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MindMasters 2: Targeting Social-Emotional Learning in Elementary School Children: A 3-
Month Intervention Evaluation

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General Abstract

The purpose of this Master's thesis was to determine the efficacy of a preventative intervention, *MindMasters 2*. In order to do so, an outcome evaluation was conducted to explore the extent to which *MindMasters 2* impacted specific social and emotional skills in Grade 3 children. Additionally, a process evaluation was conducted to attain teachers' perspectives on the acceptability of the program in a classroom setting. Teachers also provided suggestions for program improvement. A total of 98 Grade 3 children were recruited and randomly allocated to either a control or experimental group, and evaluated before and after a 3-month implementation period. Six Grade 3 teachers were recruited to partake in semi-structured interviews to share their experiences of program implementation. Overall, both quantitative and qualitative results support the notion that *MindMasters 2* may play a role in improving children's emotional regulation, relaxation ability, and social relationships. Furthermore, qualitative results indicate that the program was well adhered to in a classroom setting, and implementation of the program on a larger scale is supported by teachers. School administrators, teachers, caregivers, parents, researchers, and program administrators may find useful information in this thesis when attempting to promote positive living in the youth population.

Introduction

I remember being cut from my first soccer team. I must've been around ten years old, a point in my life when I was still finding myself in body, mind and spirit. When my parents told me that I wasn't on the team anymore, a blur of emotions flooded my thoughts; emotions I did not quite know how to name, but would nonetheless always remember. Thinking of it now, I suppose the best word for it was a feeling of disgust. I was disgusted with a system that would allow for others to influence one's identity at an age where identity is still so fragile. I was disgusted with the fact that sport for development and enjoyment had been replaced with a need to win at all costs, and I was the cost. Most of all, I was disgusted with my coach.

Yet through it all, I found something in myself I did not know I had. In the face of adversity, I was able to channel my anger, disappointment, and disgust into a sense of purpose. On that day, I told myself that I was not going to back down, in sport or in life. A few months later, I had joined another soccer team, one who valued development, inclusion and fun. Eventually we faced my former team in a tournament, and the time for redemption came in the final match, where I scored the winning goal. I was strong. I was resilient.

Though triumphant in my own experience against adversity, many young people across the globe are not as lucky. According to a report by the Mood Disorder Society of Canada (2009), the onset of mood disorders such as depression generally occurs during adolescence. Triggers in sport such as overtraining and competition stress may contribute to the onset of depression at a young age (Mummery, 2005). Similarly, life events such as domestic violence (Evans, Davies, & DiLillo, 2008), exposure to substances (Hanson et al., 2006), and bullying (Gladstone, Parker, & Malhi, 2006) can also drastically increase the probability of a child suffering from a mood disorder. Furthermore, previous research has shown that depression and

anxiety are closely associated with increased suicide rates (Jamison, 2000), which in itself accounts for approximately 10-12% of all deaths for children aged 10 to 14 (Navaneelan, 2012). Whether due to sports or other life events, adversity can lead to dire consequences in a child's life if he or she is not well equipped to face such challenges.

The silver lining rests in our hands, as we are the ones capable of changing this trend. Although traditionally focused on reactive measures to combat depression and emotional distress (i.e. medication, psychotherapy; Simon & Savarino, 2007), we are now transitioning to adopt more preventative measures to address these issues in various age groups (Christensen et al., 2010; Forsman, Schierenbeck, & Wahlbeck, 2011). Specifically, research has shown that if taught at an early age, programs that focus on social-emotional learning (SEL) can help children decrease rates of emotional distress (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011), foster positive social competence (Collaborative for Academic, Social and Emotional Learning, 2012), and improve academic achievement (Durlak et al., 2011), while reducing rates of dropout, substance abuse, unwanted teen pregnancies, and school violence (Zins, 2004). In turn, these consequences have been shown to improve both social and mental health (Beck, 2013).

The awareness and integration of SEL programs, although prevalent in the United States, are gravely lacking in Canadian communities (Carthy Foundation & Max Bell Foundation, 2013). Of those that are implemented, very few have undergone rigorous evaluations, and therefore cannot be considered evidence-based practices. Thus, there is a dire need to not only increase implementation of these programs, but to evaluate them as well.

Of interest to this thesis was the recently released *MindMasters 2* (Children's Hospital of Eastern Ontario, CHEO, 2016). *MindMasters 2* is a collection of activities intended to help

children ages 4-9 to develop positive living skills. Such a resource may prove useful in spreading the reach of SEL in Canada, helping to promote children's resilience and mental health.

Purpose of Research

The purpose of this research study was to determine, through an outcome evaluation, whether implementing *MindMasters 2* in schools improved specific social-emotional skills in students. Furthermore, we wanted to determine, through a process evaluation, whether the curriculum resource was acceptable in a classroom setting. Thus, two questions guided this research:

1. Due to implementation of *MindMasters 2*, were children able to:
 - a. Recognize, name, and manage emotions more effectively?
 - b. Relax after partaking in relaxation activities?
 - c. Display a positive attitude towards themselves?
 - d. Display a positive attitude towards others?
 - e. Demonstrate prosocial behaviours in a classroom setting, such as active listening, helping others, and focusing on the task at hand?
2. According to teachers, were *MindMasters 2* resources acceptable in a classroom setting (i.e. ease of use, barriers to implementation, opportunity for practice, observed behaviour changes), and how could *MindMasters 2* be improved?

Significance of Research

The significance of answering the two research questions for this thesis was two-fold. First, performing a rigorous outcome evaluation outlined the extent to which *MindMasters 2* resources impacted specific social and emotional skills. This is essential to creating and implementing evidence-based practices in Canada. Such information also adds to the current

body of literature that exists on social and emotional learning as it relates to children.

Second, the results from the process evaluation are key to guide future practices that attempt to promote mental health and resilience in children. From these results, *MindMasters 2* can serve as a foundation for further development of SEL resources in Canada. Results from the process evaluation can also be used to modify the existing *MindMasters 2* resource to facilitate implementation in schools and better meet the needs of its target population.

Review of Literature

The following review of literature is sorted into six sections. The first section is a needs assessment that illustrates the current body of knowledge on mental health and adversity in everyday life, sports, and schools. The second section provides an operational definition of positive living skills, and further details the role of positive thinking, relaxation, and mindfulness as a means of coping effectively with adversity in different environmental contexts. The third section explains the theoretical concepts of SEL, and then illustrates the similarities and connections between positive living skills and SEL skills. The fourth section introduces *MindMasters 2* and its link to SEL. The fifth section explains the rationale for conducting an outcome evaluation, while the sixth section explains the rationale for conducting a process evaluation.

Needs Assessment

In 2012, mood disorders were diagnosed in 5.4% of all Canadians aged 15 or over (Pearson, Janz, & Ali, 2013). However, the incidence of mood disorders is believed to be higher than noted as it has been shown that men seek medical help less often, and when they do, they are generally underdiagnosed (Rutz, 1996). Interestingly, children and teenagers have also been found to suffer from mood disorders such as major depressive disorder, with approximately 2%

of children and 4-8% of adolescents being affected (Birmaher et al., 1996).

Closely associated with mood disorders, (Jamison, 2000), an overview by Navaneelan (2012) states that in 2009, suicide was the second leading cause of death for young people aged 15 to 34. As for children aged 10 to 14, suicide accounted for approximately 10% of all deaths in boys and 12% of all deaths in girls. It is also important to note that for every completed suicide, it is estimated that as many as 20 suicides are attempted (World Health Organization, 2016).

Adversity in Life. There are many factors in life that may play a role in the formulation of the disturbing statistics surrounding mental health. Child or adult alike, adversity may seem too hard to handle if not properly prepared, ultimately affecting our mental health in a detrimental way. Events such as the loss of a loved one (Kristensen, Weisaeth, & Heir, 2012), exposure to violence (Evans et al., 2008) or sexual abuse (Brewer-Smyth, Cornelius, & Pickelsimer, 2015) have all been shown to increase the chances of mental illness or violent behaviour. This exposure to adversity in the early stages of life is especially harming, as children who do not learn to deal with adversity with proper coping skills may be at greater risk for mental problems later in life (Aebi, Giger, Plattner, Metzke, & Steinhausen, 2014).

Adversity in Sport. Much like life, sport creates an inherently optimal environment for individuals to face adversity. The inability to cope with such adversity may consequently translate to poor coping skills in other areas of life. For example, overtraining can become a debilitating practice in an athlete's routine (Mummery, 2005). According to Mummery, overtraining has been shown to be a contributing factor in mental health issues among athletes, even those at a young age. Likewise, the pressure of competition and the fear of losing have similar effects on an athlete's mental well-being (Mummery, 2005). The degeneration of mental

well-being can then negatively impact other areas of an athlete's life, such as personal, academic, and professional areas.

An article by Gee (2010) reiterates the idea that competitive athletes face psychological issues such as precompetitive anxiety. If not dealt with appropriately, precompetitive anxiety may negatively effect an athlete's performance, further harming their mental well-being.

In sports, issues such as these can greatly impact children's adherence to sport and physical activity, and translate to negative consequences such as physical (Oja et al., 2015) and mental health problems (Vella, Swann, Allen, Schweickle, & Magee, 2016) in the future, evolving into an inability to cope with adversity in sport and other areas of life.

Adversity in School. As in life and sport, children are presented with various challenges in school, many of which can have a negative impact on their mental health. Over the years, one of the most recognizable sources of adversity in schools has been bullying (Rigby, 2007). Those who experience bullying in childhood have an increased risk of suffering from a mood disorder earlier in life (Gladstone et al., 2006), and decreased subjective well-being in adulthood (Oshio, Umeda, & Kawakami, 2013). Furthermore, victims of childhood maltreatment have been shown to at times suffer from personality disorders (Hengartner, Muller, Rodgers, Rossler, & Ajdacic-Gross, 2013) and display suicidal tendencies (Kim & Leventhal, 2008).

Similar to bullying, social exclusion is another challenge many children face in schools (Cross et al., 2009). The need-to-belong theory stipulates that being rejected by peers can lead to an inability to self-regulate (Baumeister & Leary, 1995), and studies have found a bidirectional relationship between social exclusion in schools and poor self-regulation skills (Stenseng, Belsky, Skalicka, & Wichstrom, 2015). In turn, difficulties in self-regulation can lead to both psychological problems such as depression (Betts, Gullone, & Allen, 2009), and behavioural

problems such as aggression (Silk, Steinberg, & Morris, 2003).

Demand for Intervention. Due to the abundance of scenarios in which adversity can elicit negative consequences in a child's life, today's society must strive towards improving children's ability to cope with adversity in a positive way. In the past, traditional methods used to treat mental illness have mainly been medication and psychotherapy (Simon & Savarino, 2007). Although significant, these methods are reactive in nature, and are only initiated after a problem becomes apparent. We are in need of resources that promote resilience and its protective factors, which may reduce the risk of future mental health problems.

School-based interventions that focus on improving resilience have been shown to lead to decreases in depressive symptoms, internalizing problems, externalizing problems, and general psychological distress (Dray et al., 2017), consequently providing children with a solid foundation for coping with adversity. Of interest to this thesis is the recently released *Ontario Curriculum for Grades 1-8: Health and Physical Education* (Ontario Ministry of Education, 2015). These guidelines for all schools in Ontario provided new objectives concerning children's mental well-being. Specifically, within the section titled "The Living Skill Expectations" (pp. 23-25), subsections of Personal Skills, Interpersonal Skills, and Critical and Creative Thinking Skills clearly outlined various strategies children could use to cope with adversity in a positive way. Some of these skills include recognizing and managing stress, developing positive coping skills such as relaxation strategies, adopting an optimistic attitude, and expressing emotions in a safe, productive way. Although the provincial curriculum serves as a foundation for fostering a resilient mindset, it does not provide specific strategies to meet curriculum expectations. As such, validated resources are needed to help teachers address curriculum expectations, and integrate various resilience-based frameworks within schools. Of further importance is the need

to make such resources freely available on a large scale, integrating curriculum expectations into the resource, targeting children of all age ranges, providing multiple platforms of deliverance (i.e. website, software applications, guidebooks), and providing resources in both English and French.

Positive Living Skills

Positive living skills is a theoretical framework designed to promote skills important for the development of resilience. Positive living skills have been operationally defined as “self-regulation skills and activities that teach people to calm themselves when stressed, focus on the task at hand, live in the present moment, maintain a positive attitude towards oneself and others, and look for positive things in everyday life” (Orlick, 2011). By teaching these skills in a fun, interactive way, Orlick posited that children’s social and emotional development would be enhanced, therefore positively impacting their mental health. Positive living skills relevant to this thesis included positive thinking, relaxation, and mindfulness.

Positive Thinking. Positive thinking is a skill that includes having a positive outlook on oneself and others, and looking for positive moments each day (Orlick, 2011). Previous research done by Bamford and Lagattuta (2012) demonstrates that differing cognitive appraisals of the same situation can elicit different emotions in children. Therefore, if the child perceives a situation positively, then the chances of eliciting more favourable emotions increase. It follows that those who can effectively think positively are more likely to find positive moments each day.

In relation to oneself, positive attitudes have been repeatedly shown to improve mood, self-efficacy, motivation, and quality of life in a variety of contexts (Horn, 2008). Similar to the self, positive attitudes towards others have also shown favourable outcomes, such as improved

academic performance, more positive social behaviours and peer relationships, and fewer conduct problems (Durlak et al., 2011; Greenberg et al., 2003). Consequently, improving social and emotional skills by adopting a positive attitude plays a role in one's ability to meet the demands of everyday adversity.

Relaxation. Relaxation, according to Orlick (2011), helps reduce feelings of stress when we recognize the negative emotions being felt, and then take steps to calm ourselves mentally and physically. Additionally, research has shown that relaxation can help certain individuals reduce fatigue (Demiralp, Oflaz, & Komurcu, 2010), as well as improve sleep (Brand, Holsboer-Trachsler, Naranjo, & Schmidt, 2012; Demiralp et al., 2010), cognitive function (Newberg, Wintering, Khalsa, Roggenkamp, & Waldman, 2012), and self-regulation (Tang, Posner, & Rothbart, 2014). As a result, teaching relaxation strategies to varying populations may benefit their mental well-being. It is stipulated that teaching such skills to a youth population may further elicit greater changes as they continue to use these skills throughout the lifespan.

Mindfulness. Mindfulness is simply defined as the moment-to-moment awareness of one's experience (Davis & Hayes, 2011). Mindfulness activities help children to focus and be in the moment, and accept their thoughts and feelings without judgment. Numerous studies have demonstrated the many psychological benefits of mindfulness, including positive emotional states, stress reduction, self-regulated behaviour (Brown & Ryan, 2003), and a decrease in depressive symptoms (Morgan, 2003). Specific to children, a systematic review of 24 studies by Harnett and Dawe (2012) concluded that mindfulness-based interventions are an important tool for improving a range of outcome variables in children that are associated with better developmental outcomes.

Taken together, programs and activities that promote positive living skills such as

positive thinking, relaxation, and mindfulness may play an important role in promoting healthy social and emotional development, which in turn can help children manage adversity in a positive way in various contexts.

Social-Emotional Learning Skills

SEL has been defined by the Collaborative for Academic, Social and Emotional Learning (CASEL; 2012) as, “the processes through which children acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions”. It is a framework that promotes intrapersonal, interpersonal and cognitive competencies through the development of 5 core competencies: self-awareness, self-management, social-awareness, relationship skills, and responsible decision-making. Helping children and youth to develop these competencies has led to the reduction of various problems within schools, including dropout rates, substance abuse, unwanted teen pregnancies, and school violence (Zins, 2004), while increasing positive social behaviour, emotional stability, and academic achievement (Durlak et al., 2011; Greenberg et al., 2003; Taylor, Oberle, Durlak, & Weissberg, 2017). In turn, these outcomes have been linked to improved mental health in children over a prolonged duration (Bond et al., 2007; Payton et al., 2000).

