The Benefits of Integrating Mindfulness and Yoga in the Elementary Classroom

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ABSTRACT

The Benefits of Integrating Yoga and Mindfulness/Relaxation
in the Elementary Classroom

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This study investigates the benefits of a mindfulness/relaxation and yoga program on 20 students from a Grade 1 class in the Montreal area. The students included 14 boys and 6 girls ranging from 6 to 7 years of age. Terry Orlick (2004) explained that the earlier children learn strategies to deal with stressors, the better off they will be at dealing with them throughout their lives. Yoga and mindfulness/relaxation were the two strategies used in the classroom to help children deal with daily stressors. The short version of the Multidimensional Anxiety Scale for Children (MASC-10) (March, 1997) was used prior to the intervention to assess the anxiety levels in the children. Student journal writing, teacher-researcher journal writing, a mid-treatment questionnaire to see which the children preferred, yoga or mindfulness/relaxation, and a Mood Inventory were the instruments used in this study. Results suggest that children benefitted somewhat from the yoga and mindfulness/relaxation sessions. Children also enjoyed the activities. The findings support the integration of such programs in the daily lives of the children through the school curriculum.

Dedication

To my late grandfather who was the greatest influence in my life and my number one fan.

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Introduction

The quick pace of life as well as familial problems and issues related to school may be contributing factors as to why some children suffer negative consequences such as social and behavioral difficulties. The latter all serve as stressors in young children's lives. It is important for parents and teachers to offer strategies and life skills to help their children deal with the stressors that life may present. Orlick (2004) explained that the earlier children learn approaches to deal with stressors; the better off they are at dealing with them throughout their lives. Orlick also explained that yoga and mindfulness/relaxation are quite simple for teachers to learn and implement when proper teacher training is available. Mindfulness meditation and yoga are two strategies that can be used in the classroom to help children deal with these daily stressors.

Napoli (2004) mentioned the importance for adults to remember that children's overall positive attitudes and self-confidence are directly influenced by the manner in which significant adults in their lives interact with them. Parents, teachers, coaches and other adults all have the control to positively affect the children and to help make their lives less stressful (Napoli). Unfortunately, they cannot shelter the children from all anxiety-provoking events; therefore teaching strategies to help deal with them can be a preventative measure at a young age.

The following two ways have been found to help children experience less stress (Orlick, 2004):

1. "Helping them develop a positive outlook and a balanced perspective on situations that are easily perceived as being negative.

2. Teaching them simple strategies to deal with stressful situations so that stress does not take over their lives" (p. 47).

This research project sets out to explore the benefits of using yoga and mindfulness/relaxation training in the classroom. Past and recent research show that children who learn stress management strategies such as mindfulness/relaxation, tai chi and yoga will experience short-term positive results as well as possible long-term positive outcomes (e.g., Baron & Faubert, 2005; Borysenko,1989; Orlick, 2004; Lohaus & Klein-Hessling, 2003; Langer, 2000; Napoli, 2004). Zaichowsky & Zaichowsky (1984) explained that the coping strategies that children learn at an early age affect the extent to which they deal with immediate stressors. Furthermore, this can lead to healthy lifelong coping behaviours.

Literature Review

Mental Health Classes and the Quebec Curriculum

Details of Chapter Three of the Quebec Education Plan (Quebec Education Plan, 2001) delineate the broad areas of learning, which correspond to various student needs or interests while also reflecting social expectations with respect to education. Mindfulness/relaxation and yoga are related to the first area of learning--Health and Well-being.

Health and Well-being

"The educational aim for Health and Well being is to ensure that students adopt a self-monitoring procedure concerning the development of good living habits related to health, well being, sexuality and safety" (Quebec Education Plan, 2001). The competencies in this area include developing:

1. "The children's awareness of his/her basic needs.
2. The children's awareness of consequences for health and well being of his/her personal choices.
3. Active lifestyles and safe behaviours" (p. 44).

Mindfulness/relaxation and yoga are connected to all three of these competencies.

The Quebec Education Plan (2001) clearly maintains that it is one of the school's many responsibilities to provide children with opportunities to discover the main characteristics of their personality and to guide them in recognizing and expressing their individual differences, emotions and feelings. In mindfulness training emphasis is put on developing students' self-awareness and ability to express their needs and emotions with respect to their personal choices and attitudes for health, physical and emotional security.

This is most effectively done by involving teachers, administrators, community members, health professionals and parents (Quebec Education Plan).

Following the Quebec Education Plan (2001) closely, it is clear that special attention needs to be directed to students' physical and emotional well-being. The school could play a crucial role in guiding students to understand issues related to health and well being and encouraging them to adopt a healthy, active lifestyle. It is important that students be provided with an environment that is sensible and conducive to their optimal personal and emotional development (Quebec Education Plan, 2001).

Children and Stress

Stefanello (2001) explained that, "stress is the reaction of an organism to any aversive stimulus that is orchestrated by the sympathetic nervous system"(p. 294). It occurs when there is an inability to deal with the problems of life. The need to deal with stressors can trigger both physical and psychological components (Stefanello). Difficulties in dealing with relationships, aggression, disobedience, anxiety, excessive crying, stuttering, academic difficulties, nightmares and insomnia are common stress-induced psychological symptoms. Physical symptoms may include bellyaches, diarrhea, nervous twitches, hyperactivity, stuttering and muscle tensions. Stefanello explained that intense stress might also cause obesity, asthma, skin disorders, dental cavities and many other illnesses. Some anxiety symptoms in children may include shyness, social withdrawal, palpitations, dizziness and trembling (Hunt, Koegh & French, 2007). Hunt et al. (2007) explained that children who suffer from anxiety may experience behavioral difficulties and panic attacks. While, in some literature, the two are considered slightly

different concepts, for the purpose of this thesis, the terms "stress" and "anxiety" will be used interchangeable to avoid confusion.

Children are more stressed today and levels of childhood anxiety are more evident at younger ages in today's society (Mantica, 2004; Zaichkowsky & Zaichkowsky, 1984). Mantica explained that changes in society have forced young children to assume roles or be placed in situations that require dealing with stressors similar to those that adults face. Mantica also noted that children have more responsibilities than they have had in the past.

Six core stressors have been identified as affecting children in their early years (Orlick, 2004). They include people stress, school stress, performance/sport/activity stress, loss of control, sickness/illness/injury, and sleeping problems. These stress factors are often brought on by fear or worry about disappointing significant others and not being able to meet their expectations. Stress may produce tension that causes children to be unfocused (Orlick). Orlick has suggested that the worry usually occurs before a sports game or a school test where optimal performance is emphasized. Rosch (as cited in Mantica, 2004), President of the American Institute of Stress, explained that stress can cause many avoidable symptoms including insomnia, skin disorders, headaches, upset stomach, depression and eating disorders. If not properly dealt with, stress may result in more severe anxiety, which can lead to depression.

Borysenko (1989) explained that stressful events themselves are not what are important, but rather how people choose to react to them. The way one reacts to daily stressful events is what impacts on one's well being. This is also true for children. It is important for adults to understand that children do not learn effective strategies to deal

with stress on their own, but rather need to be taught stress management strategies at a young age with the potential of using them throughout their lives (Borysenko). Children can be protected from stressful situations at a young age, but sooner or later, these situations will be out of parental and teacher control. Children should be provided with the necessary tools with which to manage stressors on their own. Proper strategies to deal with stress are required to make this happen successfully. One of the goals of this project was to examine whether young children could, in fact, learn some stress management tools including bodily relaxation, breathing and yoga poses.

Holland (2004) explained that mindfulness, is allowing children to hear things they have never heard before, see things they have never seen before, feel things they have never felt before and smell things they have never smelled before, is one of many strategies for dealing with stress. The earlier children begin to learn strategies for coping with stress, the better off they will be in dealing with various stressors they will be faced with in life (Orlick, 2004).

Mindfulness

Orlick (2004) suggested that children who are mindful and who have positive mental skills spend more time working towards their goals and waste less time and energy worrying and being stressed. Samatha and Vipassana yoga are two forms of mindfulness training that emphasize varying skills and techniques. Samatha, emphasizes concentration as a means of attaining tranquility and calmness (Holland, 2004). This is done by focusing on a prayer, a chant, an icon or on any other point of focus to allow steadiness and peace of the mind. A deep sense of calm is attained through this mode of relaxation (Holland).

Mindfulness known as Vipassana is a form of relaxation that involves being in the moment and living new experiences while also being sensitive to context (Langer, 2000; Leskowitz, 2004). Mindfulness involves using a point of focus (usually the breath) to serve as an anchor around which other experiences such as thoughts, emotions, and sensations are witnessed and allowed to dissolve (Holland, 2004). Being mindful is accepting one's thoughts rather than emphasizing the formation of more positive ones (Semple et al., 2005). It is presumed that when one is in the state of mindfulness, he/she is able to pay attention better and experience feelings and sensations that would otherwise have been ignored. When individuals are in a state of mindfulness, they allow themselves to be aware of external and internal conditions such as their physiological arousal states (Singh, Wahler, Adkins & Myers, 2002). Internal experiences are examined without distortion from affective, cognitive, or physiological factors influencing the experiences. Mindfulness is a moment-to-moment practice of discriminating thought from exterior stimuli (Semple et al.).

Jon Kabat-Zinn developed mindfulness-based stress reduction (MBSR; Chang, Palesh, Caldwell, Glasgow, Abramson, Luskin, Burke & Koopman, 2004). He is known as a leader in mindfulness and mind-body-science. Mindfulness techniques with adults have shown to be effective for anxiety disorders, depression, borderline personality disorder, substance abuse, management of chronic pain, bulimia nervosa and cancer (Semple et al., 2005). Additional long-term effects of mindfulness have included a decrease in accidents and stress, and an increase in memory, creativity and health (Langer, 2000). Borysenko (1984) explained that through mindfulness, the body experiences a relaxation response where the heart rate decreases, oxygen consumption

declines due to the decrease in need of energy, brain waves shift from an alert beta-rhythm to a relaxed alpha-rhythm, blood flow to the muscles decreases and instead is sent to the brain and skin. All this causes a feeling of warmth and rested mental alertness (Borysenko).

Mindfulness versus mindlessness

King and Sawyer (1998), explained that mindfulness is to experience the present while focusing on thoughts, emotions and sensations, whereas mindlessness is when one is stuck in a rigid perspective and is experiencing behaviors from the past rather than the present. Reacting to a situation in a mindless way is to react without conscious control or intention. According to Thornton and McEntee (1995), when a situation or context is seen as an opportunity to try new solutions, one reacts in a mindful way. But, when a situation is seen as repetitious and having no other solution than the one the person already knows, a person reacts in a robotic or mindless way.

Mindfulness and children

Redfering and Bowman (1981) suggested that children deal with stress and strong emotions differently than adults do. Youngsters tend to physically manifest their emotions through outbursts, anger and/or violence (Redfering & Bowman, 1981). For this reason, they need to be taught techniques to deal with life stressors. Although an ample amount of research has been done on the outcomes of mindfulness with adults in the last two decades (e.g., Chang et al.,2004; Burgoon, Berger & Waldron, 2000; Schure, Christoper & Chritopher, 2008), little research has been done on mindfulness and children and its effects on their social, behavioral and academic results. The studies conducted with children thus far show that there were definite short-term effects to

teaching children mindfulness techniques, but few long-term effects have yet been noted (Blomqvist, Holmberg, Lindbald, Fernell, Ek & Dahllof, 2007; Levin, McCabe & Bender, 1975; Lohaus et al., 2001; Peck, Kehle & Bray, 2005). More work, such as that carried out in the intervention reported here, can only add to our knowledge base.

Zaichkowsky and Zaichkowsky (1984) included 43, Grade 4 students in a 6-weeks, in-school relaxation program. The students were randomly assigned to the experimental group (relaxation program) or the control group (no intervention). The intervention included 18 lessons on stress and stress management techniques. Three physiological (heart rate, skin temperature and respiration rate) and two psychological outcomes (respiration rate and state and trait anxiety) were the five dependent variables in this study. Spielberger's Scale for Children (Spielberger, 1973) was used to measure state and trait anxiety. A pre-test, post-test control group format was used where the five dependent variables were measured prior to and after the intervention. A t-test, which was performed at the pre-test showed that there were no significant differences between groups or between genders. The scores from pre- to post-test showed significant improvement on heart rate, skin temperature, respiration rate and state anxiety for the experimental group. The two groups differed significantly in heart rate, respiration rate and temperature, but there was no significant decrease in state and trait anxiety. The authors explained that the intervention was too short to show any change in trait anxiety or group differences. Independently, the findings showed that children can learn skills to deal with their daily stressors in a period as short as six weeks (Zaichkowsky and Zaichkowsky). The present study used a similar period of intervention as that of Zaichowsky and Zaichowsky.

