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**An Assessment of Children's Stress
and a Positive Perspectives Program
with Elementary School Children**

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**A thesis submitted to the School of Graduate Studies
and Research in partial completion of the requirements
for the degree of Master of Arts in Sports Studies**



John Donohue, Ottawa, Canada, 1994



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Dedication

This project is dedicated to my parents, Mary Jane and Jack Donohue, who taught me to reach for the stars in everything I do. They never held me back, and they were always there to help pick up the pieces when things didn't turn out exactly as planned. I can only ask that I am able to do the same for my children ...

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Abstract

A quasi-experiment was performed to study the effects of a 10 week intervention program on the positive thinking and self-esteem of elementary school children in Ottawa, Canada. Seventy students, ranging from grades three through six, at a local elementary school participated in the program. Pre- and post-test measures of positive thinking and self-esteem were collected, through the use of newly developed scales and the self-esteem inventory (SEI) of Battle (1981). Qualitative data on stressful events that the children experienced, positive thoughts they had, and negative thoughts they had were collected in logbooks, as well as the children's subjective ratings of stressful events and their emotional feelings to these events. No experimental effects were found on any of the quantitative variables, for a variety of reasons. The stressful events reported were categorised, fitting into previously identified categories of stressful experiences for children, along with ratings of the nature of the stress of these experiences. Categories were developed for the positive and negative thoughts, as no previous work in the area had been found. The strengths and weaknesses of the intervention and the measurement tools were discussed.

An Assessment of Children's Stress
and a Positive Perspectives Program
with Elementary School Children

Previous researchers in the field of mental training with children have concluded that the use of mental training "may be particularly promising for children; it offers a means of learning skills faster and more easily, as well as an opportunity to learn mental skills at an early age that can give children greater control over their personal destiny." (Li-Wei, Qi-Wei, Orlick & Zitzelsberger, 1992, p. 240)

The present study was based on the philosophy that mental training skills can and should be taught to young children. Orlick (1992c) stated that "Researchers agree that many potential problems could be avoided and benefits accrued by teaching children effective ways to cope with the demands and stresses of contemporary society" (p. 1). In particular, developing a positive perspective, learning to focus one's attention away from destructive or unproductive areas, and focusing on healthy and constructive areas, can have a healthy and long-lasting impact on life-long learning and personal satisfaction.

The idea that children experience and need to cope with stress has long been a subject of debate; this is no longer the case. Hans Selye, the

famed stress researcher, said "I have often equated life with stress, and yet children have been consistently omitted from stress research as if life did not apply to them" (Miller, 1982, p. vii). "It is common knowledge that children experience stress, but we know surprisingly little about the nature of stress and coping among most children on everyday life. Most relevant child research has focused on the extraordinary: youngsters who are ill or handicapped, have lost significant caregivers, or face serious socioeconomic and psychological risks" (Band & Weisz, 1988, p. 247).

Allen and Green (1988) wrote: "To create a society of coping adults, we must recognise stress in children and help them to learn to function effectively ... Fortunately, children are no longer excluded from the study of stress or the development of means to handle it." (p. 10) Research has shown that children do experience stress (Band & Weisz, 1988; Dize-Lewis, 1988; Omizo, Omizo & Suzuki, 1988; Werner, 1984; Wilson, 1984); Edwards and Miller (1988) stated that "childhood and adolescence are two of the most stressful periods of life" (p.10).

Hiebert (1983) pointed out that "Stress arises from a demand placed on a person. The demand may be internal or external, real or imagined" (p. 53). Essentially, stress occurs when people perceive themselves as not being able to handle the demands of a situation they

encounter. Whether the situation and the demands are real or imagined, the reaction is the same, physiologically and psychologically. Hiebert (1988, 1991) emphasised the personal and situational aspects of stress: That it is a highly individualised response to that individual's perception of the demands of a situation. This finding suggests that if we can help children change their ways of perceiving (i.e., by guiding them to more positive perspectives), then perhaps we can change their reactions to stressful situations.

Miller (1982) found that children's natural methods of relaxation are "either frowned upon or so highly organised as to be no longer relaxing." (p. 37) Miller referred to the fact that the children are prevented or inhibited from using their natural methods of relaxation, causing them more stress. This finding should disturb stress researchers deeply: While trying to help our children cope with stress, we may in fact be causing them more stress by imposing an adult structure upon their natural relaxation methods.

Band and Weisz (1988) stated "The adult literature cannot tell us how children respond to stress, but it does provide conceptualisations that may help guide research with children." (p. 247) While helpful in determining how best to help children cope with stress, research on adult

coping mechanisms and reactions to stress must be validated with exploratory, empirical work with children. Garmezy (1974) suggested that adults and children have very different perceptions of what constitutes a stressful event and how stressful it is for them. Others also cautioned that, when dealing with children, careful consideration must be given to the fact that children do not perceive stressors in the same way adults do (Allen & Green, 1988; Dise-Lewis, 1988; Hiebert, 1991; Omizo, Omizo & Suzuki, 1988). The very events that children find stressful may be different from those that adults find stressful; information on the events that children find stressful, and how stressful they find these events, is needed. Until 1988, no research had even been done to determine what children find stressful: Only the fact that they perceive stressors differently than adults was confirmed. Omizo, Omizo and Suzuki (1988) stated: "No study (to date) has provided data on the stressors and symptoms from studying school-age children" (p.267).

Omizo, Omizo and Suzuki (1988) reported that the major stressors for elementary school children were, in descending order of frequency of report by children: Family problems; feeling different; school-related problems; fear of discipline; and general concerns (insecurity, general fear of the unknown). Similar categories were reported by Dickey and

Henderson (1989): School work, peer relationships, homework, injury, loss, discipline, relations with teachers, and family. Neither of these studies report self-ratings of relative importance or amount of stress caused by the stressors reported.

Orlick (1992c) concluded that despite the consensus of opinion on the value of teaching children to prevent and cope with stress, most of the currently available programs are based upon adult stress control methods, and therefore do not do full justice to children's special needs. That is, they fail to address the specific stressors which children face, they are not child-like and playful in design, and they often fail to take advantage of the creativity and adaptability of children. "Shifting focus from negative to positive is one of the most important and least practised of all human skills." (Orlick, 1992a, p. 123)

Stress in childhood is currently recognised as an area where research is needed. What children find stressful and the ways that children perceive and actually cope with stress are still not well understood. They find many, but not all, of the same things adults find stressful to be stressful, but in different ways and for different reasons. The best methods of helping children cope with the stresses they

encounter are still being sought; most studies to date have involved teaching children adult coping methods.

