

***Effectiveness of the Mindfulness Education (ME) Program:
Research Summary, 2005-2008***

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INTRODUCTION

A comprehensive mission for schools is to educate students to be knowledgeable, responsible, socially skilled, healthy, caring, and contributing citizens.

Greenberg et al. (2003),¹

The University of British Columbia (UBC) has taken a lead role in conducting research evaluating the impact of the Hawn Foundation's *Mindfulness Education* (ME) program. A total of 3 research projects to evaluate the effectiveness of the *ME* program have been conducted to date. The Principal Investigator for two of the three projects is **Dr. Kimberly Schonert-Reichl**, Associate Professor, Department of Educational and Counselling Psychology, and Special Education at UBC. The co-investigator for these two projects is **Molly Stewart Lawlor, MA**, a doctoral student in Human Development, Learning, and Culture in the Faculty of Education. Ms. Lawlor was the principle investigator for one of the three projects. **Drs. Tim Oberlander and Adele Diamond** have been collaborators for the 2008 study.

The Case for Promoting Social – Emotional Learning (SEL) in Schools

Increasingly, school-age children are at risk for psychological and behavioral problems which affect personal relationships, school performance, and their future role as citizens. Researchers, clinicians, and educators alike share a concern about childhood aggression and accompanying problems such as anxiety, peer rejection, and hyperactivity and the classroom disruption experienced by other children.

Most recently, educators and policymakers alike have emphasized the importance of addressing social and emotional learning in schools.² Indeed, an emerging body of research suggests the importance of social and emotional programming in developing children and youth who are successful both in school and in life. Social emotional learning, or SEL, is the process of acquiring the competencies to recognize and manage emotions, develop caring and concern for others, establish positive relationships, make responsible decisions, and handle challenging situations effectively. In short, SEL competencies comprise the foundational skills for positive health practices, engaged citizenship, and school success. SEL is sometimes called “the missing piece,” because it represents a part of education that is inextricably linked to school success, but has not been explicitly stated or given much attention until recently.

The good news is that these skills can be taught through nurturing and caring learning environments and experiences. Moreover, SEL emphasizes active learning approaches in which skills can be generalized across curriculum areas and contexts when opportunities are provided to practice the skills that foster positive attitudes, behaviors, and thinking processes.

Over the past decade, a rapidly growing literature has demonstrated that fostering student social and emotional development is not only a valued outcome in its own right, but that it can be instrumental in

¹ Greenberg et al. (2003), p. 466

² In the United States, both Illinois and New York have adopted legislation promoting SEL in schools, Kindergarten to grade 12.

the acquisition of knowledge and the development of cognitive abilities – a foundation for academic success. Most recently, Weissberg and Durlak (2008) conducted a large-scale quantitative analysis of 207 SEL programs involving over 288,000 students from urban, suburban, and rural elementary and secondary schools. The findings revealed that students who participate in school-based SEL programs (programs similar to the *Roots of Empathy* program) profited in many ways. Specifically, in contrast to those students who did not participate in SEL programs, they demonstrated (1) significantly better social and emotional skills, (2) lower levels of stress and depression, (3) better attitudes about themselves, others, and school, (4) improvements in social and classroom behavior, (5) fewer conduct problems and aggression, (6) better grade point averages and standardized achievement test scores. Findings also revealed that students participating in a social-emotional learning program ranked at least *11 percentile points higher on standardized achievement tests* than students who did not participate.

OVERVIEW OF THE ME PROGRAM

Mindfulness Education (ME) is a comprehensive classroom-based program for children from Kindergarten to 7th grade aimed at fostering children’s social, emotional, and psychological well-being while decreasing acting-out behaviors and aggression. More specifically, the *ME* program was designed to enhance children’s self-awareness, social awareness, focused attention, self regulation, problem solving, prosocial behaviors (helping, sharing, and cooperating), and positive human qualities, such as happiness, optimism, and altruism. The ME program curriculum is theoretically derived and informed by the latest scientific research in the fields of social neuroscience, mindful attention, social and emotional learning (SEL), and positive psychology. Further, the ME Program was developed as an *approach* to teaching, as opposed to a curriculum that is separate from other subject areas.