There is a strong alignment between positive living skills and SEL. Both frameworks focus on teaching children social and emotional skills to help them cope with adversity. Although worded differently, the two frameworks aim to improve the management of emotions, demonstrate prosocial behaviours and social competence, and improve self-perception.

While focusing on slightly different skills (i.e. mindfulness), resources that incorporate either positive living skills or SEL aim for similar results. Recent literature has mainly focused

on SEL programs in the United States (Durlak et al., 2011), while Canadian culture has had little exposure to SEL (Carthy Foundation & Max Bell Foundation, 2013), but more exposure to resources that focus on positive living skills (Cox & Orlick, 1996; Gilbert & Orlick, 1996; Hester & Orlick, 2006; Julien, 2002; Koudys & Orlick, 2002; Partridge & Orlick, 2008; St. Denis, Orlick, & McCaffrey, 1996; Taylor & Orlick, 2004; Theberge, 2002).

MindMasters 2

The Children's Hospital of Eastern Ontario (CHEO) recently released *MindMasters 2* (CHEO, 2016), an interactive curriculum resource for children in Kindergarten to Grade 3, designed to promote social-emotional learning through the development of positive living skills. *MindMasters 2* is based on two previous initiatives in Ontario, the first of which was created in 1996 by Dr. Terry Orlick. The resource, called *Feeling Great*, consisted of games and activities that fostered positive living skills. Through various evaluations and published articles (Cox & Orlick, 1996; Gilbert & Orlick, 1996; St. Denis et al., 1996), *Feeling Great* was established as an evidence-driven resource.

The second initiative that influenced the creation of *MindMasters 2* was founded on the basic premises of *Feeling Great*. The *Positive Living Skills* program was created to help children with serious illnesses to cope with their illness, tests, procedures or surgeries. Positive living skills activities were introduced to these patients to help them handle stress, manage their emotions, and think positively. Much like *Feeling Great*, the program in a hospital setting showed improved behavioural functioning, anger management, and decreased aggression (Koudys & Orlick, 2002).

MindMasters 2 integrates activities from *Feeling Great* and *Positive Living Skills* into a guidebook, website, and software application. All resources were designed to make it easy for

teachers, parents, and children to use with minimal to no training. The *MindMasters 2* guidebook is sorted by activity, with various components outlined for each activity. In each section, the guidebook provides information on how long each activity generally takes (between 5 to 15 minutes), when to use each specific activity, how to implement activities in different environmental contexts, ways to simplify or enhance each activity, and suggestions on extra materials that can accompany activities. Furthermore, each activity targets one of three positive living skills: positive thinking, relaxation & stress control, and mindfulness. A section on how each activity links to Ontario curriculum expectations is also provided.

The *MindMasters 2* website is a place where all resources are easily and freely accessible. The website provides individuals with a quick description of the resource, a link to the guidebook, all video and audio files, and many other resources related to positive living skills. Similarly, the *MindMasters 2* software application is available for free on all mobile platforms, and provides yet another way in which to use the activities, audio, and video files in different contexts. All resources are available in both English and French.

The curriculum resource consists of 11 activities that focus on improving social and emotional skills through the adoption of positive living skills. Activities can be implemented by teachers and caregivers, and can be used in different contexts, such as at school, at home, before sleep, or in stressful situations. The resource is designed to be flexible in nature, allowing teachers and instructors to adapt the activities in creative manners. For example, a relaxation activity can be done right after lunch time, when kids are energetic and need to re-focus on classroom activities. Although the activity itself does not require it, teachers may decide to use mats or beanbag chairs as a relaxation corner of the classroom when using the resource. Yet others may try to relate what they learn in class about positive thinking to life at home, or in a

sport setting. The resource's flexibility and transferability to other contexts make it an appealing avenue in which to address Living Skills Expectations in the Ontario elementary school curriculum.

Positive Thinking Activities. Activities geared towards promoting positive thinking include *My Special Place*, *Treasure Hunting*, *Changing Channels*, *Friendship Chain*, and *I Am*. *My Special Place* attempts to teach children to use imagery as a way of thinking about a place where they feel happy, and also serves as a relaxation activity where children are focusing on an image that makes them feel calm. In *Treasure Hunting*, children think about highlights in their life, or things that make them happy. This activity attempts to make children consciously think about all of the positive things in their life, including things about themselves and people around them. *Changing Channels* is another activity that focuses on both positive thinking and relaxation, where children are instructed to “change channels” whenever they feel negative or stressed. *Friendship Chain* is an activity specifically tailored towards building positive relationships with peers, and appreciating all of the positive characteristics of those around. Lastly, *I Am* is an activity that uses animals to help children identify their own positive personality traits, build their confidence around their peers, and improve their self-perception.

Relaxation Activities. Relaxation activities within the *MindMasters 2* resource include *Spaghetti Toes*, *Animal Yoga*, *Jelly Belly*, and *Umbalakiki*. *Spaghetti Toes* is an activity that teaches progressive muscle relaxation to children, where they first pretend to be stiff, uncooked spaghetti, and then relax into soft, cooked spaghetti. *Spaghetti Toes* also attempts to teach children how to focus on the task at hand. *Animal Yoga* is a physical activity where children are taught the basic principles of yogic breathing and stances by use of animals. Like *Spaghetti Toes*, *Animal Yoga* also teaches children to focus on their breathing and be present in the moment.

Jelly Belly is a breathing exercise where children relax into a comfortable position and focus on their breathing patterns by imagining that their stomachs are made of jelly. Lastly, *Umbalakiki* is an activity that teaches children how to recognize and name emotions, and then manage these emotions in a positive and responsible manner.

Mindfulness Activities. *Great Little Listener* and *Mindful Movement* are two of the activities that focus on mindfulness. *Great Little Listener* is a listening activity where children must closely listen to animal sounds, and then identify which animal made the sound. *Mindful Movement* is another listening activity, where children must focus on an audio pattern, and then repeat the pattern. Doing so requires full attention in the present moment.

Although informed by previous evidence-based programs, *MindMasters 2* had not yet been evaluated to ensure the desired outcomes were being attained. Therefore, a thorough evaluation was required. For this research study, both an outcome evaluation and a process evaluation were conducted to determine the resource's efficacy.

Outcome Evaluation

In the world of research, evaluations are needed to provide evidence that the resource in question is indeed having its desired impact on the target population (Office of the Comptroller General & Treasure Board, 1991). Outcome evaluations are one such way of determining whether a resource is being effective in meeting its objectives. Outcome evaluations are defined as a way to “measure program effects in the target population by assessing the progress in the outcomes that the program is to address” (“Types of Evaluations”, 2016). Therefore, this research study included a quantitative outcome evaluation protocol to answer the first research question and determine *MindMasters 2*'s effects on Grade 3 children's specific social and emotional skills within a classroom setting.

Process Evaluation

Although important to determine whether a resource actually works or not, it is also important to evaluate the implementation of a resource and make adjustments to improve the resource itself. The purpose of a process evaluation is to determine whether activities have been implemented as intended (Steckler & Linnan, 2002). If gaps or ways for improvement are found by means of the process evaluation, then changes can be made to the resource to allow for better implementation in the future. As such, this research study also comprised a qualitative process evaluation on *MindMasters 2* to determine whether any changes were needed to support the successful use of the resource in classroom settings. The process evaluation also served to gather teachers' perspectives on the effectiveness of the *MindMasters 2* resources.

Methodology

To answer this thesis' research questions, a mixed methods approach was used. Mixed methods research involves using both quantitative and qualitative data in a single project to answer questions in detail (Halcomb & Hickman, 2015). As explained by Halcomb and Hickman, an increase in complexity of a research study invokes the question as how best to answer such question: objectively or subjectively? Both methods of design have their benefits and downfalls. It is therefore of benefit to use a multidimensional approach to answer the research question on a holistic level, taking into consideration both objective results due to resource implementation, as well as subjective perceptions on resource outcomes and implementation. Consequently, a quantitative, parallel group, repeated-measures study design was used to answer the first research question related to program outcomes, while an exploratory study design using semi-structured interviews was used to answer the second research question related to the process of resource implementation.

Research Paradigm

For the purposes of this thesis, a pragmatic research paradigm was used to guide the research process (Yvonne Feilzer, 2010). Researchers who adhere to a pragmatic way of thinking posit the idea that research is not dichotomous in nature, and that realities can be created in both objective and subjective methods. Different from positivists and constructivists, pragmatists endorse the use of both quantitative and qualitative research methods to answer questions in multiple ways. Coupled with its inherent complement to mixed methods research, a pragmatic research paradigm seemed the most appropriate to guide the conceptualization and execution of this research study.

Presentation of Articles

The findings from this thesis are presented in two articles. Article one summarizes the findings from an outcome evaluation performed on 98 Grade 3 children over a period of three months. Five assessments were conducted before and after implementation on specific social and emotional skills. This article focuses on quantitative results directly due to resource implementation.

Article two summarizes the subjective findings of a process evaluation via six semi-structured interviews with teachers who used *MindMasters 2* for a period of three months. Main themes that emerged from the thematic analysis are discussed in depth. Article two focuses on qualitative results that may aid future use of social and emotional learning resources.

Article One

MindMasters 2: A 3-Month Evaluation of Grade 3 Children's Social and Emotional Skills

Alexandre Santos & Corrine Langill

Abstract

Mood disorders such as depression and anxiety have been shown to lead to negative physical, mental, and global outcomes. This study investigated the impact of a curriculum resource, *MindMasters 2*, on elementary school children's social and emotional skills. Ninety-Eight Grade 3 children were randomly allocated to either a control or experimental group, and evaluated before and after a 3-month implementation period. Children were assessed on their ability to recognize, name, and manage emotions, their self-perception, and their ability to relax after partaking in a relaxation activity. Teachers completed questionnaires on children's prosocial behaviours in the classroom and their concern for others. Experimental group showed improved prosocial behaviours ($p < .01$), concern for others ($p = .02$), and emotional skills ($p < .01$) over time, as well as the ability to relax ($p < .01$) after relaxation activities. Compared to the control group, experimental group's abilities to recognize, name, and manage emotions were significantly higher at post-test ($p < .01$). However, small effect sizes were observed for all significant outcomes. Results from this study indicate that *MindMasters 2* may play a role in improving children's social and emotional skills. Future studies should strive for a longer implementation period in response to small effect sizes, taking into account target population, sample size, and persistence of effects over the lifespan.

MindMasters 2: A 3-Month Evaluation of Grade 3 Children's Social and Emotional Skills

Introduction

Mood disorders such as depression and anxiety have become a main topic of interest in health care due to their dire negative impact on an individual's physical and psychological well-being, as well as the global community (Becker & Kleinman, 2013; Markowitz, 1998; Teesson, Mitchell, Deady, Memedovic, Slade, & Baillie, 2011). The prevention of mood disorders is thought to be especially important for children due to their detrimental effects in early onset (Aebi, Giger, Plattner, Metzke, & Steinhausen, 2014; Morgan, Parker, Alvarez-Jimenez, & Jorm, 2013). Furthermore, introducing protective factors (i.e. social and emotional competencies) to aid in the coping of adversity in childhood may translate to more effective coping mechanisms in any given child's subsequent years (Goldstein & Brooks, 2012). Although various school-based and community-based interventions that target social and emotional skill development have been recently introduced in Canada (i.e. *Kids Have Stress Too, Ripple Effects for Kids*), there is still a lack of rigorously-evaluated resources which are freely available, technologically relevant, and bilingual.

MindMasters 2 is a curriculum resource recently developed for children ages 4-9 based on the principles of *Positive Living Skills* (PLS; Orlick, 2011). *MindMasters 2* includes 11 activities, which are freely available in both English and French in multiple platforms, including a guidebook, website, and software application. The resource also links each activity to current provincial curriculum standards in positive living (Ontario Ministry of Education, 2015), providing teachers with the necessary tools to meet specific curriculum objectives.

The 11 included activities focus on improving children's coping strategies by fostering social and emotional competencies through relaxation and stress control, mindfulness, and

positive thinking. Relaxation and stress control activities help children identify, express, and cope with feelings in a healthy manner, and learn to manage stress using different relaxation techniques. Positive thinking activities help children learn how to use positive thinking and imagery, find daily highlights and build positive relationships. Mindfulness activities help children to focus and be in the moment, and accept their thoughts and feelings without judgment. Together, these three techniques are postulated to improve a child's social and emotional functioning.

Programs that have focused on promoting social and emotional development have shown positive outcomes for school populations. The Collaborative for Academic, Social and Emotional Learning (CASEL; 2012) recently compiled a list of 23 social-emotional learning programs that have been shown to reduce school dropout rates, substance abuse, unwanted teen pregnancies, and school violence (Zins, 2004), while increasing positive social behaviour, emotional stability, and academic achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). In turn, these consequences have been shown to improve both social and mental health (Beck, 2013).

The purpose of this study was to investigate the outcomes of implementing *MindMasters 2* in Grade-3 classrooms for a duration of three months. We hypothesized that *MindMasters 2* would effectively improve children's prosocial behaviours in a classroom setting, their social attitudes towards others, their self-perceptions, their abilities to recognize, name, and manage emotions, and their abilities to relax after partaking in relaxation activities.

Methods

Ethical Approval

Ethical approvals were granted by a hospital-based Research Ethics Board (Appendix F), a university Research Ethics Board (Appendix G), and the Research Steering Committee of a major district school board in the Ontario region (Appendix H). Data collection occurred from January to April of 2017.

Procedures and Participants

Once ethical approvals were granted, principals within the Ontario school board were invited by letter to participate in the study. Within those schools that agreed to participate ($n=10$), teacher consent forms were distributed to all Grade 3 teachers (Appendix I), along with two 30-minute teacher information sessions held via teleconferencing. Fourteen ($n=14$) Grade 3 teachers and their respective classrooms were recruited. The classrooms were randomly assigned to either a control group or experimental group, with an allocation ratio of 1:1. An information letter (Appendix J), parental consent forms (Appendix K), and student assent forms (Appendix L) were sent home with all children in the 14 participating classrooms. Parents and children agreed to participate by returning consent and assent forms. From those who agreed to participate in the study, a maximum of 10 children per classroom were recruited via a randomization protocol (Schulz, Altman, & Moher, 2010). All consenting participants were recruited in classrooms that received 10 or less signed consent and assent forms. These restrictions were put in place to accommodate teachers' limited time availability for completing questionnaires.

Demographic information of participants can be found in Table 1. Participants were 98 Grade 3 students, aged between seven and nine years ($M=7.99$, $SD=.05$ years) from 10 elementary schools found within the Ontario school board. 49 students (50%) were randomly assigned to a control condition, while the other 49 students were randomly assigned to an

experimental condition. Participation rates were similar for control (91.84%, n=45) and experimental groups (93.88%, n=46) during student pre-test assessments. Missing data is due to non-attendance at period of assessments. By post-test assessments, 4.44% of students were lost to follow-up from the control group (n=2), and 6.52% of students were lost to follow-up from the experimental group (n=3).

Table 1

Demographic Data for Control and Experimental Group Children

<u>Variable</u>	<u>Control Group</u> (n=49)	<u>Experimental Group</u> (n=49)	<u>Group Difference</u>
Age in Years	8.00 (.07)	7.98 (.06)	$t(96) = .216, p > .05$
Gender (%)			
Male	21 (42.9%)	23 (46.9%)	$\chi^2 (1, N=98) = .17, p > .05$
Female	28 (57.1%)	26 (53.1%)	

Note. Values given are means and standard deviations (SD) or frequencies and percentage (%) where appropriate. Independent samples t-test was used to compare group age. Pearson's Chi-Square test was used to compare gender differences. An $\alpha=.95$ was adhered to for all statistical comparisons.