The purpose of this study was two-fold: 1) to gain information on what events the elementary school subjects found stressful and how stressful they found these events to be, and what they perceived as positive thoughts and negative thoughts, through self-report measures; and 2) to explore the effects of an experimental intervention program on the positive thinking and self-esteem of the experimental subjects.

METHOD

Subjects

The subjects were students in four intact classes (grades two/three, four, five and six) at Vincent Massey Public School, a large elementary school located in a residential area in south-east Ottawa. The students who attended the school came from a variety of backgrounds: A broad mixture of North Americans and immigrants from Africa, Asia and Europe. Seventy students were involved in the research project; 35 in the experimental condition and 35 control subjects. In Table 1 is outlined a complete breakdown over grades and sex.

Table 1

Distribution of Subjects by Sex and Grade

Grade	Experimental Males	Experimental Females	Control Males	Control Females	Total
2/3	7	5	7	5	24
4	5	5	5	6	21
5	2	5	1	5	13
6	3	3	3	3	12
TOTAL	17	18	16	19	70

Materials

Level of general well-being was assessed using the KISS Scale, which was developed specifically for this study. This scale consisted of three subscales on five point Likert scales which measured: a) how stressed the subject felt, anchored with 'very stressed' at one extreme and 'very relaxed' on the other; b) how the subject felt in general, anchored with 'very sad' and 'very happy'; and c) how the subject felt about themselves, anchored with 'I feel down about myself' and 'I feel great about myself'. A total score for the scale, representing the subject's general feeling about themselves was obtained by summing the scores on

the three subscales, producing a range of scale scores from three to 15. A score of three represented a low level of well-being, and a score of 15 represented a high level of well-being. See Appendix A for a copy of the instrument.

Positive or negative perspectives were assessed using the Talk Scale, which was developed specifically for this study. This scale consisted of three subscales on five point Likert scales which measured: a) how positive the subject thought their friends were with them that day; b) how positive they were with their friends that day; and c) how positive they were with themselves that day. All three scales were anchored with 'really negative' at one extreme and 'really positive' at the other. A total score for the scale was obtained by summing the scores on the three subscales, producing a range of scale scores from three to 15. A score of three represented a very negative perspective while a score of 15 represented a very positive perspective. See Appendix A for a copy of the instrument.

The Culture-Free Self-Esteem Inventory (SEI) (Battle, 1981) was used to provide an assessment of the students' self-esteem. The SEI consisted of 25 questions which could be answered either 'yes' or 'no'. The SEI was composed of four subscales which addressed different areas

scored in such a way that the four individual scale scores as well as an overall scale score were produced. The range for the overall scale scores is 0 to 25; the subscale scores differ because they have differing numbers of questions. A copy of the SEI questionnaire used is provided in Appendix A.

The Positive Perspectives Logbook for KISS was developed specifically for use by the subjects in this program to obtain self-report data on their daily activities related to the program. The logbooks consisted of multiple copies of four different pages upon which the subjects in the experimental condition were asked to record their thoughts and feelings on a daily basis. The first type of page sought to obtain information on situations subjects found stressful. The subjects were asked if anything stressful had happened to them that day. If not, they reported this and moved on to the next page; if yes, they were asked how they felt when the stressful event occurred. Space was provided for a written description, a five point Likert scale rating of how stressed they felt, as well as a five point Likert scale rating of how they felt on a face scale from terrible to great. The subject was then asked if they had done anything to feel less stressed; if not, they moved to the next page. If yes, they were asked to describe what they had done to feel less stressed, and

to rate how they felt afterwards. Again, using a written description, and a five point Likert scale rating of how they felt on a face scale from terrible to great. If more than one stressful thing happened, the subjects were encouraged to complete a separate page for each situation.

The second page asked whether the subject had any positive thoughts about themselves that day, and if they had, to list the positive thoughts and to rate how these thoughts made them feel. Space was provided for the subjects to provide a written description of how these thoughts made them feel. Whether they had any positive thoughts or not, all subjects were asked to list two positive thoughts they could say to themselves, and two positive things they could say to others.

The third page of the logbook asked the subjects if they had any negative thoughts about themselves that day, and if they had, to list the negative thoughts and to rate how these thoughts made them feel. Space was provided for the subjects to provide a written description of how the thoughts made them feel. Subjects who had no negative thoughts reported this and proceeded to the next logbook page. Subjects who reported negative thoughts were then asked if they had done anything in order to feel more positive; if they had, they were asked to describe what they had done, and to describe and rate how they felt afterwards.

The final page of the logbook asked if the subject had attempted to refocus that day. If not, the subject reported this and was finished with the logbook for the day. If yes, the subject was asked to describe in words the situation in which they tried to refocus and how they tried to refocus, and to rate on a three point Likert scale whether the refocusing worked, didn't work, or worked 'a little'. If they tried to refocus more than once, or in more than one way, the subjects were encouraged to complete a separate page for each situation. See Appendix A for copies of the 4 logbook page-types.

Audiotapes of relaxation scripts (i.e., Echo Lake, Echo Lake II, Soaring) developed for the KISS program by Orlick (1992b) were used as training aids in some sessions.

Experimental Design

This study was quasi-experimental in nature due to constraints imposed by the subject pool, specifically that the subjects were students in an elementary school and thus could not be randomly sampled for participation in the study. Subjects were randomly assigned to the control and experimental groups from the classroom units in order to reduce the problem of using these intact groups. The design of the quasi-experiment was the traditional pre-test / intervention / post-test design, with one

control and one experimental group. The quantitative analysis was set up as a 4 x 2 x 2 split-plot (mixed effects model). The between-subjects factors were Group (experimental or control) and Grade (2-3, 4, 5, 6). The within-subjects factor in the ANOVA was Test (pre-test and post-test). Each of the dependent variables (the KISS scale, Talk scale, the overall SEI score and the four SEI subscale scores) were analyzed separately, in accordance with Huberty and Morris' (1989) recommendations with respect to multivariate analyses. Specifically, multivariate interactions among the variables were not of interest in this study, because the purpose of the study was not to identify a latent variable.

Procedure

Informed consent was obtained from the parents of all students before the program was begun. An information letter and consent form was sent to the parents of all prospective subjects. Students who did not return the consent form were not included in the study. Only three students did not return consent forms.

Pre-test. All pre-testing was completed in the students' regular classroom with all students and their teacher in attendance. In order to reduce response bias, the principal investigator was not involved in the pre- or post-testing. On the first day, an experimental assistant (EA)

distributed the KISS scales and explained the procedures to be followed, i.e., that the students were to answer honestly, that no one other than the researcher would see their answers, that they were not to look at each others' responses. The students completed the scales, which were then collected. The EA distributed the Talk scales, explained the procedures to be followed, and the students then completed the scales, which were immediately collected. On the second day of pre-testing, the EA distributed the SEI and explained how it was to be answered. The EA read out each question on the SEI as the students answered it, in order that reading comprehension problems would be minimized. On the third and fourth days of pre-testing, the students completed a second and third set of KISS and Talk scales, one each on each day.