Lohaus, Klein-Hefling, Vogele and Kuhn-Hennighausen (2001) carried out a similar study with children from a Grade 4 class in Germany. Their study differed in that the relaxation lessons were divided into two different relaxation techniques (progressive muscle relaxation and imagery-based relaxation). A control group received a neutral story. Sixty-four children ages 10-12 were randomly assigned to one of the three experimental conditions. Each condition received five, thirty minutes weekly sessions as the researchers thought this would be ample time to examine any training effects. Heart rate, skin temperature and skin conductance level were continuously measured during a 5-minutes baseline period, an 8-minutes relaxation period and a 5-minutes follow-up during each session using a multi-channel polygraph. Assessment for mood and physical well- being took place during the experimental sessions using a series of rating scales developed by the authors. The design included pre- and post-test baseline as well as training conditions. Differences at baseline trials were measured to analyze differences between the experimental conditions by using five two-way ANOVA with repeated measures. The results did not show any shifts from the first baseline to the second baseline period. The dependent variables were heart rate, skin conductance level and skin temperature. Significant main effects in skin conductance level for the sessions within sessions were found, and no main effects for heart rate were revealed. There was a significant increase in heart rate from the baseline to the end of the intervention. Imagery-based lessons were the most effective as they significantly decreased heart rate. Participants in the neutral story condition also experienced relaxation effects, but did not show significant differences from baseline to the end of the treatment. Lohaus et al. concluded that there are short-term benefits to children learning relaxation techniques.

Long-lasting effects are much more difficult to achieve, and require more training. Lohaus' work is a good indication that the present study may benefit children in as short a time as six weeks.

Kiselica, Baker, Thomas & Reedy (1994) studied 48, Grade 9 students with environmental stress. The researchers concluded that an increase in stressful life events was related to lower ratings of academic performance, but was unrelated to ratings of social behavior. Forty-eight students were randomly assigned to an experimental (assertiveness training) or control group (guidance classes). Both groups participated in eight, 60-minutes weekly sessions. The control group was registered in a "guidance" class, which included 20 to 40 students per class. The "guidance" class included value clarification exercises, peer pressure discussions, decision-making skills, resume writing skills and practicing skills required for employment. The experimental group met in the guidance counselors' offices in groups of six. Assertiveness training, which included relaxation, progressive muscle relaxation procedures, cue-controlled and self-improving behaviors supplemented the regular curriculum for the experimental group in order to provide students with additional coping skills and help them deal with outside stressors, such as peer pressure. An Expectancy for Success Scale (EFS, Fibel & Hale, 1978) was administered to all participants after the second training sessions to ascertain similarities between the two groups. The EFS has fourteen 7-point items to measure the participants' confidence in the treatment they will receive. An Attitude Towards Treatment Scale (ATT) was administered at post-test and follow-up to measure the students' attitudes towards the treatments. The ATT also has fourteen, 7-point items to measure the preferences. The State Anxiety Scale (STAI A-TRAIT; Spielberger, 1973) was

administered at pretest, post-test and follow-up (4 weeks after post-test) to assess the effects of the treatment on state anxiety. The students' grade-point averages (GPA) were used as pre-test, post-test and test measures of their academic performance. A randomized pre-test/post-test control group design was employed, and a three-way ANOVA with treatment condition, gender and time of assessment as independent variables was utilized on the ATT scores. Results showed that the there was a significant main effect for treatment, indicating that the experimental group scored significantly higher than did the control group. There were no significant differences within groups apart from gender, where female participants scored significantly higher than did the male participants in both groups. Although there were more participants in this research, the Kiselica et al. study is valuable as it is has methodological implications for the present research study where the intervention length was short and the participants regularly recorded their attitude towards the intervention.

With regard to an appropriate length of an intervention, Lohaus and Klein-Hessling (2003) conducted a study to examine the effects of the duration of a systematic intervention on children. They studied 160 German children between the ages 9 to 12 who were randomly assigned to one of four training conditions (progressive muscle relaxation, imagination, neutral stories, and arithmetic problems). The participants all received five, 30-40 minutes training sessions in weekly intervals. The children who received progressive muscle relaxation and imagination were presented with a total of 10 training sessions. Heart rate, skin temperature and skin conductance were the physiological indicators of relaxation. They were monitored continuously. As well, self-report measures of mood and well-being were gathered. The expected effects of this

relaxation intervention were higher ratings in physical well-being and in mood. A two-way analysis of variance uncovered significant short-term effects for all four of the training conditions including neutral stories. This study showed that there were several techniques available to reach calmness, which ranged from specific programs to simply being presented with neutral stories or relaxing music. There also were few additional effects from the extended training suggesting that there may be an asymptotic level reached where children's interest and motivation wanes beyond a 10-weeks intervention (Lohaus & Klein-Hessling). Findings such as those of Lohaus and Kelin-Hessling, with regard to the duration of an intervention, supported the choice of a 6-weeks mindfulness/relaxation program for the young children in this study.

In other related research, Williams, Braud and Powell (2004) investigated the effects of relaxation training in reducing psychological, behavioral and physiological distress in older children (ages 12-16). Participants were 40, low income, at-risk students enrolled in an African-American high school in Texas. They included 15 males and 25 females who received 12, weekly, 30-minutes relaxation-training sessions over the course of 8 weeks. The experimental group attended relaxation sessions consisting of guided relaxation techniques and relaxation/story audiotapes. The audiotape series was entitled Old Me New Me (Lupin, 2004). The tapes were designed to help children and adolescents cope with anxiety, anger, aggression, frustration, oppositional behavior, hyperactivity and impulsivity (Williams, Braud & Powell). The stories also were developed to help children learn to work and play cooperatively, resolve conflicts and handle stressful situations in a more appropriate manner. The control group received no treatment. Participants were identified as "highly anxious" using the Revised Children's

Manifest Anxiety Scale (RCMAS, Reynolds & Richmond, 1987). The Digit Span Test of Hyperactivity (Weschler,1997), Aggression, Short Attention Span and Psychopathic Deviance from the RCMAS (Reynold & Reynolds) were the two other measures used in this study (Braud & Powell, 1992). Williams et al. found that participants undergoing relaxation sessions showed a significant decrease in aggression, impulsivity, hyperactivity, frustration, and increased attention span from pre to post-test. Participants in the experimental group also showed significant improvement on the anxiety scale, physiological scale and the worry scale. The experimental group showed statistically significant improvement as compared to the control group, while the experimental group increased over one deviation score on the Digit Span Test, an objective measure of attention. Comparably, the control group's scores declined showing that the experimental group performed significantly better than the control group. The Williams, Braud and Powell study provides further support for research similar to that carried out here as the same audiotapes were used and significant improvements were found at posttest for the experimental group.

Redfering and Bowman (1981) utilized relaxation as a treatment for children experiencing oppositional behaviors. Two classrooms of nine students experiencing behavioral difficulties were selected from a Florida public school. Fourteen males and four females between the ages of 8 to 11 took part in the study. Parents and school personnel referred the students to the researchers as children who were having difficulty adjusting to the regular curriculum. The participants were randomly assigned to an experimental group (relaxation) and a control group (rest only). A time sampling technique was employed to gather baseline data on attention (e.g., on-task behavior). Two

observers observed in a regular classroom setting for a period of five days. All behaviors were recorded over a 30-minute observation period divided into 10, 3-minute intervals. The participants' behavior was recorded at the end of each interval to determine whether they were attending or non-attending. Attending behaviors included being both task oriented and the carrying out of assigned tasks. Non-attending behaviors included making disruptive noises and disturbing others. Following the five-day of observation, a five-days intervention took place where the experimental group practiced Benson's (1975) meditative-relaxation exercises for 30 minutes while the control group was told to rest. The observers were asked to use the same time sampling technique used over the first five-day observations. Non-attending behaviors were again observed. The number of non-attending behaviors during the five-day baseline and five-day intervention were computed for each of the 18 students. T-tests for related measures demonstrated that the experimental group's mean score on attending behaviors was significantly higher than the control group (rest only). Their study revealed that the effects of relaxation were significant in reducing children's inattention, anxiety and hyperactivity, while controlling their impulsive and oppositional behaviors. The results lend further support for using relaxation successfully with children in the present study. A longer intervention in conjunction with the yoga and mindfulness/relaxation sessions may lead to more positive results.

Carson, Shih and Langer (2001) argued that children who are offered the chance to be mindful in their education would retain more information than children who do not. In their study, Carson et al. examined 55 children from Grades 3 to 5 in a traditional education setting in comparison to 19 students from a Montessori school. The results of

their findings showed that children from a traditional setting who are often given the chance to be mindful in their learning and are given different possibilities to a problem will retain more information than the students from the Montessori school. The researchers suggested that teachers from Montessori schools instruct children to use exploratory materials without being given definite answers, whereas traditionally schooled children use the information given along with their new findings to make sense of the subject matter therefore retaining it better (Carson et al.).

Lending further support for work similar to that carried out for this study, Napoli's (2004) approach to mindfulness training in the classroom involved training teachers in breath work, body scans, movement and sensorimotor activities. This allowed them to teach their students while also changing their own attitudes towards the relaxation program. Three teachers and their students from Grades 3 to 5 received two monthly mindfulness-training sessions from September to May. The teachers also received 8 weeks of intensive mindfulness training for 2 ½ hours followed by two 8-hour days of silence. Following the training, the teachers were interviewed to assess whether they benefited from the mindfulness program, and whether they were able to transfer the practice from the classroom to their personal lives. The teachers found that the mindfulness training added depth to the already existing health curriculum. At the end of the year, teacher reports indicated that following the mindfulness training, children appeared more relaxed. They also reported positive effects in behavior, mood, and attitudes of their students through the breathing exercises. Mindfulness exercises were performed before tests and students reported being able to complete tests without feeling stressed. Teachers also felt that students would be better able to handle stressful life

events if they had the tools to deal with conflicts and the skills to enhance concentration and attention.

Brady (2004), a former high school mathematics teacher, and presently a mindfulness teacher, has also recognized the importance of teaching students to take the time to breathe and live in the moment in order to help deal with daily stressors. He suggested teaching mindfulness meditation in a way that captures students' attention and motivates their involvement in mindfulness practice. Following guided mindfulness sessions, both the students and teachers express their feelings of relaxation and peace. Although there is no evidenced-based research that has emanated from his work, he reported that the students he had spoken with mentioned that they plan on using mindfulness meditation when feeling stressed or before stressful events occur (Brady).

In a related and exemplary study, Semple, Reid & Miller (2005) studied the effects of mindfulness relaxation on five children (7 and 8 years old) targeted by their teachers as highly anxious. They introduced a school-based intervention for one, 45-minute period a week over six weeks. Two adult programs, Mindfulness-Based Stress Reduction (Kabat-Zinn, 1990) and Mindfulness-Based Cognitive Therapy (Segal et al., 2002), were adapted for children. The focal point of these programs was on body sensations and perceptions. For example, each session focused on one sense (kinesthetic, taste, sight, sound smell and touch). A pre-post test design was utilized with the participants acting as their own control. Data was collected four days prior to and after the intervention. Prior to each session, children wrote down their main worry at the time on a piece of paper that was thrown away in the "Worry Warts Wastebasket" during a short ceremony. The Multidimensional Anxiety Scale for Children (MASC, March,

1997) was used to provide scores on physical symptoms, social anxiety, harm avoidance and separation anxiety. As well, a Feely Face Scale (Semple, et al.) was filled out by the students prior to and after each session. Teachers were asked to complete The Child Behavior Checklist: Teacher Report Form (Achenbach, 1991) for each student at pre- and post- treatment and state and trait anxiety were measured using The State Trait Anxiety Inventory for Children (Spielberger, Edwards, Luchene, Montuori, & Platzek, 1973). Results revealed that mindfulness was effective in helping children deal with anxiety symptoms. The researchers reported that children, in general, appeared to show great interest in the mindfulness sessions and looked forward to the calming effects and the time set aside for this new activity (Semple et al.; Redfering & Bowman, 1981). As did Ellis, Semple et al. found that teachers were generally happy with the improvements in academics and the reduction in problem behaviors.

Langer (2000) argued that not only should learning be fun, but also that learning that is not fun is also mindless. When given the time to notice and pay attention to their feelings, children were able to distinguish different feelings. It appears crucial for teachers to provide their students with the vocabulary required to properly express their feelings—one goal of the reported study.

Yoga as a Form of Mindfulness/Relaxation Training

Yoga, as an alternative physical activity, shows potential as an intervention for a variety of social, emotional, behavioral and academic difficulties (Nardo & Reynolds, 2002). It has been assumed that yoga, similar to relaxation training, results in a feeling of calmness. As a form of meditation through movement, yoga involves physical postures, breath control, mental concentration and deep relaxation. These are all elements that are

thought to lead to more relaxed mental states (Rojas & Chan, 2005; Zipkin, 1985). Yoga has been shown to promote self-control, attention and concentration, self-efficacy, body awareness and stress reduction (Nardo & Reynolds).

