to take this behaviour personally and understand the importance of staying calm in their interactions with the student (Howard, 2013). The stress system is interconnected with the ability to read the expressions, gestures, and moods of others. The child can learn how to handle stress by watching a calm adult (Perry & Szalavitz, 2006). Adults who understand that they must remain calm and limit talking when working with a dysregulated child will have more positive interactions with the child. The child needs to know that the adult is there to support them when needed but that the adult will not try to talk to the child while the child is dysregulated (Howard, 2013).

Schools that have trauma informed practices are flexible to help meet the needs of all the students but in particular those who have been affected by trauma. These schools build in routines and prioritize relationship building between students and staff (Australian Childhood Foundation, 2010). Professional development is a fundamental component of trauma informed schools. It ensures that all staff members understand the need for trauma informed practice and it helps the staff to develop the skills and competence they need to meet the needs of traumatized students. In the training, it is important for the staff to learn about prevalence and effects of trauma, the neurobiological effects of chronic trauma, and de-escalation strategies for a dysregulated child. Staff members also need to learn about the importance of creating a safe space and fostering relationship as a strategy to help prevent dysregulation. One aspect that is

sometimes forgotten in trauma-informed training is the importance of self-care for the staff. Dealing with a dysregulated child can be very stressful so staff need to have strategies to deal with that stress as well. (Chafouleas, Johnson, Overstreet, & Santos, 2016) It is important for administrators to prioritize professional development time for all of this learning to happen, for teachers to understanding the effect that trauma has on behaviour and academic performance, and to know about the evidence-based trauma practices in schools (Baweja et al., 2016).

## The Attachment Regulation Competency Framework

The Attachment Regulation Competency **(**ARC) framework was developed as an intervention designed to address the array of developmental needs experienced by traumatized children. ARC based intervention is the second most frequently used treatment for children who have experienced traumatic events such as abuse or neglect, traumatic grief, and exposure to domestic or community violence (ICF International, 2010). The framework was created as an intervention that can be used in a variety of service settings. The guidelines were created to help inform treatment, but the creators believe that it is important for practitioners to tailor the intervention based on their own skill set (Kinniburgh, Blaustein, Spinazzola, & van der Kolk, 2005). The ARC model has been used in many types of programs including outpatient and residential treatment settings, juvenile correction facilities, youth drop in centres, homeless shelters, and other community and private intervention settings. Many children who have experienced trauma are not in trauma focused treatment centres, but they are in schools, afterschool programs, and community centres. ARC gives a framework for professionals in these settings to use to help support these children (Blaustein & Kinniburgh, 2010).

The ARC framework has an evidence base for use with many youth populations including adoptive children, children and families involved with child welfare, children in residential settings, and high-risk youth being served by Head Start programs (Blaustein & Kinniburgh, 2017). A review of ARC-based treatment services found significant reductions in behavioral problems and posttraumatic stress symptoms that were similar to those observed in children receiving Trauma Focused-Cognitive Behavioural Therapy, which is the gold standard treatment for childhood PTSD (ICF Macro, 2010). The integration of ARC concepts in a Head Start program for at-risk children and families was shown to have teacher reported positive outcomes including reduction of attention problems, externalizing symptoms, and oppositional defiant behaviors in the children. The parents reported reductions in attentional problems and internalizing symptoms in the children (Holmes, Levy, Smith, Pinne, & Neese, 2014). When an ARC informed model was integrated into a residential treatment setting with adolescent girls, there were reported reductions in behaviour problems and PTSD systems in the girls and physical restraint by staff (Hodgdon, Kinniburgh, Gabowitz, Blaustein, & Spinazzola, 2013). Children in welfare-involved families showed a reduction in clinician reported child trauma symptoms such as re-experiencing, avoidance and dissociation, and emotional and behavioural challenges after ARC based treatment (Kisiel et al. 2013). ARC based intervention for children and their adoptive parents resulted in reductions in internalizing, externalizing, and post- traumatic stress symptoms, according to both self-report and maternal report. There was an increase in maternal-reported adaptive skills and mother and fathers demonstrated reduced parenting distress (Hodgdon et al., 2015).

The ARC framework identifies intervention goals, skills needed to reach the goals and examples of how skills can be gained (Blaustein & Kinniburgh, 2010). It recognizes the importance of processing traumatic memories and experiences, but it is focused on the skills deficits seen in traumatized children. The framework aims to build skills, lessen internal distress, and strengthen the caregiving system in order to give children skills to enhance resilience (Kinniburgh et al., 2005). ARC identifies targets of intervention from extensive review of the literature on the impact of complex trauma on children and factors that increase the likelihood of a resilient outcome (Blaustein & Kinniburgh, 2010).

The ARC framework includes three core domains of intervention for children and adolescents who have experienced trauma and their caregiving systems: attachment, self-regulation, and competency. These three areas were chosen based on theory and empirical knowledge about the effect of trauma on attachment, self-regulation, and developmental competencies. Cook et al. (2003) identify that caregiver-child attachment relationship as a critical element of working with traumatized children. The importance of early secure attachment is the fundamental underpinning of the ARC model.

**Research Base for ARC Core Domains**

In 1969, psychiatrist John Bowlby identified attachment as an essential part of infant safety and survival based on evolutionary need. Attachment to a caregiver helps to ensure the infant is fed and safe. Infants continually monitor how close they are to an attachment figure and if the infant senses danger they will flee to the attachment figure for safety. Through the attachment relationship the child learns to balance their needs to explore their world independently and to seek closeness to caregivers to keep themself

safe. Bowlby claimed that through early experiences with the attachment figure the child learns expectations about their behaviour and the role of themselves and others in relationships. The child then uses this knowledge to predict experiences in future relationships (Bowlby, 1969, 1973, 1982). Almost all babies will become attached to their primary caregiver even if they are maltreated by that individual (Main, 1996).

The Ainsworth Strange Situation is a widely used, standardized way to assess young children's attachment to their caregiver. It consists of a series of short episodes designed to produce mild stress reactions in children to activate their attachment behavioural system. The child's attachment style is determined based on how the child responds to the caregiver during the strange situation. The original attachment styles are: securely attached, anxious-avoidant, and anxious ambivalent (Ainsworth, Blehar, Waters, & Wall, 1978) with the latter two being forms of insecure attachment. Main and Soloman (1990) discovered that approximately 15-25% of children assessed using the Strange Situation did not fit into one of the 3 categories. They developed and validated an additional insecure attachment pattern called disorganized.

When distressed, securely attached infants seek comfort and can be calmed by an attachment figure. These infants show little anger or anxiety due to minor separations from their caregiver. It is thought that nurturing care that includes face-to-face interactions and sensitivity to the infant's emotional signals in the first year of life is the basis for secure attachment (Ainsworth et al., 1978). Secure attachment is found in approximately 55-65% of the population (Cook et al., 2003).

Anxious-avoidant infants show anger and anxiety about their caregiver's whereabouts but also will avoid an attachment figure in new situations that would usually

elicit proximity seeking and interaction. This attachment style is associated with caregivers who dismissed or rejected attachment behaviour and were averse to physical contact. These children may distrust emotions and feel ambivalent about attachment relationships with adults and peers (Ainsworth et al., 1978).

