Paying Attention to Mindfulness:

Introducing Mindfulness to Elementary School Children

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Chapter One: Introduction

Of all the things we teach our children, the teaching of mindful presence is one of the most critical yet often ignored in the rush to cover curriculum and manage the task of supervising children.

-Adele Caemmerer, from Thich Nhat Hanh’s retreat for teachers in India, 2008

Self-Regulation

In schools across the country it seems self-regulation courses, workshops, books and resources are being offered with more frequency. Classroom teachers, special education teachers, occupational therapists, and other specialists interested in supporting young people with the development of self-regulation skills are looking for strategies to teach students (Winner, 2011). And while there is a growing consensus that self-regulation is as important, if not more important, as IQ to predict future success for students (Shanker, 2013), there is often confusion about how to actually teach self-regulation skills to young people and exactly what the specific skills are. The emerging field of mindfulness education for children targets particular skills that enhance self-regulation in young people and offers teachers specific activities to model for and practice with their students (Burke, 2009; Coholic, 2010; Fisher, 2006; Greenberg and Harris, 2011; Napoli, Krech & Holley, 2005; Schirmer, 2013; Schonert-Reichl & Lawlor, 2010; Semple, Lee, Rosa & Miller, 2009).

At a general level of understanding, many teachers know that self-regulation skills are different than the fundamental academic skills that have been emphasized in recent years and for many educators this is refreshing news (Garrison Institute Report, 2005; Tregenza, 2008; Yager,
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2009; as cited by Albrecht, Albrecht & Chen, 2012). The reason why has been captured by Hyland (2011), “[e]ducation at all levels of the system has been seriously impoverished over the last few decades through an obsession with standards, targets, skills and competencies, and this has resulted in a one-dimensional, economistic and bleakly utilitarian conception of the educational task” (p. xi). As education slowly moves from a list of prescribed learning outcomes towards broader learning objectives with a stronger focus on learning how to learn rather than what to learn, there is more room in the classroom to teach skills that will benefit children inside and outside of the academic world. The British Columbia Ministry of Education is currently transforming their curriculum to reflect this move. The intent of the curriculum change is to create a “more flexible curriculum that prescribes less and enables more, for both teachers and students and a system focused on the core competencies, skills and knowledge that students need to succeed in the 21st century” (Province of British Columbia, 2013). The proposed new curriculum is divided under three broad cross curricular themes: Thinking Competencies, Communication Competencies and Social and Personal Competencies. Two areas that would closely connect with self-regulation in general, and mindfulness in particular, are: 1) Thinking Competency: Reflective and 2) Personal and Social Competencies: Personal Awareness/Responsibility (Province of British Columbia, 2013). The following section outlines how mindfulness can be linked to self-regulation.

Mindfulness

Hyland (2011) explains that mindfulness has its roots in ancient Buddhist philosophy but can now be found throughout North American culture. He asserts that Jon Kabat-Zinn is the person most associated with promoting secular mindfulness. Kabat-Zinn’s (1990) definition is commonly embraced by individuals incorporating mindfulness into their lives especially from a
secular perspective. He defines mindfulness as paying attention on purpose to the present moment without judgement. Further, Siegel (2007) suggests “there are many ways of cultivating mindful awareness, each of which develops an awareness of the faculties of the mind, such as how we think, feel and attend to stimuli” (as cited by Hyland, 2011, p.11). Mindfulness is surfacing in counselling, therapy, yoga centers, mediation centers, religions and continuing education programs.

Gunaratana (2002) asserts that mindfulness reminds us to pay attention to what we are doing in the present moment. Attention is directed on one item (breathing, eating, walking, or any other activity being pursued) and, should the mind lose this focus, “mindfulness reminds you of this and brings the mind back (gently, uncritically and with compassion) to its object. Repeated practice of this process helps to establish new mental habits to combat automatic and mindless mental activity” (as cited by Hyland, 2011, p. 29). This skill of purposely paying attention can be linked to self-regulation. Shanker (2011) writes that a child is best able to learn when he or she is calm and attentive (p. 8). Similarly, according to Mendelsen et al. (2010), mindfulness-based approaches show potential to enhance “regulatory capacities and responses to stress” among young people (p. 992).

Mindfulness focuses on calming the mind, letting go of stress, anxiety and tension and being present in the moment; it may prove be a valuable tool to teach our students (Felver, et al., 2013). With a growing body of research to support the efficacy of mindfulness strategies such as deep breathing, meditation, noticing, gratefulness, deep pressure and more, we can teach these strategies with increasing confidence (Fisher, 2006; Reid, 2008; Greenberg and Harris, 2012; Jennings, 2008; Schonert-Reichl and Lawlor, 2010; Schirmer, 2013; Byk, 2011; Coholic, 2010; Seligman, 2011).
Students Who Cannot Stay Focused

As a curriculum coordinator, many of the students I am asked to come and observe are lacking skills to stay focused or to stay on task. In my experience, adults are often quick to suggest that the student probably has Attention Deficit Hyperactivity Disorder (ADHD). Some of these students have met the diagnostic criteria and have been diagnosed as having ADHD, while many do not. Regardless of diagnosis, the inability to focus or stay on task is troubling for many teachers, parents and indeed for many students themselves. The type of attention that is most critical in a school setting is what Bodrova and Leong (2007) describe as “deliberate attention” (p. 55). They stress that this skill is especially important for school as “the thing that is most attention-grabbing may not be the most important characteristic of what the child is learning about” (p. 55).

Sheils and Hawk (2010) report that self-regulation has “been implicated in prominent theories of ADHD (as cited in Douglas, 1999; Sergeant, 2000) and is gaining research attention as single core deficit models are increasingly viewed as insufficient to understand this heterogeneous disorder” (p. 12). Similarly, Crundwell’s (2005) research results “indicate that the social and behaviour problems of ADHD children are likely, in part, related to issues of self-regulation of emotions and their level of emotionality, which place them at significant risk for ongoing behaviour and social difficulties” (p. 1).

Roeser and Peck (2009) are among a growing number of researchers who believe that self-regulation can be enhanced through the explicit teaching of mindfulness practices (Greenberg & Harris, 2012; Schonert-Reichl & Lawlor, 2010; Fisher, 2006; Felver, 2013; Rotne & Rotne, 2013; Snel, 2013; Greenland, 2010). They maintain that school curriculum should
include explicit teaching to cultivate awareness which in turn will enhance student’s ability to attend, think, feel, perceive and act in an increasingly self-regulated manner. After conducting research with children to examine the impact of mindfulness strategies on both motivation and self-regulation, they conclude that an “education in awareness’ has the potential to transform the lives of young people for the better” (p. 133).

Children’s Literature

Much evidence exists to support the use of children’s literature in the classroom. Studies have promoted using children’s literature to teach history, science, math and economics, as well as more abstract concepts such as, problem solving, aging, learning disabilities and ethics (James, M., 1989; Forgan, J., 2004; Mallinson, J., 1996; Royce & Wiley, 1996; Braddon, Hall & Taylor, 1993; McMillan & Gentile, 1988; Rodgers, Hawthorne & Wheeler, 2007; Prater, Dyches, & Johnstun, 2006; Blaska & Lynch, 1998). Considering the breadth of topics shown to be effectively taught using children’s literature, it seems reasonable to explore the potential of teaching self-regulation skills in general and mindfulness skills in particular using story books.

The following evidence presented in the form of a literature review was used in the development of My Gratitude Jar, a children’s book intended to introduce elementary aged children to the mindfulness concept of gratitude. The goal of the book is to introduce children to the practice of gratitude in a way that is engaging, instructive and accessible. It is hoped that the book will provide students with a new skill or to strengthen an existing skill to allow them to engage with the world in a more self-regulated manner.

To support the creation of this children’s book promoting mindfulness as a vehicle to increase self-regulation in students, a review of literature is presented. To begin, recent research
on self-regulation is discussed, and then an exploration is offered of the concept and techniques of mindfulness. Next, research which investigates students who struggle to stay focused is offered; this is followed by a Vygotskian perspective on the importance of self-regulation in children. Finally, research regarding the efficacy of using children’s literature to teach children is presented.

Chapter Two: Review of Literature

The intention of this literature review is to examine current research regarding self-regulation, mindfulness, attention difficulties and children’s literature to provide evidence to answer the question: Can children’s literature introduce basic mindfulness concepts to children with the intention of increasing self-regulation skills?

Self-Regulation

Bronson (2000) states that self-regulation is “central to our understanding of what it is to be human” (p. 1). Vohs and Baumeister (2011) claim that self-regulation has become “one of the most centrally important concepts in all of psychology” (p. xi) and Shanker (2013) asserts that we are in the “midst of a revolution in educational thinking and practice” due to the fact that scientific “advances in a number of fields point to a similar argument – that how well students do in school can be determined by how well they are able to self-regulate” (p. ix). Considering such strong assertions, self-regulation is worthy of further investigation by anyone concerned with the developmental success of children.
What is self-regulation? Self-regulation defined by Rimm-Kaufman, Curby, Grimm, Nathanson, and Brock (2009) as a child’s “ability to manage their emotions, focus their attention, and inhibit some behaviours while activating others” (p. 959) and is linked to enhanced student achievement (Schunk, 2005; Mastrangelo, 2012; McClelland & Tominey, 2013; Shanker, 2013; Roeser & Peck, 2009). As such there has been a greater interest from a research perspective in exploring how to enhance self-regulatory skills in a school setting for children of all ages (McClelland & Tominey). The following sections will expand upon the aforementioned definition and explore both the strategies and benefits of self-regulation.

According to Rimm-Kaufman et al. (2009) student’s self-regulation skills are critically important to children’s success in starting school. They note that many demands of the classroom require students to manage emotional, cognitive, attentional and behavioural control. For example, children need to raise their hands when they want to contribute to class discussions or ask a question, wait their turn during activities with classmates and resist continuing a preferred activity when it is time to move on to another, perhaps less engaging, activity.

Baumeister and Vohn (2011) describe self-regulation as the ability to:

1. attain, maintain, and change one’s level of energy to match the demands of a task or situation,
2. monitor, evaluate, and modify one’s emotions,
3. sustain and shift one’s attention when necessary and ignore distractions,
4. understand both the meaning of a variety of social interactions and how to engage in them in a sustained way and,
5. Connect with and care about what others are thinking and feeling – to empathize and act accordingly. (as cited by Mastranglo, 2012, p. 8)

Shanker (2013a) asserts that the past ten years has seen a breakthrough in understanding the factors that enhance academic success and chief among them is that self-regulation factors significantly into students’ success. The core of research has been done by physiologists studying the systems of the brain that regulate expenditure of energy and recovery from this expenditure. Shanker draws a distinction between self-control and self-regulation. Self-control as a concept can be traced back to Plato’s view as resisting temptation with a view that like a muscle it can be strengthened through will power and learning how to resist certain urges. A child who lacks self-control is considered somehow weak. Self-regulation on the other hand, he states “seeks to understand the causes of problematic behaviours, not suppress them” (p. 3). He explains that each time a child experiences a stressor their brain responds and this process consumes energy. This process is then followed by a restorative process in order to recover from the expended energy.

Shanker (2013a) identifies five domains of self-regulation: arousal, emotion, cognitive, social and prosocial. In order to maintain the state of arousal appropriate for current learning circumstances, students are required to process environmental stressors, for example, visual, auditory and olfactory input. Significantly, Shanker asserts that the arousal domain underpins all the other four domains. The emotional domain requires students to regulate both positive and negative emotions. In the cognitive domain it is necessary for students to sustain attention and switch attention when necessary. Mastering skills of co-regulation is key in the social domain and the development of empathy is essential in the prosocial domain.
Shanker (2013a) categorizes three stages of self-regulation: 1) identification and reduction of stressors, 2) development of self-awareness (exteroception and interception) and 3) development of self-regulation techniques – learning how to both mitigate and avoid a stress response. He recommends strategies for each identified stage of self-regulation. Regarding stage one (identification and reduction of stressors), strategies that may be effective include: use of headphones, creating “micro sound controlled environments” (p. 18) within the classroom, reduction of visual noise and different lighting options. To address stage two (development of self-regulation techniques development of self-awareness) Shanker recommends yoga, the MindUp program, the ALERT program and for some students developing core body strength and motor control. The third stage involves targeting specific self-regulation strategies fidget tools, play dough, exercise equipment, a variety of seating options, loud or soft music and/or a Snoozelen room. He reminds educators that students are constantly changing therefore trial-and-error is always necessary and what works one day won’t necessarily work the next; similarly, what works for one student might not work for another student.

Shanker (2013b) claims that special education is a particularly challenging area for teachers because of the sometimes overwhelming number of issues needing to be addressed and the many requirements set forth by Ministries of Education. However, he is quick to point out that regardless of the demands, students with special needs are entitled to the same rights as all students. He further notes that the more we tailor our teaching practices and classroom environments to meet individual student’s needs the more likely we are to see each student fulfill his or her true potential. As with all students, self-regulation can help them reach their full potential. He clarifies that he is not suggesting that students’ special needs are the cause of
students’ problem but rather a “downstream consequence of the complex and highly variable causes of developmental, psychological, and behavioural problems” (p. 122). He asserts that the:

Most important lesson to be learned from working with children with special education needs may be that, as long as we get a child’s learning curve to slope upward, however slowly, we need to assume that the upward trajectory will continue. This suggests that educators should always try to create opportunities for all children to develop core emotional, cognitive, social, and prosocial capacities, regardless of the challenges with which they may be coping. To do so is to recognize every child’s overall potential and its connection to the remarkable ‘plasticity’ of the brain. (p. 122)

Further, he claims that the more we focus on teaching subjects to students with special needs without first addressing their self-regulatory needs, the more difficulty they will have learning the subject material. However, if teachers first focus on the issue of developing students’ self-regulation skills then students will be more able to reach their full educational potential.