In a study designed to demonstrate the effectiveness of yoga training with young children, Haffner, Roos, Goldstein, Parzer and Resch (2006) examined the differences between yoga practice and conventional motor exercises on children having ADHD and on medication. The effects of yoga training were significantly greater than the conventional motor exercises, and were most effective when used with Ritalin. Haffner et al. concluded that yoga and other body-oriented therapies should be used as complementary methods to aid children with ADHD.

In another piece of groundbreaking work in alternative movement practices with children, Baron and Faubert (2005) examined the effects of twice-weekly Tai Chi Chuan sessions on state anxiety and mood of children. A case study, three upper elementary children (ages 13-14) with learning disabilities participated in this research. The participants took part in one-hour, twice-weekly Tai Chi classes for a period of 10 weeks. To measure hyperactivity, conduct difficulties, emotional surplus, anxious-passive, asocial and daydreaming-attention, the Connors' Teacher Rating Scales (Conner, 1990) was administered prior to the treatment and every 2½ weeks throughout. Ongoing transformations in state anxiety were measured using the 20-item State-Trait Anxiety Inventory for Children (Speilberger et al., 1970) while mood was measured using a 28-item mood inventory developed by Baron. A pre-treatment baseline, treatment and post-treatment baseline design was utilized to determine the effects of Tai Chi on children's state anxiety and mood scores. The intervention appeared to have had a positive effect as

there was a decrease in state anxiety, a significant decrease on the Hyperactivity Index, and a significant enhancement in mood. Baron and Faubert (2004) concluded that, overall, there were positive psychological changes in this study in which Grade 3 students were able to identify emotion terms such as excited, happy, pleasant, at ease, comfortable, calm, relaxed quiet, nervous, sad, down, bothered, gloomy, bored, tired and sleepy.

Stueck and Gloeckner (2005) set out to examine the effectiveness of the TorweY-C program (Training of Relaxation with Elements of Yoga for Children) with Grade 5, German children. The aim of the study was to teach the participants strategies to minimize stress and to optimize their responses to high psychological demands and pressures they were faced with in their every day lives (e.g., academic performance, social status, etc.). The experimental group participated in fifteen, 60-minutes, after-school yoga sessions over one year. Each session also included a relaxation/mindfulness component (journey through the body and breathing), yoga and imagery training. The design of the study was pre-test, intervention, immediate and long-term post-test. The data were collected using standardized questionnaires developed by the researchers. Results indicated that stress was significantly reduced and the students were better able to cope with daily demands after having learned new coping techniques. Aggression, helplessness in school, physical complaints, extraversion, shyness in social contact, anxiety and feelings of defeat were all significantly reduced in the experimental condition during the intervention while scores on static balance ability, test coping abilities and emotional balance were significantly increased within groups. Stueck and Gloeckner. demonstrated that the students and their parents learned proper relaxation techniques,

which will serve different purposes. The present study is expectant to uncover similar results to further support the suitability of yoga as a method of relaxation for children (Stueck & Gloeckner; Haffner et al., 2006).

ADHD

Children who are diagnosed with attention deficit disorder (ADHD) are often described as overactive, restless, impulsive, inattentive, distractible, easily frustrated, aggressive, unpredictable, experiencing academic underachievement and low self-esteem (Dunn & Howell, 1982; Harrison et al., 2004). It is estimated that 6% of children are affected by this neuropsychiatric disorder (Teicher, Anderson, Polcari, Glod, Maas & Renshaw, 2000). A typical child experiencing ADHD is highly energetic, has poor behavior control and requires continuous attention and redirection. Self-regulating his/her own behavior is the major problem caused by the disorder (Harrison et al). Many interventions exist for children who have been diagnosed with ADHD including behavior modification, cognitive behavioral treatments and medication. Many of the later are time consuming, expensive treatments that may have negative side effects (Harrison et al.).

ADHD is often associated with other conditions such as dyslexia, developmental coordination disorder, conduct disorder and high levels of anxiety (Blomqvist, Holmberg, Lindblad, Fernell, EK & Dahllof, 2007). Blomqvist et al. explained that children who experience ADHD have more difficulty interacting, concentrating and communicating, causing them to experience higher levels of stress in certain situations. Cortisol response is usually higher in children experiencing ADHD, meaning that they may experience more stress than children who do not have ADHD, (Blomqvist et al.). Although psycho-stimulant medication has been found to improve core behaviors and cognitive features in

children experiencing ADHD, there are many long-term effects such as a danger of drug abuse and dependency (Harrison et al., 2004; Peck, Hehle, Bray & Theodore, 2005). Harrison et al. explained that parental concerns of these possible negative side effects are forcing researchers to find new alternatives to non-pharmacological treatment.

In work related to that reported here, Harrison, Manocha and Rubia (2004) studied the effects of yoga meditation on families experiencing difficulties with children diagnosed with ADHD aged 4 to 12 years (M = 8.75). The majority of the children (N = 31) were medicated while the other children were either not medicated (N = 14), or no information was provided with respect to their taking medication or not (N = 3). Parents and children participated in 6-weeks of yoga sessions for 90 minutes twice weekly. Parents were trained to teach in-home relaxation sessions twice daily. Burnett's Scale (Burnett, 1998), along with a child self-report questionnaire, a parent-rated questionnaire and examiner testing and interviews (Peabody Picture Vocabulary Test -3rd Ed., Dunn & Dunn, 1997) were the measures used. Due to parental training requirements, the children were separated into two groups. Group 1 included twenty older children (M = 10.09) and took place at the end of the summer and into the first term of school. Group 2 included twenty-seven younger children (M = 7.4) who commenced their treatment during the Easter Holidays and continued into the second term of school. The pre-test and post-test for the 26 children who provided pretest and posttest data showed an improvement in ADHD symptoms. Statistical analysis using paired sample t-test showed a significant difference between the pre and post-test for this same group, and the results were highly significant. As well, there were improvements in both the children's behaviors and self-esteem. ADHD symptoms for the participants in Group 2 remained the

same between the baseline and week one of the treatment, yet showed the same decrease as group one throughout the 6-week treatment. The children described sleeping better and having less anxiety due to their yoga practice. They also reported being able to better concentrate in school and experiencing fewer conflicts. Parents reported feeling happier, less stressed and being more capable of managing their children's behavior as a result of the intervention. This study supports the use of yoga as a family-oriented treatment to help children experiencing ADHD (Harrison et al.), but most importantly it underscored the positive findings of other work using yoga as a form of stress management with children.

The school's role

Children today are stressed and their perception of life has a direct influence on their learning process and academic performance (Napoli, 2004). Schools should play a role in helping children cope with these stressors (Napoli). As demonstrated by the above research literature, valuable time can be saved when mindfulness/relaxation classes are incorporated into the daily curriculum. Children learn to deal with their stressors, retain more information and show positive behaviors and attitudes while also maintaining on task. Napoli concluded that children's perception of life events had a direct influence on the learning process and their academic performance. If stressed, their perceptions of events sometimes can be distorted. One possible way of countering the effects of these negative experiences is through mindfulness and meditation in movement techniques that research already has shown, can easily be adapted for and taught to young children. Considering the amount of time children spend in school, the school environment is an excellent place to introduce such activities.

The Present Study

Overall, most of the research in the area has revealed that mindfulness/relaxation and yoga (as well as other forms of movement) interventions are beneficial to children's overall well being (e.g., Baron & Faubert, 2005; Napoli, 2004; Sueck & Gloeckner, 2005). Yoga has shown to be an alternative to treatment for children who are diagnosed with ADHD, and parents have reported having a better rapport with their children as a result of using yoga interventions with their children (Dunn & Howell, 1982; Harrison et al., 2004; Jensen & Kenny, 2004;).

Based on the findings of past research in the field and the need to pursue further research activity in this area with young children, the following research questions were proposed for this study:

1. Does relaxation training/mindfulness enhance feelings of well-being (eg., calmness, happiness)?
2. Does yoga training lead to enhanced feelings of well-being (eg., calmness, happiness)?
3. What vocabulary do children use when expressing their experience with yoga and mindfulness/relaxation training?
4. Do children prefer yoga, a meditation in movement intervention over more static stress management/mindfulness techniques such as progressive relaxation and imagery training?

Method

Participants

The study took place at St-Willibrord Elementary School, a low socio-economic school located in the Monteregie region of Quebec. Twenty students from a regular Grade 1 class participated in the study. The mean age of the participants was 6.9 years old (SD = 0.3). There were 14 boys (M = 6.9, SD = 0.3) and 6 girls (M = 7, SD = 0.2). There was no significant difference between boys and girls with regard to age (t = 0.09, $d.f.$ = 17, $p > 0.05$). Parental permission was acquired prior to the onset of the study (see Appendix B), and all ethical principles of APA were followed in carrying out this work.

Measures

The Multidimensional Anxiety Scale for Children (MASC) (March, 1997). The MASC was given one week prior to the beginning of the study to identify the participants' anxiety levels. The MASC is a valid and reliable self-report used with children to measure physical symptoms, harm avoidance, social anxiety, separation/panic, anxiety disorders, total anxiety index and inconsistency index (March). The short version of the MASC (MASC-10) was used for this assessment. The overall Cronbach alpha reliability of the MASC-10 scale is reported to be 0.870 for females and 0.876 for males. It is an assessment that is often used in schools, child protective services, juvenile detention centers, outpatient clinics and private practices (March). The MASC-10 includes questions such as, "The idea of going away to camp scares me", "I get nervous if I have to perform in public", and "Bad weather, the dark, heights, animals, or bugs scare me". Participants respond on a four-point scale ranging from, "never true about me" to "often true about me" and T-scores are calculated from the results. The

norm scores for the MASC-10 are interpreted as follows: "Slightly below average" ($t = < 44$), "average" ($t = 45\text{-}55$), "slightly above average" ($t = 56\text{-}60$), "above average" ($t = 61\text{-}65$), "much above average" ($t = 66\text{-}70$) and "very much above average ($t = > 70$). MASC-10 results were not known to the experimenter until the end of the study to avoid researcher bias. To ensure comprehension, individual items were read to the participants. Four resource teachers, unfamiliar with the project, assisted in the process.

Mood Inventory. Prior to every session, the participants were asked to fill out the Mood Inventory to describe how they were feeling at that time (adapted from Baron & Faubert, 2004, see Appendix D). The questionnaire examined how tense, happy, relaxed, sad and afraid the children felt. After each session, the children were again asked to fill out the Mood Inventory. The questions were read to the participants to ensure comprehension. Each item on the scale was rated from one to five with five being the most positive response. Reverse scoring was used to score the scale for the traits of feeling afraid, tense and sad where the most desired outcome (feeling less afraid, less tense and less sad) were given a score of 5.

Student Journals. Qualitative data was collected through weekly student journals and drawings. The researcher asked students to write and/or draw about their mindfulness/relaxation and yoga sessions after the second session of each week. As teacher-researcher, I probed them as a group with questions such as:

1) Did you like it? Why or why not?
2) What did you like most?
3) What did you like the least?
4) How did it make you feel?

Which I Like Best. Following the third week of the intervention, the children were each given a 'preference questionnaire' (see Appendix F) that asked them, "If you had to do only one type of activity, yoga or mindfulness/relaxation, which one would you prefer to do and why"? Results were put into an envelope to be opened by the teacher-researcher only after the intervention period.

Teacher-Researcher Journal. As teacher-researcher, I kept a journal to record my feelings about the sessions and observations that I made prior to, during and after the sessions. Observations and impressions were noted both during the sessions and immediately following each session.

Procedure

The intervention was carried out over a six-week period of time. It consisted of 12 sessions (2 per week). The MASC-10 (March, 1997) was administered one week prior to the intervention.

The sessions took place in the students' classroom. Each participant in the group had a personal sitting mat that was used for all of the yoga and mindfulness/relaxation sessions. For practical reasons, as the teacher of the class, I taught the yoga and mindfulness/relaxation sessions.

The participants received 20 minutes of mindfulness/relaxation and 10 minutes of yoga per session twice weekly for a period of 6 weeks (see Appendix C). To encourage the participants to feel calmer, the sessions began with 10 minutes of mindfulness/relaxation. This was followed by 10 minutes of yoga. More mindfulness/relaxation exercises were done to finish each session. For this study, yoga included poses such as the mountain, the tree, the cat, the woodcutter, the butterfly, the

half-moon, and the kangaroo poses (YogaKids, 2005). The mindfulness/relaxation activities included pre-taped, deep breathing exercises such as "Spaghetti Toes", "Echo Lake", "Jelly Belly" and "Flowing Stream" that Orlick (2004) developed to help children relax and be mindful while also practicing their focusing skills. The activities were designed to encourage children to concentrate on a focal point (e.g., their breathing), and to guide them through elements of mindfulness (e.g., body scans, breathing, experiencing the moment and imagery). At the end of each session, participants listened to Mimi Lupin's Old Me New Me relaxation program (Lupin, 2004), which includes audio-taped relaxation and imagery training in the form of eleven stories and two relaxation exercises. One story was read during each session (see Appendix C). Similar to Orlick's (2004) activities, these taped mindfulness/relaxation exercises encouraged the participants to focus on their breathing and guided them through body scans and other relaxation strategies such as focusing and imaging (Lupin).