Student Support Partners (SSPs) were provided by the school board to facilitate the implementation of the program in each of the experimental classrooms during this study. SSPs had received a 2-hour training session on implementing *MindMasters 2* prior to this study, and were given a 1.5-hour booster session before commencing program implementation. SSPs were instructed to introduce each activity found within the program once, and allow for the teachers to lead the activities for the remainder of the study.

Before implementation, teachers in both groups were given a hardcopy of the program guidebook, access to the free program software application, and the link to the program's online website. The principal investigator met with teachers in both control and experimental groups one-on-one prior to assessments to explain the procedure and answer any questions.

Pre-test and post-test teacher measurements were dropped off in sealed envelopes at each school in January and April of 2017, respectively. Teachers were given two weeks to complete

the questionnaires, instructed to answer each questionnaire honestly, and return them in the same envelopes. The envelopes were subsequently picked up by the principal investigator. Pre-test and post-test student assessments were conducted by the principal investigator one-on-one. Children were instructed to answer each question honestly, and were informed that their answers were confidential, and that they did not have to answer any questions with which they felt uncomfortable.

Control and Experimental Conditions

Control Group. Teachers in the control group were instructed to continue teaching normally for the duration of the study. Control group teachers received all resources and opportunity for questions to be answered in May of 2017, and could begin using the resource after the completion of post-test data collection. SSPs were also available to introduce each activity to the control group classrooms at this time.

Experimental Group. The implementation of *MindMasters 2* was carried out over a duration of 3 months in the experimental classrooms, at an approximate rate of 3 activities per week. Teachers observed the SSPs lead each of the 11 activities once at a convenient schedule for them, then began to implement the activities on their own. Experimental group teachers were asked to implement each activity at least three times, and were provided with a sample schedule to consult. Teachers were asked to complete a teacher log book (Appendix M) to ensure program exposure was consistent through all experimental classrooms.

Activities took anywhere between 5 to 15 minutes to implement, and could be used at any time during the day. Some activities were accompanied by an audio or video track. Each activity related to at least one of the three PLS focused in *MindMasters 2*, and were consistent with the

living skills expectations of the Ontario Curriculum for Grades 1-8: Health and Physical Education (Ontario Ministry of Education, 2015).

Teacher Measurements

The *Prosocial Behaviours of Children – Teacher’s Perceptions* (PBC, Appendix A) measured children’s prosocial behaviours in a classroom setting (McConnell, Strain, Kerr, Stagg, Lenker, & Lambert, 1984). The 19-question measurement consisted of subscales in school adjustment, peer preferred behaviour, and teacher preferred behaviour (Cronbach’s $\alpha=.95$). A high score in any subscale or the summation of subscale scores indicated a higher amount of prosocial behaviour.

The *Concern for Others: Teacher Rating Form – Second and Third Grade* (CO, Appendix B) measured children’s social attitudes towards others (Chi, Jastrzab, & Melchior, 2006). This short questionnaire assessed children’s willingness to help others, demonstrate patience, and show empathy and respect (Cronbach’s $\alpha=.75$). A higher score for each question indicated more positive attitudes when interacting with peers.

Student Measurements

The *Self-Perception Profile for Children – Subscale 6* (SPP, Appendix C) was used to assess children’s self-perceptions (Cronbach’s $\alpha=.82$; Harter, 2012). Subscale 6 of this scale measured children’s global self-worth, defined as how much one likes oneself as a person, is happy with the way one is leading one’s life, and is generally happy with the way one is, as a human being. Those who scored higher demonstrated more positive attitudes towards the self.

A modified version of the *Assessment of Children’s Emotional Skills* was used to measure children’s abilities to recognize, name, and manage emotions (ACES, Appendix D; Schultz, Trentacosta, Izard, Leaf, & Mostow, 2004). Vignettes were used by a researcher to

describe situations in which specific emotions are elicited by the protagonist (Cronbach's $\alpha=.71$). Children were then asked which emotion they thought the protagonist felt. For this study, four simple drawings of faces were presented on sheets of paper after each vignette (happy, sad, angry, scared). One of the faces expressed the most appropriate emotional response to the situation, while the other three acted as foils. After each vignette, the children chose the face they thought best corresponded with the situation, then named the emotion. After doing so, four different behavioural responses to the situation were presented to the children. Two of the choices were considered appropriate, constructive behaviours (socially competent & passive) while two were considered inappropriate behaviours (negative & aggressive).

A total of four different emotions were examined: happiness, sadness, anger, and fear. For each of the specified emotions, two vignettes were presented that would elicit the emotion being examined. A total of 8 vignettes were presented to each child at each assessment period. Vignettes used in pre-test were different than those used in post-test to eliminate the chance of a learning effect. For each vignette, the correct recognition, naming of an emotion, and behaviour choice awarded the child one point each. For incorrect responses, no points were awarded.

Classroom Measurements

To assess children's ability to relax, the CAT Scale was used in experimental classrooms only (Appendix E; Cox & Orlick, 1996). Experimental group teachers were provided with a magnet board containing 5 different pictures of cats, ranging from (1) very stressed to (5) very relaxed. Before participating in a relaxation activity, each child in their respective classrooms was given a non-identifying magnet to place on the board under the cat he/she most felt like. After the relaxation activity was completed, children were instructed to move their magnet under the cat they most felt like if it had changed from before. Teachers took pictures of the magnet

board before and after the relaxation activity, and subsequently sent them to the investigative team in a private e-mail. An increase in the summation of how children felt indicated a better proficiency at relaxing.

Statistical Analyses

A stratified randomised trial with a no treatment control group was conducted. Primary outcomes included student reports of emotional regulation and self-perception, and teacher reports of prosocial behaviours and social attitudes. Secondary outcomes included classroom assessments of children's relaxation abilities.

Descriptive statistics were conducted for each outcome variable at pre-test and post-test assessments using IBM SPSS 24 (IBM Corp, 2016). Correlation analyses between pre-test assessment scores were conducted as justification for multivariate analyses. A two-group (control versus experimental) repeated measures MANOVA was conducted for primary outcome analysis. Subsequent 2-by-2 mixed model analyses of variance (ANOVAs) and simple effects analyses investigated origin of significance. A paired samples t-test was conducted for secondary outcome analysis.

Results

Sample Size

Sample size determination was calculated using G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009). The statistical model used was a multivariate analysis of variance (MANOVA): Repeated-measures, within-between interaction. A priori power analysis was used to determine sample size, with a moderate effect size $f(V)$ of .5, α of .05, 2 groups and 4 measurements. Total sample size needed for an 80% chance to detect intervention effects under the above parameters was determined to be a minimum of 48.

Primary Outcome Descriptive Statistics

Means and standard deviations were calculated for each outcome variable at each assessment point (Table 2). For this study, skewness and kurtosis values within the range of -2 and +2 were used as assumption of normality (Hoyle, 1995; Kim, 2013). Experimental group SPP scores in the pre-test assessment was found to be kurtoic (Pre: 2.65), while control group SPP scores in the post-test assessment was also found to be kurtoic (Post: 3.20). Scores considered to be outliers were screened for in each of these cases by use of box plots. One extreme outlier was found and removed in the experimental group pre-test assessment, while three mild outliers were found and removed in the control group post-test assessment. The removal of these outliers resulted in normal distributions for both cases.

Table 2

Means and standard deviations (SD) for primary outcome measures at pre-test and post-test assessments.

Group	PBC		CO		SPP		ACES	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Control	75.51(16.20)	75.90(16.75)	12.00(3.51)	11.82(3.88)	20.62(2.96)	21.53(2.25)	17.51(3.22)	18.12(3.01)
n	49	49	49	49	45	40	45	43
Experimental	69.71(13.73)	73.47(12.89)	11.57(3.13)	12.29(2.94)	21.07(2.93)	20.70(2.96)	17.54(2.84)	20.19(2.43)
n	49	49	49	49	45	43	46	43

Note. PBC = Prosocial Behaviours of Children; CO = Concern for Others; SPP = Self-Perception Profile; ACES = Assessment of Children's Emotional Skills.

Correlation analyses of pre-test assessment scores demonstrated an association between PBC and CO ($r=.76, p < .01$), PBC and ACES ($r=.28, p < .01$), and CO and ACES ($r=.26, p < .05$), providing justification for multivariate analyses. SPP scores were not correlated to other outcomes ($p > .05$), but were still included in the multivariate model for simplification purposes.

Primary Outcome Analyses

Using Wilk's Lambda, a repeated measures MANOVA revealed a 3-way interaction effect between tests, time, and group ($F [3, 73] = 3.254, p = .026, \eta^2 = .118$). Decomposition of this interaction was done via 2-by-2 mixed model ANOVAs on each outcome variable.

Significant 2-way interactions between time and group were revealed in PBC ($F [1, 96] = 6.16, p = .015, \eta^2_p = .06$), CO ($F [1, 96] = 4.42, p = .038, \eta^2_p = .044$), and ACES ($F [1, 79] = 14.11, p < .01, \eta^2_p = .152$) scores. No significant group effects ($F [1, 75] = .728, p = .396, \eta^2_p = .01$) or time effects ($F [1, 75] = .001, p = .97, \eta^2_p < .01$) were found for SPP scores.

Further decomposition of the 2-way interactions was done via simple effects analyses. Pairwise comparisons revealed significant improvements in PBC ($p < .01$), CO ($p = .02$), and ACES ($p < .01$) scores at post-test for the experimental group only. When compared to the control group, experimental group ACES scores were significantly greater at post-test ($p < .01$) (Figure 1).

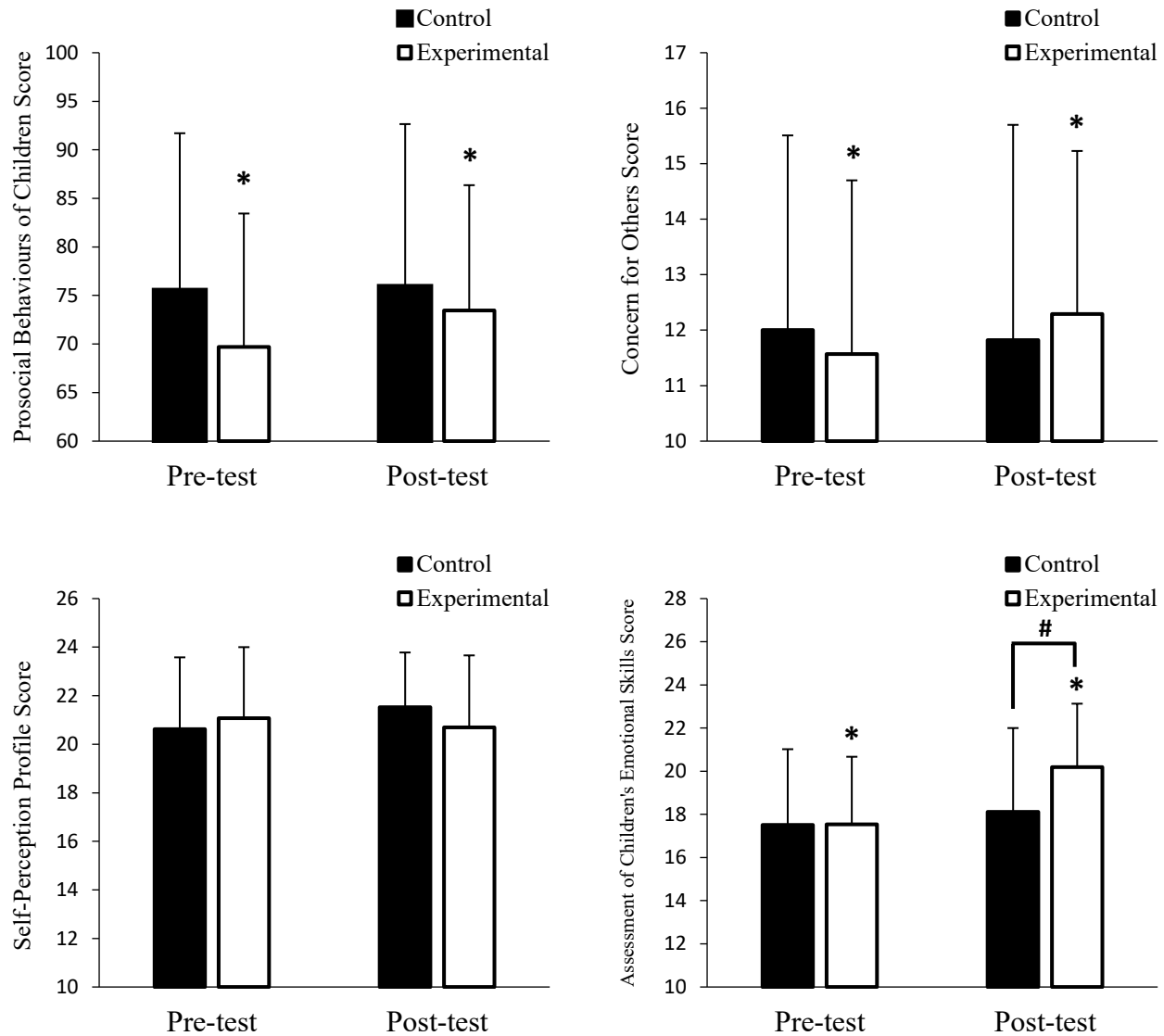


Figure 1. Means and standard deviations for control and experimental groups at pre-test and post-test assessments for top left: *Prosocial Behaviours of Children*, top right: *Concern for Others*, bottom left: *Self-Perception Profile*, bottom right: *Assessment of Children's Emotional Skills*. * denotes a significant within-subjects effect at $\alpha = .95$ ($p < .05$). # denotes a significant between-subjects effect at $\alpha = .95$ ($p < .05$).

Secondary Outcome Analyses

A sample size of 14 pairs of photographs was obtained to compare CAT Scale scores before and after a relaxation activity was used. Classrooms scored an average of 59.14 ($SD=9.96$) before a relaxation activity was used, and subsequently scored an average of 71.7 ($SD=13.33$) after a relaxation activity was used. A paired samples t-test revealed a significant

increase in relaxation scores after a relaxation activity was used in class ($t [13] = -5.713, p < .01$) (Figure 2).

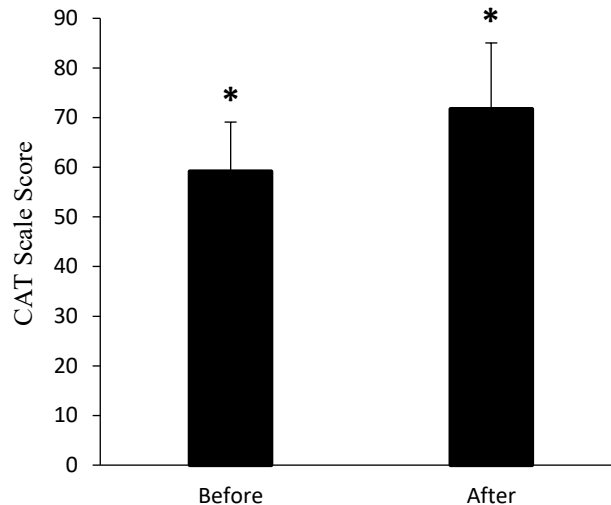


Figure 2. Means and standard deviations of CAT Scale scores for classrooms before and after using a relaxation activity found within MindMasters 2. * denotes a significant within-subjects effect at $\alpha = .95$ ($p < .05$).