Vohs and Baumeister (2011) assert that self-regulation has “emerged from obscurity and uncertain beginnings to become one of the most centrally important concepts in all of psychology” (p. xi). Bauer and Baumeister (2001) use the terms self-control and self-regulation interchangeably and define them as the “capacity to override natural and automatic tendencies, desires, or behaviors; to pursue long-term goals, even at the expense of short-term attractions; and to follow socially prescribed norms and rules” (p. 65). Stated simply they say self-regulation is the capacity to modify one’s responses to achieve an outcome that would otherwise not naturally arise. Therefore, the goal of self-regulation is to inhibit the self’s natural tendency to
proceed on “automatic pilot” and to instead consciously steer behaviour in a desired direction. They assert that self-regulation capacity is not an unlimited resource and can in fact become depleted. That being said, they note that research has demonstrated that by practicing self-regulation, self-regulatory strength can be increased. They conclude that teaching people skills in conserving or allocating self-regulation resources could help alleviate the societal and personal ills associated with flawed self-regulation. Bauer and Baumeister’s belief in the importance of self-regulation skills is so strong that they assert the key to cultural and personal advancement could lie in how effectively people are taught self-regulation skills and how well “society structures itself to create opportunities for its members to develop the capacity for self-control” (p. 79). This statement supports the notion of introducing children to knowledge of and experience with self-regulation strategies in a school setting.

According to Bodrova and Leong (2007) by the end of a child’s kindergarten year, children should have self-regulation capabilities which they describe as “the ability to act in a deliberate, planned manner in governing much of their own behaviour” (p. 127). They claim that at the end of kindergarten children should be able to regulate emotional and physical behaviours as well as some cognitive behaviours. From a Vygotskian perspective they assert that during the “preschool to kindergarten years there is a change in the relationship between a child’s intentions and the subsequent implementation of an action” (p. 127). The child’s increased self-regulation allows the child to think before he or she acts. The authors caution against thinking that we have taught children self-regulation skills simply because the child has learned to respond appropriately to a teacher’s question or abide by classroom rules when the teacher is present. They refer to this as “teacher regulation” – the ability to control themselves in the presence of the
teacher but not when the teacher leaves the room. They define self-regulation as the ability of the student to “voluntarily perform with or without an adult present” (p. 162).

Mastrangelo (2012) contends that schools need to focus on more than academics and promotes self-regulation as an important aspect to meet students' social and emotional needs. She points out that mental health concerns are impacting schools at an alarming rate noting that self-regulation has been shown in research to increase students’ success in future professional and personal relationships, academic pursuits and careers. Furthermore, she maintains that students in primary grades are capable of developing self-regulation skills and applying them. She notes that the Ontario ministry of education has incorporated self-regulation into their education goals. The province offers guidelines to teachers assessing student’s self-regulation skills. Teachers are instructed to consider how well individual students:

1. sets his/her individual goals and monitors progress towards achieving them;
2. seeks assistance when needed;
3. assesses and reflects critically on her/his strengths, needs and interests;
4. identifies learning opportunities, choices, and strategies to meet personal needs and achieve goals; and
5. perseveres when facing challenges. (p. 8)

She reminds us that it is important when dealing with our most challenging students to remember that social-emotional, behavioural, and cognitive difficulties are manifestations of a “sensory system gone awry (either on over or under drive)” (p. 9). She notes that it is important to offer all students choice regarding participation, performance outcomes, physical setting and social settings. Teachers’ own self-regulation is also underscored as an important factor in
improving students’ self-regulation. She reports that when a teacher reaches an optimal state of self-regulation they can then model effectively for students what it looks like to be calm, focused and alert.

In her curriculum, The Zones of Regulation, Kuypers (2011) states that self-regulation can be referred to by many terms: self-management, self-control, impulse control and anger control. All of the terms refer to a student’s capacity to modify their own level of alertness and their display of emotions in order to obtain goals in a socially adaptive manner. Simply put, she says that self-regulation is the “ability to do what needs to be done to be in the optimal state for the given situation” (p. 3). She claims this includes “regulating one’s sensory needs, emotions, and impulses to meet the demands of the environment, reach one’s goals, and behave in a socially appropriate way” (p. 3). She identifies three important neurological aspects needed to be integrated in order for an individual to successfully self-regulate: executive functioning, sensory processing and emotional regulation.

Kuypers (2011) defines sensory processing as the manner in which individuals take information received by their sensory receptors then integrate and organize that information so that they can purposefully respond to it. Sensory information includes: auditory, visual, tactile, olfactory, gustatory, vestibular and proprioception. The Zones curriculum attempts to address sensory processing needs by supporting students in understanding what strategies help to make them feel regulated. Executive functioning is defined as the “cognitive process involved in the conscious control of thoughts and actions” (p. 5). Many different mental operations are components of executive functioning; some that are most significant to self-regulation are: attention shifting, working memory, internalization of speech, flexible thinking, planning and impulse control. Emotional regulation refers to a student’s ability to control their emotional
reactions to help meet their goals. This requires students to monitor, evaluate and modify the timing and intensity of their emotional response. Kuypers asserts that often adults believe that they are not meeting with success when addressing student’s disruptive behaviour because they have not found a strong enough motivator. She counters with the thought that much of students’ disruptive behaviour is because they simply lack the knowledge to make a better choice. Students need explicit teaching on how to behave differently and to be offered opportunities, in a supportive and safe environment, to practice the skills. They need to be taught regulation skills that would allow them to independently calm themselves in the classroom without disrupting the other students. The curriculum’s emphasis on not judging the zones (blue/ low alert state; green/calm, alert and focused state; yellow/ heightened alertness; red/ extremely heightened state of alertness) parallels the importance placed on non-judgemental acceptance promoted in mindfulness. The use of language to acknowledge and label desired behaviours also mirrors the focus within mindfulness of awareness; teachers are increasing the students’ awareness of the desired state of alertness for a variety of settings.

Barkley (2011) presents research on the relationship between ADHD and self-regulation. He explains that ADHD can be described as involving “developmentally inappropriate degrees of inattention and hyperactive-impulsive behavior” (p. 551). He notes that although this description focuses on attention problems and impulse control, students with ADHD often also demonstrate difficulties in many other cognitive, emotional, and motor regulation abilities. These abilities are included in the executive functioning domain and he asserts that theorists have speculated that at the heart of ADHD are problems with executive function in general and self-regulation in particular. He outlines three steps involved in self-regulation: 1. Inhibiting an initial response to stimuli, 2. interrupting and re-evaluating an ongoing response and, 3. protecting the
executive response and goal-directed behaviour from competing responses and events. He further notes that the first step is the most important as it creates the delay to allow the student to consider optional behaviours and to respond accordingly. He states that in his theory executive acts comprise the main classes of behaviour used for the purpose of self-regulation. An executive act is defined as “any action directed toward oneself that functions to modify one’s own behaviour so as to change future outcomes for that individual” (p. 553). He details the steps involved in this process: “self-stopping, self-management within time, self-organization and problem-solving across time, self-activation, initiate outcomes, and self-motivation to sustain action toward the goal” (p. 554). This inhibition or self-stopping is a critical skill that children require to enhance their ability to self-regulate. Without it a child cannot direct their actions or behaviours in a more acceptable manner because they will have already responded in an impulsive way. Barkley presents an intriguing perspective of ADHD in his summary:

Those having ADHD will be more under the control of external events than of mental representations about time and the future, under the influence of others rather than acting to control oneself, in pursuit of immediate gratification over deferred gratification, and under the influence of the temporal now more than of the probable social futures that lie before them. From this vantage point, ADHD is not a disorder of attention, at least not to the moment or to the external environment, but is more a disorder of intention – that is, attention to the future and what one needs to do to prepare for its arrival. It is also a disorder of time – time management specifically – in that individuals manifest an inability to regulate their behaviour relative to time as well as to others at their developmental level. This creates a sort of temporal myopia in which the individual responds to or prepares only for events that are relatively imminent rather than ones that
lie further ahead in time to which others their age are preparing to be ready for their eventual arrival. (p. 559)

Having explored the definition of self-regulation the next section will expand upon the benefits associated with enhanced self-regulation and point to reasons why self-regulation is an important focus for the education system.

**What are the benefits?** Research indicates that the benefits of increased self-regulation are many and varied: improved motivation, improved emotional and behavioural control, enhanced cognitive processing, increased pro-social behaviour, improved motivation, enhanced planning ability, improved meta-cognitive ability, improved problem-solving ability, reduced aggression, decreased anxiety, increased perspective taking, increased academic performance, improved impulse-control, improved social competency and more (Bronson, 2000; Vohs & Baumeister, 2011; Shanker, 2013). Shanker (2013) lists six critical elements of optimal self-regulation:

1. when feeling calmly focused and alert, the ability to know that one is calm and alert,
2. when one is stressed, the ability to recognize what is causing the stress,
3. the ability to recognize stressors both within and outside the classroom,
4. the desire to deal with those stressors,
5. the ability to develop strategies for dealing with those stressors and
6. the ability to recover efficiently and effectively from dealing with stressors. (p. xi)

All these benefits suggest that increasing self-regulation would be an advantage to individual students, classrooms, entire schools and, by extension, whole communities. The
following section will explore in more detail some of the research that has led to the confident and passionate endorsement of researchers to include self-regulation as a critical component to include in school curriculum (Shanker, 2013, Bronson, 2000; Winner, 2011; Kuypers, 2011).

Cazan (2012) studied the relationship between self-regulation skills in students and their academic adjustment and performance in first year post-secondary studies. She predicted that students with high academic performance would be students using effective self-regulation strategies. To test this hypothesis she recruited 280 first year university students and collected baseline data using both the MSLQ (The Motivated Strategies for Learning Questionnaire – Pintrich et al., 1991) and The Academic Adjustment Questionnaire (Clinciu, 2003). Cazan interpreted the results to indicate “self-regulated learning strategies [as] having a significant weight in the prediction of academic adjustment” (p. 107). The results suggest that students who plan their study schedule efficiently, monitor their progress and make adjustments to their behaviour as required by the learning situation meet with higher academic success.

Rimm-Kaufman et al. (2009) examined the connection between kindergarten students’ self-regulation, classroom quality and students’ adaptive behaviour. They assessed students’ self-regulation upon entering kindergarten using a 15-minutes direct assessment during the first 5 weeks of school. During the 15 minute assessment subtests were used from the Preschool Self-Regulation Assessment (Smith-Donald et al., 2007): gift wrap, balance beam, pencil tap and toy sort. The gift wrap assessment involved having the student turn away from the research assistant while they noisily wrapped a present for the child and then, once turned around, to wait to open the present while the assistant first tidied up. Times were recorded indicating how long (up to 60 seconds) the child was able to wait for each of these requests. For the balance beam assessment, students were asked to pretend a 6-foot piece of masking tape was a balance beam and walk
along it. Next, the children were asked to walk along the tape as slowly as possible. The bigger the discrepancy between the original walk and the slower walk reflected a greater degree of self-regulation. For the pencil tap assessment, children were requested to repeat pencil tapping rhythms made by the research assistant. Higher accuracy reflected higher self-regulation. The toy sort assessment, required the children to sort highly attractive and appealing toys for two minutes without playing with them. The longer the children could resist playing with the toys reflected a higher level of self-regulation.

For this study, classroom quality focused on the quality of interactions between teacher and students and was categorized into three classifications: instructional support, classroom management and emotional support. Classroom quality was measured by direct observation through multiple classroom visits. Students’ adaptive behaviour was measured with multiple classroom visits and teacher reports. In the spring, students’ were rated by teachers regarding behavioural and cognitive self-control as well as work habits. From May to November in 2 month intervals researchers observed students’ level of engagement and amount of off-task behaviour. The authors reported that results showed that students with better self-regulation assessed upon entering kindergarten were reported as showing more behavioral control, cognitive self-control and better work habits. Surprisingly, the authors also report that there was “no relation between children’s self-regulation in the fall and their observed classroom engagement” (p. 965). The researchers assert that higher levels of self-regulation seemed to ease students’ adjustments to kindergarten classroom demands. The authors present limitations regarding this study which include the small sample size, the rural setting and the fact that the study did not take into consideration the “bidirectional nature of interactions between children’s and teachers’ behavior” (p. 969).
Crundwell (2005) examined the impact of self-regulation skills on problem behaviours exhibited by 32 boys aged 6-11 diagnosed with ADHD using the DSM-IV diagnostic criteria. The study began with an interview that was conducted by the researchers with each parent. Next, the Disruptive Behavior Rating Scale (DBRS) was completed by each boy’s mother and teacher and an interview and observation was conducted with each child. Finally, teachers were requested to complete the Disruptive Behaviour Rating Scale (teacher version). To measure self-regulation, the Children’s Behaviour Questionnaire (GBQ) and the Self-Control Rating Scale (SCRS) were administered. After analyzing the results, the researchers found several positive correlations between variables, including: a positive relationship between students with higher levels of self-control and a lower level of behaviour problems, a positive relationship between higher levels of frustration/anger with more problem behaviours and a positive relationship between the intensity of hyper-active impulsive behaviour and decreased self-regulation. They concluded: “In terms of the relationship between self-regulation and behaviour problems, the results indicated that children who were rated by their mothers as displaying less self-control were also rated to have a higher frequency of behaviour problems” (p. 4). Crundwell explains that self-control is related to self-regulation:

…if an individual had the power to inhibit or delay responding to an event (self-control), he or she should also have the power to delay the expression of emotional reactions that would have been elicited by the event. By delaying the immediate affective response to an event, the individual has time to reflect on the event and to modify his or her eventual response. The delay also allows an individual to determine his or her eventual emotional expression. It is the ability to countermand or counterbalance the
initial charge of external events that results in the development and appropriate control of emotional self-regulation. (p. 2)

They caution against generalizing these results as the study only included a small sample size of only male students and relied heavily on data collected from their mothers but state that the results provide “at least some initial support for the suggestion that the greater the deficit in inhibition in ADHD children, the larger the deficit in executive functions and hence the greater the deficit in self-regulation of emotions and emotionality” (p. 4). Another limitation to take into consideration is that the data is correlational.