Anxious-ambivalent infants show behaviour that fluctuates between seeking close contact to an attachment figure and resisting close contact to the attachment figure. These children often act very passively and helplessly. Anxious-ambivalent infants appear to have an inability to be comforted or calmed by the attachment figure when upset. It is thought that this insecure attachment style stems from a caregiver that does not reject the child but is unpredictable in their engagement with the child alternating between detachment and excessive intrusiveness. The child learns to cope by disconnecting themself from others (Ainsworth et al., 1978).

Children with a disorganized insecure attachment style appear to have no coherent coping mechanism for the stress of separation and reunion with a caregiver. They may have strong proximity seeking followed by strong avoidance or appear dazed and freeze all movement upon reunion. These children appear to have conflicting motivations to approach the caregiver for comfort and retreat from the caregiver for safety. Young children with disorganized attachment can behave erratically to caregivers, alternating between being clingy and being dismissive or violent (Main & Solomon, 1990). Maltreated children are much more likely to have insecure attachment patterns and are particularly likely to demonstrate disorganized attachment. Carlson, Cicchetti, Barnett, and Braunwald (1989) reported over 80% of maltreated children have disorganized attachments.

**Impact of attachment.** Secure attachment can have a protective property and may act as a key resiliency factor for children. It may lessen the psychological distress of abuse or trauma and provide a resilience that is not present in victims with insecure attachments (Shapiro & Levendosky, 1999). Main (1996) identified failure to form early attachment, insecure attachment, major separation from and permanent loss of an attachment figure, disorganized attachment due to early maltreatment, and disorganized attachment due to intergenerational trauma as risks for development of mental disorders. Disorganized attachment has also been found to increase susceptibility to stress, decrease the ability to regulate emotions independently, and alter help seeking behaviours so the individual excessively seeks help or is disengaged from others (Maunder & Hunter, 2001).

Children with insecure attachments may develop maladaptive coping strategies through experiences with neglectful or abusive parents. Strategies a child learns may be adaptive in keeping them safe in the adverse environment of their family but these strategies will be maladaptive in later interpersonal relationships (Shapiro & Levendosky, 1999). Children with insecure attachment show less social competence with their peers than their securely attached peers (Carlson & Sroufe, 1995). Children with an avoidant insecure attachment are more likely to victimize their peers, ambivalent insecurely attached children are more likely to be the victim of their peers (Carlson & Sroufe, 1995), and children with disorganized attachment are more likely to have disruptive and aggressive peer behaviour (Lyons-Ruth, 1996).

**Attachment and self-regulation.** A securely attached child has a caregiver who is attentive to their emotional needs. The caregiver helps the young child to regulate their

body, emotions, and behaviour through co-regulation strategies such as: providing the child comfort when distressed or dysregulated; teaching emotion identification and modeling self-calming strategies; and having age-appropriate rules, expectations, and consequences. Through this reliable co-regulation, the child will internalize regulation strategies leading to the development of self-regulation skills (Schore, 2002). The foundation of self-regulation and self-soothing is being able to associate intense sensations with safety and comfort (van der Kolk, 2014). A securely attached child knows that intense emotions are temporary and if the emotions are too overwhelming a trusted adult will help them. The safety of a secure attachment relationship helps infants to learn to trust their emotions and thoughts about how they understand the world. Through co-regulation children learn a vocabulary to describe their emotions so they are able to accurately communicate how they feel and determine strategies to respond (van der Kolk, 2005).

Impaired self-regulation is a key feature in children who have been exposed to trauma (van der Kolk, 2005). Lack of reliable co-regulation in children who have experienced trauma can lead to inadequate development of self-regulation skills (Cook et al., 2003). Traumatized children are out of touch with their feelings and have no language to describe how they feel (van der Kolk, 2005). They are often left to try to deal with uncomfortable emotions independently so they learn to feel uncertain about the reliability of others to help them with their emotions (Cole & Putnam, 1992). Without a caregiver to support the development of more sophisticated skills or provide external regulation, the child will be unable to regulate so they will disconnect from their feelings or use unhealthy coping skills (Blaustein & Kinniburgh, 2017).

**Attachment and competencies.** Secure attachment gives the child the safety to be able to explore the world, learn about self, others, and self in relation to others, and develop increasingly sophisticated developmental competencies (Schore, 2001). Through exploring the world children learn about their sense of agency and learn early receptive and expressive language skills (Cook et al., 2003). When children experience chronic trauma within the caregiving relationship, they must use their cognitive energy to survive rather than learning developmentally appropriate skills. This can contribute to children lagging behind their peers in many developmental areas (Blaustein & Kinniburgh, 2007). Infants and children who have been traumatized often experience a broad range of developmental delays including cognitive, language, motor, and socialization skills (Culp, Heide, & Richardson, 1987). As a result of these developmental delays, traumatized children are more frequently referred for special education services (Shonk & Cicchetti, 2001).

The brains of children who have been exposed to chronic trauma are regularly in a stress-activated mode and constantly looking for danger. This stress activation mode can lead to underdevelopment of the prefrontal cortex and consequently, the underdevelopment of executive functioning skills such as planning, organizing, delaying response, and controlling behaviour. Traumatized children have been found to have increasingly impaired executive functioning from early childhood to adolescence. Their skills not only lag behind their peers but also develop at a slower rate (Mezzacappa et al., 2001). Responsive caregiving in early childhood and the resulting development of skills helps a child develop a sense of self that is worthy and competent. When a child is harmed or rejected by caregivers, it is likely to lead the child to build a sense of self that

is helpless, deficient, and unlovable (Cook et al., 2003).

**ARC Domains**

The ARC framework includes three core domains of intervention for children and adolescents who have experienced trauma and their caregiving systems: attachment, self-regulation, and competency. The three domains consist of nine building blocks (described below) of intervention. The tenth building block of intervention, trauma experience integration, incorporates all of the other building blocks within the framework (Blaustein & Kinniburgh, 2010).

**Attachment.** The attachment domain was chosen as the first component because attachment serves as the foundation for healthy child development. A child needs to feel safe before other aspects of development can be addressed. The caregiving system is broadly defined to include a range of caregiving scenarios (e.g., biological parents, other relatives, foster or adoptive parents, residential staff, school staff, residential program staff, caseworkers). The attachment building blocks focus on building an environment within the caregiving system where the child feels safe enough and to support a child's healthy development through building the caregivers' skills. The attachment domain focuses on strengthening the system surrounding the child by enhancing supports, skills, and relational resources for adult caregivers. The attachment building blocks are: caretaker management of affect, attunement, consistent response, and routines and rituals (Blaustein & Kinniburgh, 2010).