Discussion

As expected, results indicate that over three months, children who were consistently exposed to *MindMasters 2* improved their prosocial behaviours in a classroom setting, their social attitudes towards peers, and their abilities to recognize, name, and manage emotions. Furthermore, compared to those who were not exposed to the program, children's abilities to recognize, name, and manage emotions were significantly higher at post-test. These findings are consistent with previous research done on social and emotional learning interventions in school settings (Durlak et al., 2011). However, effect sizes for all three of these measures were below Cohen's small effect size threshold ($d = 0.2$; Sullivan & Feinn, 2012). Such small effect sizes may be indicative of other factors that may play an influential role in the development of effective social and emotional skills. Proposed underlying mechanisms include teacher influences, age, geographical location, and family dynamics. Further research is needed to

examine the relationships between these factors and the development of effective social and emotional competencies.

The small effect sizes observed may also be partly explained by a relatively short implementation period of three months. It is believed that endured exposure may translate to further improvements in children's social and emotional skills. This notion is supported by previous research, where programs similar to *MindMasters 2* show improvements during prolonged implementation periods and follow-up assessments (Elias, Gara, Schuyler, Branden-Muller, & Sayette, 1991; Jones, Brown, & Aber, 2011; Muennig, Schweinhart, Montie, & Neidell, 2009). Therefore, future evaluations of *MindMasters 2* should focus on long-term effects by use of a longitudinal study design. Follow-up assessment periods are also recommended to test whether initial findings remain persistent over time.

No group effects were found for children's prosocial behaviours in a classroom setting or their social attitudes towards their peers. This lack of effect may be explained by a relatively small sample size. Evaluations on other prevention programs tend to have much larger sample sizes, effectively increasing the study's power (Haas, 2012). As a consequence, an increase in sample size allows for easier detection of group effects if the program is effective in improving its targeted outcomes. Furthermore, although not statistically significant, control group children's scores for both prosocial behaviours and social attitudes were slightly higher than experimental group scores at pre-test. An increase in sample size would likely balance these baseline scores to better reflect a homogenous population sample, thus providing a more accurate comparison between groups. Consequently, future endeavours at evaluating *MindMasters 2* should take this into consideration.

Contrary to our hypothesis, the program seemed to have no impact on children's self-perception. These results may be due to a few reasons. Firstly, pre-test self-perception scores were high for both control and experimental groups, meaning children were generally happy with themselves to begin with. Out of a possible maximum score of 24 points, both groups' scores averaged above 85%, potentially creating a ceiling effect. Perhaps differences in self-perception would become apparent in populations at high-risk for low self-esteem and similar issues, and should therefore be considered for future studies' target populations. Secondly, self-perception scores were not correlated to any of the other outcome variables at either pre-test or post-test assessment periods. As such, it may be that the program *MindMasters 2* does not succeed in improving children's perceptions of themselves. Further investigations are required to re-test this outcome variable in order to determine its relevance to the program.

The relaxation activities in *MindMasters 2* appeared to be effective; children reported decreased levels of stress after taking part in these activities. This was an expected outcome, as activities that focus on teaching controlled breathing and progressive muscle relaxation have shown to be effective in other prevention programs (Kjellgren, Bood, Axelsson, Norlander, & Saatcioglu, 2007; Schröder, Heider, Zaby, & Göllner, 2013).

Implications

Overall, the results from this study provide a preliminary evidence-base for the use of *MindMasters 2* in schools. An important implication of this is the broader uptake of the resource in other areas of Canada, including, but not limited to, other school boards across the country. This study also adds to the existing literature on the effectiveness of social and emotional learning resources in Canada, which thus far has been minimal (Guyn Cooper Research Associates, 2013). Moving forward, municipal and provincial governing bodies and school

administrators should consider using *MindMasters 2* as a tool when attempting to achieve the positive living expectations of the Ontario curriculum.

Limitations

As with other research studies, various limitations were present in this study which should be noted. To begin, data from this evaluation consisted of self-report measures, which can create an inherent self-enhancing bias. Second, the findings of this study cannot be generalized to other youth populations due to the small sample size, limited geographical location, and short implementation period. Furthermore, although certain resilience-related protective factors were measured in this evaluation, *MindMasters 2*'s impact on children's mental health and resilience were not measured directly. Future research on *MindMasters 2* should attempt to rectify these limitations in order to solidify the evidence-base for future implementation.

Conclusion

Results from this study indicate that *MindMasters 2* may play a positive role in improving children's social and emotional skills, as well as their ability to calm themselves and relax. *MindMasters 2* is a promising resource that could have a positive impact on children's mental health and resilience. Future studies should aim to directly measure these outcomes over a prolonged period of time, taking into account target population, sample size, and persistence of effects over the lifespan.

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Article Two

MindMasters 2: Teachers' Perspectives

Alexandre Santos

Abstract

School-based programs that promote resilience, and social and emotional development have the potential to help children navigate life's inevitable ups and downs. *MindMasters 2* is a curriculum resource designed to promote social and emotional skills, such as relaxation, positive thinking, and mindfulness. The purpose of this study was to assess teachers' perspectives regarding *MindMasters 2's* implementation and efficacy over a 3-month period, and obtain suggestions for future refinement. Six Grade-3 teachers took part in semi-structured post-program interviews, which were audio-recorded, transcribed verbatim and analyzed thematically. Nine broad themes emerged from this study, which are discussed in detail. Overall, teachers found *MindMasters 2* acceptable in a classroom setting, and observed changes in children's emotional regulation, focus in the classroom, and peer relationships. Teachers also noted children's use of the resource outside of the classroom environment. Suggestions for refinement included training opportunities, more variety in activities, introducing *MindMasters 2* earlier in the school year, and the addition of a parent section. From these preliminary findings, it appears that *MindMasters 2* may be a useful resource that can help schools meet curriculum objectives.

Introduction

Resilience, defined as the ability to overcome emotional, developmental, economic, and environmental challenges (Rutter, 1987), is a field of research that has expanded significantly over the last 25 years (Goldstein & Brooks, 2012). Of particular interest is the development of resilience in the youth population. As explained by Goldstein and Brooks, the number of youth facing adversity appears to be increasing, stimulating the need for sustainable interventions that promote protective factors related to resilience. Fostering a “resilient mindset” (Brooks & Goldstein, 2001) in all youth may lead to an improvement in coping with stress and pressure, everyday challenges, adversity, and trauma, while also providing children with the tools to develop clear and realistic goals, solve problems, relate to others, and treat oneself and others with respect. Indeed, meta-analytic research shows that building resilience through the promotion of protective factors in children via preventative interventions may translate to a reduction in the numbers of youth with emotional, psychiatric, and behavioural problems (Goldstein & Brooks, 2012; Hodder et al., 2017).

Protective factors correlated with resilience have been reported (Garmezy, 1985) and categorized (Masten, 2007). According to Masten, resilience is a multifaceted concept that entails various characteristics of the child, family, community, and culture. Interestingly, some protective factors related to child characteristics (i.e. problem-solving skills, positive peer relationships, emotional and behavioural regulation, positive view of self, positive outlook on life) that have been repeatedly reported are also used as benchmarks for policy and practice. Of interest to this study, the *Ontario Curriculum for Grades 1-8: Health and Physical Education* (Ontario Ministry of Education, 2015) outlines positive living expectations, and the need to promote activities that foster mental well-being, such as stress

management, coping skills, adopting an optimistic attitude, and expressing emotions in a safe, productive way. Similarly, the Mental Health Commission of Canada (2012) released a national-level mental health and well-being initiative that targets many of the same protective factors found in resilience research.

Social-emotional learning (SEL) is a conceptual framework that outlines intrapersonal, interpersonal and cognitive competencies through the development of 5 core competencies: self-awareness, self-management, social-awareness, relationship skills, and responsible decision-making (Collaborative for Academic, Social & Emotional Learning; CASEL, 2012). Much like the research on protective factors related to resilience, CASEL advocates for programs that target children's social and emotional development to help them thrive. Previous evaluations of programs that focus on these SEL competencies have demonstrated decreases in school dropouts, substance abuse, unwanted teen pregnancies, and school violence (Zins, 2004), and an increase in positive social behaviour, emotional stability, and academic achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Greenberg et al., 2003). In turn, these outcomes have been linked to improved mental health in children over a prolonged duration (Bond et al., 2007; Payton et al., 2000). Regretfully, exposure to SEL opportunities has so far been minimal in Canada (Carthy Foundation & Max Bell Foundation, 2013). Thus, interventions that focus on improving children's SEL competencies are needed.

MindMasters 2 is a free curriculum resource intended for children ages 4-9 that shares many of the same objectives as SEL programs and resilience research alike. Its primary purpose is to enhance children's coping strategies by improving their social and emotional skills (Children's Hospital of Eastern Ontario; CHEO, 2016). This is accomplished through 11 activities that address relaxation and stress management, positive thinking, and

mindfulness. Previous research has shown that an improvement in these skills may lead to better intrapersonal (Brown & Ryan, 2003; Horn, 2008; Tang, Posner, & Rothbart, 2014) and interpersonal competencies (Durlak et al., 2011; Harnett & Dawe, 2012).

The integration of *MindMasters 2* in schools is thought to be an essential step towards exposing children to these protective factors, and promoting the adoption of a resilient mindset. In this integration process, we must keep in mind that teachers play an immense influential role in the development of youth. Indeed, a book by Stronge (2010) compiles numerous research articles that show the impact teachers can have on a child's academic and developmental growth. In light of this research, strides must be made to ensure that teachers feel adequately prepared to hold such important responsibilities. As evidenced by the curriculum objectives, teachers are in dire need of resources that will facilitate the introduction and practice of these novel concepts within a classroom setting. It is therefore important to gather teachers' perspectives on *MindMasters 2*, to determine its acceptability in meeting curriculum objectives, and to inform future use of the resource to more adequately meet the needs of teachers.

The primary purpose of this study was to determine whether *MindMasters 2* is considered by teachers to be an acceptable resource to use in a classroom setting. The secondary purpose of this study was to gather information on teachers' opinions on how to further improve the resource. By doing so, we hoped to add to the evidence base for *MindMasters 2*. As such, the research questions guiding this study were: 1) According to teachers, are *MindMasters 2* resources acceptable in a classroom setting?; and 2) How can *MindMasters 2* be improved? The implications from these results are then explored to guide future implementation and improvements.

Methods

Ethical Approval

Ethical approvals were granted for this study by the Children's Hospital of Eastern Ontario (Appendix F), the University of Ottawa (Appendix G), and the Upper Canada District School Board (Appendix H). Data collection occurred in May of 2017.

Procedures

This study was conceptualized and executed in two phases. The first phase consisted of an outcomes evaluation, in which a total of 98 children from 14 different Grade-3 classrooms were recruited and randomly allocated to either a control group or experimental group. Children were then assessed before and after a 3-month implementation period on their abilities to recognize, name, and manage emotions, demonstrate prosocial behaviours in the classroom, show empathy for others, and relax after partaking in relaxation activities. The results of the outcomes evaluation are reported in a separate manuscript.

Implementation occurred in all experimental classrooms from the beginning of January to the end of April of 2017. Prior to implementation, the principal investigator met with all teachers one-on-one to explain the implementation process and answer any questions. At this time, teachers were given a hardcopy of the resource guidebook, access to the free software application that accompanied the resource, the link to the resource's online website, and a teacher log book to keep track of when and how often each activity was used (Appendix M). To ensure consistency in implementation across all classrooms, teachers in the experimental group were instructed to use each *MindMasters 2* activity three times, approximately three times per week.

Student Support Partners (SSPs) were provided by the school board to assist in resource

implementation. SSPs had received a 2-hour training session on implementing *MindMasters 2* prior to this study, and received a 1.5-hour booster session before commencing implementation. SSPs were instructed to introduce each *MindMasters 2* activity once to each classroom, and then allow teachers to lead the activities for the remainder of the study.

For the second phase of this study, teachers in the experimental group who implemented *MindMasters 2* for a duration of three months ($n=7$) were asked to participate in semi-structured interviews (Fylan, 2011). Of the seven teachers available, six completed the interview process. One teacher was not available due to a conflict in scheduling.

Interviews

Semi-structured interviews gave teachers the opportunity to share their perspectives of the program in a personal, yet confidential manner. To ensure the research questions were being addressed, the interviews were guided by an interview guide (Appendix N). A pilot interview was conducted with one of the study participants to ensure questions were clear, concise, and on topic (van Teijlingen & Hundley, 2002). A few modifications were made to the interview guide following the pilot interview, but the answers provided by the participant still provided quality data, and so were included in the analysis.

Interviews were conducted in person by the principal investigator, in a quiet area of the schools within two weeks after *MindMasters 2* implementation ended. Participants were asked to answer questions honestly, and were informed that they did not have to answer any questions with which they felt uncomfortable. Participants provided verbal consent to being audio recorded during the interview, before the interview began. All interviews were audio recorded, transcribed verbatim, and anonymized. The interviews lasted from 12 to 25 minutes ($M = 17.08$) in length. Interviews were purposely kept at a short duration to accommodate teachers'

busy schedules.

Analysis

Thematic analysis was used to analyze the interview data (Braun & Clarke, 2006). Audio-recorded interviews were transcribed verbatim, generating a total of 48 pages. The principal investigator read and re-read the transcripts, taking notes on initial ideas in order to develop preliminary codes in a systematic fashion. Via collation of these codes, potential themes were identified as repeated topics of discussion in multiple interview transcripts. The initial set of themes identified by the principal investigator was reviewed through peer-review briefing, and changes to the themes were made accordingly. Once themes were given clear definitions and names, NVivo 11.0 (QSR International Pty Ltd, 2015) was used to assist in the electronic coding and retrieval of interview transcripts. A total of three node levels in the coding tree were created to assist in specifying sub-themes within each existing theme. Vivid quotes from participants that portrayed the theme in question were chosen to be included in this manuscript. Quotes used in this paper have been labeled according to the participant's number, given at the time of the interview to maintain confidentiality.

Results

Nine broad themes were identified from the interviews: (a) Frequency of implementation; (b) Timing of implementation; (c) Modality of implementation; (d) Barriers to implementation; (e) Observed changes due to resource; (f) Resource likeability; (g) Resource transferability; (h) Suggestions for improvement; and (i) Future use of resource. A summary of the key themes and sub-themes are presented below.

(a) Frequency of Implementation

There was a wide range in the frequency with which teachers used the *MindMasters 2* activities. On average, teachers tried using the resource a minimum of two days a week.

However, this varied, due to unforeseen circumstances. For example:

I tried to use it [the resource] two times a week. Some days I did three days a week, some days I did one day a week. I even think some weeks, I missed a week, because of snow days and things like that. I tried to do two days a week, but it varied. (Participant 4)

Despite some variations, 5 of the 6 teachers interviewed were able to meet the standard agreed upon: introducing each of the 11 activities three times each. This was cross-verified with what teachers reported in their teacher log books.