Results

Plan of Analysis

The class was not large ($N = 20$), and there were twice as many boys than girls. Although students and parents were informed about the importance of the child being present for every session, there was evidence of absenteeism (e.g., one student was absent four consecutive times). This absenteeism was taken into account when calculating averages and change scores across variables by not counting it in the mean score. Means and change scores were primarily used to assess the effectiveness of the intervention. The research used content analysis procedures to uncover recurring themes in the student and teacher-researcher journals. Pearson product moment correlation coefficients

(University of the West of England, 2006) showed a range of correlation of emotional state with MASC-10 scores before and after the treatment at -0.03 to 0.26, which revealed no significant correlations between the MASC-10 and each independent variable in the Mood Inventory. Both measures were used to look at the effects of the treatment.

Effect Size

Using Hedges and Olkin's (1985) method, the effect size was calculated using the one-group pretest-posttest design to indicate the importance and extent of the intervention on each Mood Inventory variable. Interpretation was done using Cohen's (1988) approach where an effect size of .20 or greater is considered small, a moderate effect size is .50 or greater and a large effect is .80 or greater.

To find the effect size of each variable, the difference between the mean at posttest and the mean at pretest divided by the standard deviation was calculated. The effect size for each variable varied from -0.37 to 1.82. The only noteworthy effect size occurred in the feeling of relaxation ($d = 1.82$). The other variables showed no effect size.

MASC Scores by Sub-Score

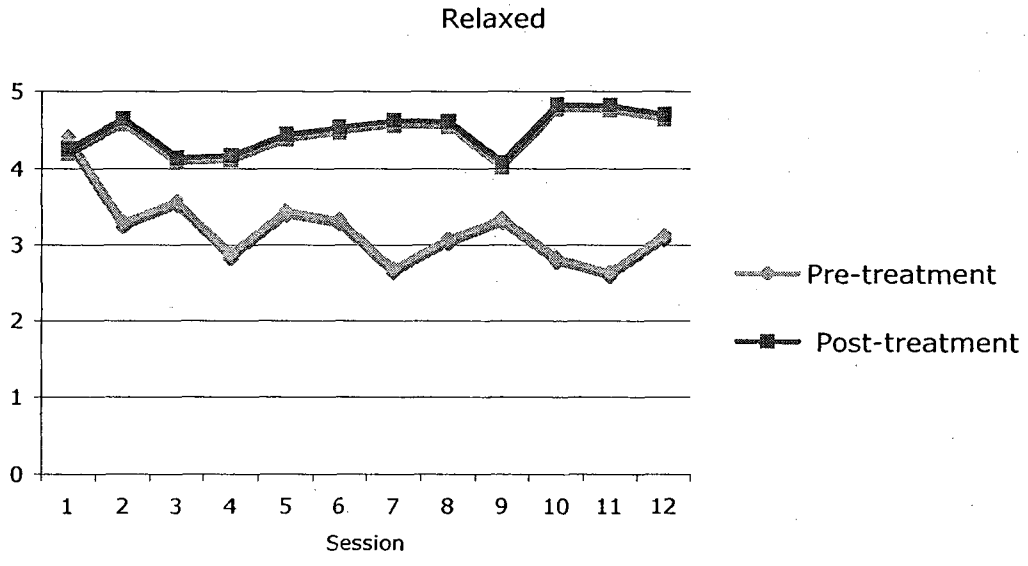
Anxiety. T-scores were calculated from the MASC-10 prior to the intervention to identify anxiety levels of all participants. At the onset of the study, the T-score results on the Multidimensional Anxiety Scale for Children (MASC-10) indicated that anxiety was "slightly above average" according to the MASC manual for both boys ($t = 57$) and girls ($t = 59.7$). Of the participants, one boy was "slightly below average" ($t = 41$), while seven boys and two girls scored "average" ($t = 45$-55). Two boys and two girls scored "slightly above average" ($t = 56$-60), while three boys and one girl scored "much above average"

(t = 66-70). Finally, two boys and one girl scored "very much above average" anxiety levels (t = > 70).

Mood Inventory

The change scores and reverse change scores were used to measure the results of each independent variable from pre- to post-intervention. Descriptive trends in the data on the Mood Inventory, comparing pre- and post-test results, revealed that almost everyone enjoyed the yoga and mindfulness/relaxation sessions.

Figure 1. Mean Change Scores for all Participants on Relaxed Sub-Measure



Inspection of mean scores in Figure 1 demonstrates that the participants expressed feeling more relaxed after each session. The most notable differences were in sessions 7, 10 and 11 (25% of sessions) where the differences in the mean scores at pre- and post-treatment were above 2.00, meaning that the participants felt much more relaxed following the session. As can be seen from Figure 1, overall, the participants expressed feeling significantly more relaxed after each session (M = 1.26, SD = 0.67) over the 6-weeks.

Table 1 (see Appendix G) shows that the change scores increased in a positive direction on this factor in 92 % of the sessions. Week 1, session 1 was the only session after which the students reported feeling less relaxed.

Figure 2 Mean Change Scores for all Participants on Afraid Sub-Measure

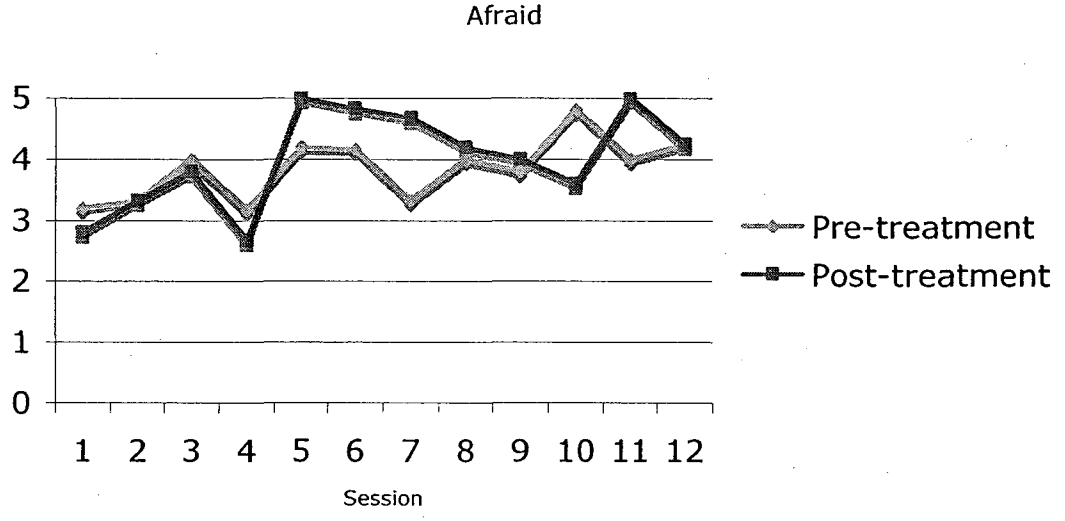
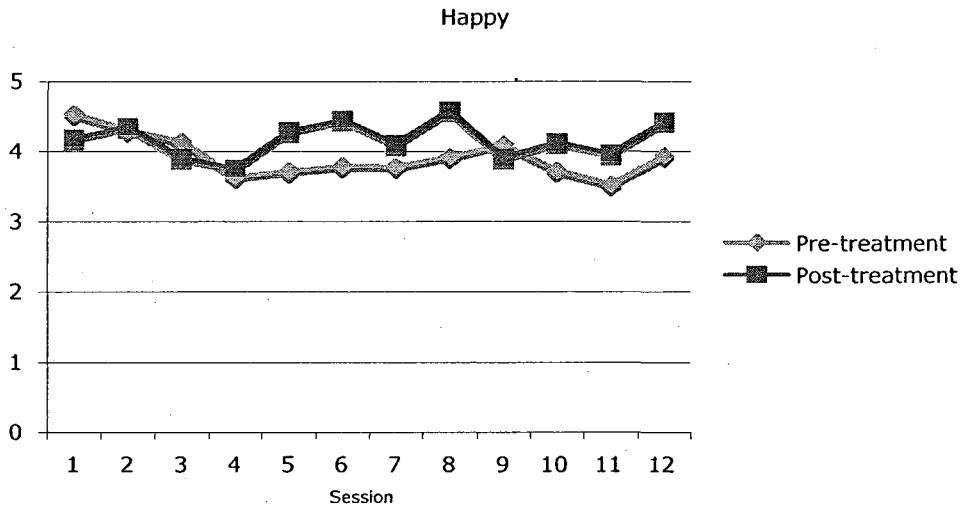


Figure 2 shows the mean scores for feeling afraid. In 67% of instances, the participants reported feeling less afraid at post-intervention for most of the sessions ($M = .0.16$, $SD = 0.71$). They reported feeling more afraid after the intervention in sessions 1, 3, 4 and 10. The trend in scores is mixed from sessions 10 and 11 while the scores in the last session were equivalent.

The mean change scores can also be seen in Table 2 (see Appendix G). The most significant decrease in scores for the feeling of afraid was in week 5, session 2 (-1.20) while the most significant increase was in week 3, session 1 (0.80). Overall, the change score increased very slightly over the sessions (0.16) showing that the children felt slightly less afraid at post-intervention

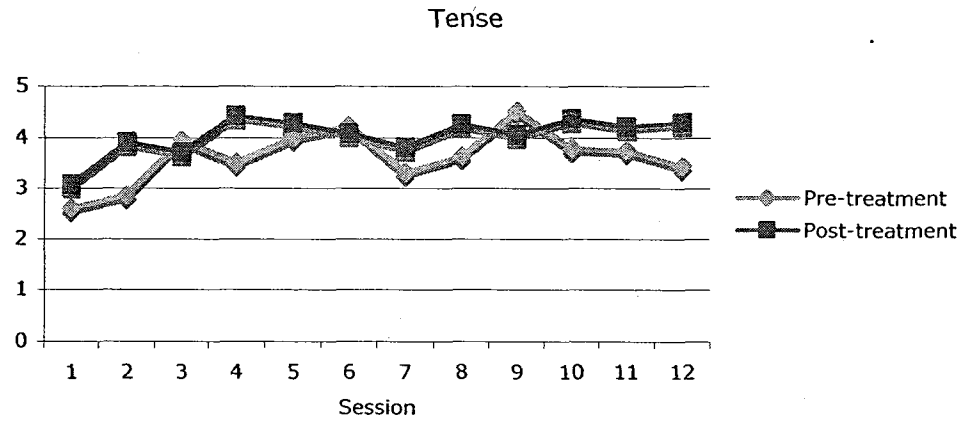
Figure 3. Mean Change Scores for all Participants on Happy Sub-Measure



In 75 % of instances, the participants reported feeling happier after the session than they had felt prior to it. The change scores in Figure 3 reveal that on three occasions, the students reported feeling less happy after the session than they felt before. Overall, the participants expressed feeling hardly happier ($M = 0.24$, $SD = 0.36$) over the 6-weeks.

Table 3 (see Appendix G) delineates more fully the level of change scores for feelings of happiness prior to and after each session. The change score for week 1, session 1 and week 2, session 1 decreased slightly, showing that the students might have been a little unhappier at the beginning of the intervention. The greatest increase in change scores was observed in week 3, session 2 (0.66) and in week 4, session 2 (0.66). Overall, the change score only increased very slightly in the predicted direction.

Figure 4. Mean Change Scores for all Participants on Tense Sub-Measure



In Figure 4, one can see that the participants reported feeling slightly less tense after the yoga and mindfulness/relaxation sessions. In 83 % of sessions the participants expressed feeling less tense post-intervention. However, overall, the mean intervention change score only shows a slight positive trend on this factor.

Table 4 (see Appendix G) also delineates in more detail the scores for feeling tense. The greatest increase in change scores was in week 1, session 2 (1.04) while the greatest decrease was in week 5, session 1 (-0.47). Overall, the mean change scores for feeling tense increased a modicum ($M = 0.40$, $SD = 0.48$).

Figure 5. Mean Change Scores for all Participants on Sad Sub-Measure

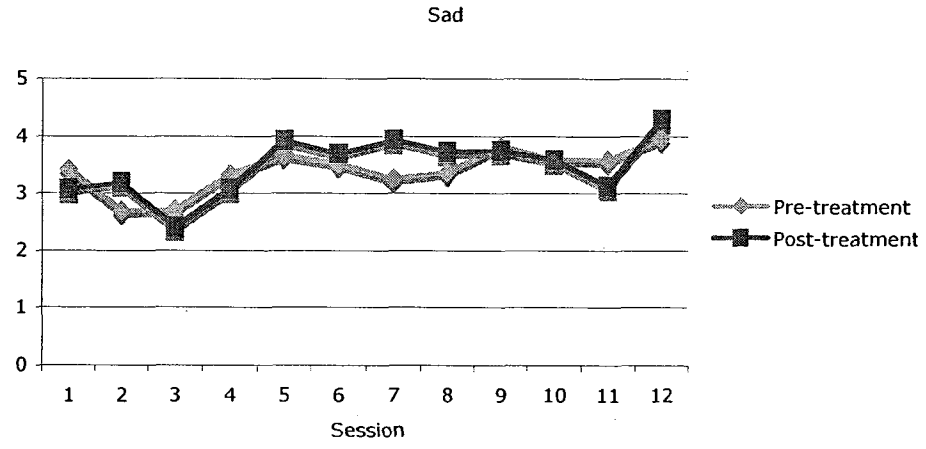


Figure 5 demonstrates that the students felt slightly less sad after the intervention in 67 % of the sessions. However, overall, the mean intervention change score barely showed an improvement in the feeling of sad ($M = 0.07$, $SD = 0.36$).