Intervention. On the first day of the intervention, the students who were to participate in the study were divided into experimental and control groups by random draw, ensuring equal representation by gender. The students in the experimental group were taken to another classroom by the experimenter. The control group and non-participating students remained in the regular classroom, where they worked on their normal class work.



The intervention program was implemented for the next 10 weeks with the experimental group. The experimental students in each grade level received three 20 min. intervention sessions per week in a separate classroom without the teacher in attendance.

Each intervention session began with a 3-5 min. relaxation exercise, using one or two of Orlick's (1992b) relaxation scripts on audiotape. See Appendix B for a complete listing of the relaxation scripts used. The relaxation script used depended on the class, since each grade had a particular favorite that was used more often than others, but each class was exposed to all 34 relaxation scripts during the course of the interventions. The purpose of the relaxation exercise was to calm the students and put them in a receptive frame of mind for the activities that followed.

A breakdown of the intervention sessions and activities can be found in Appendix C.

Post-test. The post-testing was carried out in exactly the same way as the pre-testing, by the same EA that did the pre-testing. In addition, at the end of the post-testing, the students completed the SEI a second time, in order to test the reliability of this instrument for this sample. One week after the post-testing was completed, verbal

questionnaires were administered to the experimental subjects to obtain more information on what they learned from the intervention program. A copy of the questionnaire is provided in Appendix A.

RESULTS

Subject Attrition

One student in the experimental condition withdrew from the experimental group after one week of intervention. This subject was treated as a control subject for the purposes of analysis, as the early intervention sessions were mainly introductory.

Quantitative Results

The three administrations of the KISS and TALK scales were averaged for each subject to produce a mean score on each scale which was used in the analyses.

The means and standard deviations for each cell of the design can be found in Appendix D. Bar charts of the average difference scores for each of the variables analyzed are presented in Figures 1 through 7. Accompanying each figures is a purely descriptive interpretation of the results using only the information displayed in the bar charts. The difference score represented the repeated measures portion of the ANOVA analysis. The difference score was calculated by subtracting the

pre-test score on a variable from the post-test score. A positive difference score represented an increase over time, i.e., the post-test was higher than the pre-test, while a negative difference score represented a decrease over time.

In Figure 1 is presented the bar chart of the average difference scores for the KISS scale scores. The average difference scores between the control and experimental groups all lay fairly close to each other, indicating that there was no difference between groups. The difference scores all lay fairly close to 0, indicating that there was little change in the scores over time. The grade three control and experimental groups had negative average difference scores, indicating that overall, these two groups decreased, while the other grades had positive average difference scores for both the control and experimental groups, indicating that overall, they increased their scores.

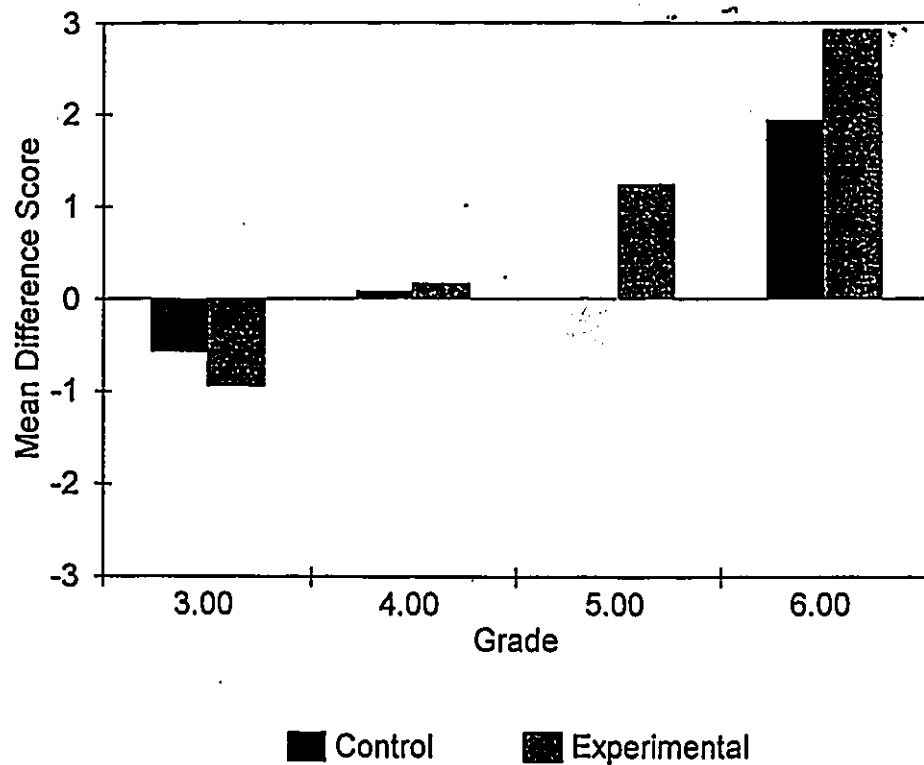


Figure 1. Mean difference score on KISS scale for control and experimental subjects in grades three to six.

In Figure 2 is presented the bar chart of the average difference scores for the TALK scale. The difference scores all lay close to 0, indicating that there was no change in scores over time. The subjects in grades three and five had negative average difference scores, while subjects in grade four had positive difference scores. The grade six subjects showed an interesting effect: the control group subjects had a

negative average difference score, indicating that they decreased over time, while the experimental group had a positive difference score, indicating that they increased over time.