The caretaker management of affect building block is the foundation for all of the other attachment related skills. This building block supports the caretaker to understand, manage, and cope with their own emotional responses so they are better able to care for

the child. The caregiver's ability to provide support for their child is limited by the caregiver's ability to effectively manage their own experiences. A caregiver must be able to tolerate, modulate, and cope with their own emotional responses before they can help a child tolerate and modulate their affect. The goal of affect modulation is to help the caregiver to monitor their own affect and communicate with the child in a constructive way. When the caregiver is able to manage their own emotions it shows the child that adults around them can stay calm and handle difficult experiences in a safe manner. Many children with complex trauma have experienced relational danger so they look for signs of danger when interacting with others. Caregivers need to develop skills to deal with this. The child's trauma-based behaviours (e.g., anger, opposition, constant demand for attention, rejection of caregiver, and extreme emotional responses) can make it difficult for the caregiver to regulate their own emotions and behaviour (Blaustein & Kinniburgh, 2010). It is important for the caregiver to learn not to take the child's behaviours and actions personally (Blaustein & Kinniburgh, 2017). Without skill building support, caregivers can feel a reduced sense of efficacy. The caregiver may feel anger or blame toward the child causing the caregiver to ignore or minimize the child's needs, overreact to small problems with the child, or be overly permissive in the relationship. The key skills and areas of focus in the caretaker management of affect building block are: psychoeducation about effects of trauma, depersonalizing the child's behaviour, and validating the caregiver response; building the caregiver's self-monitoring skills; building the caregiver's self-regulation skills; and increasing the caregiver's supports (Blaustein & Kinniburgh, 2010).

The goal of the attunement building block is to support the caregiving system to learn to accurately and empathically understand and respond to the child's feelings, needs, and behaviour. Through attunement the caregiver and child can have more positive interactions, which lead to a more positive relationship. Attunement helps caregivers to recognize the emotional message that underlies a child's behaviour. Children who have experienced trauma may have difficulty effectively communicating their needs and feelings so the caregiver needs to learn to interpret the function of a child's behaviour. A child who has experienced trauma may be overly vigilant in assessing for danger, which can cause a child to negatively misinterpret a caregiver's response. Attunement can help the child to learn to accurately read a caregiver's response. Attunement can look different in different cultures and different families and cannot always be measured by surface behaviours. The key skills and areas of focus in the attunement building block are: psychoeducation about child vigilance; psychoeducation about traumatic triggers and their expression; building a better understanding of the child's mode of communication; developing reflective listening skills; and putting all of those skills together so a caregiver knows what to do if a child is triggered (Blaustein & Kinniburgh, 2010).

The consistent response building block aims to support the caregiving system to create predictable, safe, and appropriate responses to a child's behaviour. An appropriate response acknowledges and is sensitive to how past experiences influence current behaviour. Children do better when they understand the rules and can predict an adult's response to a situation so all caregivers should respond consistently with the child. Children who have experienced trauma can make parenting difficult due to their rigidity and resistance of imposed rules. Caregivers may be reluctant to impose consequences on

a child who has been hurt by caregivers in the past or they may be overly restrictive to try to keep the child safe. The teaching points in consistent response consist of classic behavioural techniques combined with education about the role of trauma response in using these techniques. The areas of focus are: guidelines for use of praise and reinforcement; praise and the trauma response; guidelines for behaviour management; ignoring of undesirable behaviours; setting limits; use of time-outs with traumatized children; and limit setting and trauma response. Limit setting can often be a two-step process particularly in settings outside of the home, such as in school. If a child is highly aroused or shut down, the first step needs to be to contain the situation and help modulate the arousal. The second step of applying a limit or consequence with problem solving and discussion should only occur after the child is more emotionally regulated (Blaustein & Kinniburgh, 2010).

The routines and rituals building block aims to help establish routines and predictability into the everyday life of children and families. Complex trauma can cause children and families to be exposed to unpredictability. When a child lives an unpredictable life they must expend energy to ensure their own safety, with increased predictability comes a sense of safety. When a child feels safe they can relax and their energy can be used for healthy development. When establishing routines it is important to balance structure and flexibility. Younger children often crave more overt structure while adolescents may want more subtle routines. When structuring a daily schedule it can be helpful to consider a child's energy needs, so modulation strategies can be part of the daily schedule. Some common parts of the day-to-day structure would be morning, mealtimes, play, chores, homework, family time, and bedtime. Schools have their own

traditions and routines, and making these explicit can contribute to building a sense of community. Structures can be a useful component of skill building in schools, but a drawback with building structures in a school is there can be an overemphasis on the rules and a lack of understanding about individual needs (Blaustein & Kinniburgh, 2010).

**Self-Regulation.** The self-regulation domain was included as a component due to trauma having a significant impact on a child's ability to regulate physiological, emotional, behavioural, and cognitive experiences. Without the ability to regulate their emotions, individuals may believe there is something wrong with them and that their strong emotions make them bad or crazy. Babies and young children rely on caregivers to help them regulate. Self-regulation skills develop over time with supportive caregiving. Caregivers help with the development of self-regulation skills through reflecting emotions behaviourally and verbally, modelling emotion expression and modulation, and soothing or stimulating a child to help them reach an optimal arousal level. Self-regulation requires an individual to be aware of their internal state, tolerate a range of affect, engage in actions or thoughts to modulate arousal, understand factors that influence affect, and effectively communicate affect with others. The self-regulation building blocks are affect identification, modulation, and affect expression (Blaustein & Kinniburgh, 2010).

The affect identification building block focuses on helping children to become more aware of their internal experiences, identify their emotional state, and understand what causes these emotions. Emotional identification and expression are skills that need to be learned; without sufficient emotional support a child may not learn these skills. Children who have experienced trauma may also have become disconnected from their

emotions as a way to cope with overwhelming experiences and emotions. The goals of this building block are teaching feelings vocabulary; identifying emotions in self and others; connecting emotions to physical sensations, thoughts and behaviours; providing information about the body's stress response system and trauma triggers; and normalizing mixed emotions. Affect identification learning can happen by creating an environment with visual cues and posters as well as in the moment through interaction and play. An important component of affect identification is the inclusion of lessons about and recognition of positive as well as negative affect (Blaustein & Kinniburgh, 2010).

The modulation building block focuses on working with children to create safe and effective strategies to mange and regulate physiology and emotions to maintain a comfortable level of arousal. The ability to effectively modulate emotions is often a key challenge for traumatized children due to attachment and traumatic stress. These children often have high and dysregulated arousal levels and lack the skills to modulate these arousal levels. Children who are not able to modulate their arousal levels may try to shut down their emotional experience, manage their arousal through physiological stimulation, or rely on external methods of regulation. It is important for children to be able to explore their preferred arousal state. Some children are comfortable in higher or lower states of arousal. If a child is comfortable in a higher arousal state it is important for them to be able to have opportunities to be in that arousal state. An example of this would be an energetic child being given extra time for movement. The goal of modulation is to help expand a child's comfort zone for higher and lower states of arousal and a range of emotions. An additional goal is to help the child to be able to modulate the emotional and physiological states so they can navigate their world effectively. The targeted skills in

this building block are building an understanding of the degrees of feelings and building the ability to tolerate and move though arousal states using strategies that effectively increase and decrease arousal. In schools, it is important to differentiate between the need to set limits and the need to modulate. When a child is dysregulated, non-compliant, or shutdown they need support to modulate first. Limits and consequences can be applied when they are calm (Blaustein & Kinniburgh, 2010).

The affect expression building block focuses on helping children to build skills to effectively share emotions with others in order to meet emotional and practical needs. Children who have experienced trauma may learn that sharing emotions make them vulnerable. They may not share emotions or may over share without appropriate boundaries. These children may attempt to communicate their emotions in ineffective ways though aggression or may project their emotions onto others. Children need to be taught with whom to share emotions and how to effectively communicate emotions. Sharing emotional experiences is an important part of all relationships. Without the ability to communicate emotions, it is difficult for children to form and maintain healthy attachments. The specific targeted areas include: identifying safe people whom they can share emotions; identifying the right moment and strategy to initiate conversations; learning effective non-verbal communication strategies; learning verbal communication skills; and building a collection of self-expression strategies (Blaustein & Kinniburgh, 2010).