As can also be seen in Table 5 (see Appendix G), overall mean pre-test change scores for feeling sad before the session (3.41) were slightly lower than those at post-test overall (3.48) showing very little effect of the intervention.

When comparing pre-test mean scores to post-test mean scores in Table 6 (see Appendix G), it can be seen that the desired effect in mean change scores took place in the four of the five mood variables. "Happy" was the only variable that indicated that students reported feeling slightly less happy at post-test where the mean decrease was 0.06. The largest difference in mean change scores was evident in feeling tense where the mean increased by 1.88 overall across the intervention showing that the children reported feeling less tense at post-intervention.

An independent sample test revealed no significant differences between boys and girls over the 6-week period except for the "happy" variable where girls reported feeling happier than boys ($F = 0.02$).

Table 7 presents a correlation table of the Mood Inventory variables. Pearson product moment correlation coefficients (University of the West of England, 2006) revealed that children feeling more relaxed were significantly happier ($r = 0.48$, $p < 0.05$), children feeling more relaxed and happier reported feeling significantly less tense ($r = -0.70$ and $r = 0.50$ respectively) and children feeling more tense reported feeling more sad ($r = 0.49$, $p < 0.05$).

Student Journals

A content analysis was done where the most common categories were reported. The broadest categories were found (eg., poses and activities) and subcategories were then formed using the most frequently used words under each category. Table 8 (to follow) provides the breakdown by theme and percentage of students.

Table 8

Content Analysis of Student Journals

Yoga				Mindfulness/Relaxation	
Theme	Male	Female	Theme	Male	Female
Yoga	93%	83%	Mindfulness/Relaxation	57%	100%
Dog	50%	33%	A New Person	18%	82%
Moon	36%	33%	Spaghetti Toes	57%	83%
Tree	29%	33%			

As seen in Table 9 (see Appendix G), 83% of males expressed positive feelings towards the yoga and mindfulness/relaxation sessions during weekly journal writing while 66 % of the females shared these same feelings. Thirty-six percent of the males expressed feelings of calmness while 83% of the females reported feelings of calmness.

Yoga postures were mentioned more often than the mindfulness/relaxation (93% boys and 83% of girls). The term "mindfulness" was only mentioned by 17% of the females and not mentioned at all by the males. Both groups mentioned all postures with the yoga postures mentioned the most by both sexes. Fifty-seven percent of males mentioned spaghetti toes while 83% of the females did. Fifty percent of the males

mentioned the dog, 36% mentioned the moon and 29% mentioned the tree. Thirty-three percent of females mentioned each of these three poses.

Both boys and girls used mindfulness/relaxation vocabulary the same number of times (15%). Boys used relaxation terms most often while girls more frequently described themselves in terms representing their being a new person. Spaghetti toes was the most popular mindfulness/relaxation exercise that was enjoyed by both sexes and was mentioned by 40 % of the students.

What I Liked Best

At the mid-point in the intervention, the children were asked which activities they enjoyed the most -- yoga or mindfulness/relaxation. Eighteen of the children (90%) answered yoga while only two 2 (10%) said mindfulness/relaxation. The 2 students who answered mindfulness/relaxation were boys. The students answered the questionnaire and no explanation was required.

Teacher-Researcher Journal

The teacher-researcher kept a journal of observations and mentioned feelings and ideas by her. Trends are evident in the content analysis of the teacher journal as seen in Table 10 (to follow).

Table 10

Content Analysis of the Teacher-Researcher Journal Over the Intervention

Positive comments	Times used	Negative comments	Times used
Calm	8	Agitated	6
Enjoy	6	Fooling around	5
Poses	4	Chatty	3
Comfortable	3	Giggling	3
Did well	14	Upset	1
Focused	1	Did not cooperate	8
Total	36	Total	26

Similar to findings evinced from the students' journals, the teacher-researcher described the initial phases of the intervention with more negative meaning words. Over the course of the treatment, however, the content analysis uncovered more positive meanings and experiences of the children's involvement (e.g., from sessions 5 to 12). Overall, there was a larger percentage of positive descriptors (58%) over negative ones (42%).

Discussion

The intent of this study was to investigate the benefits of integrating a yoga and mindfulness/relaxation intervention into a Grade 1 classroom. The findings suggest that although the children enjoyed the intervention, their mood and well-being barely improved over the 6-week intervention. These findings support the Zaichowsky and

Zaichowsky (1984) study where state and trait anxiety were not improved during a 6-week intervention.

Due to the variability in the MASC-10 scores across all children, it is clear that individual children may have different needs, and this must be taken into account when doing research, interpreting results, and designing interventions. Despite the small sample size, the unevenness in scores on the MASC-10 indicates that individual levels of anxiety may be a factor that teachers should consider as related to children's learning styles and ability to cope in the classroom.

Overall, the Mood Inventory results, albeit extremely small, show a slight trend in the proposed direction following the intervention. Interestingly, however, despite the more quantitative results on the Mood Inventory, the journal entries are indicative of children who both enjoy and feel they benefit from the sessions (e.g., more relaxed and less stressed). For example, one boy mentions the following, "It was good and tiring. It was good for my heart and I love yoga". Another student writes, "yoga and mindfulness/relaxation makes me feel tired and relaxed. It makes me sleep. Spaghetti toes makes me feel warm and soft like soft spaghetti". The teacher-researcher also perceives the students' enjoyment of the intervention (eg., ". . . a little frustrating at first, but observing improvements and benefits by the end").

Effect Size

Finding the effect size is an important analysis as it helps identify the magnitude of the treatment effect (Lipsey & Wilson, 1993). For this study, the only effect size worth reporting is for the feeling of relaxation where the same variable is the only one to show significant improvements on the Mood Inventory.

Caution in interpreting the data is advised, as there is no control group for this study. There is a wide array of techniques available to measure the effect size, which can provide different results. For this reason, caution is advised.

MASC-10 Scores by Sub Score

Approximately half the students scored above average in anxiety levels while the other half scored average or slightly below average. Although there are no correlations between these results and the Mood Inventory scores, there are some moderate trends that indicate that the more anxious participants benefited from the intervention. For example, one of the children who scored "slightly above average" on the MASC-10 ($t = 60$) describes how positively she felt during yoga. She mentions, "Yoga makes me feel happy and stronger. Yoga makes me feel myself and I get to do the half moon and the butterfly." Although there is no mention of mindfulness/relaxation in her journals, vocabulary such as "a new and better person" and "I believe in myself" used throughout the journal entries, demonstrates that she seemed to gain a better sense of self through the exercises. Another child who scored "much above average" on the MASC-10 ($t = 69$) mentioned the following: "Yoga makes me feel happy and relaxed. Yoga is the best."

Although the children's scores on the MASC-10 vary, the qualitative data shows that children across the MASC-10 spectrum enjoyed the sessions and saw the benefits of practicing yoga and mindfulness/relaxation.

Mood Inventory

The results on the Mood Inventory improved minimally. The children, both boys and girls, report feeling significantly more relaxed after the training. Girls reported

feeling significantly happier while the boys felt slightly happier. There was limited improvement in the feelings of afraid, tense and sad after the 6-week intervention.

The students report feeling significantly more relaxed (1.26) and slightly happier (0.24) after the 6-week intervention. Throughout the 12 sessions, the students reported feeling more relaxed at every post-session than they did at pre-session following the first one. For the feeling of happiness, only during sessions 1, 3 and 4 did they report feeling unhappy at post-session, but there is no clear indication as to why they felt this way. The results of this intervention slightly support Stefanello (2001) and Orlick's (2004) idea of children learning coping methods from adults to deal with stress and stressful events more effectively. Learning to breathe properly and live in the moment allows the students to deal with their difficulties while feeling more relaxed.

There is only a modicum of change for the feelings of tense (0.40), afraid (0.16) and sad (0.07) on the Mood Inventory from pre to post intervention. The results are unstable throughout the 12 sessions for the feelings of afraid, tense and sad. There could be a number of reasons for the instability of these results on this factor throughout the intervention. One reason could be the various levels of internal and external circumstances surrounding the individual at different points in time. This is simply a speculation and to make definite claims, more research on this topic would need to be pursued. The students report feeling more tense on three occasions during sessions 3, 6 and 9. The change score results for the feeling of sadness vary during the intervention. Overall, the children barely report feeling less sad after the intervention albeit the results are unstable throughout. One explanation for the unstable results can be explained by King and Sawyer (1998), when they describe mindfulness as the ability to experience the

present while focusing on thoughts, emotions and sensations. Perhaps being mindful brought out these feelings of sadness. Another explanation for the insignificant changes could be due to a ceiling effect where there is little room for improvement in feelings of well-being for children of this age.

Student Journals

The frequency count for the student journals shows that the students generally enjoyed the sessions and saw the benefits of doing them. The students most often mention that the sessions make them feel relaxed and make them a better person (see Appendix G) . This confirms Orlick's suggestion (2004) that children who are mindful and who have positive mental skills spend more time working towards their goals and waste less time and energy worrying and being stressed. Singh, Wahler, Adkins and Myers (2002) explain it best when they mention that one is in the state of mindfulness when they are able to pay attention better and experience feelings and sensations that would otherwise have been ignored.

Words such as fun, enjoy, great, good and happy are used by the participants to express affirmative feelings towards yoga and mindfulness/relaxation. For example, when writing in his journal, a participant said, "Yoga and mindfulness/relaxation makes me feel good and happy and relaxed and excited. I get to concentrate." Another participant wrote, "Yoga and mindfulness/relaxation is fun. I love yoga." One student mentioned, "yoga and mindfulness/relaxation is fun for everyone."

Calm, sleepy, tired and relaxed are the words most often used to express the students' sense of calmness during the sessions. To explain how he felt, a participant wrote the following in his journal, "Yoga and mindfulness/relaxation makes me feel

sleepy. Spaghetti toes makes me feel soft and warm like spaghetti." Another participant expressed the same feelings of calmness: "During yoga and mindfulness/relaxation, I feel relaxed and it makes me feel like a new person. It made me feel sleepy and it made me calm. It made me tired but now I am not tired anymore."

One particular child, average on anxiety ($t = 54$ on the MASC-10) was observed as fully participating in all sessions. During the mindfulness/relaxation sessions, she barely moved and it was clear that she was following the instructions. She also put much effort into her yoga and pulled herself away from the crowd to be alone when lying next to disruptive students. According to the teacher-researcher's logs, this girl took the sessions very seriously, and did not contribute to any giggling or chatting at any time. Every entry in her journal mentions the positive effects that the sessions had on her. Through her journal writing, it is clear that she understands the varying impact of yoga and mindfulness/relaxation on her. She states, "Yoga makes me feel tired and relaxation makes me feel tired and later in the day I feel excited. Spaghetti toes makes me feel soft and warm like spaghetti. Yoga made me feel good and mindfulness made me feel like a new person."

One participant ($t = 60$ on MASC-10) experienced difficulties cooperating and focusing during the sessions. Despite her negative classroom behavior, she expresses in every journal entry that she enjoyed the intervention and thought it is important to do yoga and mindfulness/relaxation in class. She says, "Yoga is relaxing because it makes me feel like a better person in my life. I believe in myself. I do the half moon, the butterfly and spaghetti toes. It is good because you can do relaxation with your teacher and your whole family". Feelings of this nature are indicative of the benefits of

interventions similar to that used in this study for children having special needs (Peck, Bray & Theodore, 2005; Singh, Wahler, Adkins & Myers, 2003).

One boy giggled during the sessions. He was average on anxiety on the MASC. During the first three sessions, he mentions in his journal that he enjoys the activities, but finds them "funny". By the end of the second week, his log entries indicate that he had become more positive and aware of some of the qualities of the activities and the impact they have on him (e.g., "I like to do yoga. It feels good. I like to do the kangaroo and the tree"). This is positive. It also seems evident from his journal entries that he is aware of his "silly" behaviour and sometimes gives explanations for it, "Yoga was funny but I don't know why. I laughed because it is funny."