Overview of Research Studies

Since 2005, Dr. Kimberly Schonert-Reichl and her colleagues at the University of British Columbia have undertaken a series of research studies evaluating the effectiveness of the ME program. In each of these studies, measures were chosen that were identified as being scientifically sound (e.g., reliable and valid, chosen from the best available measures in the literature) and developmentally appropriate for children. Hence, some different measures were utilized across the studies in light of the age group that was being studied.

The evaluation of each of the studies utilized a developmental evaluation methodology “that embeds the evaluation into a theoretical framework consonant with the theoretical underpinnings of the program, using measures sharing the same theoretical assumptions as the practice” (Schultz & Selman, p. 2). In other words, developmental theory is used both for identifying the elements that are transformative and what constructs should be examined. Evaluations of this nature are not only a means with which to test program efficacy, such approaches can also be used as a way in which to specifically identify mechanisms and processes that underlie development.

For the two outcome evaluations, it was hypothesized that, when compared to children not exposed to the ME Program curriculum, ME program children would show significant and positive changes from pretest to posttest in their emotional and social competence, well-being, and mindful attention. Moreover, it was hypothesized that increases in ME children's emotional and social competence and well-being would be associated with concomitant improvements in their teacher-rated and peer-rated social competent behaviors. More specifically, in accordance with the theoretical and empirical literature, it was hypothesized that children who had received the ME program, in contrast to those

children who had not, would have significant reductions in dysregulated behaviors (e.g., aggression) and increases in prosocial behaviors (e.g., helping, sharing, cooperating).

1. 2005 Mindfulness Education Evaluation

Project Title: *Promoting Children's Social and Academic Success through Mindfulness Education*

Program Evaluated: This was the first iteration of the ME Program curriculum and was created in collaboration with Nancy Fischer. This program was comprised of 10 lessons and was designed for grades Kindergarten to 7th (only one curriculum for all age groups).

Principle Investigator: Kimberly A. Schonert-Reichl, Ph.D.

Funding Sources: The Hawn Foundation (\$8,800.00CAD)
Human Early Learning Partnership, UBC (\$2000.00CAD)

Site: Vancouver

Research Design: Quasi-experimental, pretest, posttest, control group design.

Method: A quasi-experimental control group pre-test/post-test design was used. This evaluation included 246 4th to 7th grade children drawn from 12 classrooms (6 ME program classrooms and 6 comparison classrooms) attending public elementary schools in Vancouver, representative of a range of socioeconomic status (82% participation rate). ME program classes were matched with comparison classes where the average age, gender, and race/ethnicity of the class was equivalent. Children were administered questionnaires at both pretest and posttest on a series of instruments designed to assess dimensions of their social and emotional understanding (emotional awareness, reflection and rumination), mindful awareness, optimism, and self-concept. Teachers' rated children at pretest and posttest on dimensions of social and emotional competence and aggressive behaviors.

Results: Results revealed that children who participated in the ME Program, compared to children who did not, ***showed significant improvements on all four dimensions of teacher-rated school behaviors***, including attentional control, aggression, behavioral dysregulation, and social competence. Program effects were also found for self-reported optimism, self concept, reflection, and mindful awareness attention, although for some of these constructs, program effects demonstrated more positive benefits for girls and/or pre-adolescents.

A secondary focus of the research was to examine and delineate the implementation fidelity/integrity of the ME Program via evaluation of teachers' weekly reports of implementation on two dimensions of the ME Program: 1) 3X daily attention/breathing core practices, 2) Weekly lessons. Data analyses revealed that while there was high implementation fidelity of 3X daily core practices, there was low implementation fidelity for the weekly lessons. More specifically, implementation of core ME practices ranged from 73% to 100%, with an average of 87% across the nine weeks. Additionally, all teachers (100%) reported they implemented extension activities within their respective classrooms, denoting evidence the ME Program was also embedded into required curricula across subjects. A different picture emerged, however, when examining implementation of ME lessons. The majority of the ME program teachers reported that they implemented just portions of the weekly lessons, with several reporting that they eliminated entire lessons. The primary reason that teachers provided for

eliminating lessons was due to the inappropriateness of the lesson for the age group with whom they were teaching. Two recommendations were put forth by teachers, namely make the lessons more developmentally appropriate for children, with different curricula and lessons for younger and older children, and provide extension activities for teachers to allow them to integrate the ME program principles throughout the regular school curricula across multiple years.