Bronson (2000) claims that self-regulation and motivation are closely related and therefore with increased self-regulation comes a greater ability for students to be self-directed learners, problem solvers and active participants. She asserts that these student qualities stem from the students ability to control their thinking and their behaviour coupled with a desire to do so. She claims there is a “convincing body of evidence that humans have intrinsic motivation for self-regulation” (p. 55). She suggests that a child’s desire to control and influence progress grows from a seemingly innate joy into an “active interest in mastery and achievement as the child grows older” (p. 56). She also highlights the importance of self-regulation in the development of behavioural and emotional control. Benefits for students with adequate self-regulation in these areas include: social competence, peer acceptance, school success and greater ease with life adjustments. She explains that during the primary grades, students’ ability to control their behaviours, emotions and attention increases, as does their ability to see another’s perspective. Also improved is the student’s ability to process information, including memory. Considering the significance of such development she encourages teachers to plan the classroom environment to support the children’s efforts at self-regulation and to provide assistance when necessary.
Furthermore, she notes that self-regulation can help students as they develop the ability to set goals, choose strategies, monitor their progress towards goals and modify activities and behaviours as they move forward.

Shanker’s (2013) work is particularly noteworthy for this paper as his work focuses on self-regulation in children within a school setting. He offers a model that explores self-regulation within five domains: biological, emotional, cognitive, social and prosocial. In his book, *Calm, Alert, and Learning* he elaborates in detail regarding the benefits that students may experience if they are optimally self-regulated:

**The Biological Domain**

- physical health, which includes a robust immune system
- sufficient energy on waking up, which is maintained through the course of the day
- the ability to recoup energy after difficult experiences
- the ability to remain calm amid distracting visual and auditory stimuli
- the ability to follow healthy daily routines (e.g., healthy diet, sufficient exercise, required hours of sleep)
- engagement in – and enjoyment of – physical activities, enabled by well-functioning motor systems that, for example, allow the coordination of arms and legs and of eyes and fingers (p. 1)

**The Emotional Domain**

- the ability to modulate strong emotions
• emotional resiliency – the ability to recover from disappointment, challenging situations, embarrassment, and other difficulties, and move forward confidently and positively

• willingness and interest to experiment and to learn, on their own and in collaboration with others

• a desire to create and innovate, and while doing so to use a wide range of strategies and techniques

• a healthy self-esteem that is based on awareness of personal efforts and achievements – as well as those of others (p. 22)

The Cognitive Domain

• focus, and switch focus, as required

• consider perspectives other than one’s own

• plan and execute several steps in a row, including being able to try different courses of action when an initial plan has failed to work

• understand cause and effect

• think logically

• set learning goals

• monitor and assess performance

• see that failure provides an opportunity to learn

• manage time effectively

• develop self-awareness, especially the recognition of personal strengths and weaknesses
use learning aids, including digital technologies, where appropriate (e.g., making an outline to help order thoughts in writing) (p. 45)

The Social Domain

- understand their feelings and intentions
- understand the feelings and intentions of others
- respond to the feelings and intentions of others appropriately, both verbally and nonverbally
- monitor the effects of their responses on others
- be an effective communicator – as a listener and as a speaker
- demonstrate a good sense of humour that does not rely on ridicule
- recover from and repair breakdowns in interactions with others (e.g., through compromise) (p. 73)

The Prosocial Domain

- the ability to help regulate others and to co-regulate with others
- a sense of honesty, both with themselves and with others
- empathy, or the capacity to care about other’s feelings and to help them deal with their emotions
- the ability to put the needs and interests of others ahead of their own
- the desire to “do the right thing” and the conviction to act on their convictions (p. 93)

Considering the breadth and depth of the preceding list, it is no wonder some theorists “believe that self-regulation should be considered a more important indicator of educational
performance than IQ” (Blair & Diamond, 2008; Duckworth & Seligman, 2005; Shonkoff & Phillips, 2000; as cited by Shanker, 2013, p. ix). Furthermore, the extensive benefits that are attributed to optimal self-regulation suggests support for Bauer and Baumeister’s (2011) assertion that “the key to personal and cultural advancement may lie in how efficiently people hone these skills, and how well society structures itself to create opportunities for its members to develop the capacity for self-control” (p. 79).

The benefits outlined in this section support the idea that teaching children techniques and strategies that aim to increase their self-regulatory ability is worth exploring. Therefore in the following section the concept of mindfulness is explored with the intention to investigate how mindfulness may contribute to improved self-regulation in children.

**Mindfulness**

**What is mindfulness?** Albrecht et al. (2012) contend that although there are many different interpretations of the concept of mindfulness it can be “simply described as a natural human capacity, which involves observing, participating and accepting each of life’s moments from a state of equilibrium or loving kindness” (p. 2). They explain that there are two traditions from which mindfulness is studied. First, traditional mindfulness practices connected to Buddhist, Hindu, Islamic and other spiritual traditions. Second, more contemporary efforts to study the benefits of mindfulness have been developed in the field of psychology by Langer (1997) and in the field of medicine by Kabat-Zinn (1990). Segal, Williams and Teasdale (2002) note that although mindfulness has Buddhist roots the essence of the practice is universal. They maintain that mindfulness has to do with improving our ability to pay attention, be more aware and more insightful (p. viii).
Kabat-Zinn’s (2003) definition is often used when considering mindfulness from a secular perspective: “paying attention on purpose, in the present moment and non-judgementally to the unfolding of experience moment by moment” (p. 143). Kabat-Zinn also contends that mindfulness is universal, not exclusively a Buddhist feature. He states that it is neither an ideology, a belief nor a philosophy and that to varying degrees we are all mindful all the time. He states that from a behavioural science perspective mindfulness can be defined as a “consciousness discipline” (p. 146).

In an article promoting mindfulness as a viable intervention for students, Felver, Doerner, Jones, Kaye and Merrell (2013), propose a modified definition for school psychologists: “the self-regulation of attention so that it is maintained on immediate experience…an orientation that is characterized by curiosity, openness and acceptance” (Bishop et al., as cited by Felver et al., p. 532). Felver et al. further note that this definition has two key components. First, that mindfulness and self-regulation are related and second, that mindfulness and orientation towards experience are also related inasmuch as mindfulness teaches individuals to accept in a nonjudgmental and inquisitive manner the person’s present experience. Importantly, they make clear that this acceptance of the present moment is not to be confused with resignation. They assert that acceptance “implies a simple acknowledgement of the reality of one’s present experience as it is, whereas resignation suggests surrender or submission” (p. 532). In summary, they write that “mindfulness psychology is the systematic study of how self-regulated attention, applied to one’s current experience with an attitude of acceptance, affects human functioning” (p. 532).

Another study exploring the impact of mindfulness and self-regulation was conducted by Roeser and Peck (2009). They assert that public education should be explicitly developing
awareness skills in students and that the cultivation of awareness and wilful self-regulation are preconditions for deep learning, freedom of thought, creativity, harmonious social relationships and myriad forms of personal and social renewal (Greenberg et al., 2003; Roeser, Peck, & Nasir, 2006, as cited in Roeser & Peck, 2009). They point to evidence that suggests under regular living conditions individuals do not instinctively develop mindfulness skills beyond minimal levels without some form of specific training. They state that one specific outcomes of meditation, a form of mindfulness practice, is increased attentional regulation ability and claim that providing young people with an education that helps develop healthy mindsets and increased executive control could help reduce emotion-behavioural struggles and increase positive development. They conclude that contemplative or mindfulness education has the potential to transform young people’s lives for the better.

The definition offered by Zylowska et al. (2007) describes mindfulness as a “type of meditative technique that emphasizes an observant and nonreactive stance toward one’s thoughts, emotions and body states” (p. 738). They add that meditation, a practice of mindfulness, is increasingly being recognized as a form of training that could help the development of self-regulation of emotion and attention. Their research, which is discussed in more detail later in this paper, yielded results which they report “supports the feasibility of mindfulness meditation in a subset of ADHD adults and adolescents” (p. 744).

Van de Weijer-Bergsma et al. (2011) present a similar definition of mindfulness in their study focusing on adolescents diagnoses with ADHD; their definition places greater emphasis on the reduction of impulsive responses:
Mindfulness is a form of attention or meditation training, based on Buddhist tradition and Western knowledge of psychology, in which awareness of the present moment and non-judgemental observation is increased, whereas automatic responding is reduced (Kabat-Zinn 2003, as cited by van de Weijer-Bergsma et al. 2011).(p. 776)

In the introduction to this study the authors explore possible reasons why mindfulness training could be effective for treating individuals diagnosed with ADHD. They present three levels of functioning on which mindfulness may benefit individuals. First, on a behavioural level they propose that mindfulness meditation develops stronger ability to control attention and reduces automatic responses (Teasdale et al. 1995, as cited by van de Weijer-Bergsma et al., 2011). Second, on a neuropsychological level, they point to research that shows that performance of tasks measuring executive functioning is enhanced by mindfulness meditation (Heeren & Philippot 2011; Semple 2010; as cited by van de Weijer-Bergsma, 2011). Third, evidence is provided that at a neurobiological level mindfulness meditation changes frontal-striatal circuit activity (Chiesa & Serretti 2010; Kilpatrick et al. 2011; Tang et al. 2010; as cited by van de Weijer-Bergsma 2011). Chiesa and Serritti (2010) discovered that studies focused on the long-term effects of mindfulness meditation showed that the structures in the brain involved in attentional process in expert meditators were thicker compared to control groups and that as meditators aged they did not show significant loss of attentional performance (p. 1245).

Zylowska, Smalley and Schwartz (2008) offer a slightly more detailed definition of mindfulness to apply to their research introducing mindfulness strategies to individual’s diagnosed with ADHD. They state the following about their research:
In discussing the application of mindfulness to ADHD, we focus on ‘mindful awareness’ as meta-awareness, (Teasdale et al., 2000) a quality of consciousness that has a regulatory (observing and correcting) function on the rest of the one’s experience and leads to improved cognitive-emotional and behavioural self-regulation (Brown & Ryan, 2003; Brown, Ryan and Creswell, 2007). We believe that mindful awareness can be fostered in diverse ways (meditation or non-meditation tools) and in our program we use psychoeducation and formal (sitting and walking meditation) and informal (mindfulness in daily life) practices as ways to train mindful awareness. (p. 322)

The authors claim that since ADHD involves many attention and cognitive impairments mindfulness training can be viewed as either a rehabilitation or remediation approach.

This exploration of the definition of mindfulness has helped understand the history of mindfulness, with its Buddhist roots, as well as the more contemporary secular definition. Perhaps Bishop et al. (2004) offers the simplest definition when they suggest that an “operational definition of mindfulness…includes attention, awareness and acceptance” (as cited by Reid, 2009, p. 1). Next, the benefits of mindfulness will be investigated.

**What are the benefits?** Kabat-Zinn (2003) describes the results of two studies conducted at the Center for Mindfulness with the intention to explore how the mind/body connection is effected by mindfulness. The first study involved 37 individuals with moderate to severe psoriasis. The patients were divided into two groups both of whom received traditional phototherapy (UVB). One group also received instructions on guided meditation during the UVB treatment sessions. The treatment for both groups took place three times a week over the course of twelve weeks. The patients’ skin condition were monitored by a nurse, photographed and
rated by dermatologists. The study showed that mediators skin improved approximately four times as much as the non-meditating group (p=.033). The second study involved 41 employees from a biotechnical company. The groups were divided into a mindfulness-based stress reduction program (MBSR) or a waitlist group. The MBSR program was delivered over an 8-week period and took place during the work day. Assessments were conducted before and after the program as well as a four month follow up assessment. The study reports that the MBSR participants showed an increase in “left-sided activation in the anterior cortical area” (p. 152) which is associated with more positive emotional expressions (Davidson, 1992; Davidson, Ekman, Saron, Senulis, & Friesen, 1990; as cited by Kabat-Zinn, 2003) as opposed to activation on the right-side which is associated with negative emotions such as anxiety, anger and depression (Davidson, 2000; Davidson & Irwin, 1999; as cited by Kabat-Zinn, 2003). The MBSR participants were also given an influenza vaccination at the end of the 8-week mindfulness training period and showed a significant increase in anti-body titers when tested after 8 weeks. Kabat-Zinn claims that this study “suggests the MBSR training can lead to brain changes consistent with more effective handling of negative emotion under stress” (p. 153). He reports that after 4 months the changes endured.