The students generally enjoy the sessions as evinced by their journal entries. Although some of the students initially find it difficult (e.g., a child mentions, "It is hard and it makes me feel bored." and another said, "I like it but it makes me laugh because it is funny."), it would appear from their log entries that they are aware of the positive effects the intervention has on them. Their narratives are indicative of their taking the sessions more seriously over time as mentioned above (e.g., I like to do yoga because it is the best thing I ever had in the class. It helps me be happy"). From the content analysis of the student logs, it appears that anxiety levels, as measured by the MASC-10 do not correspond with the more positive attitudes that the children have about the intervention.

The comments made by the students in their journals support much of the previous research where children take pleasure and have the desire and ease in learning yoga and mindfulness/relaxation strategies (Kiselica et al., 1994;; Redfering & Bowman, 1981; Semple et al., 2005).

A mixed-method was used in this study to better assess the efficacy of the 6-week intervention. The quantitative data provided a better understanding of the Mood Inventory results while the qualitative data provided a more detailed assessment of the student and teacher-researcher journals. A research study integrating different methods is most likely to produce better results (Driscoll, Appiah-Yeboah, Salib & Douglas, 2007)

What I Liked Best

In comparing yoga and mindfulness/relaxation activities, 18 of the twenty students report enjoying yoga more while only 2 students mention getting pleasure from the mindfulness/relaxation exercises. One possible explanation for the children enjoying yoga over mindfulness/relaxation is the teacher-researcher's use of vocabulary throughout the intervention. She tended to focus on the yoga more in her discussions with the children, possibly creating a bias. Another potential bias may have been the fact that the journals were labeled "Yoga Journal". Additionally, when children mentioned having yoga sessions, the teacher-researcher did not correct them by saying that they were experiencing both yoga and mindfulness/relaxation sessions. In future work, a teacher-researcher must be very cautious about their choice of words.

Teacher-researcher Journal

Many of the observations made by the teacher-researcher are subjective and make it difficult to interpret behaviours. Caution is advised when interpreting them.

In her journal, the teacher-researcher more frequently uses positive comments to describe the yoga and mindfulness/relaxation sessions and the behaviour of the children. Negative comments are more evident at the beginning of the intervention as the children adjust to a novel activity. In one journal entry, the teacher-researcher writes, "When

doing mindfulness, the students were very cooperative and didn't talk at all. I was very impressed. When doing the yoga, the students were chattier, but their talk was all about their poses. One student mentioned that he had taught the tree, the chick and the dog to his parents while another said that he has also shown those poses to his parents and his brothers, and they were practicing them at home. I let them talk for about one minute, and then asked them to focus on their poses". The fact that the children mention initiating yoga at home is indeed another sign that they enjoy the movements underscoring the fact that young children can participate in more nontraditional activities like yoga exercises. As previously pointed out, most of the teacher-researcher's negative journal entries occurred at the beginning of the intervention (e.g., "During the whole session, two participants did not follow directions. They were constantly moving during the mindfulness/relaxation session and were fooling around during the yoga.").

Most of the teacher-researcher's frustrations occurred in the first week of the intervention when the students were getting used to this novel addition to their daily routine. "Wobbly", "agitated" and "fooling around" are mentioned in the teacher-researcher's log in the first week, but are not mentioned again. The teacher-researcher also describes the children as being disruptive during the first few sessions. The positive feelings were well distributed over the weeks but were mentioned most often towards the end of the intervention. Two children in particular showed difficulty adapting to the yoga and mindfulness/relaxation sessions. During five sessions the teacher-researcher reports that one student was "distracted", "agitated" and "not cooperative". These behaviours continued until the end of the intervention with no noteworthy improvements. Ten of the 26 negative instances mentioned by the teacher-researcher in her log involve one

particular child who was known to send mixed signals. This particular child, as mentioned previously, scored slightly above average on the MASC-10 ($t = 60$). Although she does not cooperate during the sessions and is very agitated, she is the participant who shows the most interest for yoga and mindfulness/relaxation outside of the sessions. As previously mentioned, her journals are very descriptive and show a strong sense of appreciation for the sessions.

During the second week of the intervention, the teacher-researcher mentions, "During today's session, 2 participants did not follow directions. They were constantly moving during the mindfulness/relaxation session and fooling around during the yoga". These happen to be two particular students who are very distractible in class, and who are not usually able to focus for long periods of time. One scored "much above average" on the MASC-10 while the other fell into the "average" range.

During the last week of the intervention, the teacher-researcher notices that most students are doing well, but again, 10% of students continue to chat and not pay attention. She mentions in her log, "Although most of the children did well and followed directions, they continued to chat and wiggle during the whole session. One child's behaviour was out of the ordinary as he was not able to focus and stay calm. I had to pat him on the shoulder a few times to get his attention back on the session".

Limitations

The present research project used the MASC-10 at pre-test only, but the findings could have been more strongly supported had it also been done at post-test to compare anxiety level differences. The MASC-10 is an instrument that can be used more

frequently with children to determine their anxiety levels and this research study should have taken this into consideration.

A further limitation of this study is the teacher-researcher's inadvertent use of words that may have influenced the children's responses regarding both their choice of yoga over mindfulness/relaxation exercises as well as the themes of their journals. As previously mentioned, using the title "Yoga Logbook" on the cover of the children's journals may have also influenced the findings. Furthermore, two of the participants lost a grandparent during the intervention, which may have moderated their feelings about the activities. This is hard to predict, however, as it was not examined fully. One of two the children left for England for a week to attend a funeral, and mentioned upon his return that he was upset. When looking at his mood inventory results, one can see that his mood does not change very much except for the session immediately following his return from England. He reports feeling less happy after that session. In fact, the mindfulness/relaxation activities may have precipitated his focusing more inward during a difficult period of time for him.

Having the classroom teacher as the researcher and classroom instructor may have created a bias that should be avoided in controlled quantitative research. The preferred way of doing evidence-based research of this nature is to have someone totally 'blind' as to the goals of the study as the instructor. As well, the small sample size may have had an impact on the findings albeit the more qualitative narratives are still revealing. There also should be more balance by gender to reveal any differences between boys and girls.

Future Research

Given today's quick pace of life and the different roles children play in it, as well as the number of children exhibiting stress-induced symptoms, further research with adequate sample sizes, reliable and valid instruments, as well as the inclusion of other variables is needed to truly discover the benefits of using yoga and mindfulness/relaxation as well as other alternative physical and stress management activities in their daily routines. Following more of a bio-ecological model, similar to that of Carson et al. (2001), would provide a more robust look at the impact of similar interventions on different cohorts of children. Additionally, there is very little research on yoga and mindfulness/relaxation as part of the school curriculum, and yet, there is a definite call for the inclusion of such stress reducing activities in the classroom (Quebec Education Plan, 2001).

Educational Implications

With caution, the results of the present study evoke some useful suggestions for implementing yoga and mindfulness/relaxation in the elementary school classrooms. First, it is recommended that yoga and mindfulness/relaxation be incorporated in the daily routine and be done regularly with the homeroom teacher. Second, it is important to teach the techniques to children and to provide them with adequate time for repeated practice before moving on to different routines and activities. That being said, changing the yoga and mindfulness/relaxation exercise can also be motivational. As mentioned by Lohaus and Klein-Hessling (2003), children can become bored and lose motivation when repeating the same thing over a long period of time. It is important to listen to the children's feedback in order to identify their needs as well as assist them in mastering the

techniques while also maintaining their interest. For example, if one sees that the children are not focused during the sessions, and they mention that they are not enjoying themselves, the teacher must step forward and make a decision to change the session routine or identify what the children are doing wrong. Third, involving parents and guardians can also help put yoga and mindfulness/relaxation into practice. Some children in the present study mention teaching their parents yoga. This is definitely a positive consequence of the intervention, which speaks of the possibility of more adult involvement as both an instructional and motivational strategy. For example, Harrison et al. (2004) involved parents in a yoga intervention with children suffering from ADHD, and found that the children benefited from the treatment. The also reported positive outcomes. In a more recent and related piece of work was carried out by Eyberg and Graham-Pole (2005), mindfulness/relaxation training was given to parents as part of behaviour training for parents (BTP). They found that the parent-child relationship positively changed. Finally, the teacher's role must also be an active one. By participating in the sessions and listening to the students' feedback, s/he must show interest and appropriately guide the students to allow them to fully develop their skills for yoga and mindfulness/relaxation. Adapting the curriculum to allow this to happen might be required from the teacher.

Conclusion

The qualitative and some of the quantitative findings indicate that students at a Grade 1 level can both perform and enjoy yoga and mindfulness/relaxation exercises while benefiting from them. This is an important discovery as more alternative programming is introduced into today's curriculum. From the results of the more

qualitative student narrative and teacher-researcher's logbook, it would appear that yoga and mindfulness/relaxation has the potential of helping young children feel more relaxed, less afraid, less tense, less sad and more happy. In their journal entries, they often incorporated the "language" used in the sessions, demonstrating that they were learning both how to perform the exercises as well as acquiring knowledge about the interventions. This is a positive sign. More in depth examination with well-controlled designs and valid instruments as well as the use of mixed methodology could possibly lend further support to limited results of this work.

Finally, knowing that there are benefits to doing yoga and mindfulness/relaxation in classrooms, teachers and educators could find ways of including these more alternative activities into their curriculum. For example, the Quebec Education Plan (Quebec Education Plan, 2001) embraces physical activity, health and well-being, including the implementation of stress management exercises for young children. Teaching children to be more aware of their bodies, emotions and surroundings, as was done in this particular study, is a step in the right direction.

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Appendix A

Letter to Parents

Dear parents/guardians,

Many of you might know me as Mme. Cruchon, the Grade 1 French teacher. This letter is to explain to you that besides being a teacher in your child's school, I am also working on completing a Master of Arts degree in Child Study from Concordia University under the supervision of Dr. Lois Baron.

The project that I am doing will include the students from the senior learning center at St. Willibrord. With parental consent, students from the grade 1 class (101) will be involved in a program that includes yoga and or relaxation techniques. Research in this field is showing that the latter improve students' learning by teaching children important skills like concentration and attention.

This research project has been approved by the ethics committee in the Department of Education, Concordia University. Please know that no risk or harm will come to your child by participating in this study. If the child feels uncomfortable with the intervention at any time during the 6 week study, s/he has the option to withdraw.

Once the study is complete and the report is written, I will share the results with you at a session at the school.

Thank you for taking the time to read this letter and for allowing your child to participate in this study.

The consent form is attached. I would appreciate your filling it in as soon as possible.

Thank you in advance.

Yours truly,

Melissa Cruchon
M.A. Candidate
Department of Education
Concordia University

Appendix B

Informed Consent Form

Researcher: Melissa Cruchon

Email: mcruchon@csnewfrontiers.qc.ca

Thank you for allowing your child to participate in this study, which will take place from April 2007 to June 2007. This form outlines the objectives of the study and provides a description of your child's involvement and rights as a participant.

The purposes of this study are:
1. To gain insight and experience on the effects of relaxation and yoga training on student's anxiety levels.
2. To fulfill the requirements of an M.A. thesis in Child Studies, Department of Education at Concordia University.

As a parent or guardian, you are encouraged to ask questions at any time about the nature of the study and the methods that are being used. Your suggestions and concerns are important, and I ask you to please contact me at the email above. I will use the information from the study to write a thesis and share with the New Frontiers School Board administration.

I guarantee that the following conditions will be met:

1) The child's name will never be used at any point during data collection or in the written case report. All information is anonymous and confidential.
2) Your child's participation in this research is voluntary; your child has the right to withdraw at any point of the study, for any reason, and without prejudice, and the information collected and records and reports written will be turned over to you.

Do you allow your child to participate in the "Integration of mindfulness and yoga in the classroom" study?

Yes_____ No_____
I agree to the terms as outlined above. I feel that I adequately have been explained the goals and methods of the study.

Parent or guardian_____

Date _____

Child's Name: _____

Appendix C

Multidimensional Anxiety Scale for Children-10

MASC–10: Multidimensional Anxiety Scale for Children–10 Item

by John March, M.D., M.P.H.

Client ID:_____ **Age:**_____ **Sex:** Male Female
(Circle One)

Date:____/____/____ **School Grade:**_____
Month Day Year

This questionnaire asks you how you have been thinking, feeling, or acting recently. For each item, please circle the number that shows how often the statement is true for you. If a sentence is true about you a lot of the time, circle 3. If it is true about you some of the time, circle 2. If it is true about you once in a while, circle 1. If a sentence is not ever true about you, circle 0. Remember, there are no right or wrong answers, just answer how you have been feeling recently.

Here are two examples to show you how to complete the questionnaire. In Example A, if you were hardly ever scared of dogs, you would circle 1, meaning that the statement is rarely true about you. In Example B, if thunderstorms sometimes upset you, you would circle 2, meaning that the statement is sometimes true about you.

	never true about me	rarely true about me	sometimes true about me	often true about me
Example A I'm scared of dogs	0	(1)	2	3
Example B Thunderstorms upset me	0	1	(2)	3

Now try these items yourself.