**Competency.** The third domain is competency. This domain was chosen because children who are affected by trauma often have lagging skills in a variety of domains due cognitive resources being focused on survival rather than skills development. The goal of

this domain is to build internal and external resources to help development in areas such as social connection, community involvement, and academic engagement. The interventions focus on the importance of a child feeling successful and helping them build a positive sense of self, both of which are associated with resilient outcomes in future life stages. At each developmental stage competencies develop in cognitive, interpersonal, intrapersonal, emotional, and motor domains. The competencies at each stage of childhood build on tasks from previous stages. When selecting developmental tasks to target, domains should be chosen where there are discrepancies between stage and age. Developmental competencies can vary in level across domains and settings. The building blocks of competency are executive functions and self-development and identity (Blaustein & Kinniburgh, 2010).

The executive function building block focuses on working with children to help them learn to use higher order cognitive processes to solve problems and make choices to help them reach their goals. Simply put, it is helping to teach children to act based on choices rather than react without the use of forethought. Some executive functioning skills are delaying or inhibiting response, active decision making, anticipating consequences, evaluating outcomes, and generating alternative solutions. The development of executive functions is connected to the development of the prefrontal cortex. When children are exposed to chronic trauma, the limbic system takes charge and the prefrontal cortex is deactivated. This can lead to inadequate development of the prefrontal cortex and the higher-level cognitive abilities it controls. Executive functions help create a sense of agency and control. The ability to make active choices increases resiliency in high-risk youth. The primary goal of this building block is to increase a

child's ability to make active choices, which increases their sense of empowerment and their personal responsibility for decisions and consequences. The goal of focusing on executive functioning skills is to make problem solving a conscious process. Problem solving work can include training staff in problem solving skills and ways to recognize, cue, and support children to make active choices. It is important to note that for problem solving to occur affect modulation is a prerequisite. People working with children can also help to teach problem solving skills through planning for challenging situations and identifying strategies to cope to achieve a desired outcome (Blaustein & Kinniburgh, 2010).

The self-development and identity building block focuses on supporting children in developing an understanding of self and personal identity. It helps children to identify unique and positive qualities, build a sense of coherence across experiences, and imagine a range of future possibilities. When young children are exposed to chronic trauma they often internalize negative experiences and understand themselves as unloved, unworthy, helpless, or damaged. Interventions target for aspects of self and identity include: unique self, positive self, coherent self, and future self. The unique self involves personal attributes such as likes and dislikes, values, opinions, family norms, and culture. The positive self interventions aim to build self-esteem and efficacy through building internal resources and identifying strengths and successes. The coherent self interventions help children to build a sense of self that incorporates self across multiple aspects of experience (e.g., self before and after trauma; self with biological parents versus adoptive parents). The future self interventions aim to build the child's ability to imagine self in

the future and to make connections between current actions and future possibilities (Blaustein & Kinniburgh, 2010).

The final building block is trauma experience integration and is not part of one of the three ARC domains. It uses the skills and resources within the other nine building blocks to help children build a coherent understanding of self in order to increase their ability to effectively engage in present life. There are two related but distinct types of trauma experience integration. The first type is the integration of thematic or fragmented self-states and the associated early experiences. The second type is the processing of specific events. Reflection and attunement through the caregiving system play a key role in both types of traumatic experience integration. The integration of fragmented self-states requires the child to be reflective about the patterns of behaviour, thoughts, feelings, and physiological states that occur in daily life and how they might be related to past experiences. The processing of specific memories involves careful examination of memories and the associated affect, psychological sensations, and cognitions. Through careful exploration, the child is able to integrate these experiences into a more coherent story of self, decrease the intensity of the experiences, and gain control over them. Some strategies for trauma integration include writing, storytelling, drawing, and playing.

# CHAPTER TWO: EVALUATING THE PATHS PROGRAM

## Introduction

Positive relationships with caring adults are a fundamental aspect of the development of social-emotional skills. Experiencing trauma, particularly within the primary caregiving environment can have a negative effect on the development of social-emotional skills. The attachment relationship in infancy and early childhood is the foundation for healthy development. When a child has a secure attachment, the caregiver is attentive to the child's emotional needs. Through this attentive relationship the child learns to identify and manage their emotions, identify and respond to the emotions of others, build healthy relationships, follow age appropriate rules, and accept the consequences of their actions. These are the early building blocks of social-emotional development.

When a child receives inconsistent or inadequate co-regulation and caregiving due to trauma. Young children are particularly susceptible to the effects of trauma and insecure attachment because of neuroplasticity. Their brain's neural connections are being built based on experiences. Children who have experienced trauma are at risk of developing a disorganized insecure attachment. These children do not learn the foundational social-emotional skills within the caregiving environment. They may have deficits in intrapersonal, interpersonal, self-regulatory, and neurocognitive competencies. They are often unable to correctly identify their own or others emotions, manage their emotions, control impulses, and build relationships with others. Impaired self-regulation is a key feature of children who have been exposed to trauma (van der Kolk, 2005).

School success is dependent upon social-emotional skills. It is important for schools to have programs that teach social-emotional skills and help children who have experienced trauma to be successful in school. Due to neuroplasticity, children's brains can be changed in positive ways by a good school environment and strong interventions. Their brains can be rewired to change the way they identify and react to stressful situations. Interventions can help to counteract or reverse damage that has been done to the brain as a result of experiencing trauma. The purpose of this study was to examine if PATHS is a good curriculum to use in schools with children who have experienced trauma, based on research about social-emotional learning programs and the the developmental needs of traumatized children identified by ARC.

**Criteria for Evaluating an SEL Program**

When implementing a SEL program in a school it is important for the program to have consistency. This means that the SEL program should not be implemented in a single class in disjointed time blocks in a schedule. The program needs to be implemented throughout the school so that the terminology and practices (e.g., PATHS Kid of the Day, control signals, turtle technique, feelings face) can happen in all school settings. The program should be integrated into everyday interactions where the children are given the opportunity to practice and apply the skills in real life situations and through the use of experiential learning approaches, such as role-play. To help with consistency in learning and practicing SEL skills, partnerships between school and home should be promoted so there is a consistency in messages and experiences in both settings (CASEL, 2013). Therefore, it is important to determine whether the PATHS curriculum is structured to enable it to be implemented throughout all aspects of a school and

whether it uses common terminology to ensure children have consistency and opportunities to practice the newly learned SEL skills in real life situations. To help support consistency and practice of skills, does PATHS promote a partnership between the schools and home environment?

Along with having a consistently implemented SEL program, it is vitally important to have teachers with strong social-emotional competence to implement the program. Teachers' social-emotional competence strongly influences the level of integration of SEL into schools and classrooms (Jones et al., 2013). Teachers with greater social-emotional competence will be more effective in teaching a SEL curriculum because they are good role models for desired social-emotional behaviour and they create a more positive classroom climate (Jennings & Greenberg, 2009). When teachers have strong social-emotional skills they can manage stressful events that arise during the school day and model healthy reactions to these events (Jennings & Frank, 2015). They can set limits in a classroom that are firm but respectful without being rigid and can observe, understand, and respond respectfully and effectively to student behaviours (Jennings & Greenberg, 2009). For all of these reasons, strong social-emotional competence will help teachers in the interactions with children who have experienced trauma.