Felver et al. (2013) describe a meta-analysis of 39 peer-reviewed studies concentrating on mindfulness-based therapy and its effect on mood and anxiety symptoms in both nonclinical and clinical samples, “research found effect sizes in the moderate to large range with Hedge’s $g$ values between .59 and .97” (Hofmann, Sawyer, Witt and Oh, 2010; as cited by Felver et al. 2013, p. 534). Another two meta-analysis studies are noted as producing similar results for the “effectiveness of mindfulness-based intervention on various measures of physical and psychological well-being for a variety of populations, with effect sizes ranging from moderate to
The authors also presented data on studies conducted with school aged children. The first two studies examined mindfulness-based programs delivered at a universal level - tier one interventions if using a response to intervention model. One study, designed to improve attention and focus in students grades 1-3, gathered data before and after a 24-week mindfulness training program. The researchers measured results using a teacher-report questionnaire, a student self-report questionnaire, as well as a student behavioral assessment. The results indicated that “students had significantly fewer teacher-reported behavior problems, decreased self-reported test anxiety, and increased accuracy and reaction time in tasks of selective attention following mindfulness training” (p. 537). The authors provided evidence from several research projects regarding tier two interventions, that is, interventions that target smaller groups of students. One study conducted with 7-8 year old children experiencing symptoms of anxiety showed a decrease in problem behaviours, an increase in academic functioning and decreases in internalizing symptoms after a six week intervention program, as reported by teacher and school psychologists. Another study involved 25 children aged 9-13. Half the children were assigned to a 12 week mindfulness training program and half were assigned to a waitlist. Between group measures indicated a “statistically significant reduction in attention problems…[and] statistically significant reductions in anxiety and problem behaviour scores” (p. 538). Another study noted involved adolescents and adults diagnosed with ADHD. After an eight-week mindfulness training program results indicated “statistically significant improvements in self-reported ADHD symptoms and significant changes on neurocognitive measures” (p. 540). For an example of a tier three intervention, the authors present a study that focused on 14 adolescents dealing with chronic pain. Acceptance and Commitment Therapy (ACT) was used as an intervention; this
intervention is considered a mindfulness-based therapy. Self-reporting of participants pre- and post-intervention as well as at 3 and 6 month follow up times indicated improved daily functioning, improved school attendance and reduced pain symptoms.

Albrecht et al. (2012) claim that the purpose of teaching students mindfulness is to help them more clearly perceive reality; “enabling students to understand themselves and others better and enjoy a more fulfilling and joyful life” (p. 3). They ascribe short term benefits as: increased student engagement, enhanced school social climate, and enhanced academic performance. Regarding long term benefits, they assert that mindfulness training nurtures empathy, compassion and forgiveness amongst students. In addition to the benefits that are experienced by the students, the authors state that research has demonstrated that teachers themselves benefit. Reportedly, teachers claim that their stress level was reduced, classroom behaviour management was improved and teachers’ self-esteem increased.

Reid (2009) created a workbook for children to introduce them to mindfulness as part of her doctoral thesis from the department of philosophy at Columbia University. She cites Siegel, Director of the Mindsight Institute and Co-Director of the UCLA Mindful Awareness Research Center, who has studied the impact of mindfulness on the brain. He asserts that all “mindfulness practices appear to stimulate the prefrontal cortex of the brain [and] mindful learning invites the whole person to participate in the learning process” (as cited in Reid, p. 3). Reid also suggests that the “school setting is an ideal environment to reach children. They are there for many hours per day and school is the center of their learning and social experience” (p. 4).

Fisher (2006) writes specifically about the benefits associated with teaching meditation to children. He claims there are good “philosophical, practical and pedagogical reasons to support
the practice of mediation” with children (p. 148). He reminds readers that childhood can be a stressful time for many children. He claims that in a competitive, materialistic world children are exposed to many of the same pressures and stresses as adults. He notes that research findings indicate meditation can improve:

**Mental abilities.** Including increases in intelligence, creativity, learning ability, memory and academic achievement.

**Health.** Including reduction in stress, anxiety, incidence of ill-health; improved cardiovascular health and increased longevity.

**Social behaviour.** Including improved self-confidence, relationships with others, job performance and satisfaction. (p. 148)

Further, he claims there is strong pedagogical support for having meditation included as part of every student’s daily school experience. He promotes mindfulness in schools since the “optimum state for learning is one of relaxed attention (Claxton, 1997) [and that if] relaxation is one benefit of meditation, attention is another” (p. 149).

Nhat Hanh (2011) is a Vietnamese Buddhist monk who has authored many books on the topic of mindfulness. In *Planting Seeds: Practicing Mindfulness with Children*, he states that the “practice of mindfulness teaches students how to pay attention, and this way of paying attention enhances both academic and social-emotional learning” (p. 19). He claims that mindfulness is an effective strategy for dealing with stress and enhancing executive functioning. Significantly, he asserts that mindfulness is increasingly being recognized as an important educational tool because it increases attention, enhances cognitive and emotional understanding, develops coordination and body awareness and interpersonal skills. Further, he maintains that “by
diminishing stress, anxiety and hostility, mindfulness enhances our total well-being, peace, confidence, and joy” (p. 11).

Having shown that research suggests many benefits associated with mindfulness for both adults and children, the following section will present a description of some of the techniques that are promoted as effective mindfulness practices.

**Mindfulness techniques.** Mindfulness is strongly associated with meditation and while there is evidence to suggest that meditation is an effective practice to increase mindful awareness (Jhn, Krompinger, & Baime, 2007; Lutz, Slagter, Dunne, & Davidson, 2008; Leeuwen, Singer, & Melloni, 2012; Beauchemin, Hutchins, & Patterson, 2008; Fischer, 2006) other studies demonstrate that mindfulness can be cultivated through a variety of practices (Reid, 2009). As Siegel states: “mindfulness can be cultivated through many means from experiences with attuned relationships, to approaches in education that emphasize reflection, to formal meditation” (Siegel, 2007, p. xiv).

**Meditation.** Although not the only practice available to increase mindfulness, meditation is a common strategy. Fontana and Slack (1997) define meditation as a “very special kind of sitting quietly doing nothing, in which the mind is held clear and still, alert and watchful, and free from losing itself in thinking” (p. 5). Tang et al. (2007) note that there are many different styles of meditation: mantra, concentration meditation, mindfulness meditation and more. Van Leeuwen et al. (2012) explain that during meditation participants focus on an object for an extended period of time and when distraction occurs individuals are not to “cling to the object of the distraction but rather disengage attention from it and to reengage attention onto the [focal] object” (p. 2).
Beauchemin et al. (2008) researched the effects of mindfulness meditation on adolescents conducting a pilot study using a “pre-post no-control design” (p. 39). They describe mindfulness meditation (MM) as follows:

…a basic sitting meditation technique believed to help stabilize the mind and ‘develop the capacity for relaxed, choiceless awareness in which conscious attention moves instantly and naturally among the changing elements of experience’ (Germer, Siegel, & Fultum, 2004, p. 16). In MM training, the breath or another object is used as a reference point for being mindful in the present moment. Thoughts, emotions and sensations that may arise are neither judged nor engaged but simply experienced, acknowledged, and released. The result is increased present-moment awareness and greater acceptance of oneself. (Germer et al., 2004; Kabat-Zinn, 1994; Kabat-Zinn et al., 1998, as cited by Beauchemin et al., p. 36)

They recruited 34 students ages 13 – 18 diagnosed with a learning disability. The mindfulness meditation intervention was provided to all of the students for 5 to 10 minutes at the start of each of their classes for 5 weeks. The results of the study demonstrated significant improvement in anxiety levels of the students.

The authors describe the meditation sessions as such:

…students were first asked to sit and were given the option of keeping eyes open or closed. Then, students were instructed to initially focus attention on their breathing by following their breath as it entered in through the nose and was released slowly out through the mouth, in an effort to develop calmness and stability. After successfully developing a sense of calm students were encouraged to note thoughts and feelings as
they occur, thereby increasing awareness. Consistent with MM training, MM was modeled and students were provided opportunities to practice MM and pose questions. In line with the MM literature (Kabat-Zinn, 1994; Koszycki et al., 2007), the goal of intentionally observing thoughts of feelings and non-judgemental attention were made explicit. If students sense that they became engaged and somehow enmeshed in thoughts, feelings, or sensations, they were encouraged to silently identify and acknowledge these experiences in a non-judging way. (Beauchemin et al., 2008)

Nhat Hanh (2011) teaches children a meditation he calls “Pebble Meditation” (p. 77). Children are instructed to select 4 small pebbles. Each pebble represents a nature symbol and value: flower/ freshness, mountain/ solidity, still water/ stillness and space/ freedom. One at a time the child picks up a pebble and looks at it. With the first pebble, the child is asked to breathe in and out three times. Each time they are to say “Breathing in, I see myself as a flower. Breathing out, I feel fresh. Flower, fresh” (p. 78). This is repeated in a similar manner with the remaining three pebbles, each time repeating a simple, calming phrase. Nhat Hanh reports that when groups of students (and adults) practice mindfulness with schools and communities a “peaceful energy will become pervasive” (p. 13). He further notes that mindfulness is an effective response to tension and stress, a response which enhances executive functioning. He adds that children also benefit by learning to direct their attention, be less reactive and behave more compassionately toward themselves and others.

**Mindful Breathing.** Schitmer (2013) reminds readers that it may take a long time, even months, to teach mindful breathing to children, but it is important not to rush the process. He asserts that the cultivating an anchor breath is the first step. He describes the anchor breath as “learning how to use your breath to slow yourself down when you notice yourself getting
anxious or angry” (p. 33). As Rotne and Rotne (2013) explain breathing “is the anchor of our mindfulness practice; the place we revisit again and again when thoughts drive our awareness into the future or back into the past” (p. 61). Additionally, they claim that slow, “deep breaths stimulate the parasympathetic nervous system and help to slow down the pulse” (p. 60). Similarly, Greenland (2010) suggests that focusing on your breath is a form of introspection. She writes:

Mental restlessness can be like wind on the surface of a pond, making ripples and waves that hide the still, clear mind below. Introspection calms the waves so that we can once again see through the still water to the bottom of the pond. The process of introspection settles restless thoughts and emotions, allowing us to discover the stillness and mental clarity that is already there. (p. 63)

So important is breathing to mindfulness that the MindUp Curriculum refers to it as “The Core Practice” (p. 42) claiming that the practice can take less than a minute a day and helps students calm their minds and be more ready to learn. They assert that breathing techniques helps students control their physical and mental energies.

By concentrating on the sensations of a resonant sound and then of their breathing, children calm their minds and get ready to focus on the next part of their day. For the individual child, the Core Practice supports self-regulation and mindful action. For the class community, the Core Practice becomes a time for setting the tone and getting everyone ready—teacher and children—to achieve a state of mind in which they can all participate purposefully and thoughtfully. (p. 42)
The authors expand on the benefits of teaching children at a young age to control their breathing:

Focusing on breathing helps calm the body by slowing the heart rate, lowering blood pressure and sharpening focus. Paying attention to breathing also supports strong functioning in the higher brain, Controlled breathing lessens anxiety by overriding the ‘fight, flight, or freeze’ response set off by the amygdala and gives control to conscious thought, which takes place in the prefrontal cortex. When breathing is deliberately regulated, the brain is primed to think first and then plan a response, enabling mindful behavior.

Teaching children to focus on and control their breathing can help them become less reactive and more reflective when feeling anxious or stressed. The short daily activity of listening and breathing…capitalizes on neuroplasticity, the brain process that creates and strengthens nerve cell (neuron) connections through practice or repeated experience. One example of the growth occurs on the receiving end of the neurons involved in repeated thoughts and actions; branch-like receptors called dendrites increase in number and size, enabling a more efficient passage of information along frequently used pathways. This is one of many ways in which the structure of the brain is flexible and ready to grow.

As children practice controlled breathing, their brains develop and reinforce the ‘habit’ of responding to anxiety by focusing on breathing. This leads to reflective rather than reactive responses. The more controlled breathing is practiced, the more self-managed and mindful children can become. (p. 43)
Lesson three in the MindUp curriculum (2011) for children pre-school aged to grade two involves a breathing exercise for children. The activity is very simple; it requires the students to sit comfortable, close their eyes or look down at their hands and focus on taking slow gentle breaths. The curriculum provides a basic script as a guideline for teachers.

Schonert-Reichl (2010) of the University of British Columbia conducted research on the MindUp Curriculum sponsored by the Hawn Foundation. She reports that after a ten week implementation of the mindfulness curriculum there was evidence from teacher-rated feedback of significant improvement in students’ emotional and social competency and of particular note “were the robust findings that for two of the four dimensions of teacher-rated social emotional competence – Attention and Concentration, and Social Emotional Competence” the two dimensions that were selected as targets for this research study (p. 147).

Greenland (2010) offers a fun alternative activity to help illustrate for children how mindful breathing can help them become calm when they are feeling stressed, anxious or overly excited. She calls the activity the “Clear Mind Game” (p. 63). It starts with clear glass jar of water. Children are asked to look through the clear water and notice what they see. A cupful of baking soda is then added to the water and shaken together. The water becomes cloudy; the children are asked to look through the water again. They will no longer be able to see through the water. The teacher explains that thoughts and emotions can often cloud our minds and make it difficult to think clearly. After a few minutes the soda will settle and the water will be clear again. The children are reminded that the same is true for our minds. As we sit and focus on gentle, calming breathing our emotions and thoughts settle and our minds become clearer. Greenland taught mindfulness skills to a group of third graders for one study and the parent and teacher reports indicated significant improvement in students with deficits in executive function.
The areas that showed the most improvement were metacognition, behavioural regulation and overall executive function.