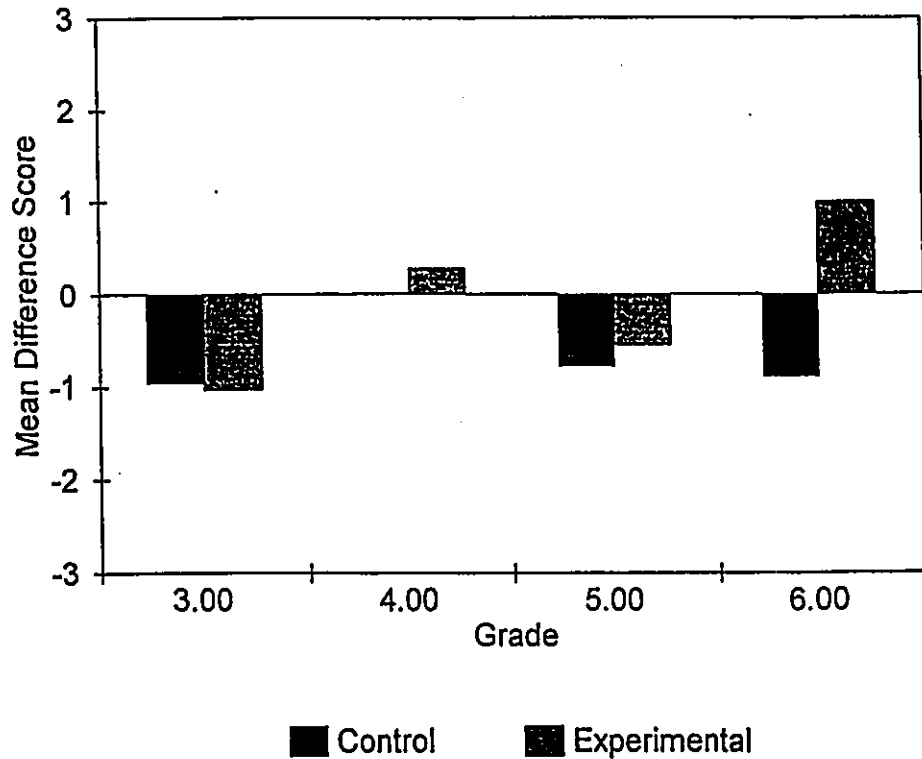


Figure 2. Mean difference score on TALK scale for control and experimental subjects in grades three to six.

In Figures 3 through 7 are presented the bar charts of the average difference scores for the SEI and each of its four subscales. No group differences were evident on any of the plots. In Figure 3, the overall SEI scale scores, all the average difference scores were close to 0. The

grades three and six control and experimental groups showed an interesting effect, in that the control groups increased and the experimental groups decreased, on average. The grade five groups showed the opposite effect, while the grade four groups both decreased.

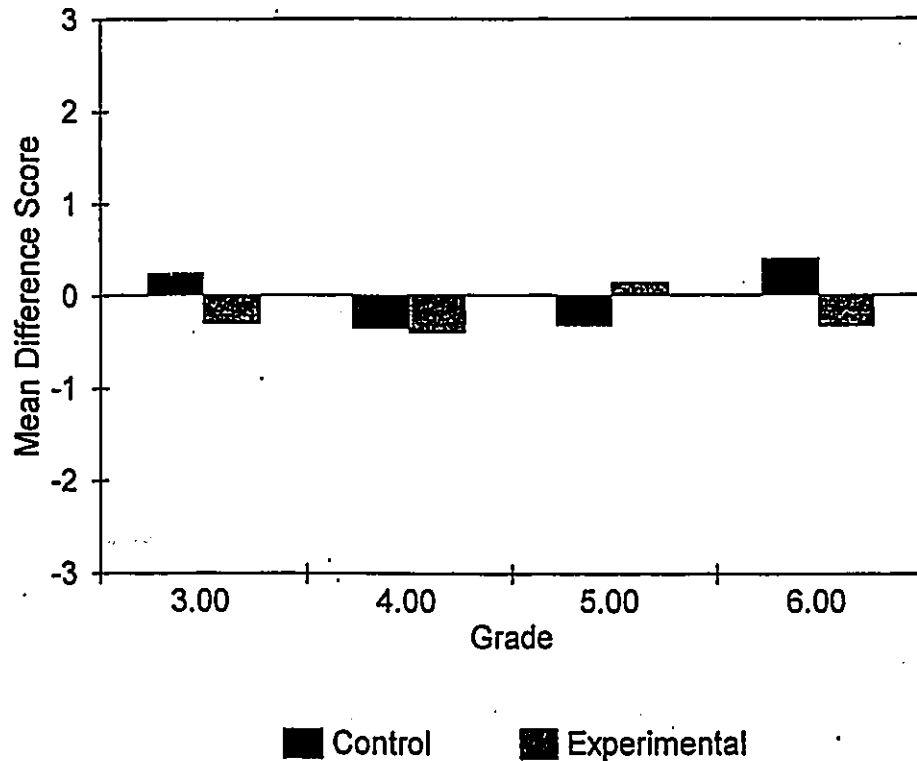


Figure 3. Mean difference score on SEI scale for control and experimental subjects in grades three to six.

In Figure 4, the average difference scores for the SEI general subscale, the control groups for the grades three and six subjects again increased while the experimental groups decreased. The grade five

subjects again showed the opposite group effect, and the grade four groups both increased their scores.

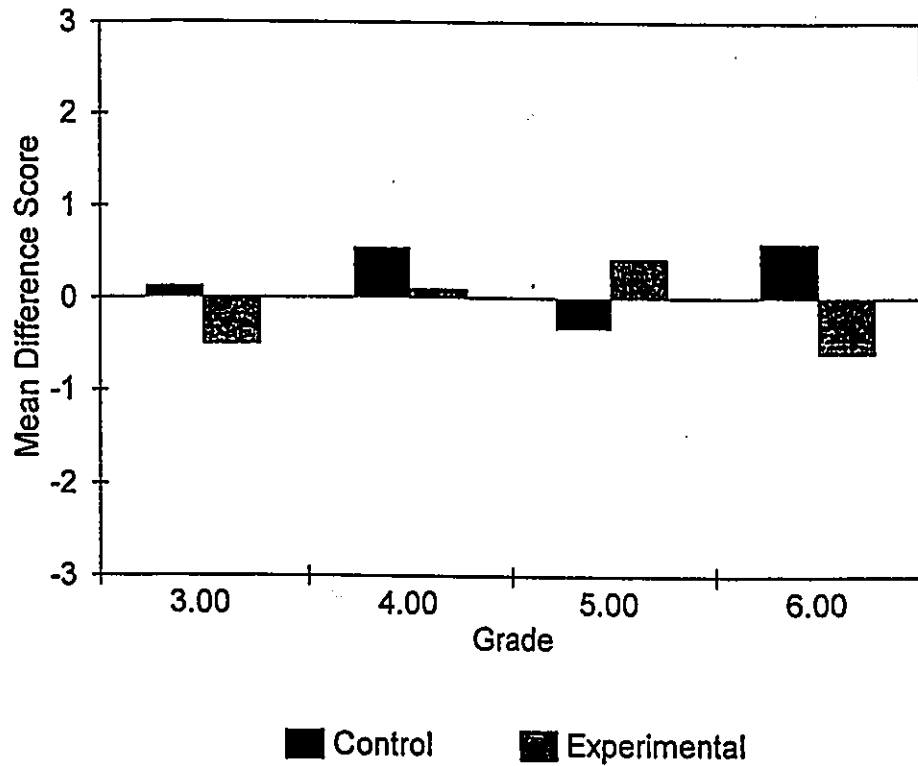


Figure 4. Mean difference score on SEI General subscale for control and experimental subjects in grades three to six.