1. The idea of going away to camp scares me	0	1	2	3
2. I'm afraid that other kids will make fun of me	0	1	2	3
3. I try to stay near my mom or dad	0	1	2	3
4. I get dizzy or faint feelings	0	1	2	3
5. I feel restless and on edge	0	1	2	3
6. I feel sick to my stomach	0	1	2	3
7. I get nervous if I have to perform in public	0	1	2	3
8. Bad weather, the dark, heights, animals, or bugs scare me	0	1	2	3
9. I check to make sure things are safe	0	1	2	3
10. I feel shy	0	1	2	3

Appendix D

Schedule

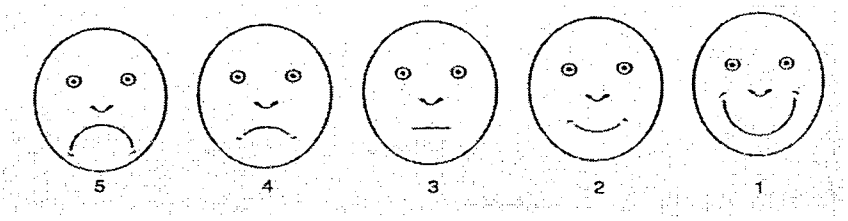
Week 1	Mindfulness/Relaxation Spaghetti Toes (12 mins.) The Tree (3 mins.) Bum Balancing (3 mins.) Half Moon Standing (3 mins.) Mindfulness/Relaxation Slow Relax (10 mins.) Total: 31 minutes	Mindfulness/Relaxation Echo Lake (10 mins.) Yoga The Chandelier (3 mins.) The Wood Cutter (3 mins.) The Moon (3 mins.) The Kangaroo (3 mins.) Mindfulness/Relaxation Trip to the Beach (11 mins.) Total: 33 minutes
Week 2	Mindfulness/Relaxation Flowing Stream (10 mins.) Yoga The Triangle (3 mins.) The 2 Angle Posture (3 mins.) The Dog (3 mins.) Mindfulness/Relaxation Old Me New Me (17 mins.) Total: 36 minutes	Mindfulness/Relaxation Spaghetti Toes (12 mins.) Yoga The Tree (3 mins.) Bum Balancing (3 mins.) Half Moon Standing (3 mins.) Mindfulness/Relaxation Walk in the Woods (12 mins.) Total: 33 minutes
Week 3	Mindfulness/Relaxation Echo Lake (10 mins.) Yoga The Chandelier (3 mins.) The Wood Cutter (3 mins.) The Moon (3 mins.) The Kangaroo (3 mins.) Mindfulness/Relaxation Trip to the Mountains (13 mins.) Total: 35 minutes	Mindfulness/Relaxation Flowing Stream (10 mins.) Yoga The Triangle (3 mins.) The 2 Angle Posture (3 mins.) The Dog (3 mins.) Mindfulness/Relaxation Yes I Can (15 mins.) Total: 34 minutes
Week 4	Mindfulness/Relaxation Spaghetti Toes (12 mins.) Yoga The Tree (3 mins.) Bum Balancing (3 mins.) Half Moon Standing (3 mins.) Mindfulness/Relaxation Trip to a Star (13 mins.) Total: 34 minutes	Mindfulness/Relaxation Echo Lake (10 mins.) Yoga The Chandelier (3 mins.) The Wood Cutter (3 mins.) The Moon (3 mins.) The Kangaroo (3 mins.) Mindfulness/Relaxation Secret Place (14 mins.) Total: 36 minutes
Week 5	Mindfulness/Relaxation Flowing Stream (10 mins.) Yoga The Triangle (3 mins.) The 2 Angle Posture (3 mins.)	Mindfulness/Relaxation Spaghetti Toes (12 mins.) Yoga The Tree (3 mins.) Bum Balancing (3 mins.)

	The Dog (3 mins.) Mindfulness/Relaxation Robin and the Magic Kingdom (18 mins.) Total: 37 minutes	Half Moon Standing (3 mins.) Mindfulness/Relaxation Robin Returns (16 mins.) Total: 37 minutes
Week 6	Mindfulness/Relaxation Echo Lake (10 mins.) Yoga The Chandelier (3 mins.) The Wood Cutter (3 mins.) The Moon (3 mins.) The Kangaroo (3 mins.) Mindfulness/Relaxation Magic Mountain Part 1 (16 mins.) Total: 38 minutes	Mindfulness/Relaxation Flowing Stream (10 mins.) Yoga The Triangle (3 mins.) The 2 Angle Posture (3 mins.) The Dog (3 mins.) Mindfulness/Relaxation Magic Mountain Part 2 (11 mins.) Total: 30 minutes

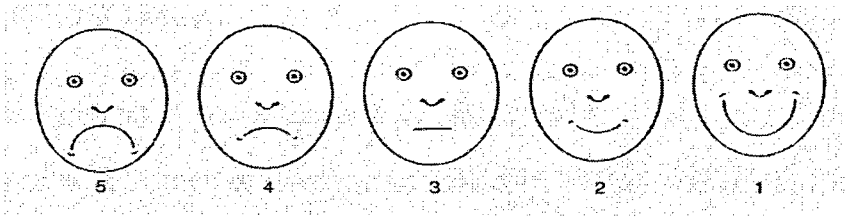
Appendix E

Mood Questionnaire

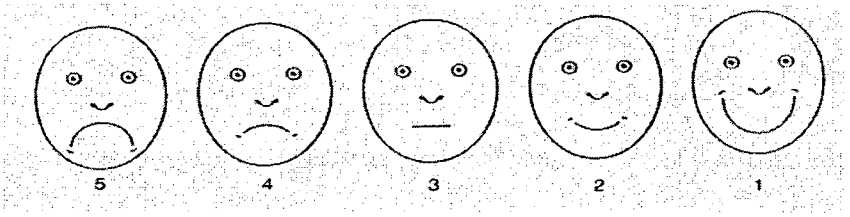
1. I feel relaxed.



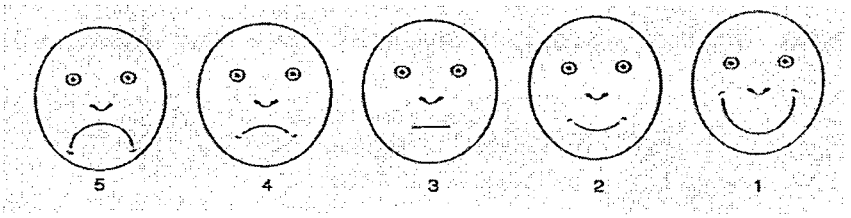
2. I feel afraid.



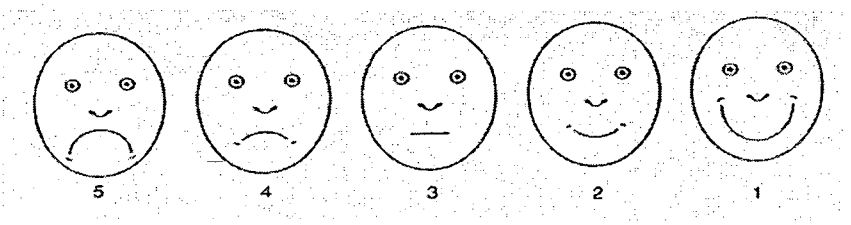
3. I feel happy.



4. I feel tense.



5. I feel sad.



Appendix F

What I Liked Best

What I Liked Best

Name: _____

Which activity do you like most?

1) Mindfulness/relaxation
2) Yoga

Tell me why:

_____

_____

_____

_____

Appendix G

Tables

Table 1

Mood Inventory: Mean Change Scores for all Participants on Relaxed Sub-measure

Sessions	Pre-treatment	Post-treatment	Change Scores
Week 1, Session 1	4.42	4.25	-0.17
Week 1, Session 2	3.3	4.64	1.34
Week 2, Session 1	3.58	4.14	0.56
Week 2, Session 2	2.88	4.17	1.29
Week 3, Session 1	3.45	4.44	0.99
Week 3, Session 2	3.33	4.53	1.20
Week 4, Session 1	2.69	4.62	1.93
Week 4, Session 2	3.08	4.61	1.53
Week 5, Session 1	3.35	4.08	0.73
Week 5, session 2	2.83	4.83	2.00
Week 6, Session 1	2.64	4.82	2.18
Week 6, Session 2	3.13	4.7	1.57
Overall Mean	3.22	4.49	1.26

Table 2

Mood Inventory: Mean Change Scores for all Participants on Afraid Sub-measure

	Pre-treatment	Post-treatment	Mean Change Scores
Week 1, Session 1	3.20	2.80	-0.40
Week 1, Session 2	3.33	3.33	0.00
Week 2, Session 1	4.00	3.80	-0.20
Week 2, Session 2	3.17	2.67	-0.50
Week 3, Session 1	4.20	5.00	0.80
Week 3, Session 2	4.17	4.83	0.67
Week 4, Session 1	3.33	4.67	1.33
Week 4, Session 2	4.00	4.20	0.20
Week 5, Session 1	3.80	4.00	0.20
Week 5, session 2	4.80	3.60	-1.20
Week 6, Session 1	4.00	5.00	1.00
Week 6, Session 2	4.25	4.25	0.00
Overall Mean	3.85	4.01	0.16

Table 3

Mood Inventory: Mean Change Scores for all Participants on Happy Sub-measure

	Pre-treatment	Post-treatment	Change Scores
Week 1, Session 1	4.53	4.18	-0.35
Week 1, Session 2	4.3	4.35	0.05
Week 2, Session 1	4.14	3.90	-0.24
Week 2, Session 2	3.63	3.75	0.12
Week 3, Session 1	3.71	4.28	0.57
Week 3, Session 2	3.79	4.45	0.66
Week 4, Session 1	3.78	4.10	0.32
Week 4, Session 2	3.92	4.58	0.66
Week 5, Session 1	4.09	3.9	-0.19
Week 5, session 2	3.72	4.12	0.4
Week 6, Session 1	3.52	3.96	0.44
Week 6, Session 2	3.93	4.43	0.5
Overall Mean	3.92	4.17	0.24

Table 4

Mood Inventory: Mean Change Scores for all Participants on Tense Sub-measure

	Pre-treatment	Post-treatment	Change Scores
Week 1, Session 1	2.61	3.07	0.46
Week 1, Session 2	2.86	3.9	1.04
Week 2, Session 1	3.95	3.71	-0.24
Week 2, Session 2	3.5	4.42	0.92
Week 3, Session 1	4	4.28	0.28
Week 3, Session 2	4.24	4.08	-0.16
Week 4, Session 1	3.31	3.8	0.49
Week 4, Session 2	3.64	4.26	0.62
Week 5, Session 1	4.52	4.05	-0.47
Week 5, session 2	3.78	4.37	0.59
Week 6, Session 1	3.74	4.21	0.47
Week 6, Session 2	3.43	4.29	0.86
Overall Mean	3.63	4.04	0.40

Table 5

Mood Inventory: Mean Change Scores for all Participants on Sad Sub-measure

	Pre-treatment	Post-treatment	Change Scores
Week 1, Session 1	3.42	3.06	-0.36
Week 1, Session 2	2.69	3.18	0.49
Week 2, Session 1	2.7	2.41	-0.29
Week 2, Session 2	3.33	3.08	-0.25
Week 3, Session 1	3.66	3.92	0.26
Week 3, Session 2	3.51	3.69	0.18
Week 4, Session 1	3.25	3.93	0.68
Week 4, Session 2	3.37	3.72	0.35
Week 5, Session 1	3.82	3.75	-0.07
Week 5, session 2	3.59	3.58	-0.01
Week 6, Session 1	3.58	3.13	-0.45
Week 6, Session 2	3.95	4.29	0.34
Overall Mean	3.41	3.48	0.07

Table 6

Mean Changes of All Sub-Scores of the Mood Inventory Between The Beginning and End of the 6-weeks

		Mean	N	SD	Std. Error Mean
Relaxed	Pre-test session 1	4.59	17	1.00	0.24
	Post-test Session 12	4.71	17	0.99	0.24
Afraid	Pre-test session 1	3.59	17	1.73	0.42
	Post-test Session 12	4.65	17	0.70	0.17
Happy	Pre-test session 1	4.47	17	0.94	0.23
	Post-test Session 12	4.41	17	1.00	0.24
Tense	Pre-test session 1	2.59	17	1.66	0.40
	Post-test Session 12	4.47	17	1.12	0.27
Sad	Pre-test session 1	3.12	17	1.90	0.46
	Post-test Session 12	4.18	17	1.22	0.27
Overall		4.08	17	1.22	0.30