Routine vs. Sporadic use. The majority of teachers thought that the resource was most effective when integrated into a routine. Participant 3 explains:

...I think for some groups, especially the one that I have, making it part of a routine, especially after a transition time, was kind of key, because they knew that this was now their calming down time. Whatever had happened at recess was now no longer. It was forgotten about, and now we can focus and do that activity... I would recommend making it part of their routine, especially after transition time, just because it's a good turning point for a lot of those students who aren't able to self-regulate. (Participant 3)

Although all teachers were using the resource as part of their routine, some teachers still thought that using the resource sporadically could work in given situations. Participant 2 was one such teacher:

I think you can use it sporadically. I think it totally depends on your group. I think mine kind of thrive on the routine, and expecting it and enjoying it, whereas if I had a

different group from the past where they were more needs, more anxiety, I think you can put it in sporadically when you kind of see things are elevating. Or the beginning of the day, if you see they've come in a little bit off, I think you could use it wherever you need. (Participant 2)

When asked if they thought the program could be used sporadically, two teachers in particular did not believe that using the program in such way would yield the program's desired effects. One teacher stated, "I think that would be my big thing to teachers. You can't use it five times and expect it to change. It's got to be a slow progression." (Participant 1), while participant 5 had a similar thought:

I don't think so. With this group, like even in the beginning when it wasn't the routine, it was very noisy and they weren't quite following the instructions, and it was more of a game than an actual technique they should use. Whereas now, it's very quiet. They know exactly what to do. (Participant 5)

(b) Timing of Implementation

Teachers used the program at three main times during school hours: as soon as they began the day, after recess, and at the end of the day. Most teachers used *MindMasters 2* activities after recess, as one teacher shares, "So they come in from that unstructured time [recess], so they're usually coming in pretty high. So it was a perfect time to do the MindMasters." (Participant 2). Another teacher used the activities at the end of the day:

For us, we transitioned at the end of the day when they were packing up and finishing at the carpet, and we kind of [used the program] to bring them down. Or when they're coming back from recess, or coming back from gym and you kind of need to bring them down. (Participant 3)

Transitions. The majority of teachers used the *MindMasters 2* activities during transition periods as a way of calming the children and getting them focused on the class subject. Some teachers would even recommend using the program in such way to other teachers, as participant 1 notes, “If I’m transitioning from language to math, and I feel like they’re hyper, I’ll do an activity just as a way to calm them down.” Other teachers shared the same view:

I don’t usually have them first thing in the morning, so when I would come in at 9:40, it was often then [that the activity was used]. It was kind of a transition between what they had just finished. Like, they could be a little riled up and everything after music, so it’d be a little kind of transition and calm down before we got into our language.

(Participant 2)

It’s a great transition. That’s when I would recommend it, during transition time, and I really would suggest it to teachers, even if they just go to that website, and do some activities and get it into their routine so the kids learn it. (Participant 3)

(c) Modality of Implementation

For the most part, teachers used the online website to deliver the resource to their classrooms. Reasons for doing so included the website being well organized and easy to access, as participant 3 explains, “Yeah it had it all together there [the website], so it was like a one-stop kind of shop where I could put up, and they knew to just click on it.” Participant 4 also had a similar opinion:

I used the website the most. It was great. Especially with the smart board, I just put it right up there, and it was much easier for me because I had to do less right? The first time, I’m looking back at the book and I’m like ‘okay what do I need to say here, or

what do I need to do here?’, whereas the website was really easy. You just click on it, and it talks them through it, which I found really helpful. (Participant 4)

Teachers sometimes used the guidebook hardcopy to implement the resource.

However, this was not nearly as common as the website, as the guidebook can also be found there as a document. Surprisingly, none of the teachers used the software application. As one teacher explains, the technological limitations were the cause:

No, I didn’t use the app. I wanted to try the app. Timewise, I couldn’t, and in the portable it’s tricky to get the technology out there, so we didn’t really use the app. If I were to do it again, I would use the app for sure. (Participant 2)

(d) Challenges to Implementation

Time. According to teachers, one of the most common challenges to implementing the resource was a lack of time. Adding to the issue was the fact that many of their classrooms lost days of school due to environmental factors (i.e. snow days), making it even harder to implement the program on a regular basis. Participant 4 explains:

Time restriction was the biggest thing I found. And I think just the fact that I’m not here every day of the week. Like, the other teacher is here, but she wasn’t doing the program, it was just really me. So those days when I’m not here and she’s in the class, it didn’t get done. (Participant 4)

Coordinating with SSPs. Another challenge was scheduling conflicts with the SSPs designated to help with the implementation process. Such conflicts would mean that introducing new activities would sometimes have to be introduced by the teachers who were unfamiliar with the activities, as was the case with participant 1:

It’s been tricky because she [the SSP] is here twice a week, and if she has a big

upheaval somewhere else, she's not in for the week. So sometimes I had to run them on my own, and that's a challenge too. (Participant 1)

Buy-in from kids. Some of the teachers felt that children were often not interested in doing the activities at first. This created a challenge, as these students would often influence the other children by acting out. However, as time progressed, teachers saw an improvement in participation from the more challenging students. This is well portrayed by two of the teachers:

My biggest one [challenge] is just the fact that I feel the kids that need it the most don't want to buy-in when we do it... and I don't know if it's because those are the kids that have a hard time. They're very self-aware as far as knowing their emotions, and recognizing them. They're really good at that, but I don't know if they want to acknowledge their feelings all the time. (Participant 1)

Probably four of the boys [weren't buying-in]. I don't know if they maybe felt uncomfortable, just because it's kind of something that they're not used to, and they'd make little noises, or kind of fidget, try and distract themselves... they got better towards the end. Towards the end, I did see them, the last couple of times, where they would participate more. (Participant 6)

(e) Observed Changes Due to Resource

Classroom climate. When asked if they thought the program had changed the "climate" of their classroom, such as noise level and level of focus, teachers were mostly in agreement that it had. Participant 6 states, "Especially towards the end, once they got more used to doing the activities", children were able to take the activities more seriously.

Participant 1 noted a change in the acceptability of the resource over time:

There's been a slow pendulum switch to the fact that it's okay to do it, and that

they're not feeling singled out. At the beginning, they'd close their eyes, but they were peeking to see if people were watching. Now, they're more comfortable, and they're not looking to see if others are watching. They don't care. (Participant 1)

However, participant 5 did not observe any changes in classroom climate which she could attribute to *MindMasters 2*, "There were a few examples like that where they said they were using it but I thought like, did it change the whole feeling of the class? No, I don't think so."

Emotional regulation. Many of the teachers saw an improvement over time in children's ability to understand and manage their feelings:

I think they're just more in tune with their feelings and how they're feeling. I can quickly say 'oh you seem to be feeling, I don't know, frustrated. Could you go do Jelly Belly. Making reference to it, the kids will go, and I don't know whether they do it internally or not, but just knowing it, it seems to be able to tweak them to change their behavior. (Participant 1)

The first few times, they were very silly and unfocused and it took a while for them to even stay focused to it, but then as we did it, and as the program continued, it got much better, and they were calm, and it did its purpose. (Participant 4)

I feel like they're better at relaxing when they're stressed. I know like, a couple of my high-flier kids still do have problems with controlling their temper, I guess you would say. A lot of the other ones, like whenever they're stressed, or if they had a bad dream, that kind of thing, I feel like that's when they were most effective at being able to use it. (Participant 6)

Focus. Similar to emotional regulation, teachers saw an improvement in children's ability

to focus in class after an activity, especially during transition periods. Participant 4 explains her observations:

I try to do a guided writing thing at the end of the day too, where we write on our Facebook page and do it together. That's a time where sometimes they're not always a hundred percent focused, and I'm like 'okay, you guys have to focus'. So I would do it often right before that, because they all would have to come to the carpet for that anyway. It just lent itself well, because they were coming to the carpet. So I put on MindMasters 2, and then we'd do the shared writing activity, and it did help with that.

(Participant 4)

Peer relationships. There were a few examples of when teachers observed children helping their peers during implementation. However, this was not reported often. One teacher said, "I've heard them telling each other 'you should go do this activity because you're, like, stressed. You should go do Jelly Belly, you're super whacky right now.'" (Participant 1). Another teacher observed, "...especially with the yoga to start [laughter]. Some of them were very good, others had a few issues, so they would say 'oh no, try this', and show them. So yeah, they definitely would help each other." (Participant 2).

(f) Resource Likeability

Overall, all teachers liked the program and found it acceptable in a classroom setting. The main reasons teachers gave were its ease of use and simplicity. Teachers also reported that students found the activities fun, and that conducting the activities did not take very long:

I like that it's easy. Honestly, for a teacher with not a lot of time, it's very easy to follow, everything you need is right there and laid out for you, so it's very easy... I think the activities were simple and fun, and I think that's why the kids really enjoyed

it. (Participant 2)

I think it was really straightforward... it was easy for me to look at the book to go to the links that you sent me... yeah, so I've found it easy to follow, easy to use, and the kids liked the songs; they loved to sing them. (Participant 3)

The activities were short, they were usable, and the kids enjoyed them, because if they didn't enjoy them it would have been painful. I like how there was variety so we could change it up. I like how they felt afterwards. I liked how they were thinking and actually using it outside of it [the classroom]. It shows that they were effective so that was good. But it was just easy and positive. (Participant 5)

I liked that the activities the kids could actually do. They weren't complicated, they were really easy, they were quick, and they didn't take up too much time. I liked having the audio clips, so then it could play and they could just listen to the voice on the computer. (Participant 6)

(g) Resource Transferability

A prominent topic of discussion during the interviews was the relevance of *MindMasters 2* outside of the classroom. Most teachers felt that the activities the kids learned in the classroom were being applied in everyday situations, including conflicts during recess, sports situations, and even when trying to sleep:

We've talked about, if you're at home and you're not able to sleep, how you can use these activities and try to apply it to their everyday world, so it's not just something that they use here... We've talked about if they're an athlete and they're nervous before a hockey game, that athletes use these activities and, I think when I make it applicable to someone like a Sidney Crosby doing something like this, then all of a

sudden [they are interested]. (Participant 1)

We talked about that, and they talked about when they feel stressed and stuff like that, and different situations, like out in the yard. And I have a lot of really competitive boys in this classroom, and recesses are usually always an issue. And gym is always an issue too. They're super competitive and they get super upset if they're not winning, or something like that, so we talked about that, and using it. (Participant 4)

A few of them are using it before they go to sleep. A few of them are using it when they get angry, and actually there was one time in the office and I said 'this would be a good time to use your MindMasters' and he goes 'I'm trying! I'm trying to use my Jelly Belly!'. (Participant 5)

(h) Suggestions for Improvement

Teachers were able to provide various suggestions for improving the *MindMasters 2* resource.

Parental involvement. One such suggestion was made by participant 1 to include a parent section that parents could use with their children at home:

Maybe even a parent section where you could take it home after you do the activity and then it goes home, and they see it. I've been trying to send things home as we've been doing them... a little activity as a follow-up that they can take home, and then show their parents, and maybe it'll prompt them to use it too. (Participant 1)

Timeline. A suggestion made by various teachers was to ensure that implementation started at the beginning of the school year. With this change, teachers felt that they would be more prepared to integrate *MindMasters 2* within their daily routines, making it easier to implement. Participant 6 shares, "It kind of started part way through the year. Maybe if I

started it in September, or something like that, then I would've been able to do it on a more regular basis." Participant 4 expands on this idea:

I see the benefit more at the beginning of the year than now. So in the future, I would do it more. I would start out stronger at the beginning of the year, and would do it almost not very much now. Maybe reflect on it every once in a while. (Participant 4)

Training. Some of the teachers thought they would be better prepared to implement the *MindMasters 2* resource if they had previously received training instead of the SSPs:

I don't know if they would offer any training on it for teachers to make better use of it. I don't know if I'm doing everything I can with it or not... I think that more teachers would be using it if they got the tool themselves... you know, if you do it, you retain it, but if it comes at you from somebody else, it's another thing. (Participant 1)

I'm sure I probably wasn't using it to the max that I probably could have. Having the training might've been able to help when using it at an appropriate time, or I probably could've used it better. (Participant 3)

Variety in activities. Some teachers noted that for some of the activities, children were getting bored after a while. Therefore, they suggested introducing more variety in specific activities that could get repetitive. For example, participant 5 provides specific activities that could have more diversity:

If I had a request, like the clapping one [activity], the Good Little Listener and things like that, it was great, but once you've done it a couple times [they got bored]. Maybe it's the age of them, but it would have been nice if there was more. (Participant 5)

(i) Future Use of Resource

Moving forward, when teachers were asked if they planned on continuing to use

MindMasters 2 in the future, all of the teachers stated that they would. Some, like participant 4, even said they were willing to introduce the resource to other classrooms, “Yeah, I think so. And even in future years, I think that I would like to do it... I have a two/three [classroom] next year, so I definitely intend to use it with them.” Participant 6 also had the same idea, “Yeah, I plan on using it with my other class as well. They’re excited, because I said once the grade two and threes were done, I would do it with them, so they’re pretty excited.”

Discussion

The results from this study indicate that teachers were using the *MindMasters 2* resource approximately two times a week. Despite fluctuations in the frequency of implementation, most teachers were able to meet the required level of exposure. Interestingly, all teachers used the resource as part of a routine. Teachers had mixed views on whether the program would work if used sporadically. From this study, it’s unclear whether the way the resource is implemented plays a role in its effectiveness in a classroom setting. Previous research shows that other school- based social-emotional programs are consistently integrated into routines (Frey, Nolen, Edstrom, & Hirschstein, 2005; Jones, Brown, Hoglund, & Aber, 2010; Webster-Stratton, Reid, & Stoolmiller, 2008). Therefore, implementation of *MindMasters 2* may be more effective if used on a regular basis. Further research is needed to determine whether or not this is the case.

Teachers reported that they used *MindMasters 2* at various times during the day. However, it was consistently used during times when kids were transitioning from one school activity to another. In fact, some teachers would even recommend that other teachers use *MindMasters 2* in such a way to reduce transition time and increase focus and instruction time. This is an important finding, as *MindMasters 2*’s facilitating role in transitions makes it an

appealing resource for schools.

For the most part, teachers used the website as the main source for delivering *MindMasters 2*, as they found it well organized and easy to access. Surprisingly, they seldom used the software application and guidebook. Reasons given for this were a lack of time, lack of technological availability, and inconvenience. This is an important point, as previous research on web-based interventions for schools have also shown favorable outcomes (Lochman et al., 2017, Savage et al., 2010). Moving forward, program administrators may wish to evaluate the relevance of the less used formats, and consider investing more resources to the further development of the website.

Three main challenges were reported when implementing *MindMasters 2*: time, student buy-in, and scheduling conflicts. Time was often cited by teachers as a barrier, and is reported in other school-based programs (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). Fortunately, activities found within the *MindMasters 2* resource are relatively short, ranging from 5 to 15 minutes in length. Therefore, despite reporting a lack of time, teachers were still able to use the activities in an effective manner, overcoming this perceived challenge.

Some teachers observed that at the beginning of implementation, children would sometimes not take part in the activities, for reasons such as self-consciousness, the desire to be socially accepted, and silliness. However, this challenge seemed to diminish over time, as those children who were not buying into the program at first realized that it was safe and socially acceptable to join in. Such changes in attitude seemed to create a shift in the classroom “climate”, where accepting one’s emotions and being focused in the present moment was perceived as acceptable actions to engage in. This finding illustrates the importance of ongoing

exposure, and urges teachers to remain patient and promote inclusion when doing activities.

Most teachers also felt that scheduling *MindMasters 2* around SSP's availability made implementation more difficult. From the teachers' perspective, implementation would have been facilitated if they had received training beforehand. This is reinforced in CASEL's (2012) guide to effective social and emotional programs, where a main criterion for success is opportunity for training. For this study, school board staff did not feel there was enough time to train teachers first. They decided that since SSPs had received training several months before, they could introduce each activity once, allowing the classroom teacher to observe before using the activities independently. In the future, providing training to teachers could prove helpful.

Of great interest to this study were teachers' observations of changes that occurred in students after taking part in *MindMasters 2* activities. Four main areas were discussed. On a classroom level, teachers felt that noise level and ease of instruction improved after using a *MindMasters 2* activity. They noted this particularly during transition time. Some teachers observed that individual children were better able to regulate their emotions and focus on the task at hand. Teachers provided a few examples of children interacting with their peers in a positive way. These observations provide insight into the efficacy of *MindMasters 2*, and provide some anecdotal evidence to support the use of *MindMasters 2* in schools to promote social and emotional skill development.

All teachers used the *MindMasters 2* resources as requested. They reported that *MindMasters 2* was easy to use, activities were short and simple, and students enjoyed them. Teachers also found *MindMasters 2* quite applicable to real life situations. Most said they talked about situations where students could use the activities they learned in class. Some

teachers also observed or heard about children using these activities outside the classroom, such as when they were feeling negative emotions, having trouble sleeping, or dealing with conflict. These results are similar to those observed in some positive youth development interventions, where the transfer of learned skills into real life situations is a main objective for success (Ciocanel, Power, Eriksen, & Gillings, 2017). These examples of self-regulation are relevant to promoting resilience and the development of effective coping skills (Zimmerman, 2013).