The attachment building blocks (management of affect, attunement, and consistent response) in the ARC model also focus on building the social-emotional skills in a caregiver. Although teachers are not primary caregivers for their students, a teacher can be an important adult figure a student's life. The ARC framework explicitly states that it broadly defines caregiver to include professionals who work with traumatized

youth. Due to the importance of teachers having strong social-emotional skills for the effectiveness of a SEL program and the importance of SEL skills in adults working with children who have experienced trauma, it is important for school based SEL programs to have professional development for teachers to build their social-emotional skills and not solely focus on building the social-emotional skills of the children. Therefore, given the importance of teachers having strong social-emotional skills, it is important to determine whether the PATHS curriculum includes teacher training to build social-emotional skills in teachers?

The ARC model also focuses on building self-regulation skills in children who have experienced trauma due to the significant impact trauma can have on a child's ability to regulate their physiology, emotions, and behavior. The building blocks of self-regulation are affect identification, modulation, and affect expression. A SEL program used with children who have experienced trauma should teach all of these self-regulation skills. Therefore, it is important to determine whether the PATHS curriculum explicitly teaches self-regulation skills and whether it includes the three ARC building blocks of self-regulation (affect identification, modulation, and affect expression). Does the PATHS curriculum explicitly teach self-regulation skills? Are the three ARC building blocks of self-regulation (affect identification, modulation, and affect expression) taught?

Children who have experienced trauma often have impaired executive functioning skills. The ARC model has a building block that focuses on these skills. It would be important for a SEL program used with traumatized children to teach executive functioning skills such as: delaying or inhibiting response, active decision making, anticipating consequences, evaluating outcomes, and generating alternative solutions.

These skills can help individuals to make problem solving a conscious process. Therefore, it is important to determine whether the PATHS curriculum teach students executive functioning skills. Does PATHS teach students executive functioning?

The self-development and identity building block in the ARC model focuses on helping children to develop a sense of self and personal identity through exploring their unique and positive qualities. It would be beneficial for an SEL program used in a school with traumatized children to foster the growth of positive identity in these students. Therefore, it is important to determine whether the PATHS curriculum helps to foster positive self-identity in traumatized youth. Does PATHS help to foster positive self-identity in traumatized youth?

The last component of the ARC model is trauma experience integration, which helps children build a coherent understanding of self and increases their ability to actively engage in present life. It would be beneficial for an SEL program used in schools to include trauma experience integration because it can help traumatized children decrease the intensity and gain control over the feelings related to the trauma. Therefore, it is important to determine whether the PATHS curriculum includes aspects of trauma experience integration. Does PATHS include components of trauma experience integration?

To summarize, the questions that will be examined below are:

1. Is the PATHS curriculum structured to be implemented throughout all aspects of a school through the use of common language to ensure children have consistency and opportunities to practice the newly learned SEL skills in real life situations?

To help support consistency and practice of skills, does PATHS promote a partnership between the schools and home environment?

2. Given the importance of teachers having strong social-emotional skills, does the PATHS curriculum include teacher training to build social-emotional skills in teachers?
3. Youth who have experienced trauma often have difficulties with self-regulation. Does the PATHS curriculum explicitly teach self-regulation skills? Are the three ARC building blocks of self-regulation (affect identification, modulation and affect expression) taught?
4. Does PATHS teach students executive functioning?
5. Does PATHS help to foster positive self-identity in traumatized youth?
6. Does PATHS include components of trauma experience integration?

## Results

### Is the PATHS Curriculum Structured to be Implemented Throughout All Aspects of a School Through the Use of Common Language to Ensure Children Have Consistency and Opportunities to Practice the Newly Learned SEL Skills in Real Life Situations?

The creators of the PATHS curriculum, Dr. Carol Kusché and Dr. Mark Greenberg, recommend for the curriculum to be implemented throughout a school. The program can be beneficial for all students, not just those who have experienced trauma, so it has been designed to be used in general education classrooms rather than only in a small group intervention program. School wide implementation ensures continuity across grades making it easier for students to transition into the next grade. The probability of

generalization of skills increases when students have the opportunity to practice with different individuals throughout the school. The generalization can be further enhanced if all adults in the school, including playground and lunch monitors, bus drivers, volunteers, specialist teachers, and administration are familiar with the PATHS curriculum (Kuché & Greenberg, 1994). The use of common terminology by all of the adults in the school could be good for all students, not just those who have experienced trauma. The PATHS curriculum includes problem solving posters (e.g. Control Signals Poster) which can be displayed throughout the school to help remind the adults and students to implement the lessons learned through the PATHS curriculum (Kuché & Greenberg, 1994).

PATHS is designed to offer the students consistency throughout the school environment and opportunities to practice through integrating PATHS language and lessons into the structure of the classroom. The teacher can model genuine use of PATHS problem solving skills and the students can practice using these skills as difficulties arise in the classroom. In the PATHS instructor's manual, teachers are encouraged to dialogue with a student when a problem arises. Through this dialogue, the student learns to identify their own feelings and build their own problem solving skills. The teacher can encourage the students to practice their PATHS skills with friends and caregivers outside of school and report back to the class about their successes and difficulties when implementing the skills in the real world (Kuché & Greenberg, 1994). Through using the PATHS curriculum in a variety of settings, children learn to generalize problem solving skills into all aspects of their lives. For the PATHS curriculum to be implemented school wide in a consistent manner the administrators need to be the SEL leader in the school. They can encourage teachers to use the program within their classroom, encourage

discussions among staff about the PATHS program, ensure the program is supported in all aspects of the school and positively reinforce the positive changes in students' behaviour (Kuché & Greenberg, 1994).

**Does PATHS Promote a Partnership Between the School and Home Environment?**

The PATHS curriculum encourages the participation of parents. The school administrator has an important role to play in promoting positive attitudes towards PATHS among parents. A home and school partnership is important to gain the parents' support and co-operation in using the PATHS curriculum. When parents support the program, they can help to reinforce the newly learned skills in the home environment. To support this, the PATHS curriculum includes multiple parent letters, a parent handbook, and home activities to help the parents understand the program and support their children. These parent materials explain what information and skills are being taught, why these skills are important, and how the information is being taught in the school. The at-home worksheets give caregivers activities and general suggestions to help encourage the use of the skills at home. The instructor's manual suggests teachers communicate in person with the parents about the program and about their child's newly acquired skills during parent-teacher meetings and, if there is enough interest, recommends that the school offer parent groups about PATHS (Kuché & Greenberg, 1994).

**Does the PATHS Curriculum Include Teacher Training to Build Social-emotional Skills in Teachers?**

Professional development is optional for those who will be delivering the PATHS curriculum, but the creators strongly recommend a two-day workshop and ongoing consultation with a PATHS facilitator. The professional development aims to help the

educators understand emotional development and brain organization, review the curriculum, observe presentations of the lessons, and participate in small group discussions. The ongoing consultation is designed to help the teachers modify the lessons, generalize concepts into real life classroom situations, and integrate PATHS curriculum with curriculum in other subject areas. If the teachers do not have in-person or online training in PATHS they are encouraged to study the curriculum and become familiar with all of the themes and lessons prior to teaching the program (Kuché & Greenberg, 1994).