In Figure 5 is presented the average difference scores for the SEI academic subscale. The grade four and six control groups both increased, while their respective experimental groups decreased. The grade three subjects increased their average scores; the grade five control group showed no change at all and the experimental group showed an overall decrease.

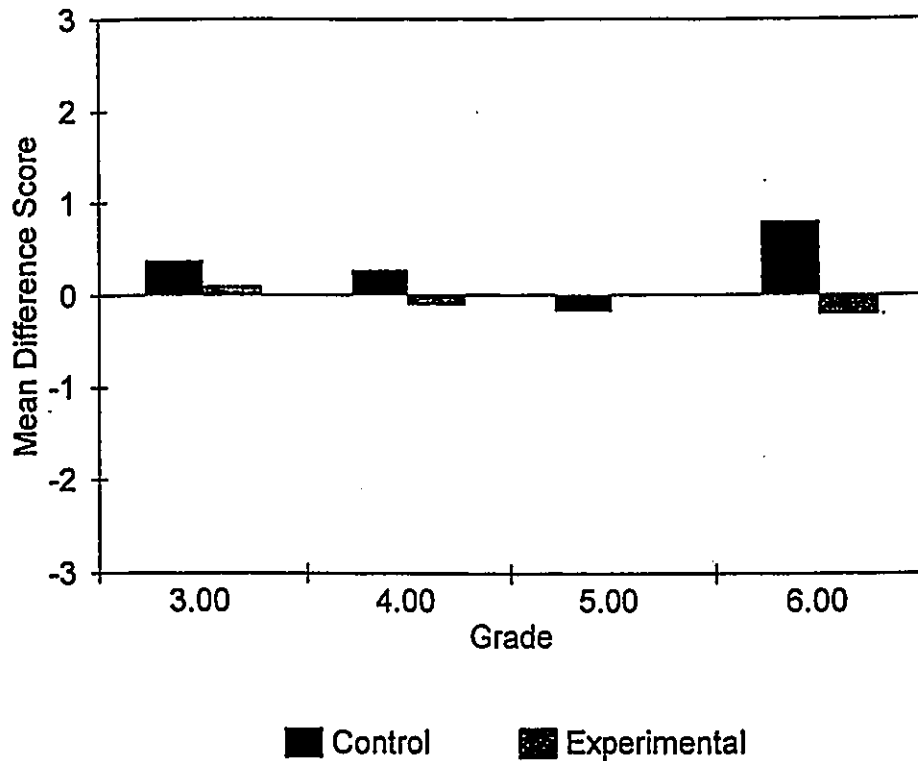


Figure 5. Mean difference score on SEI Academic subscale for control and experimental subjects in grades three to six.

In Figure 6, the social SEI subscale average difference score bar chart revealed that the scores for subjects in all groups decreased, except the grade three control group which showed no change in their scores and the grade five experimental and the grade six control groups which showed an increase in their scores.

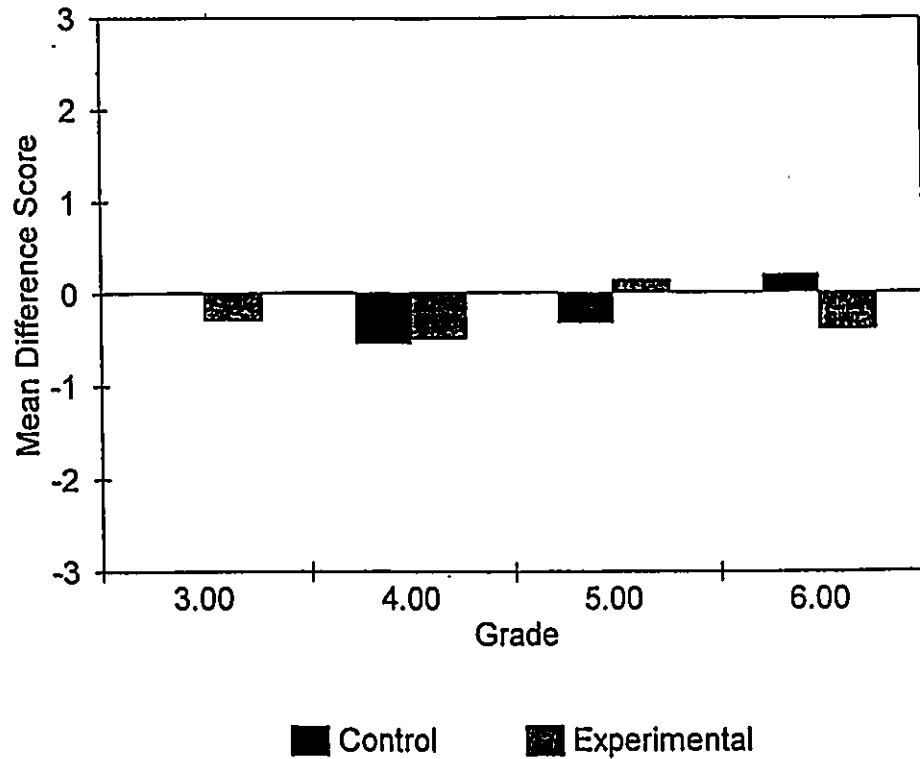


Figure 6. Mean difference score on SEI Social subscale for control and experimental subjects in grades three to six.

In Figure 7, the average difference scores on the SEI parental subscale are shown. All groups showed a decrease in their scores on this subscale.