Another child-friendly exercise to help children develop mindful breathing was created by Snel (2013) called “Sitting Still Like a Frog” (p. 23). She reports that children find it understandable and enjoyable. Children are asked to sit quietly with the attention of a frog. She offers the following introduction to the exercise:

A frog is a remarkable creature. It is capable of enormous leaps, but it can also sit very, very still. Although it is aware of everything that happens in and around it, the frog tends not to react right away. The frog sits still and breathes, preserving its energy instead of getting carried away by all the ideas that keep popping into its head. The frog sits still, very still, while it breathes. Its frog tummy rises a bit and falls again. It rises and falls.

Anything a frog can do, you can do too. All you need is mindful attention. Attention to the breath. Attention and peace and quiet. (p. 24)

Snel introduced her mindfulness techniques to 12 teachers at 5 schools with a total of 300 students involved. She modeled her program after Kabat-Zinn’s 8-week mindfulness training program for adults and adapted it for children in a program called Mindfulness Matters. The pilot project took 8 weeks and involved a 30 minute weekly session and 10 minute daily sessions. She asserts that both teachers and students reported positive changes, increased concentration and calmer classrooms.

**Mindful Listening.** To introduce children to the concept of mindful listening, Nhat Hanh (2011) suggests an activity called “What did you hear?” (p. 160). Children are asked to sit quietly with their eyes closed while the teacher creates sounds using a variety of objects (bell,
whistle, sandpaper, stones, water). Children are asked to identify what objects they think created the sounds.

The MindUp curriculum uses mindfulness listening as a warm up activity for young children. After reviewing the five senses with the students they are told they are going to focus on listening to the sounds around the classroom. They are asked to sit quietly and comfortably and listen to the sounds around them for 30 seconds. After 30 seconds, they open their eyes and then share and compare what they heard. The activity can be repeated to encourage children to listen for sounds they didn’t hear the first time. Children are taught that when they were listening carefully, they were being mindful.

Greenland (2010) suggests a game called “Sounds in Space” in which children first settle into a comfortable seated position by focusing on mindful breathing. Next, a bell is sounded and children are asked try to hear the bell as long as they can. When the can no longer hear the bell they are to indicate this by raising their hand. An extension of this activity is to have a quiet period of time with the children in which the bell is sounded several times and the children are asked to mindfully keep track of how many times they heard the bell. To build further on this activity a variety of instruments can be used to create sounds for the children. Greenland provides a worksheet in her book, *The Mindful Child*, which children can use to record their responses to a variety of sound.

**Mindful walking.** Greenland (2010) adapted the traditional practice of walking meditation for children. She realized that many children found it uncomfortable and difficult to sit still during mindfulness exercises so she developed the “Slow and Silent Walking” (p. 80) exercise. She explains that there are three parts to the exercise: “lifting the foot, moving it
forward, and placing it back down” (p.80). Starting with just one of these movements students focus their attention on what the movement feels like. The purpose of the exercise is to increase children’s awareness of the sensory experience of this movement. She cautions that slow walking “can be frustrating, and as with every practice with children, it is important to tailor it so that your children feel comfortable and enjoy practicing them” (p. 81).

Rotne and Rotne (2013) suggest introducing children to mindful walking by asking them to silently and with awareness walk as though they were animals in the forest. They bring children’s attention to how their muscles feel as they slowly lift their legs and move their feet forward. Throughout the entire exercise the teacher is gently having the children notice both their breath and the subtle movements of the body as the students slowly walking together.

Nhat Hanh (2011) recommends a similar mindful walking practice but with added variety. As the children walk at different speeds around the room he offers them a variety of images:

Imagine walking in snow, leaving deep footprints. Imagine walking on this ice, being very careful not to break the ice. Imagine each time you put your foot down and lift it up a beautiful lotus springs up from the ground, so you are leaving a trail of lotuses wherever you go.

Walk like a busy businessperson; like a hairy beast; like a balloon; like a soldier; a burglar; a robot. Imagine you are wearing a crown or a cape. Imagine carrying a bucket of water on your head. Imagine you are rushing. See how the movements change. (p.98)

The MindUp Curriculum (2011) suggests incorporating mindful walking practice into gym class. The authors maintain that mindful walking is an important concept to teach children
because it enhances their body awareness and how the various parts of their body work together. They suggest asking the students to start walking slowly and to pay attention to how their bodies feel. Students are then asked to increase their walking speed and compare the way they feel.

**Mindful Eating.** Nhat Hanh (2009) writes that eating “is a meditative practice” and that we “should try to offer our full presence for every meal” (p. 41). He (2011) stresses the importance of enhancing children’s awareness of nature as we eat. He offers a list of contemplations to be considered at mealtimes:

1. This food is the gift of the whole universe: The earth, the sky, the rain, and the sun.
2. We thank the people who have made this food, especially the farmers, the people at the market and the cooks.
3. We only put on our plate as much food as we can eat.
4. We want to chew the food slowly so that we can enjoy it.
5. We want to eat in a way that nurtures our compassion, protects other species and the environment, and reverses global warming.
6. This food gives us energy to practice being more loving and understanding.
7. We eat this food in order to be healthy and happy and to love each other as a family. (p. 142)


At first I wasn’t exactly sure why we were to put so much thought into just an orange. Plainly, there were the orange pickers, the farmers and the market owners selling the
oranges. However, when reminded of Thay’s poem that we read in class about how, in order for this paper to be made, rain had to fall for the tree to grow, I was then able to concentrate on the deep meaning of the activity, which was to get out of the trance of thinking that the orange is a simple matter and should have been in my hands without the effort and natural process of a thousand events. Before the orange pickers, or even the farmers who planted the orange tree, the Earth had to exist. It may sound like an exaggeration to think about prehistoric times just for an orange to have happened. But like humans, the current existence of you and me took just as much time.

In conclusion, I learned that we shouldn’t take things for granted, but actually think about how they came to be, and how much effort and time was put into just one simple thing. And I learned to be thankful, thoughtful, and simply more aware of my surroundings. (p. 146)

Greenland (2010) also promotes mindful eating with children. She notes that mindful eating has been shown to have health benefits for adults but research has not been conducted with children yet. She asserts that mindful eating “is a brilliant way to pay attention to what we hear, taste, see, smell, and touch all at the same time, and we can do it at every meal of the day” (p. 125). She suggests a “classic mindful-eating practice, which was introduced by Jack Kornfield and made famous by Jon Kabat-Zinn in his mindfulness stress reduction program” simply referred to as “Eating a Raisin” (p. 125). In this activity students are each given a raisin. They are asked to look at it very carefully, noticing its colour, wrinkles, shape and texture. They are asked to imagine the grapevine growing from the earth, nourished by the sun and rain. They are talked through, and encouraged to imagine, the process of the grape growing on the vine through to the raisin in their hand. They are directed to shake the raisin in their cupped hands and
listen to it. Next, they smell it and finally they are asked to slowly taste the raisin, savoring all the sweet flavour. At the end of this exercise the students are given the opportunity to feel grateful for the raisin and all the people who made it possible for them to mindfully eat it.

Snel (2013) offers a list of questions to ask children to encourage them to develop mindful eating abilities:

- What do you really taste once you stop thinking about the foods being either tasty or nasty? (Remember, these are just thoughts.)
- Do you have a salty, sweet, or bitter taste in your mouth? Or a mixture of all three?
- Does it feel hard or soft in your mouth? Rough or smooth?
- What is happening in your mouth while you are eating? What do you experience? Can you feel your mouth watering? What is your tongue doing? What happens when you swallow? And when do you lose track of your mouthful? (p. 37)

The Hawn Foundation (2011) maintains that young people rarely eat mindfully. They claim that mindful eating can help children to have a healthier outlook on eating by slowing down their eating and increasing awareness which will improve digestion and help children be more aware of being full. They suggest that mindful eating may also increase a child’s willingness to try new foods. Further they note that introducing children to mindful eating at a young age is important because it can start them on a “path toward better decision making about what they put into their bodies” (p. 82).

Hong et al. (2014) studied the effects of mindful eating on participants’ willingness to try foods that are not typically enjoyed and whether there was a higher enjoyment rating when
eating these foods after a mindful eating exercise. They randomly assigned 411 participants to either a control group, a group who were led through an exercise which involved eating raisins mindfully, a group who ate raisins without the mindful exercise and a group that performed no task. The participants were all undergraduate students aged 17 to 40. The groups were offered samples of anchovies, prunes and wasabi peas. If they chose to sample the food, they were also asked to rate their enjoyment of the food. The results indicated a significant increase in enjoyment of the typically non-preferred food items after participating in the mindful eating exercise. The authors claim that the results suggest that mindful eating may “generalize beyond the initial eating experience or food, ultimately promoting higher enjoyment of other foods, even typically not-enjoyed food” (p. 85). They further note that these results may have implications in possibly decreasing eating patterns that are unhealthy and picky eating behaviours, which may have an impact on adult and children’s physical health. The age of participants in this study is older than elementary school children so further research would be necessary to see if similar results were found with younger participants. Interestingly, mindfulness did not significantly increase the likelihood that participants would sample the non-preferred food items.

**Gratitude.** According to McIntosh (2007) research has been shown to link gratitude with well-being and positive human strengths (Emmons & Crumpler, 2000; Emmons & McCullough, 2003; Fredrickson, 1998; Fredrickson, Tugade, Waugh, & Larkin, 2003; McCullough, Emmons, & Tsang, 2002; Seilman, Steen, Park, & Peterson, 2005; Sheldon & Lyubomirsky, 2006; Watkins, Woodward, Stone, & Kolts, 2003; as cited by McIntosh, 2007). She suggests that combining gratitude practice with mindfulness may enhance the positive effect already associated with gratitude alone by adding vividness and clarity to gratitude experiences, which has already been shown to produce feelings of vitality and enjoyment (Brown & Ryan, 2003;
For her study, she combined a traditional gratitude exercise, writing a gratitude list (Emmons & Crumpler, 2000; Emmons & McCullough, 2003; as cited by McIntosh, 2007), with a breathing exercise, time to focus mindfully on things for which they were grateful, instructions that there was not “right” and “wrong” way to respond during the exercise (thus bringing the non-judgmental aspect of mindfulness into the exercise) and a reminder that to be mindful of their attention throughout the activity. After conducting her research, McIntosh concluded that given what is “currently known about mindfulness and gratitude interventions, [she] would expect that adding a mindfulness component to traditional gratitude inductions would serve to increase the staying power of its benefits” (p. 53).

Seligman (2011), past president of the American Psychological Association and Zellerbach Family Professor of Psychology at the University of Pennsylvania, has assigned gratitude journals to a variety of people as diverse as a group of students at Geelong Grammar School in Australia to soldiers in the US military. He explains that the “rationale is that people who habitually acknowledge and express gratitude see benefits in their health, sleep and relationships, and they perform better” (p. 171). Between 2008 and 2011 more than 250 staff from Geelong Grammar school have been trained in through Seligman’s Positive Education program which includes a component on cultivating gratitude. The classes are offered to students in grades 7, 9 and 10. The staff report that they have seen improvements regarding conflict resolution with students and a “powerful impact [by] having a common strength-based language shared by students and staff” (p. 3). The Master Resilience Training program, introduced at two pilot sites in November 2009, includes an aspect of cultivating gratitude in the second module (Building Mental Toughness); participants are directed to maintain a “three blessings” journal (Reivich & Seligman, 2011). Starting in 2001 the researchers intended to conduct a large-scale
assessment regarding the impact of the program, in the meantime, initial feedback from participants was positive. Ratings from both the Fort Jackson and Philadelphia pilot sites averaged between “4.7 and 4.9 out of 5 on ‘learning skills valuable to military and personal life’” (p. 32). One soldier even commented that they believed the “training should be mandatory for all ranks, families, and civilians” (p. 33). It would be worth investigating if similar results would be recorded if training was adapted for children; it may well be discovered that cultivating these skills, including gratitude, earlier may be as effective, if not more, than learning the skills as adults.

Rotne and Rotne (2013) suggest that one of the values of keeping a gratitude journal is that by being grateful for what we have in the present moment individuals’ happiness may increase. They assign participants to list three things they are grateful for, three times a week for a period of five weeks. They predict that, in time, feelings of gratitude will expand to include moments when individuals are not writing in their gratitude journals.

The Hawn Foundation (2011) report that by simply concentrating for a minute on things in our lives for which we are grateful our thinking can become calmer and our perspective more content which can comfort us and lift our mood. They claim that when we practice expressing gratitude regularly we are training our brains to have a healthier, more positive and optimistic mind-set. Further they note:

Feeling thankful and appreciative also affects the levels of brain neurotransmitters, including releasing dopamine toward the prefrontal cortex where reasoning and logic occur. Dopamine not only fosters contentment, it is also the main player in the brain’s reward and motivation system. Experiments have shown that those who keep gratitude
journals or lists feel more optimistic and make more progress toward their goals. Any young people who do daily self-guided exercise in gratitude have higher levels of alertness, enthusiasm, determination, attentiveness and energy. (McCullough et al., 2001) Children who practice grateful thinking not only have a more positive attitude toward school, their brains are more ready to learn. (129)

The MindUp curriculum includes several activities to enhance children’s levels of gratitude. In a warm up activity the children make a list together of things that recently happened for which they are grateful. They practice thanking their classmates and teacher with different expressions and gestures. They suggest creating a class “gratitude tree” and have children fill the branches with leaves with gratitudes written on them. Other suggestions include: drawing things for which they are thankful, writing an acrostic poem using the word gratitude, writing thank-you cards, retelling a favorite story focusing on the parts of the story that emphasize gratitude, teaching fractions using the concept of sharing the parts of various items among friends, learning the word thank-you in several languages, writing gratitude letters to significant people in their lives and creating ‘gratitude stones’ which when see throughout the day will remind them to be grateful.