Papers Produced from Research:

Schonert-Reichl, K. A., & Lawlor, M. S. (2008). *Promoting optimism and well-being in school-aged children: Initial findings from the "Mindfulness Education" program*. Manuscript being prepared for publication in *Psychology in the Schools* (December, 2008)

Lawlor, M. S., Schonert-Reichl, K. A., & Zumbo, B. (2008). *Mindfulness, its measurement and relationship to well-being during early adolescence*. Manuscript being prepared for publication, *Journal of Psychoeducational Assessment*.

Schonert-Reichl, K. A., & Lawlor, M. S. (2007, April). Promoting children's social-emotional competence and prosocial behavior in school: Initial findings for the "Mindfulness Education" (ME) Program. In T. Jennings (Session Chair), *Mindfulness-based activities in the classroom: Promoting social-emotional and cognitive development*. Symposium presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Schonert-Reichl, K. A., & Lawlor, M. S. (2007, March). *Promoting children's social-emotional-competence in school: Findings from the pilot research of the "Mindfulness Education" program*. Invited Presentation, Fetzer Institute, Kalamazoo, Michigan.

Schonert-Reichl, K. A. (2005, November). *Linking theory and research to educational practice: Lessons learned from a University-School Board partnership developed to foster children's social-emotional competence and social responsibility in schools*. Invited Presentation, Graduate School of Education, Harvard University. (Note: In this presentation, I presented research findings from several of the program with which I have been involved, the ME program was one of the programs that I presented).

2. 2007 Implementation/Process Evaluation

Project Title: *Process Evaluation of the Focus Mind/Mindful Matters Program*

Programs Evaluated: Two programs were the focus of this evaluation – *Focus Mind* and *Mindful Matters*. These two programs were created in collaboration with researchers and educators at The School at Teachers College, Columbia University.

Principle Investigator: Molly Stewart Lawlor, MA

Funding Source: The Hawn Foundation (\$4,732.06US)

Sites/Participants: Seymour Elementary, Vancouver (1 teacher); The Brown School, Schenectady, NY (7 teachers); Cape May City Elementary, Cape May, NJ (1 administrator); The School at Columbia University, NY, NY (1 teacher)

Research Design: Formative/Process Evaluation

Method: The objective of this study was to carry out a process evaluation of the *Focus Mind/Mindfulness Matters* program, a classroom-based program designed to foster children’s mindful awareness, psychological well-being, and social-emotional competencies; these programs were developed by The Hawn Foundation. A process evaluation assesses the delivery of a program with a specific focus on program integrity. Implementation quality or program integrity, which is described as the “degree to which a program is delivered as intended” (Yeaton & Sechrest, 1981 as cited in Domitrovich & Greenberg, 2000) and “what a program consists of in practice (Durlak, 1995, as cited in Domitrovich & Greenberg, 2000). This research constitutes a **Phase 1 Formative Evaluation** based on a model that Dr. Mark Greenberg and his colleagues at the Prevention Research Center at the Pennsylvania State University conceptualized to outline the four critical phases of program development for effectiveness and efficacy research (see <http://www.prevention.psu.edu/>). The information garnered from this study was seen as being integral for revisions made to the curriculum prior to embarking on further outcome evaluations of the ME Program curriculum.