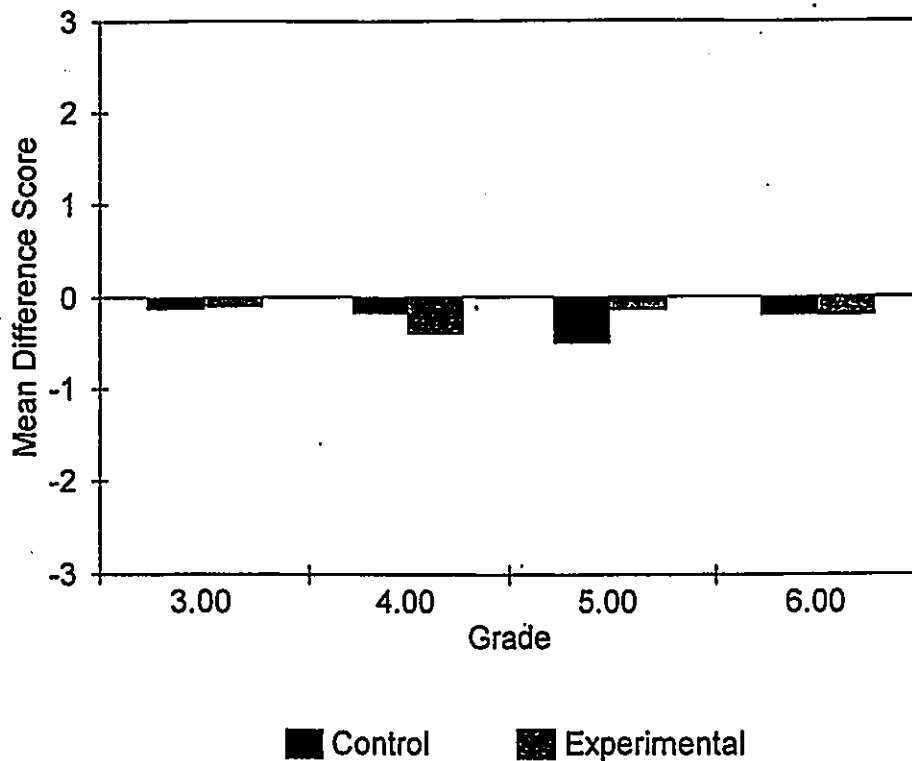


Figure 7. Mean difference score on SEI Parental subscale for control and experimental subjects in grades three to six.

Psychometric Instrumentation

The validity of the KISS scale was assessed by comparing the subjects scores on it to their scores on the General self-esteem subscale of the SEI, because they are both measures of how the subject felt. The correlation between the pre-test KISS scale and the General self-esteem subscale was 0.62 ($n = 66, p < 0.001$). The post-test KISS scale was

compared with the average of the two post-test SEI General self-esteem scores, yielding a correlation of 0.60 ($n = 62$, $p < .001$). The test-retest reliability of the KISS scale using the experimental subjects was 0.95 ($n = 34$, $p < .001$).

The validity of the Talk scale was assessed by comparing the subjects scores on it to their scores on the Social self-esteem subscale of the SEI, because they are both measures of the subjects' feelings about themselves. The correlation between the pre-test Talk scale and the Social self-esteem subscale was 0.44 ($n = 66$, $p < .001$). The post-test Talk scale was compared with the average of the two post-test SEI Social self-esteem scores, yielding a correlation of 0.50 ($n = 62$, $p < .001$). The test-retest reliability of the Talk scale using the experimental subjects was 0.91 ($n = 33$, $p < .001$).

The correlation between the first and second post-test SEI scales was 0.84 ($n = 62$, $p < .001$). The correlations for each of the post-test SEI subscales are presented in Table 2.

Table 2

Correlations for Two Post-test SEI Subscales

SEI Subscale	Pearson 'r'	N	Probability
General	0.93	62	< .001
Social	0.77	62	< .001
Academic	0.82	62	< .001
Parental	0.83	62	< .001

ANOVA Results

The ANOVA results (presented in Appendix E) were interpreted with a modified significance level (alpha) of 0.007, because seven separate ANOVAs were performed (Huberty & Morris, 1989).

The results of the ANOVA analyses revealed that there were no significant main effects of Test on any of the variables. This meant that there was no significant difference between subjects in the control and experimental groups on the pre- and post-test for any of the variables. The ANOVA source tables for each analysis can be found in Appendix E.

A significant Grade by Test interaction on the KISS scale ($F(3,62) = 4.65, p < .007$) was found. Post-hoc analysis of the difference between the post-test and pre-test KISS scale scores using Tukey's HSD revealed

that students in grade six exhibited a significantly larger change in their score on the KISS scale than did students in grade three and students in grade four.

Qualitative Results

The main areas of interest in the logbook data were the subjects self-reported: Sources of stress, positive thoughts, and negative thoughts.

Sources of Stress

Subjects reported 61 stressful experiences in their logbooks in response to the question "Did anything stressful happen/What happened?" The subjects were also asked to rate how they felt when the experience happened on a five point Likert scale from 'very stressed' (1) to 'very relaxed' (5). These experiences were entered into a data base and categorized on the basis of similarity. The 61 reported experiences were classified into six major categories which were previously developed by Cox (1994). The research supervisor and the investigator together examined each of the experiences and came to a consensus on category definitions and the assignment of each of the stressful experiences to an appropriate category. An independent categorization of 20 randomly selected stressful experiences from the logbooks was subsequently

conducted by a research assistant. Twenty stressful experiences were selected from the database by random draw. The five categories developed by the principal researchers were explained to the assistant, and then the research assistant decided independently which stressful experiences should be placed in each category. The correlation between the research assistant's categorization of the 20 stressful experiences and the principal investigators' categorization was 0.95.

The major categories that emerged from the stressful experiences reported by the children in this study were: 1) People stress, with four subcategories; 2) school stress; 3) sport/activity/performance stress; 4) loss of control stress; and 5) sickness/illness/injury stress. A sixth category developed by Cox (1994), i.e., sleeping related problems, was not found to be necessary in this study, perhaps because this study did not include children in kindergarten or grade one. The distribution of the stressful experiences is presented in Figure 8. A description of each category and examples of the stressful experiences that were placed in each category follows:

People stress. This category revolved around conflict, arguments, feelings of rejection or guilt primarily with respect to parents, friends, siblings or others; if the specific source of the people stress was unclear,

the experience was classified under others. Of the 61 reported stressful experiences, 26 experiences (43%) were placed in this category. The average rating on the Likert scale for these experiences was 1.44 or 'very stressful'.

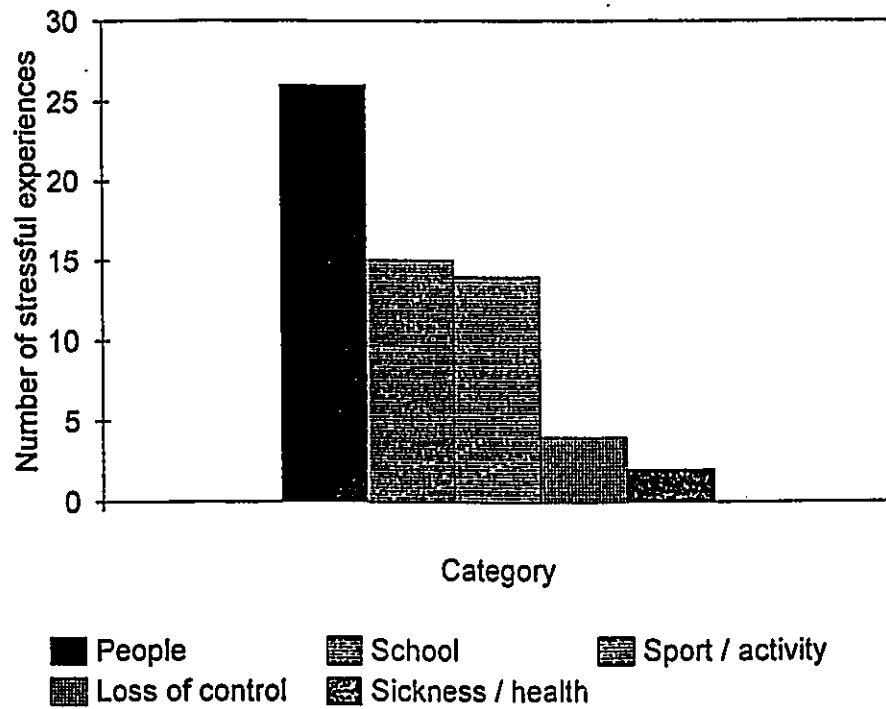


Figure 8. Distribution of the 61 stressful experiences reported in the logbooks by experimental subjects in grades three to six.