Teachers were able to provide various suggestions for improving the *MindMasters 2* resource and the implementation process. One teacher suggested adding a parent section to the resource, so that students would be able to use it at home as well. This idea may further stimulate the use of the learned coping skills in other environmental contexts, and should be strongly considered. A few teachers also mentioned that more variety in certain activities was needed, as students began to lose interest with repeated activities. Several teachers noted that implementation would have been easier if they had started using the program in September. As noted earlier, some teachers suggested that it would be beneficial to receive *MindMasters 2* training in advance of the beginning of the year, as opposed to relying on a third party for resource implementation.

Overall, all teachers found the resource acceptable to use in a classroom setting, and were planning on using it in the future as a method of achieving curriculum criteria, and as a resource to manage their classrooms during transition periods. Teachers also supported broader uptake of the resource, and felt every child could benefit from exposure to *MindMasters 2*.

Implications

Qualitative data from this study reveal that *MindMasters 2* may be a valuable resource to teachers, and can be used to promote social and emotional skill development, focus in the

classroom and positive peer relationships. This acceptance and endorsement is critical for broad uptake and sustainability. The feedback and suggestions provided by teachers through this evaluation will improve *MindMasters 2*, and facilitate its effective implementation in the future.

Limitations and Future Directions

Although this study provided valuable information, it did have limitations. First, a small sample size of six teachers was recruited to participate in the interviews. With such a small number, we are unable to generalize our findings to the entire teacher population, as we are uncertain whether other teachers would have had different experiences with the resource. Future research should aim to recruit a larger sample of teachers to attain a better representation of the population.

Second, implementation of the program started halfway through the school year, and was only run for three months. Perhaps different results would have been observed if teachers had been able to use the resource from the beginning of the school year, as suggested by some teachers. This should be taken into consideration for future evaluations of *MindMasters 2*.

Lastly, coding of the interviews and identification of themes were done by only the principal investigator. Although peer-review briefing was conducted as a trustworthiness procedure, future studies should aim to have multiple coders for the analysis portion, so that disagreements between identified themes can be discussed, refined, and resolved collaboratively.

Conclusion

In conclusion, the results from this study demonstrate that according to some teachers, *MindMasters 2* is a valuable resource to use in classroom settings, and may play a role in improving children's social and emotional skills, which may in turn foster resilience.

MindMasters 2 could prove useful in helping schools meet specific health-related curriculum objectives for students 4-9 years of age. Ongoing evaluation will ensure that *MindMasters 2* resources are relevant, effective, and implemented successfully.

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General Discussion

The results gathered in this Master's thesis provide important insight on the efficacy of *MindMasters 2*. Two main purposes were established for this thesis. First, we wanted to determine whether *MindMasters 2* had an impact on children's specific social and emotional skills. These skills included being able to recognize, name, and manage emotions, relax after partaking in relaxation activities, show positive attitudes towards oneself and others, and demonstrate prosocial behaviours in a classroom setting. Second, we wanted to determine teachers' perspectives on the acceptability of *MindMasters 2* in a classroom setting, and gather their thoughts on how the resource could be improved. By achieving these two purposes, we hoped to add to the body of literature that currently exists on preventative interventions that target children's social and emotional development. Furthermore, we wished to provide evidence to further the development of *MindMasters 2*, and support its integration into a broader scale.

Article one of this thesis focused on *MindMasters 2*'s impact on specific social and emotional skills. There were various findings in this study. To begin, children who were exposed to *MindMasters 2* for a period of 3 months improved their ability to recognize, name, and manage emotions, demonstrate prosocial behaviours in a classroom setting, and show concern for their peers. Furthermore, children who were exposed to the program showed significantly better emotional skills when compared to children who were not exposed. Finally, children reported being significantly more relaxed after taking part in relaxation activities found within *MindMasters 2*. Overall, article one provided some evidence suggesting that *MindMasters 2* played a positive role in improving children's social and emotional skills. These results may provide support for broader integration of *MindMasters 2* in schools, so that the positive living

expectations set out by the provincial curriculum can be achieved in a free and sustainable manner.

Article two of this thesis looked at teachers' subjective perspectives of *MindMasters 2*. Teachers generally found the program acceptable to use in a classroom setting, as they thought it was easy to use, the activities were short and simple, and children usually enjoyed doing the activities. Similar to findings in article one, teachers observed a positive change in children's emotional skills, their behaviours in the classroom, and their relationships with other students. Interestingly, teachers noted children's ability to adapt the activities they learned in the classroom to other life situations, such as during sports activities, sleep, and recess. Other findings from this study included the frequency and modality of program implementation, barriers to implementation, and teachers' intentions to use the program in the future. Finally, teachers provided valuable insight as to what they believed could be improved about the program. Suggestions included providing more training opportunities directly to teachers to facilitate implementation, as well as reach a broader audience, including a parent section so that parents and caregivers would be able to use the resource at home, further stimulating translation of these skills into other areas of life, and including more variety in certain activities to maintain a high level of interest. Overall, findings from this study support the implementation of *MindMasters 2* in school settings, while also providing subjective information to further modify the resource.

Taken together, results from articles one and two allow for the exploration of various theoretical and practical implications. Based on the objective findings from article one, as well as teachers' observations of children's behaviours in article two, *MindMasters 2* seems to positively impact children's social and emotional skills. From a theoretical perspective, the proper

development of these protective factors may translate to a greater adoption of resilient thinking in future years (Masten, 2007). Although components of resilience and mental health were not directly measured in this thesis, *MindMasters 2*'s impact on these protective factors may be crucial in developing long-term effective coping mechanisms when faced with adverse conditions. In turn, this may propagate a reduction in the incidence of emotional, psychiatric, and behavioural problems (Goldstein & Brooks, 2012; Hodder et al., 2017).

Practically speaking, the results from this thesis provide us with the opportunity to help a great number of children. With a very preliminary evidence-base supporting the implementation of *MindMasters 2* in schools, we are now able to approach administrators and stakeholders of different organizations in an attempt to spread the impact of the resource to the greater population of children. Doing so will also facilitate teachers' attempts at meeting the positive living curriculum objectives set forth by the province.

The practicality of this thesis is also observed in children's ability to transfer their knowledge of the program and its contents into real life situations. As explained in article two, children are adapting the activities and using them at times when they are faced with adversity or stress. Therefore, the potential of implementing *MindMasters 2* to a broader audience may translate to children gaining access to a resource that they can use in any adverse situation. This may be true in a variety of contexts, including adversity in schools, at home, or in sports. Future research should aim to assess the transferability of *MindMasters 2* to other environmental contexts to further support this point.

The information gathered in this thesis may also help in the further refinement process of *MindMasters 2*. Based on the variables impacted by the resource, as well as teachers' suggestions for resource improvement, administrators can now take this information and apply it

to better meet the needs of children and teachers alike. Furthermore, the results gathered in this thesis may also help other teachers, educators, parents and caregivers when attempting to implement the resource in their respective environments. Lastly, this thesis' findings may contribute to the knowledge of social-emotional programs currently available in Canada, and may even play a role in bridging the gap between the theoretical framework of social-emotional learning and the practical application of such a framework.

Limitations & Future Directions

As with any research, this Master's thesis had various limitations that should be taken into consideration. First, sample size was relatively small for both the outcome and process evaluations. Regarding the outcome evaluation, an increase in sample size would subsequently mean an increase in the study's power (Haas, 2012). An increase in power allows for easier detection of program effects if effects do exist. An increase in sample size also creates a more homogenous representation of the target population, thus allowing for a more accurate and reliable generalization of findings. Regarding the process evaluation, an increase in sample size would elicit saturation in the findings, increasing content validity (Francis et al., 2010). With such a small sample size, we were unable to determine whether saturation was achieved, or whether other teachers may have had different perspectives based on their lived experiences. Therefore, future research on *MindMasters 2* should aim to attain a larger sample size to reduce these limitations.

Another limitation in this thesis was the fact that program implementation only occurred for three months. Larger effect sizes in the outcome evaluation may have been observed if program exposure was extended. Likewise, teachers may have observed even greater changes in children's social and emotional development skills had they used the program for a longer

duration. Therefore, future endeavours at implementing *MindMasters 2* in school settings should aim to integrate the program for at least one full school year.

A last limitation that affected both the outcome and process evaluations was the fact that only short-term effects were evaluated. We cannot say for sure whether the impact of *MindMasters 2* on children's social and emotional development skills is persistent over time. Therefore, longitudinal assessments and follow-up assessments of these outcomes are needed to determine the program's long-term effects.

Moving forward, a continued effort must be put forth in synthesizing, implementing, evaluating, and refining preventative interventions. Future research should continue to explore the correlation between the protective factors studied in this thesis and mental health. Once enough evidence supports the relationship between these constructs, we can better plan and refine preventative approaches to handling mental health issues.

Conclusion

Overall, this thesis shows that *MindMasters 2* may play a positive role in improving children's social and emotional skills, which may in turn foster a resilient mindset. Teachers' perspectives on the resource further support the implementation of *MindMasters 2* in schools. The information found in this thesis may be used by schools hoping to meet the positive living criteria set forth by school curricula, individuals attempting to implement the program in different environmental contexts, and administrators hoping to refine *MindMasters 2* so that the needs of the target population are met. Although this thesis adds to the existing body of knowledge in the field of preventative intervention research, future research is needed to address the limitations discussed, and further examine the relationship between the protective factors in question and mental health.

Statement of Contribution

I, Alexandre Santos, was responsible for the conceptualization of this Master's research, under the supervision of Dr. Terry Orlick. I was responsible for all ethics applications, reviewing the literature, data collection, data analysis, and manuscript writing. Corrine Langill, manager of Health Promotion and Injury Prevention at the Children's Hospital of Eastern Ontario, provided assistance in the creation of consent forms, teacher documents, and communications with the Upper Canada District School Board. Ms. Langill also provided assistance in writing by editing the entire manuscript on numerous occasions.

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Appendix A**Prosocial Behaviors of Children – Teacher’s Perceptions**

Student ID #: _____ Phase: _____

Classroom ID #: _____

Indicate how frequently you have observed the child engage in the following actions.

1. Other children seek the child out to involve him/her in activities.

 Never Rarely Sometimes Often Frequently

2. The child uses free time appropriately.

 Never Rarely Sometimes Often Frequently

3. The child shares laughter with peers.

 Never Rarely Sometimes Often Frequently

4. The child has good work habits (e.g., is organized, makes efficient use of class time).

 Never Rarely Sometimes Often Frequently

5. The child compromises with peers when a situation calls for it.

 Never Rarely Sometimes Often Frequently

6. The child responds to teasing or name calling by ignoring, changing the subject, or some other constructive means.

 Never Rarely Sometimes Often Frequently

7. The child accepts constructive criticism from peers without becoming angry.

 Never Rarely Sometimes Often Frequently

8. The child plays or talks with peers for extended periods of time.

Never Rarely Sometimes Often Frequently

9. The child initiates conversation with peers in informal situations.

Never Rarely Sometimes Often Frequently

10. The child listens carefully to teacher instructions and directions for assignments.

Never Rarely Sometimes Often Frequently

11. The child displays independent study skills (e.g., can work adequately with minimum teacher support).

Never Rarely Sometimes Often Frequently

12. The child appropriately copes without aggression from others (e.g., tries to avoid a fight, walks away, seeks assistance, defends self).

Never Rarely Sometimes Often Frequently

13. The child interacts with a number of different peers.

Never Rarely Sometimes Often Frequently

14. The child can accept not getting his/her own way.

Never Rarely Sometimes Often Frequently

15. The child attends to assigned tasks.

Never Rarely Sometimes Often Frequently

16. The child keeps conversations with peers going.

Never Rarely Sometimes Often Frequently

17. The child invites peers to play or share activities.

Never Rarely Sometimes Often Frequently

18. The child does seatwork assignments as directed.

Never Rarely Sometimes Often Frequently

19. The child produces work of acceptable quality given her/his skill level.

Never Rarely Sometimes Often Frequently

Point values are assigned as follows:

Never = 1

Rarely = 2

Sometimes = 3

Often = 4

Frequently = 5

Score the scale by adding together the points for each question. You can also examine particular sets of behaviors using four subscales:

School Adjustment subscale (items 2, 7, 10, 11, 15, 18 and 19); the highest possible score is 35 points

Peer Preferred Behavior subscale (items 1, 3, 8, 9, 13, 16 and 17); the highest possible score is 35 points

Teacher Preferred Behavior subscale (items 5, 6, 7, 12 and 14); the highest possible score is 25 points

A high score on any subscale indicates a higher amount of prosocial behavior. The highest possible score for the entire scale is 95 points.

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Appendix B

Concern for Others: Teacher Rating Form

Rate for Start of the Year, 1st Report, 2nd Report, and End of the Year

Use the scale representing the grade level that applies to the child being observed: Kindergarten/First Grade, Second and Third Grade, or Fourth and Fifth Grade.

Student ID #: _____ Phase: _____

Classroom ID #: _____

Teacher Rating Form - Second and Third Grade

How frequently does the student exhibit the described skill or behavior? Circle the number that matches the frequency.

	Almost Never	Sometimes	Frequently	Almost Always
1. Voluntarily helps peers who require it (e.g., shares materials, etc.)	1	2	3	4
2. Is concerned about the feelings of others (e.g., asks about a student who is upset or includes a student who is left out)	1	2	3	4
3. Actively respects others in actions and words	1	2	3	4
4. Shows patience with younger children	1	2	3	4

Appendix C

What I Am Like

Student ID #: _____

Phase: _____

Boy Girl
(check one)

Classroom ID #: _____

	Really True for me	Sort of True for me			Sort of True for me	Really True for me
Sample Sentence						
a.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids would rather play outdoors in their spare time	BUT	Other kids would rather watch T.V.	<input type="checkbox"/> <input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are often unhappy with themselves	BUT	Other kids are pretty pleased with themselves	<input type="checkbox"/> <input type="checkbox"/>
12.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids don't like the way they are leading their life	BUT	Other kids <i>do</i> like the way they are leading their life	<input type="checkbox"/> <input type="checkbox"/>
18.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are happy with themselves as a person	BUT	Other kids are often not happy with themselves	<input type="checkbox"/> <input type="checkbox"/>
24.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like the kind of person they are	BUT	Other kids often wish they were someone else	<input type="checkbox"/> <input type="checkbox"/>
30.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are very happy being the way they are	BUT	Other kids wish they were different	<input type="checkbox"/> <input type="checkbox"/>
36.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are not very happy with the way they do a lot of things	BUT	Other kids think the way they do things is fine	<input type="checkbox"/> <input type="checkbox"/>

What I Am Like

Scoring Key

SELF-PERCEPTION PROFILE FOR CHILDREN
 (GRADES 3 - 8)
 (Revision of the Self-Perception Profile for Children; Harter, 1985)

Susan Harter, Ph.D., University of Denver, 2012

6.	1	2	Some kids are often unhappy with themselves	BUT	Other kids are pretty pleased with themselves	3	4
12.	1	2	Some kids don't like the way they are leading their life	BUT	Other kids do like the way they are leading their life	3	4
18.	4	3	Some kids are happy with themselves as a person	BUT	Other kids are often not happy with themselves	2	1
24.	4	3	Some kids like the kind of person they are	BUT	Other kids often wish they were someone else	2	1
30.	4	3	Some kids are very happy being the way they are	BUT	Other kids wish they were different	2	1
36.	1	2	Some kids are not very happy with the way they do a lot of things	BUT	Other kids think the way they do things is fine	3	4

Susan Harter, Ph.D., University of Denver, 2012

Appendix D
Assessment of Children's Emotional Skills: Pre-Test

Happy

- 1) You see Terry running to join you and the other kids in the game.
 - a) Do you let him play?
 - b) Do you kick the ball at him?
 - c) Do you tell him he can't play?
 - d) Do you ignore him?
- 2) It is the first day of school. Your friend Maria hasn't seen you all summer. She sees you in class.
 - a) Do you say hi to Maria?
 - b) Do you ignore Maria?
 - c) Do you cry and hide?
 - d) Do you play a game with Maria?