Vygotsky

The concept that teachers play a significant role as mentors and as people who scaffold information for students is not new. Vygotsky, a Russian psychologist born in 1896, He believed that learning took place in a social context therefore the teacher influenced greatly what the student learned simply by influencing what the student noticed; the teacher’s “ideas mediate what and how the child will learn; they act as a filter in a sense, determining what the student
will learn” (Bodrova and Leong, 2007, p. 9). He believed that children constructed their own understanding rather than passively reproducing what was presented to them and that adults helped by presenting information, tasks and modeling at an appropriate development level.

According to Bronson (2000) while Vygotsky believed that the desire for control in humans was innate, he also stressed the importance of the social-cultural surrounding of the child in the development of self-regulation. He believed that interactions that promoted this development may involve “active ‘scaffolding’ (Wood, Bruner, & Ross, 1976), ‘guided participation,’ or ‘building bridges’ (Rogoff, 1990) on the part of an adult or a more experienced peer” (p. 20). In order for this guidance to result in effective development of self-regulation, the guidance must be offered within the student’s “zone of proximal development”, a term coined by Vygotsky (p. 20).

Vygotsky (1962) considered language to be the most important psychological tool required for the development of self-regulation. He viewed language as the primary vehicle for transmitting culture and the primary means for thought and self-regulation. He detailed the development of self-regulation via language and believed that language was first used for self-expression and communicating with others before children used it for thought regulation and regulation of their actions. He claimed that when children are very young their self-talk is their main means of self-regulation and that by age 6 or 7 this speech becomes internalized. At this point he asserts that the internalized private speech is indistinguishable from thought itself and language becomes the primary vehicle for both self-regulation and thought. One way that Vygotsky believed private speech helped children develop self-regulation was by organizing behaviour. As students use language to label situations and their own behaviour within different situations they are able to “see recurrent patterns that might be hidden without the abstraction of
language” (p. 119). Bronson (2000) further notes that there is increasing body of research that supports the concept that language assists children to develop self-regulation. This evidence suggests that adults and more knowledgeable peers can use language to scaffold or guide children toward greater self-regulation. For example, a task that requires self-regulation can be broken down into chunks and presented to a student within their zone of proximal development. Prompts, feedback and support can then be gradual reduced as the child learns to accomplish the task independently. Once the supports are removed and the child continues to perform the task, the child is self-regulating. In Vygotsky’s opinion, students cannot develop self-regulation alone; they require assistance from others. This is not assistance in the form of shaping or training as a behaviourist would view it. Vygotsky viewed it as the transmission of psychological thinking tools that were learned through social interactions. Although he claims that children cannot develop self-regulation skills on their own he is clear that the child is actively involved in the construction of the knowledge.

Bodrova and Leong (2007) consider self-regulation strategies “tools of the mind”, (p. vii), tools that once learned children can use for the rest of their lives to help them navigate more calmly through emotionally charged situations, help them prepare more thoroughly for important academic and career challenges and enhance enjoyment of all the various moments of life in between. More than just tools to increase skills, Vygotsky “believed that they actually change the very way we attend, remember and think” (p. 4). Considering self-regulation strategies to be tools of the mind corresponds with Vygotsky’s view of self-regulation strategies being “psychology thinking tools”. They assert that because Vygotskians believe that mental tools play a critical role in the development of the mind, they have explored ways in which children acquire these tools. They propose that these tools are learned from adults and suggest that the role of the
teacher is to ‘arm children’ with these tools. This sounds simple, but the process involves more than merely direct teaching of facts and skills; it involves enabling the child to use the role independently and creatively. As children grow and develop, they become active tool users and tool makers; the teacher’s role is to provide the path to independence – a goal of all educators. They describe how for preschoolers and kindergarteners there is shift in the “relationship between a child’s intentions and the subsequent implementation of an action, Instead of having an immediate “thoughtless response to a situation, usually the kindergartener is able to inhibit his initial reaction and act in a thoughtful, planned way” (p. 127). The student is developing the capacity to think before they act; they can act more deliberately and purposefully. The child first develops physical regulation skills and then emotional ones; mindfulness strategies benefit both of these domains. “Cognitive self-regulation, involving such advanced processes as metacognition and reflective thinking, does not appear full-blown until the end of elementary school” (p. 127). This information would suggest that elementary school is an ideal setting and time to introduce children to mindfulness strategies – strategies that can be added to their “tool kit” as they develop more sophisticated self-regulation capabilities.

Fox and Riconscente (2008) examined Vygotsky’s view on self-regulation and concluded that for Vygotsky self-regulation meant the deliberately controlling one’s own “attention, thoughts and actions” (p. 385). He emphasized the need for children to first be able to recognize and control the initial response to stimuli:

at the higher developmental stages of nature, humans master their own behaviour; they subordinate their own responses to their own control. Just as they subordinate the external forces of nature, they master personal behavioral processes on the basis of the natural laws of this behaviour. Since the laws of stimulus-response connections are the basis of
natural behavioural laws, it is impossible to control a response before controlling the stimulus. Consequently, the key to the child’s control of his/her behavior lies in mastering the system of stimuli. (Vygotsky 1981a, p. 175-176)

The authors maintain that Vygotsky viewed voluntary attention as the “most basic form of self-organization of behavior; the ability to direct our mental focus toward a given situation, aspect, or task, is presupposed in all other forms of self-directed activity” (p. 385). Vygotsky outlined three stages for children’s development of voluntary attention: being directed by adults with words, being able to direct the attention of others, and finally being able to direct their own attention with the use of words – first externally, then internally as inner speech or thought.

The development of a child’s attention, from the very first days of his/her life, takes place in a complex environment that consists of double-valved stimuli. On the one hand, things, objects, and phenomena attract the child’s attention; on the other hand, corresponding stimuli in the form of hints (indication) carried out by words direct the child’s attention. Hence, from the very beginning, the child’s attention is controlled attention. But this attention is initially controlled by adults, and only with the gradual mastery of speech does the child begin to master the primary process of attention, first, in relation to others, and then, in relation to himself/herself. (Vygotsky, 1981b, p.219)

Gredler (2009) explored Vygotsky’s views regarding self-regulation. She asserts that the major focus of his work was understanding human intellect and the development of intellect, exploring how cognition transforms into advanced levels of thought. She claims that his “theory is unique in that it identifies particular changes in thinking and behavior that represent self-regulation across courses and curriculum areas” (p. 17). She points out that Vygotsky considered
cultural development to be synonymous with the development of higher mental functions. Vygotsky (1982) states: “the essence of cultural development….consists of man mastering processes of his own behavior” (p. 242-243). As previous studies examined for this paper have highlighted, Gredler notes that Vygotsky believed that the “mind develops cognitive tools that influence intellectual operations, an accomplishment that leads to the development of more powerful tools and then more powerful ways of thinking (van der Veer, 1984; as cited by Gredler, 2009). Gredler identifies four stages involved in the development of self-regulation presented by Vygotsky: “two premastery stages and two stages of self-regulation, external (control of external auxiliary stimuli) and internal (control of internal auxiliary stimuli)” (p. 7-8). Gredler concludes that the “highest level of the mastery/self-regulation is thinking in concepts that includes developing a system of acts of thinking, a development that is not completed until late adolescence” (p. 8). Vygotsky also identified three conditions required for development of self-regulation:

(a) a self-monitoring system that updates information about the individual’s particular state or activity; (b) a self-system that includes the individual’s nature, history, tendencies, and preferences, and (c) self-modification skills and strategies. (Demetriou, 2000, pp. 209-210; as cited by Gredler, 2009, p. 8)

Gredler further notes that to Vygotsky higher mental functioning was the goal of education. Vygotsky himself stated that “Education not only influences certain processes of development, but restructures all functions of behavior in a most essential manner” (Vygotsky, 1982-1984/1997i, p88; as cited by Gredler, 2009, p.9). The author claims that higher functions result in self-organized attention, conceptual thinking, categorical perception, and logical memory. For Vygotsky self-regulation was an essential foundation required to develop these
higher mental functions. The significant impact Vygotsky attributed to self-regulation capabilities suggests that a deliberate focus on developing these skills in children throughout their school career should be a high priority for all educators.

Fox and Riconscente (2008) assert that the “types of tasks which students perform in school [and] the systems of socially constructed stimuli to which they are introduced…are all critical for deliberate control of behavior and actions” (p. 385). Teaching children self-regulatory strategies should result in them being more able to attend to learning experiences in school; self-regulation sets the stage for other learning to take place. Further, by equipping the child himself or herself with these skills we are encouraging the young person to take responsibility for their own learning rather than placing the onus on the teacher to keep them entertained and engaged. The teacher can provide a rich learning environment and the student can increasingly take responsibility to keep themselves in a ‘calm, alert and learning’ (Shanker, 2012) state. This is important in order to avoid what Bodrova and Leong refer to as “teacher regulation” (p. 162) whereby the student can control themselves when the teacher is in the room but once the teacher leaves the room they are no longer able to maintain that control.

As teachers we are responsible to create learning environments and employ teaching strategies that are catered to our students’ zones of proximal development. Exploring Vygotsky’s perspective regarding the impact of self-regulation on human development reinforces the idea that teaching self-regulation skills to students of all ages needs to be emphasized in every classroom. A focus on self-regulation skills will benefit all students and will specifically benefit students who have difficulty maintaining and directing their own attention. The next section will explore the particular needs and challenges of these students who have trouble staying focused.
Students Who Cannot Stay Focused

Hawk and Shiels (2010) define ADHD as characterized by “persistent and impairing developmentally inappropriate level of inattention, hyperactivity and impulsivity. Such behavioural dysregulation may be a consequence of deficits in self-monitoring or adaptive control, both of which are required for adaptive behaviour” (p.1). They explain that the skills required to monitor, evaluate and adjust one’s behaviour in any given situation, process contextual demands and maintain attention are all components of self-regulation. The authors report that 5% of the world’s population is diagnosed with ADHD. They assert that self-regulation research is increasingly being conducted with individuals with ADHD especially as “single core deficit models are increasingly viewed as insufficient to understand this heterogeneous disorder” (Nigg, 2006; Pennington, 2006; Willcutt et al., 2005, as cited in Hawk & Shiels, 2010).

Crundwell (2005) offers similar findings and reports that children diagnosed with ADHD who display better self-regulation skills have fewer behaviour problems; he states the correlation between emotional regulation and behaviour problems was high. He asserts that children with ADHD are at high risk for ongoing social and behaviour difficulties given the evidence that indicates that children with ADHD are likely to have deficits in the area of self-regulation which leads to problems both socially and behaviourally. He cites research by Barkley (1997a, 1997b) which states that:

if an individual has the power to inhibit or delay responding to an event, he or she should also have the power to delay the expression of emotional reactions that would have been elicited by the event. By delaying the immediate affective response to an event, the
individual has time to reflect on the event and to modify his or her eventual response. The delay also allows the individual to determine his or her eventual emotional expression. It is the ability to countermand or counterbalance the initial charge of external events that results in the development and appropriate control of emotional self-regulation. (Kopp, 1989 as cited in Crundwell, 2005)

He summarizes that, overall, his research results “indicate that ADHD children who display better skills in regulation and lower levels of emotionality are rated as having fewer behavioural problems” (p. 4).

Schirmer (2013) explored the benefits of teaching children diagnosed with ADHD mindful breathing practices. He maintains that while recent years have seen an increase of research teaching mindfulness to children, rarely has the research focused on children with ADHD but that initial findings indicate that “mindfulness is indeed a valid option in treating ADHD in children” (p. iv). Furthermore, he asserts that teaching mindfulness strategies to students with ADHD makes sense since ADHD is essentially an inability to pay attention for sustained amounts of time and mindfulness focuses on how to pay attention on purpose and with compassion. Therefore, he recommends teaching children with ADHD mindfulness strategies.

Van de Weijer-Bergsma et al. (2011) introduced mindfulness to youth (ages 11-15) diagnosed with ADHD and their parents through an 8-week training program. They used questionnaires and computerized attention tests to measure the effectiveness of the program. They measured prior to the training, immediately after the training, 8 and 16 weeks after the training. The training was taught in a group setting. The treatment was created based on both a mindfulness program that had been designed specifically for children with ADHD and their
families and the Mindfulness in Schools Project (Bogels et al. 2008; van der Oord et al. 2011; Huppert & Johnson 2010 as cited in van de Weijer-Bergsma et al. 2001). The adolescents were taught regular mindfulness exercises which included sitting meditation, breathing space and body scan which were combined with other exercises specifically addressing ADHD. An example of an activity designed for youth diagnosed with ADHD is a distraction exercise, in which the young person focuses on a single point while being distracted by other participants. Self-reports indicated that behaviour and attention problems reduced while executive functioning improved. Performance on the computerized attention tests also improved. Effectiveness of the training was reported stronger at the 8 week follow-up and weaker at the 16 week follow-up. Although the sample size was small (10 adolescents), the authors claim that their study “adds to the emerging body of evidence indicating that mindfulness training for adolescents with ADHD (and their parents) is an effective approach” (p. 775).