Results: Overall, both teachers and students reported some satisfaction with the program. Three key findings emerged from this process evaluation that should be considered for future revisions and implementation of the program:

1. Primary grade teachers identified a need for age appropriate lesson plans for younger students. These comments support the work to create a primary curriculum.
2. Although teachers reported the manual as largely, “easy to use, well-organized and written,” 87.5% of those teachers felt the training they received was not sufficient to feel comfortable to implement the program. This finding urges The Hawn Foundation to consider the protocol for teacher training, one that specifically includes 1) more time to learn about mindfulness, 2) more information on particular techniques, 3) more time to brainstorm about potential problem areas, and, 4) more time to practice and role play to facilitate comfort level with the program.
3. Results indicated a need to improve the program’s ability to be embedded into existing, required subject areas. Only half of participating teachers engaged in extension activities, bringing the ideas of the programs into subject areas such as language arts, math and science. To improve the program’s implementation, sustainability and growth, it is recommended that the core practices, approaches and lessons be easily transferable to what teachers are already doing within their classrooms. This could take the form of suggested extension activity examples within the manual for both the core practices and for each of the lessons. Additionally, the teacher training protocol should allocate time for discussion around embedding the program within the school day.

3. 2008 Randomized Controlled Trial of the ME Program

Project Title: *Effectiveness of the Mindfulness Education Program on Children's Social-Emotional Competence, Psychological Well-Being, Stress Reactivity, and Cognitive Control*

Program Evaluated: This RCT study examined the effectiveness of a newly revised ME curriculum that was developed based on teacher/child feedback on the earlier iterations of the Hawn Foundation curricula, namely the findings from the two research studies described previously. Cognizant of the importance of being both responsive to the practical needs of teachers in classrooms, as well as

designing curriculum that is informed by the latest theory and research on what is known about how to best promote children's optimism, happiness, and well-being, Ms. Molly Stewart Lawlor, with consultation from a team of scientists and educational experts, wrote a new ME program curriculum comprised of 12 lessons that incorporate activities that provide children with opportunities to learn about their brain, how their thoughts and feelings affect their actions, and how to become a caring and altruistic person. Lessons incorporate both direct teachings of concepts along with opportunities to actively engage in their learning via activities, role plays, and journals.

Principle Investigator: Kimberly A. Schonert-Reichl, Ph.D.
Co-Investigators: Eva Oberle, MA (Ph.D. Student, UBC)
 Molly Stewart Lawlor, MA
 Kim Thomson (Masters Student, UBC)
 Tim Oberlander, MD
 Adele Diamond, Ph.D.

Funding Sources: Mind and Life Institute (\$10,000US)
 The Hawn Foundation (\$12,000US)
 Human Early Learning Partnership, UBC (\$2000CAD)

Participants: 99 4th and 5th grade children drawn from 4 classrooms (2 ME Program classrooms, 2 Comparison classroom). Classrooms were randomly assigned to receive the ME Program or serve as an active control (receiving the regular school curriculum with a focus on the promotion of social responsibility). A total of 95% of those children recruited for participation received parental permission to take part in the research study, thus ensuring high generalizability to the population under study.

Site: Coquitlam, British Columbia

Research Design: Randomized Controlled Trial

Method: The initial pilot of the implementation of a revised ME curriculum began in January 2008. Note that the program was revised based on implementation data collected from teachers and students during the 2005 implementation. These data were then used to improve the program. At that time the Hawn Foundation, along with the Mind and Life Institute, provided funding for a Randomized Controlled Trial (RCT) of the impact of this curriculum on 4th and 5th grade children. This research included assessments of children's executive functioning (cognitive control) and neuroendocrin regulation (obtained via diurnal salivary cortisol), along with self-, peer-, and teacher-reports of optimism, empathy, emotional awareness, depression, self-concept and social competence at pretest and posttest (i.e., before the program began and after it ended). This research is being conducted at the University of British Columbia.

Results: The results from this study are currently being written up for publication.

Papers to be Produced from Research:

It is expected that several papers will be produced from this research, and that some of these articles will be submitted for publication in 2009.

4. Future Work

Future research on the ME curriculum should include some of the following:

1. One year follow-up of the children who participated in the 2008 evaluation in order to determine the sustainability of program effects.
2. A process/implementation of a couple of the schools in which the entire school staff have been trained in the ME Program (“Whole” school approach). This project is currently underway with one elementary school in Coquitlam, BC.
3. A new RCT that includes an “active” control group, with an N = 60 in order to conduct analyses at the level of the classroom rather than at the level of the student (i.e., HLM).
4. Replication of research across different sites in the US and Canada.