Within the category of People stress there were four subcategories: Parents, friends, siblings and others.

Three of the 61 experiences (5%) were placed in the Parents subcategory. The average rating on the Likert scale for these experiences was 1.00 or 'very stressful'. The three experiences reported were: "My dad found out that I was moving to Halifax."; "My mom yelled at me today."; and "Some animal ripped a hole in a cement bag and dragged it all over our shed. My dad was very mad and said I'd left the door open so he blamed it on me and said we would never put our bikes in the shed."

Eight of the 61 experiences (13%) reported were placed in the Friends sub-category. The average rating on the Likert scale for these experiences was 1.25 or 'very stressed'. Examples of the experiences reported were: "(Name) scared me."; "(Name) and (Name) touched me."; "(Name) poked me in the face."; and "Cause I got spit on by (Name)."

The Siblings subcategory contained only one (2%) of the 61 reported stressful experiences. The Likert scale rating for this experience was 2.00 or 'a little stressed'. The experience reported was "I argued with my brother/my brother argued with me."

The Others subcategory contained 14 (23%) of the 61 experiences. The average Likert scale rating for these experiences was 1.57 or 'a little stressed'. Examples of the experiences in this subcategory were: "This

girl was bothering me and my friend.”; “I got teased by the dumb boys.”; “Somebody shot a rock at my back.”; and “Somebody kicked me.”

School stress. Stressful experiences in this category related to homework, tests, and meeting school-related expectations. Of the 61 reported stressful experiences, 15 (25%) were placed in this category. The average Likert scale rating for these experiences was 2.25 or 'a little stressed'. Examples of the stressful experiences reported were: “I didn't quite get my homework done in time.”; “I was afraid that the Identification/Placement Review Committee was a test.”; “I didn't start my interest talk.”; and “I presented my speech in front of the school.”

Sport/activity/performance stress. Experiences in this category revolved around pre-performance anxiety and/or failing to win, pass or meet expectations. Of the 61 reported experiences, 14 (23%) were placed in this category. The average Likert scale rating for these experiences was 2.00 or 'a little stressed'. Examples of experiences in this category were: “I had an exam in piano.”; “I forgot how to play my piano piece.”; “In king-square (A GAME) I couldn't get past second rank.”; and “Got 0 points (IN A SPORT).”

Loss of control stress. Stressful experiences in this category related to frustration, loss, a sense of helplessness or fear. Of the 61

reported experiences, 4 (7%) were placed in this category. The average Likert scale rating for the experiences in this category was 1.50 or 'a little stressed'. Examples of experiences in this category were: "Exactly one year ago my friend (Name) died."; "I lost my bicycle lock."; "I have to get ready to go to a play."; and "Someone started to ride my bike when I said no."

Sickness/illness/injury stress. Stressful experiences in this category revolved around injury, illness or medical treatment. Of the 61 experiences reported, two (5%) were placed in this category. The average Likert scale rating for these experiences was 3.00 or 'in between'. The two experiences in this category were: "I had a headache."; and "I wasn't feeling well."

Positive Thoughts

The subjects reported 86 positive thoughts in response to the logbook question "Did you have any positive thoughts about you today/What thoughts did you have". The subjects were also asked to rate on a five point Likert scale how they felt when they had these thoughts, with a score of one indicating the thought made the subject feel very poorly, and a score of five indicating the thought made them feel very good. These positive thoughts were entered into a data base and

categorized on the basis of similarity. The 86 reported positive thoughts were classified into five major categories. The research supervisor and the investigator together examined each of the positive thoughts and came to a consensus on category definitions and the assignment of each of the positive thoughts to an appropriate category. An independent categorization of 20 randomly selected positive thoughts from the logbooks was subsequently conducted by a research assistant, using the same procedure as for the stressful experiences, which yielded an inter-rater reliability of 0.85.

The five major categories that emerged from the positive thoughts reported by the children in this study were: 1) Positive thoughts about my good qualities/assets/abilities; 2) Positive thoughts about things I did well; 3) Self-encouragement/self-reinforcement; 4) Positive thoughts about things I enjoyed; and 5) Positive thoughts about things I am going to do (positive anticipation). The distribution of the categorized positive thoughts is presented in Figure 9. Examples of the positive thoughts that were placed in each category follow:

Positive thoughts about my good qualities/assets/abilities. Of the 86 positive thoughts reported, 47 (55%) were placed in this category. The average Likert scale rating was 4.20. Examples of thoughts in this

category were: "I am nice."; "I have a loving caring family."; "I'm a good friend."; and "I am artistic."

Positive thoughts about things I did well. Of the 86 positive thoughts reported, 15 (17%) were placed in this category. The average Likert scale rating of these thoughts was 4.67. Examples of thoughts in this category were: "I won the speech competition."; "I did well on my test."; "I got good on my report."; and "I got my test all right in math."

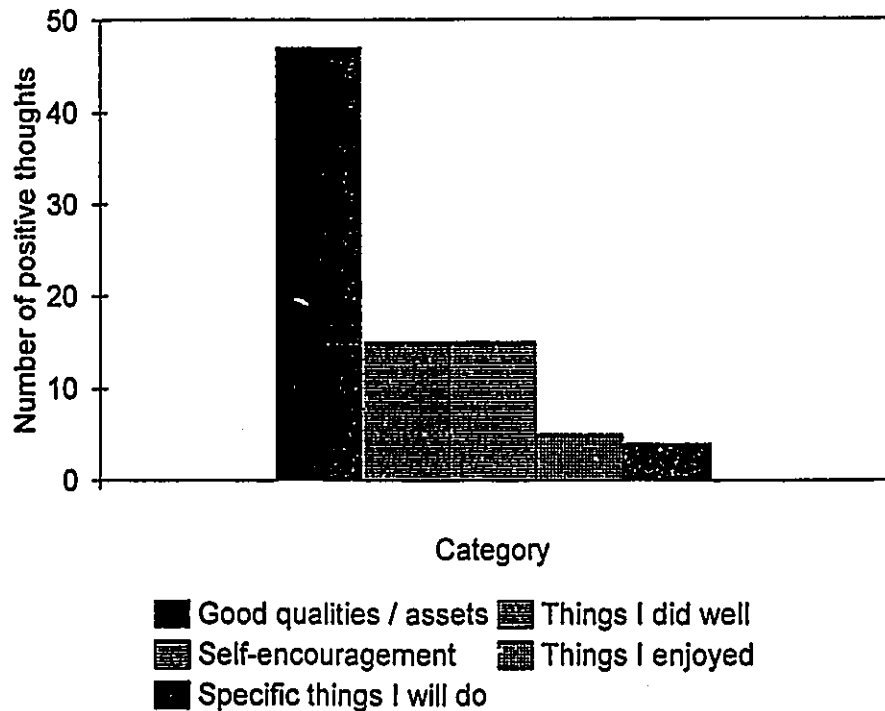


Figure 9. Distribution of the 86 positive thoughts reported in the logbooks by experimental subjects in grades three to six.