Similarly, Zylowska et al. (2008) report that their pilot study supports the “feasibility of mindfulness meditation in a subset of ADHD adults and adolescents” (p. 744). They also introduced adults and young people with ADHD to mindfulness through an 8-week training program with promising results. They refer to research that suggests that mindfulness is increasingly being recognized as “mental training that could regulate attention and brain function” (Bishop et al., 2004; Brown & Ryan, 2003; Davidson et al., 2003; Lazar et al., 2005; Schwartz & Begley, 2001; Segal et al., 2002, as cited in Zylowska et al., 2008). More specifically, they cite research that demonstrates how mindfulness strategies can positively impact attentional networks in the brain (Jha, Krompinger, & Baime, 2007, as cited in Zylowska et al., 2008). They report that many of the cognitive deficits associated with ADHD can be categorized as “self-regulation impairments” (p. 738). They assert that mindfulness meditation is
a multifaceted self-regulatory strategy that appears to increase self-regulation skills of emotion and attention (Teasdale, Segal, & Williams, 1995; as cited in Zylowska et al., 2008). Their study included 24 adults and 8 adolescents with ADHD. Training was offered for 2.5 hours once a week coupled with daily at-home practice. The weekly sessions included an opening meditation, discussion regarding the at-home assignments, introduction of a new exercise, time for discussion, and a closing meditation session. For this study, modification were made to accommodate the nature of ADHD: meditation sessions were shortened, mindful awareness was emphasized, visual aids were added to illustrate and explain mindfulness techniques and a “loving-kindness mediation” was added to the end of the sessions. This last modification was incorporated to address problems related to low self-esteem connected with ADHD (Zylowska et al., 2008). The researchers conclude that providing instruction on mindful awareness practices to individuals with ADHD can be considered self-regulation training and “offers a novel and potentially useful tool in the multimodal treatment of this condition” (Zylowska et al., 2008, p. 744).

The above research clearly suggests that the impulsive and inattentive behaviours displayed by children diagnosed with ADHD can be connected with lagging skills in the area of self-regulation. Coupled with the research that connects mindfulness practices with an increase in self-regulatory skills, it is advisable to explore further what benefits might be realized by introducing mindfulness strategies to children diagnoses with ADHD and by extension all children who struggle with attention skills.

Teaching with Children’s Literature
Many studies have been conducted supporting the effectiveness of using children’s literature in the classroom. Studies have promoted using children’s literature to teach history, science, math and economics, as well as more abstract concepts such as, problem solving, aging, learning disabilities and ethics (James, M., 1989; Forgan, J., 2004; Mallinson, J., 1996; Royce & Wiley, 1996; Braddon, Hall & Taylor, 1993; McMillan & Gentile, 1988; Rodgers, Hawthorne & Wheeler, 2007; Prater, Dyches, & Johnstun, 2006; Blaska & Lynch, 1998).

Wartenberg (2009) promotes using children’s literature to introduce important concepts to children and states that reading picture books out loud to children “fuels the kids’ curiosity and gets them to learn skills naturally, without having to give them specific instructions…” (p. 11). He asserts that the picture book serves to initiate a discussion in which the “teacher is not the center of attention but the facilitator to a child-centred discussion among peers” (p. 23). He adds that the use of a picture book helps teachers keep the discussion focused and on track. Furthermore, he claims that children learn “language arts skills almost by osmosis” (p. 11) while focusing on important discussion featured in children’s literature. Vygotsky (1962, 1978; as cited by Bronson, 2000) believed that language and culture were key aspects in the development of self-regulation and was particularly “interested in the power of social mediation and mentoring” (p. 33). The selection of quality children’s literature to present to students is an example of how teachers can use culture, language and their mentoring role to influence the development of self-regulation. Vygotsky asserted that the “child is controlled by others initially, but that this control shifts to the child as she internalizes the mores of her culture and its symbolic tools” (p. 29). Considering the number of hours that teachers are interacting with students, it is important that language used, lessons planned and even literature selected be done purposefully and thoughtfully.
Cooper (2006) also promotes the merits of using children’s literature to teach self-regulation skills to young people. According to Cooper, Vygotsky’s theory states that “learning precedes development, and all learning results from imitation and mentoring” (p. 317). She proposes that books can act as mentors to children and provide a “model of how to gain control over natural energies” (p.319). She cautions that with the current emphasis of using children’s literature as a teaching tool for reading and writing, teachers can lose sight of the important role that children’s literature can play in “helping children navigate the intellectual, social and emotional terrains of childhood” (p. 315).

Prater, Dyches and Johynstun (2006) describe how quality children’s literature can effectively “expand readers’ personal perspectives” and “promote awareness, understanding and acceptance” of important concepts (p. 15). The authors studied how children’s literature could effectively teach children, both young and old, about learning disabilities and concluded that teachers can “skillfully use both picture books and chapter books to serve the curricular and social needs of their students” (p.17).

Topics as complex as economics are effectively introduced to young children through the use of picture books according to Rodgers, Hawthorne and Wheeler (2007). They assert that children are more motivated to engage with important topics when introduced with a picture book because they enjoy the stories and that the combination of visuals and text help them conceptualize the information. Additionally, they offer evidence from the National Commission on Reading which demonstrates that reading aloud to children contributes significantly to children’s literacy skills and school performance. Consequently, they encourage teachers to select literature to be read to children carefully thereby contributing to the children’s literacy skills and introducing them to important concepts.
Blaska and Lynch (1998) describe how books act as both mirrors and windows in children’s worlds. Books mirror the relationships and environments surrounding children and also act as windows into other circumstances, reactions and possibilities that aren’t currently in the children’s worlds. They assert that books can change children’s attitudes, values and help shape their character. The authors stress that “early literacy experiences are important for [children’s] overall development” (p. 36). They quote from a Carnegie Corporation study that reports that “in books children find characters with whom they identify and whose aspirations and actions they might one day try to emulate” (p. 36). By presenting mindfulness strategies in a picture book, it is hoped that children will indeed try to emulate the actions of the main character thereby gaining important self-regulation skills.

Social Stories are a particular form of story developed by Carol Gray to teach children with Autism social skills required in specific situations. Social stories help students become more aware of the social cues and expectations they may encounter in a variety of social situations. Children are taught to pay attention to social cues and social expectations. They are coached on expected responses to different social situations. Paying attention non-judgementally is a key component of mindfulness (Shapiro and Schwartz, 2000) and, ideally, students will be more aware of their social surroundings after exposure to social stories. Attwood (2010) writes in the forward of Gray’s 2010 book, The New Social Story Book:

Carol Gray originally developed Social Stories in 1991 from working directly and collaboratively with children with autism and Asperger’s Syndrome. For nearly twenty years, she has been modifying the guidelines for writing Social Stories, based on extensive personal experience and feedback from parents, teachers, and the children themselves. The ideas and strategies have matured over the years and Social Stories have
now been examined independently in numerous research studies published in scientific journals. There is no doubt that the use of Social Stories in education and therapy is what scientists describe as ‘evidence-based practice.’ Social Stories really do work. (p. xvii)

Gray (2010) outlines the specific criteria and rational for creating a social story. Key components include: a clear goal, a focus on information sharing, accurate illustrations, first –or third-person perspective, positive and patient tone, suggested response to a situation and affirmative sentences. Gray also promotes repetition, rhyme and rhythm as possibilities when creating stories that may be appealing to children who thrive on predictability and routine. Furthermore, she cautions authors to use care when selecting illustrations to pair with the text so as to avoid misleading or confusing the child. These recommendations were taken into consideration while creating the children’s book, *My Gratitude Jar*.

Agosta et al. (2004) describe that for many years the effectiveness of social stories was measured largely through anecdotal accounts from teachers and parents. Significantly, they report that more recently “scientific research on social stories and individuals with autism has offered some promising findings (Cullain, 2000; Hagiwara & Myles, 1999; Kuttler, Myles & Carlson, 1998; Lorimer, Simpson, Smith Myles, & Ganz, 2002; Norris & Dattilo, 1999; Pettigrew, 1998; Rogers & Myles, 2001; Scattone, 2002; Staley, 2001; Swaggart et al., 1995; as cited in Agosta et al., 2004). Agosta et al, describe a targeted intervention for a young boy struggling to sit quietly at circle time. Shanker (2012) describes the ability to “attain, maintain, and change one’s level of energy to match the demands of a task or situation” as an important component of self-regulation (p. x). Circle time would be an example when students are required to adjust their level of energy to match expected classroom behaviour i.e. sitting quietly in one spot, paying attention to the teacher, not disturbing the other students and raising your hand with
a question or comment. Social stories were created and read to the young person by his teacher three to four times a day for 20 school days. The results were positive; the researchers report that the young boy’s decreased screaming behaviour and his increased ability to sit quietly after the introduction of social stories was “observed by all participants, including teachers and other school staff, we feel more confident in attributing the findings to the use of the social story” (p. 285). Caution must be taken before generalizing these results as the sample size is extremely small and the Hawthorn, or observer, effect may have influenced the results.

Kuoch and Mirenda (2003) provide additional research that shows favorable results for the use of social stories to teach children how to handle a variety of social situations. Kuoch and Mirenda created social stories for three young boys with autism, aged 3, 5 and 6 years old. The stories created for the children covered targeted behaviours including, acceptable interaction while playing with peers; reducing screaming during snack and lunch time; and decreasing crying and aggression when required to share with peers. The authors report that all three participants “immediately reduced their rate of problem behaviours when the social story was implemented” (p. 224). Moreover, the authors state that the results suggest that “changes in problem behaviours following social story interventions may occur quite quickly and may be robust” (p. 225). Limitation regarding this study include the small sample size, the fact that the participants had all received one-on-one discrete trial training prior to the research which may have influenced their ability to benefit from the interventions, the target behaviours happened at a specific time each day, interventions occurred in only one environment and social stories included special interest subjects of the participants which may limit the ability to generalize the results.
More (2011) expands the discussion of social stories beyond children with autism: “By implementing Social Stories with young children with developmental delays in a thoughtful and systematic way, teachers can increase the likelihood these children will access and utilize the information contained with a social story” (p. 173-174). She describes how children love to read and reread stories and claims that this provides teachers and families an opportunity to interact with the text and the targeted skill multiple times with the children. She maintains that this multiple exposure can benefit the child by reinforcing the social skill being taught. More generally, she asserts that when stories are “read to students in a way that is engaging and exciting, they can be a powerful tool for helping children with developmental delays learn the skills needed for particular social situations” (p. 171).

Examining children’s preference for social stories in a broader context, that is, stories that focus on social interaction as opposed to those that focus solely on objects (not formal Social Stories such as prescribed by Carol Gray), Barnes & Bloom (2013) found that children selected stories with a focus on people consistently over stories that focused on objects. They presented children aged four to eight years old with stories in pairs and discovered that the children preferred stories that focused on people; stories that were “described with some mental content over those that were described purely in terms of action; and stories that contained more characters over those with fewer” (p. 501). They maintain that the results support the notion that people of all ages are “‘hungry’ for information about the minds of others, and fiction satisfies this hunger (e.g., Zunshine, 2006)” (p. 501). Likewise, Dyer, Shatz and Wellman (2000) state that their research suggests that “storybook reading may provide even young children with a rich context for developing an understanding of mind” (p. 17).
Mar and Oatley (2008) researched the function that fiction can play in learning social information. They assert that fiction “[m]odels life, comments on life, and helps us understand life in terms of how human intentions bear upon it” (p. 173). They describe how fiction acts as a simulation and that this simulation “allows us to know what another might be wanting, thinking, and feeling. This ability is referred to as theory of mind in psychology…” (p. 175). The authors expand on this thought by asserting that a “possible candidate for the basis of such a simulation system is suggested by the discovery of mirror neurons: cells that fire both when an action is observed and when that same action is enacted by the observer” (p. 179). Significantly, they claim that the simulation of social experience that “literary narratives afford, provides opportunity for empathic growth. It trains us to extend our understanding toward other people, to embody (to some extent) and understand their beliefs and emotions (Keen, 2006; Mar, Oatley, Hirsh, de la Paz, & Peterson, 2006; Zunshine, 2006), and ultimately to understand ourselves (Moore & Macgillivray, 2004)” (p. 181). In addition to potential growth of empathy, the authors claim that perspective taking can also be increased through narrative simulation. Much of their research focuses, but it is not limited to, adults and they point to other research that provides evidence to support that storybooks can affect children’s perceptions regarding others’ emotions (Tsai, Louie, Chen, & Uchisa, 2007 as cited in Mar & Oatley, 2008).

The previous study referenced research conducted by Tsai, Louie, Chen and Uchisa (2007). These authors state that their “findings suggest that cultural differences in ideal affect exist among young children and may be transmitted through exposure to storybooks” (p. 28). They conducted studies examining the results of exposing two groups of children to storybooks that either presented characters with an excited or calm perceived state. One group of children were European American preschoolers and the other group were Taiwanese Chinese
preschoolers. One study demonstrated that after being exposed to a story focusing on an excited character, the children showed an increased preference for activities that were exciting versus calm. The authors report that one limitation of this study is that despite the fact that “relative group differences in ideal affect were consistent across studies, there was less consistency across the different measures of ideal affect within cultural groups” (p. 27). The authors conclude that the findings suggest exposure to excited or calm perceived states of storybook characters can “influence children’s preferences for those states” (p. 26). They assert that their research identifies storybooks as a “specific pathway through which affective values are culturally transmitted and learned” (p. 27). Interestingly, even though both groups of children responded to the perceived level of excitement in the storybooks with a subsequent increase in desire for more exciting (verses calm) activities, the European American students had both a higher reported perception of excitement in the picture books and a higher level of engagement with exciting activities than the Taiwanese Chinese children.