The PATHS instructor's manual emphasizes the importance of teachers becoming aware of their own values, feelings, and attitudes. A teacher's awareness of their feelings can affect how they model their feelings and problem-solving skills. It is important for the teacher to able to remain aware of how they are feeling and acting because their behaviour is a model of self-control and problem solving for the students. The PATHS curriculum emphasizes the importance of not only the content but also the constant modeling of the lessons. It is not enough to teach a lesson on feeling frustrated. The teacher needs to empathetically respond to a frustrated child and the teacher needs to label their own feelings when frustrated. The teacher needs to model the behaviours they want from the children. The teacher may need to change their style of teaching to model self-control and active problem solving skills (Kuché & Greenberg, 1994).

**Does the PATHS Curriculum Explicitly Teach Self-Regulation Skills?**

Children who have experienced trauma often have difficulty regulating their physiology, emotions, and behaviour. They need self-regulation skills to be explicitly taught. The ARC model divides self-regulation into three building blocks: affect identification, modulation, and affect expression. The foundation of the PATHS

curriculum is a theoretical model called the ABCD (Affective-Behavioural-Cognitive-Dynamic) Model of Development. The affective and behavioural components are related to self-regulation skills. The affective component focuses on understanding and controlling one's emotions. This component would relate to affect identification and modulation ARC building blocks. The behavioural component of the ABCD model consists of controlling behaviours and building appropriate behavioural skills, which would relate to the modulation and affect expression ARC building blocks. The affective and behavioural components are taught in two units of the PATHS curriculum: Readiness and Self-Control and Feelings and Relationships. The first unit in the PATHS curriculum is Readiness and Self- Control. This unit is generally only used with kindergarten-aged children unless there are serious emotional or behavioural difficulties. Then it could be used with older children in grades one to three. The focus of this unit is to teach self-control through behavioural response and internal self-talk. The behavioural response taught to the students in this unit is called the turtle technique. The turtle has three steps. The first step is to stop and do the turtle. Doing the turtle is a specific action chosen by the teacher such as making an x across their chest with their arms. When the child is doing the turtle they can do the second step, which is taking long, deep breaths. Once the child is calm, they can do the third step, which is to say the problem and how they feel. The turtle technique is used as a way of helping children have an alternative to other, often negative behaviours that they might have used in response to some experiences or feelings. Children can also use it as a signal that they need help from an adult. The child is then given verbal praise for doing the turtle. Through doing the turtle and the subsequent verbal praise the child builds confidence in their ability to control their

emotions (Kuché & Greenberg, 1994). The targeted modulation skills in the ARC model are understanding the degrees of feelings and building the ability to tolerate and move through the arousal states using strategies that effectively increase and decrease arousal.

The Feelings and Relationships unit focuses on teaching emotional and interpersonal understanding. The unit introduces 50 emotions and teaches that all emotions are acceptable but not all behaviours are acceptable. There is an emphasis on labeling emotions to help with emotional control and problem solving. The students learn about recognizing feelings in themselves and others, perspective taking, and empathetic understanding of how one's behaviour affects themselves and others. This unit is a precursor to the subsequent problem-solving unit (Kuché & Greenberg, 1994). This unit addresses the affect identification building block of the ARC model and touches on the affect expression building block. The aspects of the affect identification building block that are examined in this PATHS unit are teaching feelings vocabulary, identifying emotions in self and others, normalizing negative and positive affect, and normalizing mixed emotions. The unit introduces this information through visual cues (e.g., emotion cards) and through interaction with others and role-play. This PATHS unit does not examine how emotions are connected to physical sensations, thoughts, and behaviours or give the students information about the body's stress response system and trauma triggers.

**Does PATHS Teach Students Executive Functioning?**

The cognitive component of the ABCD (Affective-Behavioural-Cognitive-Dynamic) Model of Development, which the PATHS curriculum is based, is related to executive functioning. The areas addressed in the cognitive component are

analytic/logical reasoning skills and independent thinking, which includes decision-making and responsibility to solve own problems. The cognitive component of the ABCD model aligns with the ARC executive functioning building block focusing on making problem solving a conscious process. The PATHS unit that covers these topics is called Interpersonal Cognitive Problem Solving. The main objective of this unit is for children to learn to identify a problem, set a positive goal, generate alternative solutions, formulate a plan, deal with obstacles, and determine why good solutions sometimes fail. The students learn that with some problems, all good solutions can fail due to obstacles outside of one's personal control. The problem solving skills can be generalized by the teacher facilitating real class problems through problem solving meetings, problem solving lessons based on concerns of students, and on-the-spot problem solving. Initially the teacher may need to dialogue with the students to help solve the problems, but according to the PATHS manual, students gradually begin to dialogue with their peers to solve their own problems (Kuché & Greenberg, 1994).

**Does PATHS Help to Foster Positive Self-Identity in Traumatized Youth?**

The dynamic component of the ABCD (Affective-Behavioural-Cognitive-Dynamic) Model of Development is related to positive self-identity. The dynamic component focuses on building positive self-esteem and healthy personality development. This component would relate to the self-development and identity building block of the ARC model that focuses on supporting children in developing an understanding of self and personal identity. The aspects of personal identity that are addressed in this building block are: unique self, positive self, coherent self, and future self. The PATHS curriculum does not have a separate unit focusing on building self-esteem and peer

relations, but rather there are lessons about these skills in each of the three units. One component of these lessons is PATHS Kid of the Day where the student assists with a lesson and is then given compliments by the teacher and their classmates. Another component is learning about topics related to peer relations such as defining a friend, discussing and role-playing ways of making up after peer conflict, and understanding and handling peer teasing (Kuché & Greenberg, 1994). The building self-esteem and peer relations lessons in PATHS introduces positive self but does not have in depth lessons about the topic. PATHS does not teach the other aspects self-identity (e.g., unique self, coherent self, and future self) addressed in the ARC model.

### Does PATHS Include Components of Trauma Experience Integration?

The PATHS curriculum does not include trauma experience integration. Trauma experience integration focuses on examining the trauma that has occurred and being able to accept that it is part of an individual's experience and identity but it is not their whole identity. This requires examining thematic or fragmented self-states and the related early experiences and processing specific events.

## Discussion

Children who have experienced trauma often have deficits in their social-emotional skills and school success is dependent upon social-emotional skills. It is important for schools to have programs that teach social-emotional skills and help children who have experienced trauma to be successful in school. The ARC framework was developed as an intervention designed to address the array of developmental needs experienced by traumatized children. PATHS is a SEL curriculum that is used in schools across Nova Scotia. The purpose of this study was to examine if PATHS is a good

curriculum to use in schools with children who have experienced trauma, based on research about social-emotional learning programs and the developmental needs of traumatized children identified by the ARC framework.