Sad

- 1) Jack doesn't feel like playing ball at recess. Instead, he just sits alone.
 - a) Do you ignore Jack?
 - b) Do you ask him what's wrong?
 - c) Do you invite him to play?
 - d) Do you make fun of Jack?
- 2) Mary's grandfather died.
 - a) Do you try to make her feel better?
 - b) Do you ignore her?
 - c) Do you laugh at her?
 - d) Do you offer to play a game with her?

Mad

- 1) You see Shelley hit another girl (Shelley is the protagonist).
 - a) Do you confront Shelley?
 - b) Do you help the other girl?
 - c) Do you walk away?
 - d) Do you tell the teacher?
- 2) Melissa is building a big tower of blocks. Another kid comes over and knocks it over and laughs.
 - a) Do you help build another tower?
 - b) Do you hit the other kid?
 - c) Do you ignore them?
 - d) Do you cry?

Scared

- 1) At recess, you watch Mark play with some other kids. Mark gets the ball, and his body seems to freeze.
 - a) Do you encourage Mark?
 - b) Do you ask him what's wrong?
 - c) Do you make fun of Mark?
 - d) Do you get frustrated with him?
- 2) Juan walks down the hall. A big kid walks right at Juan and tells him to get out of the way.
 - a) Do you ignore them?
 - b) Do you hit the big kid?
 - c) Do you tell the teacher?
 - d) Do you comfort Juan after?

Assessment of Children's Emotional Skills: Post-Test**Happy**

- 1) You see Joanne skipping down the hallway and whistling.
 - a) Do you make fun of her?
 - b) Do you run and hide?
 - c) Do you say hi to her?
 - d) Do you ignore her?
- 2) Alex made a nice card for his friend. His friend likes the card a lot.
 - a) Do you make your own card?
 - b) Do you make fun of him?
 - c) Do you tell him good job?
 - d) Do you ignore them?

Sad

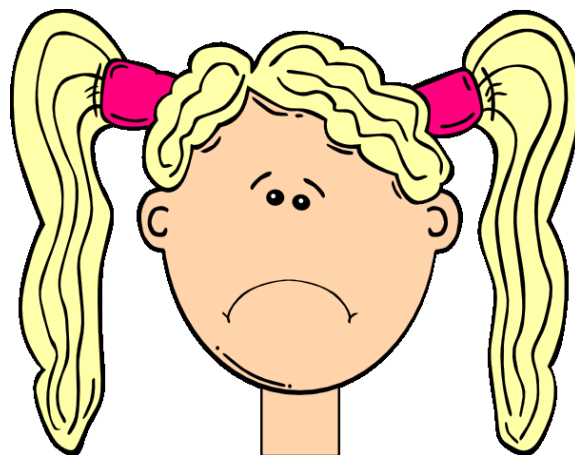
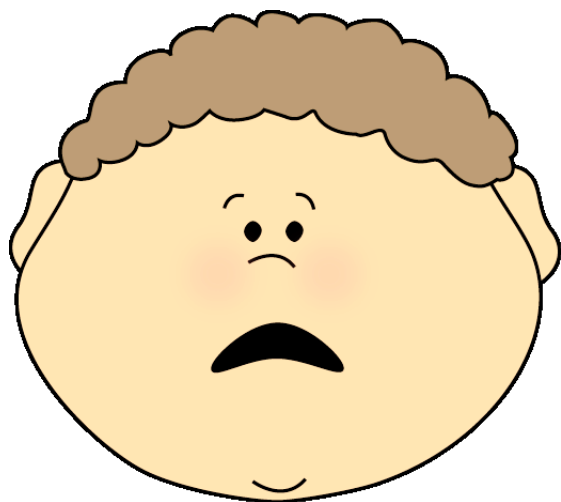
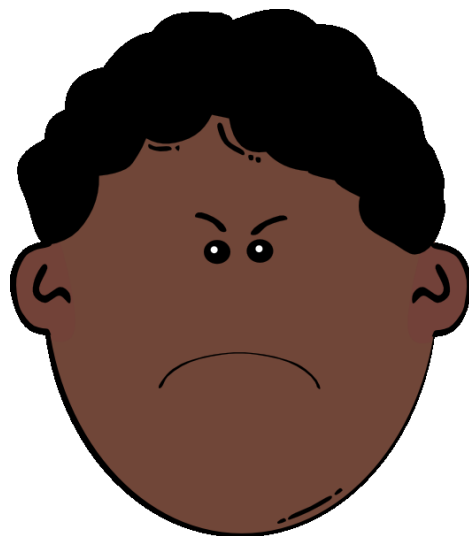
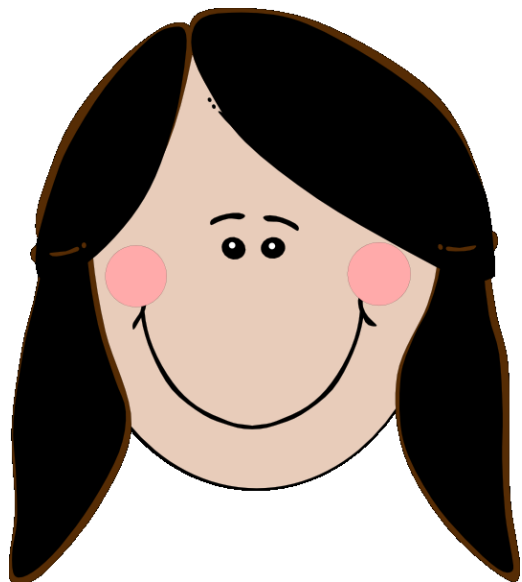
- 1) Jill talks softly, and her eyes seem watery.
 - a) Do you ignore her?
 - b) Do you ask her what's wrong?
 - c) Do you invite her to play?
 - d) Do you make fun of her?
- 2) Brian was at the park, and his mother bough him an ice cream cone. Brian took one lick and then accidentally dropped the ice cream cone.
 - a) Do you share some of your ice cream?
 - b) Do you laugh?
 - c) Do you walk away?
 - d) Do you comfort him?

Mad

- 1) David calls another boy a bad name.
 - a) Do you tell him that's not okay?
 - b) Do you call David a bad name?
 - c) Do you walk away?
 - d) Do you tell the teacher?
- 2) Lonnie is in line for lunch. Another boy steps in front of him without asking.
 - a) Do you yell at the boy?
 - b) Do you ignore them?
 - c) Do you hit the boy?
 - d) Do you ask him to move?

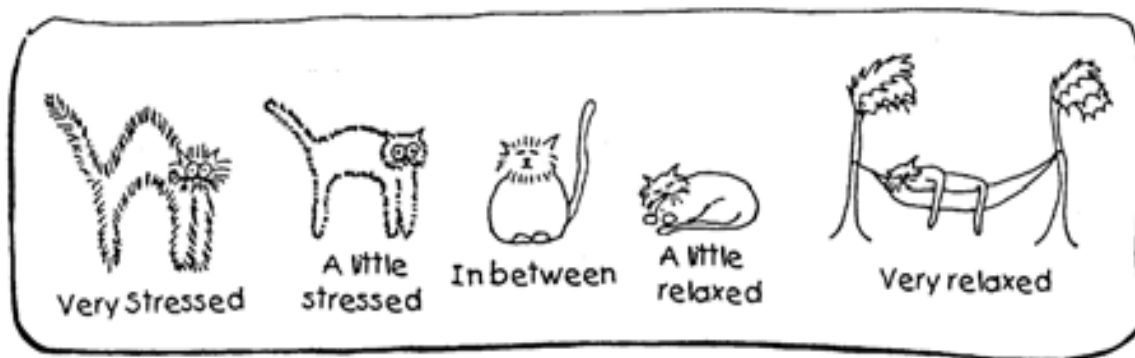
Scared

- 1) A group of kids are called to the principal's office. You see Patrice walking at the back of the group slowly.
 - a) Do you ask her what's wrong?
 - b) Do you point and laugh?
 - c) Do you walk away?
 - d) Do you ignore her?
- 2) When the teacher asks Laurie a question, you see Laurie look down.
 - a) Do you laugh at her?
 - b) Do you raise your hand to help answer?
 - c) Do you ignore her?
 - d) Do you tell her the answer?



Appendix E

CAT Scale



Appendix F
CHEO Research Ethics Board
Approval - Delegated Review

Principal Investigator: Ms. Corrine Langill

REB Protocol No: 16/75X

Romeo File No: 20160283

Project Title: CHEOREB# 16/75X - MindMasters 2: Assessing social-emotional learning in elementary school children

Primary Affiliation: Clinical Research\Health Promotion & Injury Prevention

Protocol Status: Active

Approval Date*: June 24, 2016

Valid Until:** June 15, 2017

Annual Renewal Submission Deadline: 15 May 2017

Documents Reviewed & Approved:

Document Name	Comments	Version Date
Protocol	Study protocol	2016/06/22
Consent Form	Appendix A Parent consent	2016/06/22
Consent Form	Appendix B Teacher consent	2016/06/22
Questionnaire/Survey	Appendix C Teacher log	2016/06/22
Questionnaire/Survey	Appendix D: Teacher interview guide	2016/06/22
Questionnaire/Survey	Appendix F: Assessing children's emotional skills	2016/06/22
Questionnaire/Survey	Appendix G: Cat scale	2016/06/22
Questionnaire/Survey	Appendix H: Self perception profile	2016/06/22
Questionnaire/Survey	Appendix I: Concern for others teacher rating form	2016/06/23
Questionnaire/Survey	Appendix J: Prosocial behaviours of children	2016/06/22
Assent Form	Appendix K: Student assent	2016/06/22

This is to notify you that the Children's Hospital of Eastern Ontario Research Ethics Board has granted approval to the above named research study on the date noted above. Your project was reviewed under the delegated review stream, which is reserved for projects that involve no more than minimal risk to human subjects.

Final approval is granted for the above noted study, with the understanding that the investigator agrees to comply with the following requirements:

1. The investigator must conduct the study in compliance with the protocol and any additional conditions set out by the Board.
2. Investigators must submit an annual renewal report to the REB 30 days prior to the expiration date stated above.
3. The investigator must not implement any deviation from, or changes to, the protocol, consents or assents without the approval of the REB.
4. The investigator must, prior to use, submit to the Board changes to the study documentation, e.g., changes to the informed consent letters, recruitment materials.
5. Investigators must provide the Board with French versions of the consent form, unless a waiver has been granted. An interpreter should be offered to participants as required or at the request of the participant throughout the course of research.
6. The investigator must promptly report to the REB all unexpected and untoward occurrences (including the loss or theft of study data and other such privacy breaches).
7. Investigators must notify the REB of any study closures (closed to accrual, temporary, premature or permanent).
8. Investigators must submit a final report at the conclusion of the study.

Should you have any questions or concerns, please do not hesitate to contact the Research Ethics Board Office.

Regards,

Dr. Carole Gentile
Chair, Research Ethics Board
Présidente, Comité d'éthique de la recherche

Appendix G

File Number: H08-16-10

Date (mm/dd/yyyy): 08/29/2016



Université d'Ottawa **University of Ottawa**
 Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

Ethics Approval Notice

Health Sciences and Science REB

Principal Investigator / Supervisor / Co-investigator(s) / Student(s)

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>	<u>Role</u>
Corrine	Langill	Others / Others	Principal Investigator
Terry	Orlick	Health Sciences / Human Kinetics	Supervisor
Alexandre	Santos	Health Sciences / Human Kinetics	Student Researcher

File Number: H08-16-10

Type of Project: Other

Title: MindMasters 2: Assessing social-emotional learning in elementary school children

Approval Date (mm/dd/yyyy)	Expiry Date (mm/dd/yyyy)	Approval Type
08/29/2016	08/28/2017	Approved

Special Conditions / Comments:

N/A

File Number: H08-16-10

Date (mm/dd/yyyy): 08/29/2016



Université d'Ottawa **University of Ottawa**
Bureau d'éthique et d'intégrité de la recherche Office of Research Ethics and Integrity

This is to confirm that the University of Ottawa Research Ethics Board identified above, which operates in accordance with the Tri-Council Policy Statement (2010) and other applicable laws and regulations in Ontario, has examined and approved the ethics application for the above named research project. Ethics approval is valid for the period indicated above and subject to the conditions listed in the section entitled "Special Conditions / Comments".

During the course of the project, the protocol may not be modified without prior written approval from the REB except when necessary to remove participants from immediate endangerment or when the modification(s) pertain to only administrative or logistical components of the project (e.g., change of telephone number). Investigators must also promptly alert the REB of any changes which increase the risk to participant(s), any changes which considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project and safety of the participant(s). Modifications to the project, including consent and recruitment documentation, should be submitted to the Ethics Office for approval using the "Modification to research project" form available at: <http://www.research.uottawa.ca/ethics/forms.html>

Please submit an annual report to the Ethics Office four weeks before the above-referenced expiry date to request a renewal of this ethics approval. To close the file, a final report must be submitted. These documents can be found at: <http://www.research.uottawa.ca/ethics/forms.html>

Appendix H



February 27, 2017

Alexandre Santos
University of Ottawa
125 University Private
Ottawa, Ontario

Re: Application to Conduct Research – MindMasters2 – Confirmation Approved

Dear Alexandre Santos,

Thank you for your forwarding your research proposal entitled "*MindMasters2: Targeting social-emotional learning in elementary school children: A 3-month intervention evaluation*" for consideration by the UCDSB's External Research Steering Committee.

The Committee reviewed the proposal in December 2016, and at that time also gave consideration to the anticipated commitment of our school(s) towards its implementation. When considering an application, criteria such as benefits to students and student learning, links to educational outcomes, impact on class time and routines within the school, health and safety, and ethical compliance are examined.

We are pleased to follow up with this written confirmation that your research application has been approved, with current ethics approval and criminal background/vulnerable sector checks received. As you are aware through your current work with our schools, participation is at the discretion of the individual school principal.

We wish you the very best with your research and look forward to your final report upon its completion.

Appendix I

Informed Consent: Teachers

Title of Research Project:	MindMasters 2: Promoting Positive Living Skills
Principle Investigator:	Corrine Langill, Manager, Health Promotion and Injury Prevention, Children's Hospital of Eastern Ontario (CHEO)
Study Team:	Alexandre Santos, B.Sc., M.A. Candidate, University of Ottawa, Human Kinetics Dr. Terry Orlick, Ph.D., Full Professor, University of Ottawa, Human Kinetics Julia Kurzawa, Research Associate, Health Promotion & Injury Prevention, Children's Hospital of Eastern Ontario

MindMasters 2 is a curriculum resource designed to support teachers to help children develop emotional and social skills, as well as critical and creative thinking skills. It includes interactive classroom activities that teachers can use in many ways with students. It is based on a program originally developed by Dr. Terry Orlick, which was used at CHEO to help patients cope with tests, pain and stressful treatments. MindMasters 2 is an updated version that includes more activities, curriculum links and a mobile app. It was designed to help children handle their feelings and everyday ups and downs.

This study has been approved by the Upper Canada District School Board Ethics Oversight Committee.

Why is this study being done?

The study team would like to learn if the MindMasters 2 resources help children develop positive living skills (part of the curriculum), like:

- Recognizing and managing emotions more effectively
- Calming themselves when stressed
- Having a positive attitude towards themselves and others
- Showing positive behaviour in the classroom

It's important for us to understand how helpful these resources are. What we learn in the study will guide us as we further develop the resource, and teach people how to use it with children.