**Evidence-Based Curricula**

Two popular curricula designed to promote self-regulation in children are: The MindUp Curriculum created by the Hawn Foundation and The Zones of Regulation, Kuypers (2011). Both of these curricula incorporate picture books to teach self-regulation skills. Schonert-Reichl (2010) of the University of British Columbia conducted research on the MindUp Curriculum sponsored by the Hawn Foundation. She reports that after a ten week implementation of the mindfulness curriculum there was evidence from teacher-rated feedback of significant improvement in students’ emotional and social competency and of particular note “were the robust findings that for two of the four dimensions of teacher-rated social emotional competence
– Attention and Concentration, and Social Emotional Competence” the two dimensions that were selected as targets for this research study (p. 147).

Attention magazine referred to The Zones of Regulation curriculum as a “promising practice” and reported that teachers and “others using the curriculum also say the strategies help them in their own personal lives.” This magazine is published by CHADD (Children and Adults with Attention-Deficit/Hyperactivity Disorder; they are a non-profit organization with over 12,000 members. Their goal is to provide evidence-based research on ADHD. Their board of directors is formed by a group of doctors, parents and educators. Their professional advisory board consists of 17 medical doctors. They claim that the “curriculum has also been successfully adapted to teach pre-kindergarten students” (http://www.chadd.org/Membership/Attention-Magazine/View-Articles/PP-Zones-of-Regulation.aspx). Kuypers (2014) website states that currently “The Zones is a practice based on evidence versus evidence based practice, however, there are studies in the process gathering quantitative data.” The Zones curriculum was developed from Kuypers’ (2008) research for her Master’s in Education from Hamline University. In the summary of her literature review she asserts that self-regulation has a profound impact on students’ success. She concludes that there are hopefully strategies that have been found to improve self-regulation skills for all students and particularly those diagnosed with autism and/or attention deficit hyperactivity disorder. From her research she developed the Zones of Regulation curriculum.

Saltzman (2014) created a resource for teachers, parents and therapists designed to teach mindfulness to children and adolescents over an eight-week period. This program can be implemented within a school day or as an after school program. This curriculum, A Still Quiet Place, also recommends the use of children’s literature to introduce mindfulness concepts to
young people (p. 31). Saltzman and Goldin (2008) researched the program using a self-referred community sample of 24 families (31 children and 27 parents) and eight families on a waitlist as a control group. The children were enrolled in grades 4 to 6. Saltzman led them through her eight-week MBSR (mindfulness-based stress reduction) program. Saltzman and Goldin measured attention, emotional regulation and reactivity, and symptoms of depression and anxiety. They used a variety of self-report questionnaires, both child and adult versions. They also used a computer program to measure cognitive-affective tasks. Data was gathered pre- and post-mindfulness training. The researchers concluded that the data suggested children and their families may benefit in measurable and meaningful ways from an MBSR program. Compared to the group of waitlisted participants, the participants who participated in the mindfulness program showed a “significantly greater improvement on the cognitive control of attention of attention component of the Attention Network Task”, an increase in their ability to sustain their attention with distractors present, significantly lower negative emotion in response to social and physical threat scenarios, no change regarding positive or negative self-view, and an improvement in self reports of self-compassion and self-judgment. Interestingly, when measuring negative and positive self-views there was no evidence of any change in either children or adults. It is important to note that the participants in this study were all from high-functioning middle-class families and were mainly European Americans. The researchers explain that their experience suggests a significant difference both at home and at school when a young person is more able to regulate his or her attention and is less reactive emotionally. They insist that the “impact on the social relations and learning environment cannot be underestimated” (p. 159). Future research could examine the impact of this program on students who struggle to maintain focus.
On the final day of the mindfulness program, A Still Quiet Place, the children are asked to write a letter to a friend (real or imaginary) who does not know about mindfulness. They are asked to explain to their friend what mindfulness feels like. Saltzman and Goldin (2008) include the following comments gathered from children on the last day of the mindfulness program they offered to conduct their research:

- **Dear Invisible Bob:** Resting in the Still Quiet Place is very relaxing. It helps you get in touch with your inner self. And find out how you are actually feeling.

- **Dear Keith:** I am doing this thing called mindfulness. It is a way of understanding and being aware of feelings. One thing you do is go to the Still Quiet Place. It feels relaxing to be there. Mindfulness had helped me before homework because it relaxes me so I do a good job with my homework.

- **It feels sort of strange but peaceful.** I can’t really tell how I use mindfulness at home, but I do know it helps me when I am made at my brother.

- **Mindfulness is a great class because you can chill out, and relax.** It will cool you down and make you less stressed, you should try it if you are mad or sad or just want to feel better. That’s what I do. Try it!
• Still quiet place has given me a lot of stress relief. I use mindfulness when I’m upset or stressed out. Mindfulness Rocks! Thank you Dr. Saltzman for introducing this wonderful program to me.

• Dear Friend: Mindfulness is a class I am taking at school. It is a time when we breathe and think about our thoughts, about NOW, not the past or the future. When we settle in breathing we go to our “still quiet place.” It feels calming in the “still quiet place.” I use mindfulness when I am nervous about something.

This literature review presents research that supports the concept that mindfulness strategies may be able to support young people in the development of self-regulation skills. Evidence suggests that children who struggle to maintain attention may particularly benefit from learning mindfulness strategies. There was also evidence from a variety of disciplines regarding the effectiveness of using children’s literature to teach concepts to children. Significantly, this review provided evidence to support the notion that children’s literature could be created specifically to introduce children to the concept of mindfulness with the intention of increasing their self-regulation skills. Two curricula, MindUp and A Still Quiet Place, reviewed for this paper are designed for typically developing students while The Zones of Regulation is designed specifically for student with attention difficulties and/or who are on the Autism spectrum. Future research could explore how these curricula benefit other students with special needs.

The Concept: My Gratitude Jar
Saltzman (2014) defines mindfulness for children as “paying attention here and now, with kindness and curiosity, and then choosing your behaviour” (p. 29). In the story book, *My Gratitude Jar*, these elements are introduced to children through the experiences of a young boy named Jacob. To start, Ms. Lane introduces the practice of being mindful of things for which we are grateful. She asks the student to pay attention at least once a day to things they are grateful for (paying attention here and now). Ms. Lane also helps Jacob stay grounded in the “here and now” when she suggests that Jacob take a few deep breathes before proceeding with his day. This also introduces the important element of breath to children. Breath is a central element in mindfulness that research has suggested has many benefits (Hawn Foundation, 2011).

At this point in the story, Ms. Lane also introduces the concept of kindness and curiosity when she explains to the children that there is no right or wrong way to be grateful. The term kindness and curiosity in the children’s definition of mindfulness is referred to as not judging in the adult definition of mindfulness (Kabat-Zinn, 1990). This concept is reinforced when Jacob has a bad day and rather than try to convince Jacob otherwise, the teacher simple replies, “Some days are like that.”

The last part of Saltzman’s definition addresses choosing your behaviour. In this story Jacob is given the opportunity to choose his behaviour when the teacher invites him to “try it and see” regarding reading the gratitudes in his gratitude jar on a bad day. She also suggests, rather than directs, Jacob to try to take a few deep breathes. Additionally, she does not instruct Jacob how he should respond to reading the gratitudes. She allows him to experience whatever results occur for him while reading the gratitudes. On his own, Jacob realizes that by reading in the gratitudes he has had a change in his emotional state. He then chooses to write a gratitude to put in his jar even though a few minutes earlier he had no desire to do so.
In addition to touching on the key components which define mindfulness, the story also introduces the practice of daily gratitude. Children are also introduced to the practice of stopping and taking some anchoring breathes especially when experiencing stress or negative emotions. The text is written in a manner so that teachers or parents reading the book to children can encourage the young people to take three deep breaths along with Jacob.

This story introduces an activity that teachers or parents can do with children. It is hoped that children will be excited to create their own gratitude jars and begin to explore the benefits of practicing gratitude. At the end of the book three more gratitude suggested are offered to the readers: a gratitude tree, a gratitude journal and thank you cards.

The three programs reviewed in this paper which introduce concepts of mindfulness and self-regulation to children all utilize children’s literature to introduce a variety of topics. It is hoped that this piece of literature will support these programs and help make the concept of mindfulness more accessible for children.
References


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Appendix A

The Story: My Gratitude Jar

My teacher Ms. Lane is always trying to make the world a better place. In the fall, our class visited a home for old people and read them our poems. In the spring, we planted flowers at the park near our school and once a week we go on litter patrol...yuck! Ms. Lane says it is important for everyone to do their part.

One day at school Ms. Lane gave everyone a jar.
“This is your gratitude jar,” she said. “Gratitude means being thankful. It is a good idea to take time every day to remember to be grateful. You can be grateful for big things like when you make a new friend. You can be grateful for little things like when someone smiles at you. There is no right or wrong way to be grateful. Every day we will take a few minutes to stop and pay attention to what we are grateful for at that moment. We will write it down and put it in our gratitude jar.”

“Why are we making gratitude jars?” I asked.

Ms. Lane said, “There are two reasons. One reason is that when we take time to be grateful, we feel happier.”

“What is the other reason?” I asked.

“You will have to wait and see,” she said.

We spent the afternoon decorating our jars.

I put blue polka dots all over mine.

The next day we all wrote down something we were grateful for.

I wrote: I am grateful for recess.

[picture of all the gratitudes from the day]
I asked Ms. Lane again, “What is the other reason for our gratitude jars?”

She said, “Wait and see.”

In a few weeks, our gratitude jars were full of things we were thankful for.

Most days I wrote down one thing.

Some days I wrote down two.

One day, I wrote down three things I was grateful for.

It was a very good day.

Shown in the illustrations:

{I am grateful for an invitation to Benjamin’s birthday party.}

{I am grateful that I found a quarter on the ground.}

{I am grateful for the sun because we can play soccer outside at lunch.}

I asked Ms. Lane again, “What is the second reason for our gratitude jars?”

She said, “Wait and see.”

A few days later, I had a very bad day.
When I got out of bed, I stepped right on top of the castle that I had built the night before.

It hurt a lot and wrecked the castle.

I spilled my oatmeal all over my favorite shirt. I had to clean it up all by myself.

We were out of my favorite bubble gum flavored toothpaste. I had to use the mint kind. The mint kind hurts my mouth.

Then my brother called me Shrimp. He knows I hate it when he calls me Shrimp.

When I got to school I was grumpy.

When I got my gratitude jar, I had nothing to write.

Now Ms. Lane would be mad. Now my day would get worse.

I needed a complaint jar not a gratitude jar.

“There is nothing to be thankful for today,” I told Ms. Lane.

“I am not grateful for this morning.

I am not grateful for school.

And I am certainly not grateful for my brother.”
“It sounds like you had a rough start to your day,” said Ms. Lane. “Some days are like that.

So, today is the day you get to learn about the second reason for your gratitude jar.”

Even though I was grumpy, I still wanted to know the second reason.

Ms. Lane said, “Today, instead of writing a new gratitude, you get to open your jar and read all the gratitudes you have already written.”

“That’s it? That’s the other reason? That doesn’t seem very important.”

“Try it and see. Before you open your jar, you might want to take a few deep breaths. When I have a bad day, taking a few deep breaths always helps. It makes me feel a bit calmer. See if it helps you, too.”

I took a big breath in and slowly blew it out.

I took a big breath in and slowly blew it out.

I took a big breath in and slowly blew it out.

I think it did help a little. I felt a little calmer.

I opened my jar and took out the gratitudes one by one. I read them all.
Then I started to understand the second reason. I felt less grumpy. I remembered that not all days were bad days. Lots of days were good days.

The last note in the gratitude jar was not one that I had written.

It was from Ms. Lane:

{I am thankful for Jacob. He helps make the classroom a happier place.}

That made me smile.

I picked up my pencil and began to write.

{I am grateful for my gratitude jar.}

{...and Ms. Lane.}

Dear Teachers and Families,

This story introduces children to the concept of mindfulness. Mindfulness means paying attention to the present moment without judgement. In today’s busy world it is easy for adults and children to worry about the future or the past. This can add to stress and anxiety. At the very least it can mean that we all miss some wonderful moments right now. Research shows that practicing mindfulness can help reduce stress, improve concentration and help people live healthier lives.
In this story, Jacob learns the value of gratitude – a key component of mindfulness. Here are some other ideas for practicing gratitude with children:

Gratitude Jars: Have your children create their own gratitude jars, gift bags or boxes. Make one for yourself as well and together take time to notice things for which you are grateful.

Gratitude Tree: Create a tree trunk and branches out of paper on a bulletin board or door. Have children cut out colourful leaves and write gratitudes on them before attaching them to the tree. You can also use a real bare tree branch and hang the gratitudes with string. Watch as the branches fill with gratitude.

Gratitude Journal: The simple act of writing down gratitudes can increase children’s appreciation for the positive aspects of their lives. Have the children write gratitudes in their journals. If possible, provide pens and other art supplies so they can personalize their journals.

Thank You Cards: Encourage children to go beyond writing thank you cards when they receive a gift. Encourage them to write thank-you cards for other less traditional reasons: a kindness, an event, friendship, love. Model writing gratitudes and thank yous so the children have examples.