**Consistency in School and at Home**

Consistency is an important component for the development of social-emotional skills. The first goal was to determine if the PATHS curriculum is structured to ensure children have consistency and opportunities to practice social-emotional skills. The PATHS curriculum is designed to be implemented throughout the school and provide opportunities to practice skills. The creators recommend whole school participation in the program, training for all staff involved in implementing the program, common terminology to be used by all staff, and that PATHS posters be displayed throughout the school. All of these recommendations would help to create consistency in the school if they were implemented. If there were children in a class who had experienced trauma, it would be particularly important for PATHS to be implemented in a way that is consistent across classes and throughout the entire school. PATHS can become part of the routine in the school, which in turn can help it become part of the school culture. When all of the adults in the school are informed about the PATHS curriculum there is more likely to be consistency in their response to the students. This consistency in response may lead to an environment that feels predictable and safe for all students but could be particularly beneficial for those who have experienced trauma.

If it is implemented as recommended, PATHS has the potential to be quite beneficial for students; however, school wide, consistent implementation may not always be the reality. There could be a number of reasons for this. Administrators may not

understand or value the importance of a whole school social-emotional program so PATHS may only be taught in individual classrooms rather than being implemented school wide. Teachers may not understand the importance of developing children's social emotional skills so they might not implement the program fully in their classroom. It is possible that teachers may adopt the easier parts of the PATHS program, such as PATHS Kid of the Day, but they might not have time to spend teaching the lessons and modeling the skills due to the busy demands of the classroom. This could be problematic because the lessons and modeling of skills are the core of the PATHS curriculum. If the teachers are not spending time on the lessons and modeling good social-emotional skills then the children may not develop the social- emotional skills taught within the program.

The next goal was to determine if the PATHS curriculum encourages a partnership between the school and home environment. The PATHS curriculum does encourage this partnership. Again, however, there could be practical challenges that get in the way of this partnership. Teachers in today's schools and parents of today's children are very busy. It is possible, therefore, that schools may not have time to effectively communicate with parents about the PATHS curriculum. If the parents are not informed about or involved with the lessons, then they may not know what skills are being taught through this program or how to model these skills for their children. This may lead to the children not practicing newly learned social-emotional and problem solving skills in real life situations. It could also result in parents accidentally providing conflicting information to children about how to manage interactions and solve problems.

Parents, as well as teachers, do serve as models and provide prompts, feedback, and reinforcement that could help children further develop SEL skills learned in the

PATHS program. For students who have a history of trauma, family involvement in PATHS could be particularly important. Perry and Szalavitz (2006) found the most effective interventions with children who have experienced trauma involve educating and supporting the child's social support network or family. If these families were supported in using PATHS language and strategies, it could make it more likely that there would be consistency in response at home and school. Despite the potential benefit of supporting the use PATHS language and strategies at home this may logistically be difficult to co-ordinate. The school system is generally not set up to give support and training to families.

**Teacher Training**

Jennings and Greenberg (2009) found teachers with greater social-emotional competence are more effective in teaching a SEL curriculum, because they are good role models for desired social-emotional behaviour and they create a more positive classroom climate. Given the importance of a teacher's social emotional competence, the next inquiry was whether the PATHS curriculum includes training to build the social-emotional skills in teachers.

The PATHS curriculum does include a two day PATHS workshop for teachers and ongoing consultation with a PATHS facilitator, but these components focus on the curriculum and how to use the curriculum to develop the social-emotional skills of students. The PATHS Instructor's Manual does address the importance of teachers being aware of their own values, feelings, and attitudes and the importance of modeling the social-emotional skills, behaviours, and problem solving strategies they want the children to use. However. PATHS does not give teachers any direct instruction to help build their

social-emotional skills.

The lack of explicit social-emotional skills training for teachers is a major drawback of the PATHS curriculum. This may be particularly true when working with children who have experienced trauma and exhibit challenging behaviours. When a child is dysregulated it is of upmost importance that the adults around them have strong social emotional skills and can remain calm. When a child is very dysregulated in a classroom filled with other children and the teacher needs to be able to control their own affect to help calm the dysregulated child and not escalate the situation, it is important that the teacher has strong social emotional skills.

**Self-Regulation**

The next goal was to determine if the PATHS curriculum explicitly teaches self-regulation skills. Children who have experienced trauma often have difficulty with self-regulation, including affect identification, modulation, and expression. A SEL program used with children who have experienced trauma should, therefore, teach self-regulation skills. The PATHS curriculum does teach self-regulation; however, the amount of self-regulation training in the program may be enough for most students but may not be intensive enough to meet the needs of children who have experienced trauma.

The PATHS Readiness and Self-Control unit addresses affect modulation, but the lessons may not be appropriate for all age levels and may not be in-depth enough for a child who has experienced trauma and struggles with self-regulation. In this unit, students are taught a strategy to stop and to signal that they need help because they are upset (e.g., turtle technique). Older children might be reluctant to draw attention to themselves in the classroom by doing this and could also be concerned about how their peers might react.

Therefore, the turtle technique strategy may need to be adapted for older students. In this unit the students are only taught a few strategies to change their emotional state. The focus is on taking deep breaths until they feel calm and a teacher can help. While deep breathing can definitely be helpful, students would probably benefit from learning about multiple strategies for increasing positive emotions or increasing energy levels and decreasing negative emotions or decreasing energy levels because not every strategy will work for everyone in every situation. The PATHS curriculum does encourage teachers to continue to monitor and teach age appropriate coping strategies, but teachers are not given direct instruction about how to teach these skills. Their ability to teach these skills is probably dependent on the teacher's own self-regulation strategies and social-emotional skills.

The PATHS Feelings and Relationships unit teaches students some components of the ARC affect identification building block. Students are taught to identify their emotions through building their feeling vocabulary and learning to identify emotions in themselves and others. However, the PATHS curriculum does not teach about the connection between emotions and their body (e.g. physical sensations, thoughts, behaviours, stress response system, trauma triggers). Knowledge of the connection between emotions and the body may help to give an individual a feeling of control over their emotions and may help them use strategies more effectively to manage their emotions. An additional area of self-regulation the PATHS curriculum is missing is teaching students how to effectively express emotions to meet their needs. Children need to learn who to share their emotions with and when it is appropriate to share personal emotions and experiences. They also need to learn to communicate emotions without

becoming aggressive or projecting their emotions onto others. Without the ability, to effectively express their emotional needs a child may struggle in relationships with their peers.

**Executive Functioning**

Children who have experienced trauma have severely delayed executive functioning skills due to inadequate development of the prefrontal cortex (Mezzacappa, Kindlon & Earls, 2001). It would be important for a SEL program used with traumatized children to teach executive functioning skills. It was examined whether PATHS teaches executive functioning skills. PATHS does teach executive functioning skills in the Interpersonal Cognitive Problem Solving Unit. This unit teaches effective problem solving skills that could be beneficial to all of the students in a class. It breaks problem solving up into steps that are easy to follow and the students have visual reminders of the steps on posters displayed in the school. The unit incorporates practicing the problem solving steps in an effort to help the students generalize these skills to real life problems.

Children with lower levels of executive functioning skills may need additional time and practice to become effective problem solvers. An additional difficulty in acquiring problem solving skills for some students may be that affect modulation is a prerequisite of active problem solving. As previously discussed, the self-regulation lessons in the PATHS curriculum may not be intensive enough for those students who struggle with self-regulation. It would be important to ensure that students have strong emotion modulation skills prior expecting them to become effective problem solvers.