What does the study involve?

We want to compare students who receive the MindMasters 2 resources with those who don't. 10 grade 3 classrooms will be recruited throughout the UCDSB. Teachers of 5 classes will use the MindMasters 2 resources with students with the help of a Student Support Partner. The teachers of the remaining 5 classrooms will not, but resources will be made available once the study is completed. 10 students from each classroom (whether or not the teacher is using MindMasters 2 in the class) will be randomly selected to participate in the evaluation of the resources.

Student assessments:

Teachers will be asked to observe their children throughout 3 months and complete 2 assessment forms on each participating student (total of 10 students per class) before MindMasters 2 resources are introduced, and after all activities have been used. We expect that this will take between 7-12 minutes per student.

Activity log:

The teachers using the MindMasters 2 resources with students are also asked to complete a very brief activity log after using each activity. We expect that this will take less than 2 minutes after each activity.

Interview:

The teachers using the MindMasters 2 resources will also be asked to take part in a 30-minute interview to share experiences using the resource.

Do I have to take part in this study?

Taking part is completely up to you. You don't have to take part if you don't want to.

Are there any risks to taking part?

Some people may feel uncomfortable answering questions in an interview. If this happens, you may choose not to answer a question.

Are there benefits to taking part?

If you decide to take part, you may or may not benefit directly from taking part in this study. You will be helping us to understand if the MindMasters 2 resources help children develop positive living skills.

Will I be paid to take part?

To compensate you for the extra time it takes to complete the assessments for students, we'll provide you with a \$25 gift card for taking part in the study.

What about Confidentiality and Privacy?

All study information is confidential, and we will keep it private. Personal information that could identify you will never be used in any presentation, article or report. Student assessment forms will be de-identified and names will be replaced with a unique identifier. The list of students and code numbers will be with the researcher while at the school, and kept in a locked office at other times. All study data will be entered into a computer database at the University of Ottawa that will be password protected. All data will be destroyed 7 years after the study findings are published. Personal information that could identify a child will never be used in any presentation, article or report. All data collected for this study will be securely stored, password protected and available only to the research team.

What if I have questions?

If you have any questions about taking part in this study, please contact:

Corrine Langill, RN, BScN

You may receive a copy of the study results, if you wish.

This study has been reviewed and received CHEO Research Ethics Board (REB) approval. The CHEO REB is a committee of the hospital that includes individuals from different professional backgrounds. The board reviews all research that takes place at the hospital. Its goal is to ensure the protection of the rights and welfare of people participating in research. The Board's work is not intended to replace the participant's judgment about what decisions and choices are best for them. I may contact the Chair of the Research Ethics Board for information regarding participant's rights in research studies.

There are two copies of this consent form, one of which is yours to keep and the other for our records.

By signing this consent form, I agree that:

- I am voluntarily agreeing to participate in this research study;
- I understand the information within this consent form;
- All of the risks and benefits of participation have been explained to me;
- All of my questions have been answered;
- I allow access to my personal information as described in this consent form, and;
- I do not give up my legal rights by signing this form.

Signature of teacher

Name of teacher

Date

Signature of Person
Obtaining Informed
Consent

Name of Person Obtaining
Informed Consent

Date

Appendix J

PARENT/GUARDIAN INFORMATION LETTER

October, 2016

Dear Parent/Guardian:

We are a research team from the Children's Hospital of Eastern Ontario (CHEO) and the University of Ottawa. The UCDSB has recently included a new resource, MindMasters 2, in their curriculum. MindMasters 2 is a program created by CHEO to help children develop social and emotional skills, like:

- Managing emotions;
- Feeling for others (empathy);
- Thinking positively about everyday life.

Our research team would like to find out if MindMasters 2 is helping children to develop these social and emotional skills. What we learn will help schools to choose effective curriculum resources in the future. It will also help us refine MindMasters 2 to better meet the needs of the children.

The Research Steering Committee of the UCDSB, CHEO, and the University of Ottawa have granted approval for this study. The school Principal has also given permission for this study to be carried out in your son/daughter's school.

Selected students will meet one on one with a researcher to answer survey questions at 2 points during the school year. This will happen before MindMasters 2 starts (October 2016), and again once all the activities have been completed (February 2017). The meetings with the researcher will last about 15-19 minutes. They will take place at school, in a quiet place with other school staff present (for example, a corner of the library, or a quiet corner of the classroom). The survey will include questions about how your son/daughter feels about themselves. The researcher will also ask them to guess how children in a short story would feel.

Taking part in this study is voluntary (it is up to you). Your child may withdraw from the study at any time. The study will not affect your child's attendance in class or grades. All collected information will remain confidential, and students will not be identified individually after the data has been collected.

Please sign and return the attached consent form if you agree that your child can take part in this study. Please do not hesitate to contact me if you have further questions or concerns. Thank you for considering taking part in our study!

Sincerely,

Corrine Langill, RN, BScN

Manager, Health Promotion & Injury Prevention, CHEO



Appendix K

Informed Consent: Parents

Title of Research Project:	MindMasters 2: Promoting Positive Living Skills
Principle Investigator:	Corrine Langill, Manager, Health Promotion and Injury Prevention, Children's Hospital of Eastern Ontario (CHEO)
Study Team:	Alexandre Santos, B.Sc., M.A. Candidate, University of Ottawa, Human Kinetics Dr. Terry Orlick, Ph.D., Full Professor, University of Ottawa, Human Kinetics Julia Kurzawa, Research Associate, Health Promotion & Injury Prevention, Children's Hospital of Eastern Ontario

Your child is invited to take part in a research study at school. We want to evaluate the MindMasters 2 resources to see if they help children develop positive living skills.

MindMasters 2 is a curriculum resource designed to support teachers to help children develop emotional and social skills, as well as critical and creative thinking skills. It includes interactive classroom activities that teachers can use in many ways with students. It is based on a program originally developed by Dr. Terry Orlick, which was used at CHEO to help patients cope with tests, pain and stressful treatments. MindMasters 2 is an updated version that includes more activities, curriculum links and a mobile app. It was designed to help children handle their feelings and everyday ups and downs.

This study has been approved by the Upper Canada District School Board Ethics Oversight Committee.

Why is this study being done?

The study team would like to learn if the MindMasters 2 resources help children develop positive living skills (part of the curriculum), like:

- Recognizing and managing emotions more effectively
- Calming themselves when stressed
- Having a positive attitude towards themselves and others
- Showing positive behaviour in the classroom

It's important for us to understand how helpful these resources are. What we learn in the study will guide us as we further develop the resource, and teach people how to use it with children.

What does the study involve?

We want to compare students who receive the MindMasters 2 resources with those who don't. 10 grade 3 classrooms in the UCDSB will be take part in the study. 5 of the classrooms will use the MindMasters 2 resources with students. The other 5 classrooms will not, but will be offered the program after the study is completed. 10 students in each class will be randomly selected to meet with researchers to assess whether or not the MindMasters 2 resources have made any difference. Selected students will meet one on one with a researcher to answer survey questions at 2 points during the school year. This will happen before MindMasters 2 starts, and again once all the activities have been completed. The meetings with the researcher will last about 15-19 minutes. They will take place at school, in a quiet place with other school staff present (for example, a corner of the library, or a quiet corner of the classroom).

Does my child have to take part?

MindMasters 2 activities will be presented to the whole class. This consent is asking for permission for your child to meet the researchers before and after the resources are used. This is how we can learn if the activities help to teach important skills. Taking part is completely up to you. Your child doesn't have to take part if he or she doesn't want to (or if you don't want them to). Even if you decide that your child can take part, you can change your mind at any time. Your child's teacher is not part of the research team. Taking part in this study will not affect your child's attendance in class or grades. Your child's schooling will also not be affected if you decide that you don't want your child to take part in this study.

Are there any risks to taking part?

The researcher will ask children questions about how they feel about themselves. The researcher will also ask children to guess how children in a short story would feel. There are no known risks to taking part in this kind of study. If children feel uncomfortable at any point, they can choose to not answer a question.

Are there benefits to taking part?

If you decide to take part, your child may or may not benefit directly from taking part in this study. Your child will be helping us to understand if the MindMasters 2 resources help children develop positive living skills.

Will I be paid to take part?

You will not be paid to take part in the study.

What about Confidentiality and Privacy?

All study information is confidential, and we will keep it private. We will use code numbers to identify each student taking part in the study. The list of students and code numbers will be with the researcher while at the school, and kept in a locked office at other times. This information will be entered into a computer database at the University of Ottawa that will be password protected. There will be no personal information on any of the assessment forms. All data will be destroyed 7 years after the study findings are published. Personal information that could identify a child will never be used in any presentation, article or report. All data collected for this study will be securely stored, password protected and available only to the research team.

What if I have questions?

If you have any questions about taking part in this study, please contact:

Corrine Langill, RN, BScN. You may receive a copy of the study results, if you wish.

This study has been reviewed and received CHEO Research Ethics Board (REB) approval. The CHEO REB is a committee of the hospital that includes individuals from different professional backgrounds. The board reviews all research that takes place at the hospital. Its goal is to ensure the protection of the rights and welfare of people participating in research. The Board's work is not intended to replace the participant's judgment about what decisions and choices are best for them. I may contact the Chair of the Research Ethics Board for information regarding participant's rights in research studies.

By signing this consent form, I agree that:

- I am voluntarily agreeing to participate in this research study;
- I understand the information within this consent form;
- All of the risks and benefits of participation have been explained to me;
- All of my questions have been answered;
- I allow access to my personal information as described in this consent form, and;
- I do not give up my legal rights by signing this form.

Name of child: _____

Signature of Parent

Name of Parent

Date

Signature of Person
Obtaining Informed
Consent

Name of Person Obtaining
Informed Consent

Date

Appendix L

Assent form

Title of Research Project:	MindMasters 2: Promoting Positive Living Skills
Principle Investigator:	Corrine Langill, Manager, Health Promotion and Injury Prevention, Children's Hospital of Eastern Ontario (CHEO)
Study Team:	Alexandre Santos, B.Sc., M.A. Candidate, University of Ottawa, Human Kinetics Dr. Terry Orlick, Ph.D., Full Professor, University of Ottawa, Human Kinetics Julia Kurzawa, Research Associate, Health Promotion & Injury Prevention, Children's Hospital of Eastern Ontario CHEO, Health Promotion & Injury Prevention

Why is this study being done?

We would like to invite you to be part of a research study. Research is a way to test new ideas to see if we can do things better.

In our study, we want to learn if MindMasters 2 helps children to:

- Handle feelings in a positive way
- Calm themselves when worried, angry or upset
- Feel good about themselves and others
- Notice good things that happen

Who will take part?

Ten grade 3 classes in your school board will take part in this study. Five class will take part in MindMasters 2 activities. We'll ask 10 kids in each class to meet with a researcher twice during the school year.

What will happen during the study?

10 kids in each class will meet one on one with a researcher, either in your class or another part of the school with teachers close by. You'll meet for about 15-19 minutes. The researcher will share some short stories, and then ask you about how the kids in the stories might feel. You'll also look at some drawings of faces, and decide how the person is feeling. There will be a few more questions about how you feel about yourself.

Are there good things that can happen from this study?

Sometimes good things can happen to people when they take part in a study. These good things are called 'benefits'. This study will help us learn if MindMasters 2 really helps kids. That is a benefit. There are no other benefits we think will happen to you if you decide to join this study.

Are there bad things that can happen from this study?

We do not think that anything bad would happen if you decide to take part in this study. If there are questions you don't want to answer, you don't have to.

Is this private?

We will keep the answers you give us private. We won't use your name on any of the forms we use.

Can I say no?

You can choose to take part in this study or not. You can also decide to stop taking part at any time. Talk with a parent or caregiver if you want to stop being in the study, and they will tell the researchers. No one will be mad at you if you decide that you don't want to take part.

What if I have questions?

Please ask us! We'll do everything we can to answer your questions.

If you agree to take part in this study, please sign this form.

I understand the information the researcher gave me. I understand that I can ask any question I want about the study.

Signature of participant

Name of participant

Date

MindMasters 2 Activity Log

Classroom ID: _____

Student Support Partner ID: _____

January 2017				
Monday	Tuesday	Wednesday	Thursday	Friday
2	3	4	5	6
9	10	11	12	13
16	17	18	19	20
23	24 *Spaghetti toes	25	26 *Animal yoga	27
30	31 *Jelly Belly	1	2 *Special place	

* indicates activities where you'll have students assess themselves on the cat scales magnet board before and after the activity. Take photos of the whiteboard after students 'vote', and upload them to the MindMasters 2 google docs site.

- Pre-test assessments on students (researcher)
- Teachers complete 2 student surveys

SSPs begin *MindMasters 2* activities in experimental classrooms, **1-2 activities each week**. Once they've introduced an activity, teachers will begin using it.

February 2017				
Monday	Tuesday	Wednesday	Thursday	Friday
	31 *Jelly Belly	1	2 *Special place	3
6	7 Treasure hunting	8	9 *Umbalakiki	10
13	14 *Changing channels	15	16 Friendship chain	17

These calendars are guides only. Try to introduce activities in the order suggested. You can also use the calendars to record the activities you use, and when.

March 2017				
Monday	Tuesday	Wednesday	Thursday	Friday
		1	2	3
6	7	8	9	10
13	14	15	16	17
20	21	22	23	24
27	28	29	30	31

April 2017				
Monday	Tuesday	Wednesday	Thursday	Friday
3	4	5	6	7
10	11	12	13	14
17	18	19	20	21
24	25	26	27	28

After SSPs have introduced an activity, teachers can begin to use the activity in the classroom. Use the calendar to record which activities you use, and when. Aim to use each activity at least twice more. Use the checklist below to keep track.

- Spaghetti toes
- Animal yoga
- Jelly belly
- Special place
- Treasure hunting
- Umbalakiki
- Changing channels
- Friendship chain
- I am
- Great little listener
- Mindful movement

- Post-test assessments on students (researcher)
- Teachers complete 2 student surveys

Appendix M

MindMasters 2 Activity Log

Teacher: _____

Please rate the overall group conditions following each MindMasters 2 activity, by checking the appropriate box.

Activity: _____ Date: _____

	Excellent	Good	Average	Poor	Very poor	Unsure
Relative noise level						
Student engagement						
Transition						

Activity: _____ Date: _____

	Excellent	Good	Average	Poor	Very poor	Unsure
Relative noise level						
Student engagement						
Transition						

Activity: _____ Date: _____

	Excellent	Good	Average	Poor	Very poor	Unsure
Relative noise level						
Student engagement						
Transition						

Appendix N

Teacher Interview Guide

1. How often did you use the activities or techniques found within the MindMasters 2 resource?
 - a. Were there specific times or situations where you used them?
 - b. Can you think of any barriers you encountered that prevented you or made it hard to use MindMasters 2?
2. Did you find it easy to integrate the program into your daily routine?
 - a. Was there a source you used more than another? For example, the guidebook, the website, the app?
3. Let's talk a bit about changes you observed. First off, did you see any changes?
 - a. What did you observe on an individual level:
 - i. Changes in focus and listening?
 - ii. Changes in children helping others?
 - iii. Changes in controlling emotions/relaxing?
 - iv. Did some children adhere to the program more readily than others?
 - b. What did you observe on the classroom as a whole:
 - i. Changes in class climate (i.e. noise level, attention, ease of instruction)?
 - ii. Do you think they applied what they learned in real life situations?
4. In general, did you like the program?
 - a. What did you like about it?
 - i. Any specific activities or resources you liked more?
 - b. What didn't you like about it?
 - c. How do you think the program could be improved?
5. Do you plan on continuing to use MindMasters 2?
6. Is there anything else that you would like to add that we haven't touched on?