Table 7

Correlation Table

		MASC T-Scores	Relaxed	Afraid	Happy	Tense	Sad
MASC T-Scores	Pearson Correlation	1.00	0.10	0.15	0.11	0.19	0.13
	Sig. (2-tailed)		0.67	0.53	0.65	0.42	0.58
Relaxed	Pearson Correlation	0.10	1.00	-0.14	**0.48**	**-0.70**	-0.38
	Sig. (2-tailed)	0.67		0.56	0.03	0.00	0.10
Afraid	Pearson Correlation	0.15	-0.14	1.00	0.15	0.05	0.19
	Sig. (2-tailed)	0.53	0.56		0.53	0.82	0.43
Happy	Pearson Correlation	0.11	0.48	0.15	1.00	**-0.50**	-0.04
	Sig. (2-tailed)	0.65	0.03	0.53		0.03	0.86
Tense	Pearson Correlation	0.19	-0.70	0.05	-0.50	1.00	**0.49**
	Sig. (2-tailed)	0.42	0.00	0.82	0.03		0.03
Sad	Pearson Correlation	0.13	-0.38	0.19	-0.04	0.49	1.00
	Sig. (2-tailed)	0.58	0.10	0.43	0.86	0.03	

Students' Journals

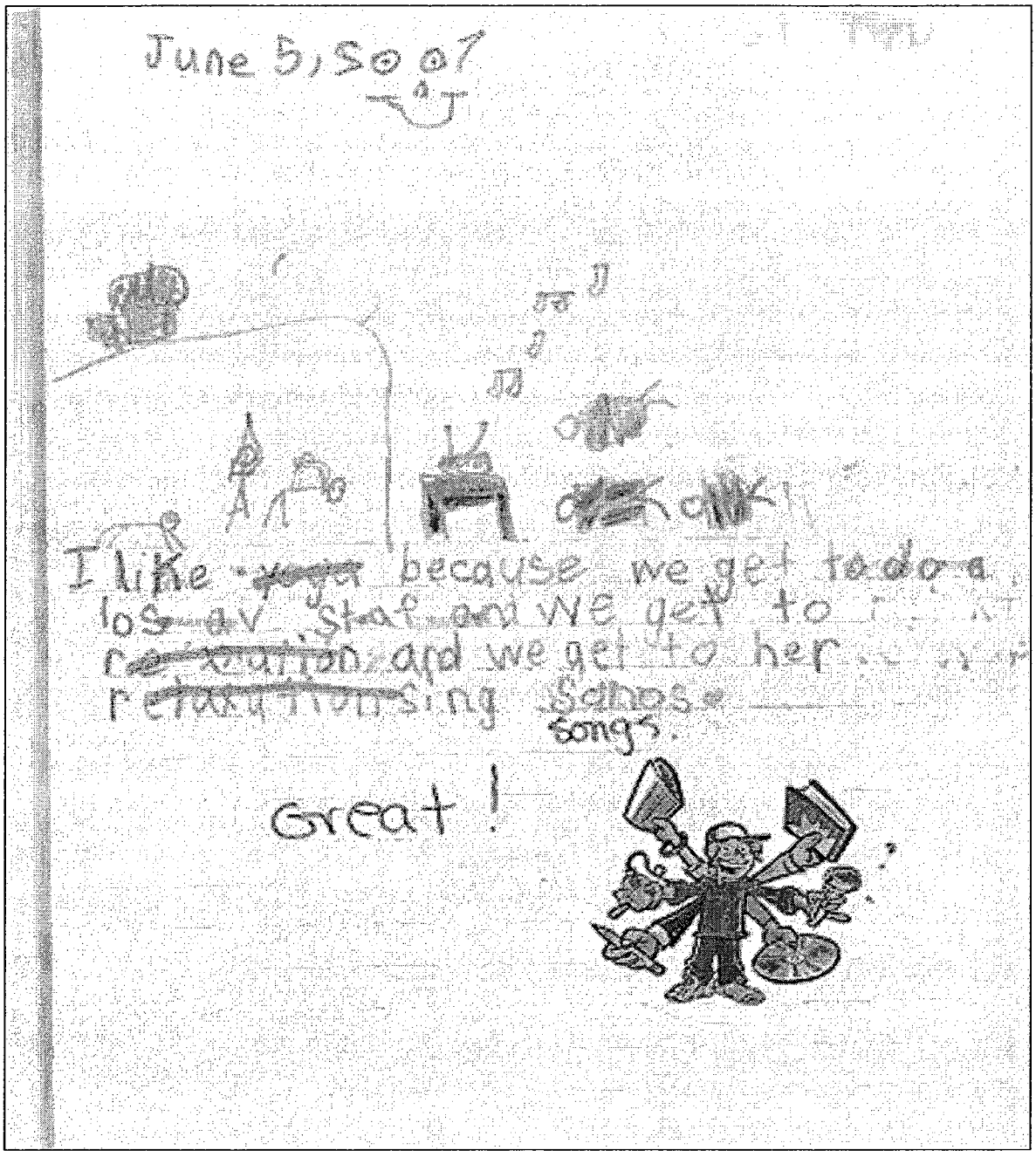
Table 9

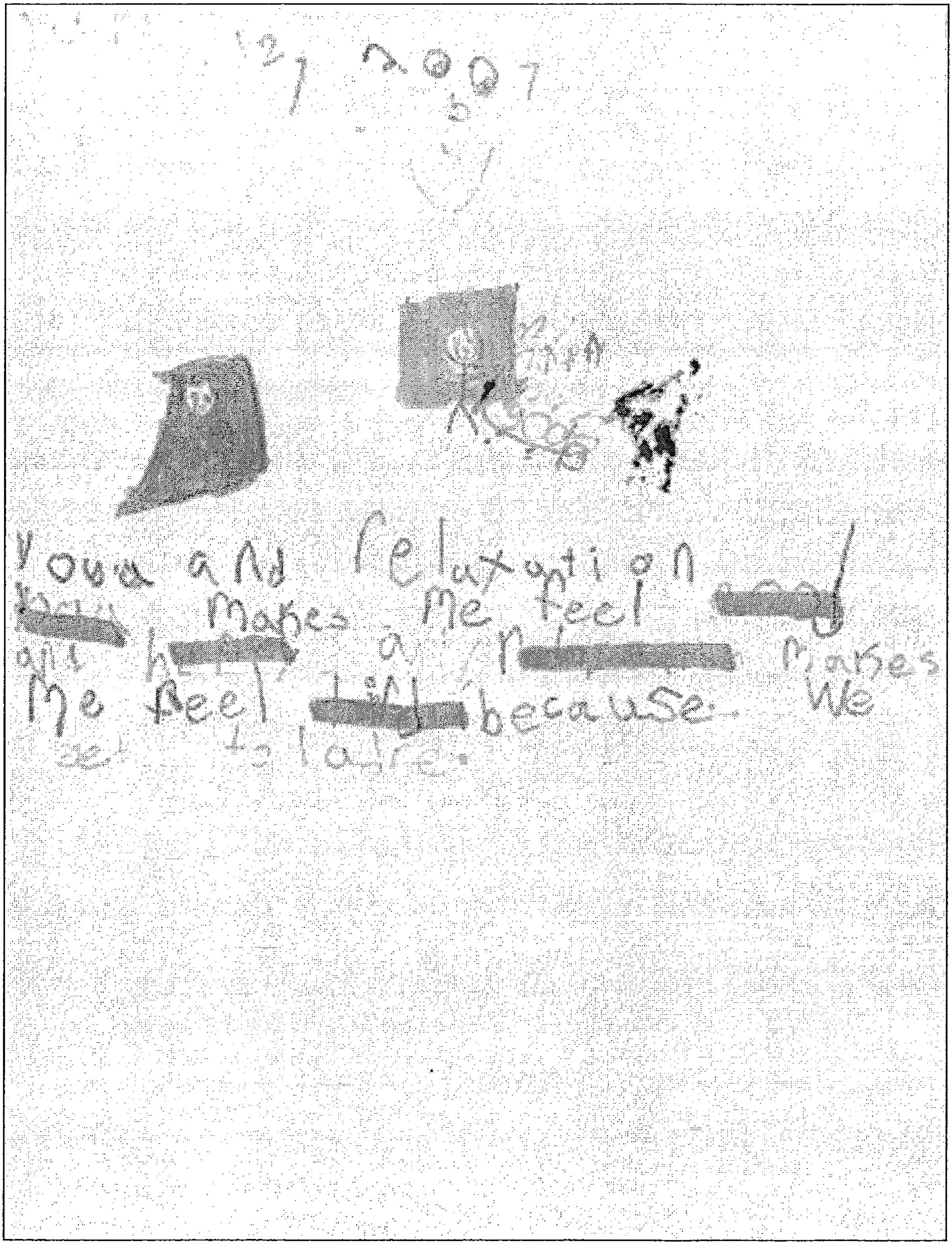
Content Analysis for Feelings of Student Journals

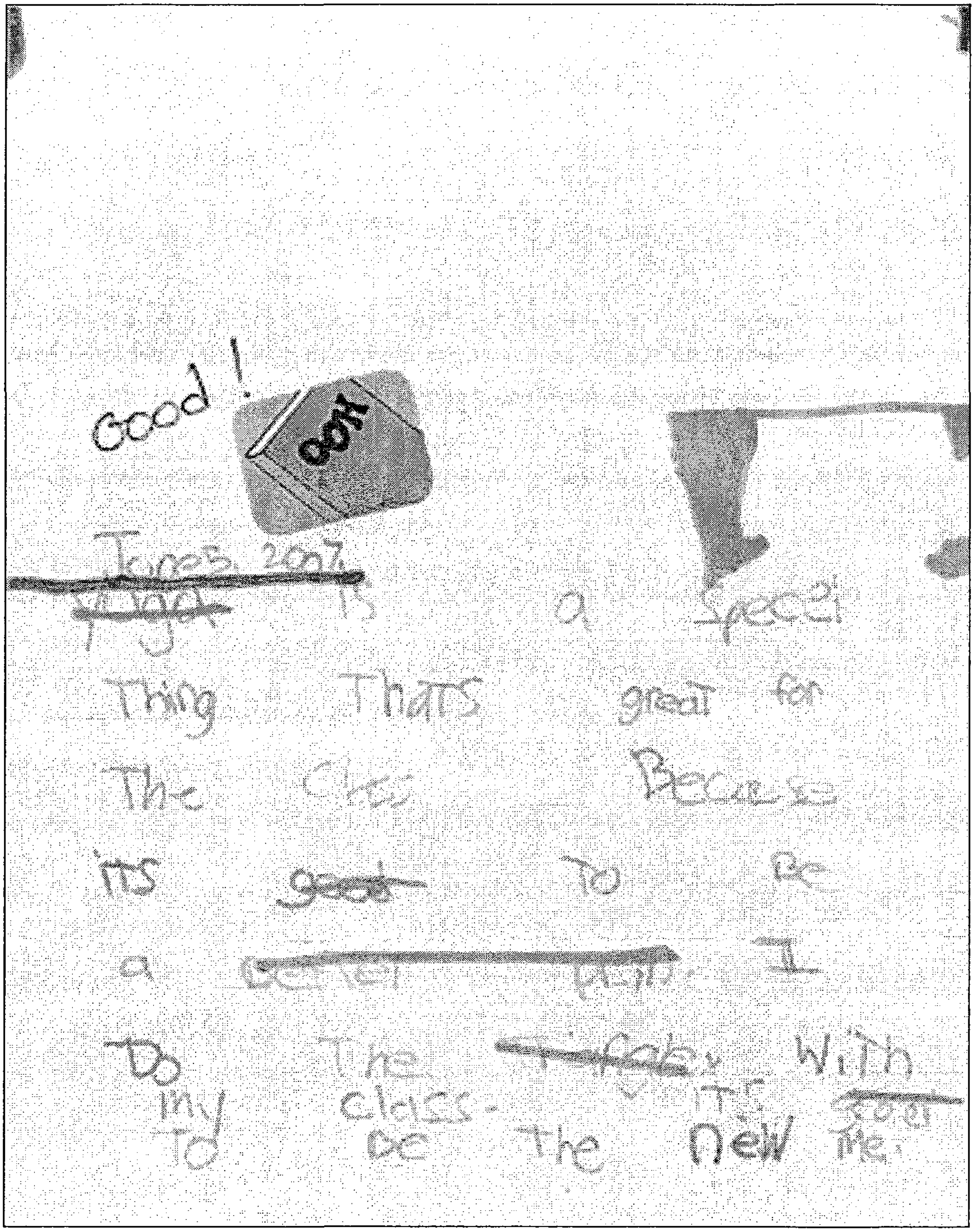
Positive				Feeling of Calmness				Negative			
	Total Number of Students Mentioned	Male 14	Female 6		Total Number of Students Mentioned	Male 14	Female 6		Total Number of Students Mentioned	Male	Female
Fun	15	71%	83%	Calm	8	21%	83%	Bored	1	0	100%
Good	17	86%	83%	Tired	12	50%	83%				
Happy	15	93%	33%	Relaxed	17	86%	83%				
Average	47	83%	66%	Average	37	36%	83%	Average	1	0	100%

Appendix H

Samples of Student Journals


June 5, 2007
I like because we get to do a
Great!


relaxation
makes me feel
makes
me feel
because we


Good!
Thing Thats great for
The class Because
its to be
Doing The with
my class.
To be The new me.