**Positive Self-Identity**

Children who have experienced trauma may internalize and feel defined by negative experiences in their life. This may cause them to have a negative self-identity. The next goal was to determine if PATHS help to foster positive self-identity in traumatized youth. The PATHS curriculum does not have a separate unit focusing on building positive self-identity but it does have lessons in each of the units about building self-esteem and peer relations, which are components that can help build positive self-identity. Although the self-esteem and peer relations lessons in the PATHS program are related building positive identity they might not be enough for a child who has experienced trauma and is struggling to develop positive identity.

One of the PATHS activities that is part of the self-esteem lessons is PATHS Kid of the Day. Children who have experienced trauma may have a negative perception of themself and find it difficult to hear compliments about themself when it is their turn to be PATHS Kid of the Day. The peer relations lessons and associated role play practice may also be difficult for children who struggle with peer relationships. Teachers may need to attentive to how the child responds to these lessons and provide additional support to these students if needed.

The PATHS curriculum is missing the other parts of the ARC self-development and identity building block, which are unique self, coherent self, and future self. These are important components to help a child who has experienced trauma develop an understanding of self and personal identity. These components help children to identify unique and positive qualities, build a sense of coherence across experiences in their life, and imagine a range of future possibilities.  When young children are exposed to chronic

trauma they often think their identity revolves around their negative experiences and understand themself as unloved, unworthy, helpless, or damaged. Engaging in activities that help to build a positive self-identity is important for an individual who has experienced trauma and these activities, overall, are lacking in the PATHS curriculum.

**Trauma Experience Integration**

Trauma experience integration can help traumatized children decrease the intensity and gain control over the feelings related to their trauma. It may be beneficial for children to have this support at school. The last goal was to determine if PATHS includes trauma experience integration. PATHS is a program for all students not just those who have experienced trauma and it does not include trauma experience integration. Trauma experience integration would only be appropriate for children who have experienced trauma not all of the other children in the class. Trauma experience integration also needs to be facilitated by a trained professional, such as a psychologist, rather than a classroom teacher due to sensitive nature of the details of the child's trauma. If this sensitive information was inappropriately examined by an untrained professional it could be more damaging than helpful for the traumatized child. It could also be detrimental to the other children in the class if they heard about the trauma that their classmate experienced. However, some of the skills learned from the PATHS curriculum could help prepare a child for trauma experience integration with a trained professional. Part of trauma experience integration requires the child to reflect on patterns of behaviour, thoughts, feelings, and physiological states that occur in daily life and how they might be related to past experiences. The PATHS curriculum teaches children to

identify feelings and teaches some self-regulation skills. These skills would be needed for a child to reflect about difficult personal experiences.

**Overall Conclusions about PATHS**

The PATHS curriculum is a SEL program designed for all elementary students. It may be a good SEL program to use with all of the students in a school. It is structured in a way that could also be beneficial for children who have experienced trauma, but it does not claim to be a program designed for traumatized children. The creators acknowledge PATHS should not be used as a replacement for behavioural management programs with children who have severe behavioural or emotional difficulties or as a substitute for counseling or psychotherapy. PATHS can, however, be used in addition to other programs to help build the cognitive and emotional competence of children who have experienced trauma (Kuché & Greenberg, 1994).

The PATHS curriculum promotes consistency in implementation, teaches self-regulation and executive functioning, and introduces positive self-identity. These are components that could be beneficial for all students. Some limitations of the program could be: consistent implementation may the ideal rather than the reality, key components of self-regulation and positive self-identity are missing from the curriculum and the executive functioning lessons are only useful for students if they have already built self-regulation skills. PATHS does not build the social-emotional skills of teachers or facilitate trauma experience integration. The PATHS curriculum introduces social-emotional skills, but additional supports to address a traumatized child's individual areas of competency and difficulty would most likely be needed to help these children to be successful.

## Recommendations

PATHS is SEL program that may be suitable to be used with all of the students in a school. The following are recommendations about implementing PATHS in a real school environment.

1. School boards should create policies to ensure PATHS is being implemented consistently throughout a school. One way to help ensure PATHS is being taught is to have protected time in the school schedule for PATHS programming. Additional staff may be needed to help with implementation. Multiple school board level PATHS facilitators could each work with a couple of schools to help implement the program and to support staff teach the lessons within their class as well as helping a school use the curriculum school wide. It may also be beneficial that all school staff, not just teaching staff and administrators, be taught about the purpose and importance of the curriculum.
2. School systems need to give support and training to families in PATHS and social emotional learning to help them implement the same strategies at home. This may require the assistance of additional staff or additional agencies to support families outside of regular school hours. Information about the program in evening sessions and the session could provide an incentive to attend, possibly provide a meal to participants as well as childcare during the session. PATHS facilitators or school psychologists could teach these sessions.
3. Build teachers and other school staff members knowledge and competencies in social emotional learning and trauma. School psychologists are a resource within the school system that are trained in these areas and could offer professional

development for school staff. Some important information for school staff to learn more about may be: the developmental process of social-emotional skills; the relationship among emotion, cognition, and behaviour; and how to meet the social emotional needs of students. More importantly give teachers opportunities to develop their own social emotional skills including self-awareness and self-regulation. Teachers should also become knowledgeable about attachment theory, the prevalence of trauma and the effect trauma can have on neurobiology and child development, and de-escalation strategies for a dysregulated child.

4. Teach additional self-regulation strategies.
    a. The turtle technique could be adapted for older children so they have a strategy that is more age appropriate.
    b. Ensure that teachers know age appropriate coping and self-regulation strategies so they can teach them to the students.
    c. The students also may benefit from being taught about how to express emotions effectively. This would include but is not limited to expressing emotions rather than holding them inside, expressing negative emotions without aggression and learning with whom and when to share personal information and emotions.
    d. Children may also benefit from explicit teaching about the connection between emotions and their body (e.g. physical sensations, thoughts, behaviours, stress response system, trauma triggers). They could learn to use this information to help them to regulate their emotions.

e. Ensure children have strong self-regulation skills prior to teaching them effective problem solving techniques.

5. Children who have experienced trauma may need some additional support to build positive self- identity. Self-development and identity focuses on helping children to identify unique and positive qualities, build a sense of coherence across experiences, and imagine a range of future possibilities. It would be important for these children to learn about their unique self, positive self, coherent self, and future self. This support would most likely need to be provided on an individual basis with a mental health professional such as a school psychologist.
6. Children who have experienced trauma may also need intervention focused on trauma experience integration. This could help a child build a coherent understanding of self in order to increase their ability to effectively engage in present life. Through trauma experience integration children can decrease the intensity of their emotions and gain control over their trauma experience. This support would need to be provided on an individual basis by a well-trained mental health professional such as a school psychologist.

## Conclusion

Social-emotional skills are a precursor to learning academic skills and need to be prioritized in schools. PATHS is one SEL program that can be used that may help children who have experienced trauma. It contains components that could be helpful for this population but it also misses some key components that could be useful for children who have experienced trauma. These children would most likely need additional interventions to help them build social-emotional skills and be successful in school. The

school system also needs to adjust to ensure that staff have more knowledge and competencies in social-emotional skills and trauma informed practices. School psychologists have the skill set to support students and staff in these areas but their skills are often underutilized.  Trauma and the resulting impacts on children are prevalent. It is vital that school systems use all of their resources to help support these children.

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