Self-encouragement/self-reinforcement. Positive thoughts in this category revolved around children trying to talk themselves into doing something good, feeling good, or congratulating themselves for having done something. Of the 86 positive thoughts reported, 15 (18%) were placed in this category. The average Likert scale rating of these thoughts was 4.33. Examples of thoughts in this category were: "I can do it. I'll finish."; "I told myself 'good work.'"; "I feel positive."; and "I will work hard today."

Positive thoughts about things I enjoyed. Of the 86 positive thoughts reported, five (6%) were placed in this category. The average Likert scale rating of these thoughts was 5.00. Examples of thoughts in this category were: "I played with my friend."; "I played in the water."; "I played a fun game."; and "I had fun and was happy all day."

Positive thoughts about specific things I am going to do (positive anticipation). Of the 86 positive thoughts reported, four (5%) were placed in this category. The average Likert scale rating of the thoughts was 4.50. Examples of thoughts in this category were: "I was going to hit a home run."; "I'm starting a new term and I will do fine."; "I'm going to my friends house on Friday."; and "I am going to go and play outside today."

Future Positive Thoughts

The subjects reported 119 positive thoughts in their logbooks in response to the suggestion "Try to be positive with yourself today. Write down some thoughts you will say to yourself today." The 119 positive thoughts recorded were classified into the five major categories which were developed for the preceding positive thoughts. The research supervisor and the investigator together examined each of the positive thoughts and came to a consensus on category definitions and the assignment of each of the positive thoughts to an appropriate category. An independent categorization of 20 randomly selected positive thoughts from the logbooks was subsequently conducted by a research assistant, using the same procedure as outlined for the stressful experiences, which yielded an inter-rater reliability of 0.95. The distribution of the categorized thoughts is presented in Figure 10.

Future positive thoughts about my good qualities/assets/abilities.

Of the 119 positive thoughts reported, 86 (72%) were placed in this category. Examples of thoughts in this category were: "I am nice to others. I'm intelligent."; "I feel good and healthy. I like myself."; "I'm good. I'm nice."; and "I'm nice. I'm good at that."

Future positive thoughts about things I did well. Of the 119 positive thoughts reported, three (2%) were placed in this category. Examples of thoughts in this category were: "I got good marks on my report card."; "I got a good report card."; and "I did very well helping my dad lighting the steambath fire."

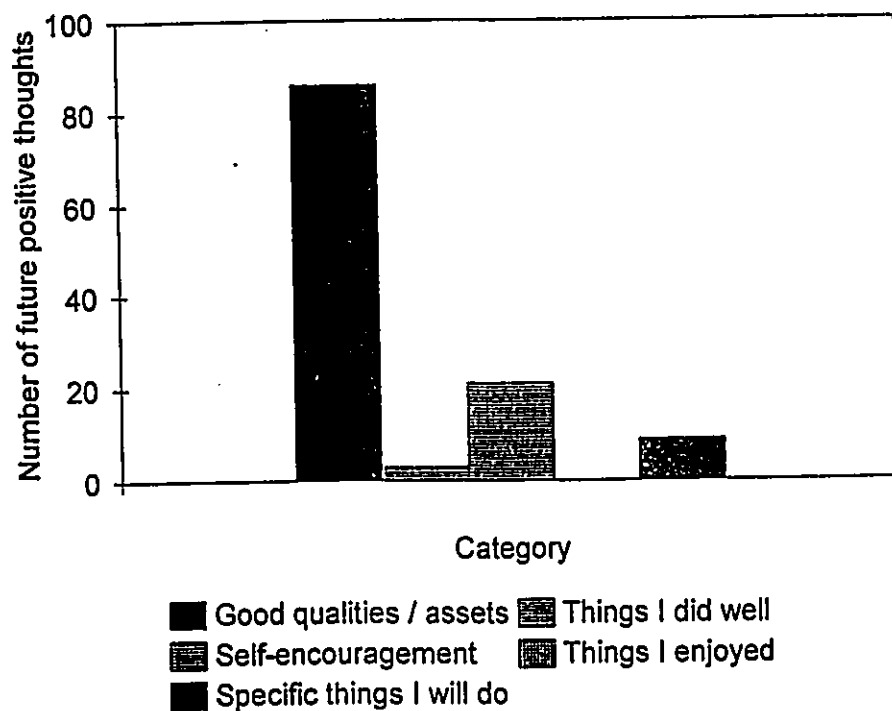


Figure 10. Distribution of the 119 future positive thoughts reported in the logbooks by experimental subjects in grades three to six.

Future self-encouragement/self-reinforcement. Of the 119 positive thoughts reported, 21 (18%) were placed in this category. Examples of

thoughts in this category were: "We're going to win ra ra."; "Nice move. Doing great."; "Great hit. Nice catch."; "You're doing great (Own Name). I can do it. I can do anything if I try."; and "Go go go. I am good."

Future positive thoughts about things I enjoyed. Of the 119 positive thoughts reported, none (0%) were placed in this category.

Future positive thoughts about specific things I am going to do. Of the 119 positive thoughts reported, nine (8%) were placed in this category. Examples of thoughts in this category were: "I will be nice to my friends."; "I will work hard. I will be nice. I will not argue."; "I won't lose my temper. I will do well in gym again."; and "I will go home and work on my project."

Negative Thoughts

In response to the logbook question "Did you have any negative thoughts about you today/What thoughts did you have?", the subjects reported 30 negative thoughts that they had observed. The subjects were also asked to rate on a five point Likert scale how they felt when they had these thoughts, with a score of one indicating the thought made the subject feel very poorly, bad, or down, and a score of five indicating the thought made them feel very good. These negative thoughts were entered into a data base and categorized on the basis of similarity. The

30 reported negative thoughts were classified into four major categories. The research supervisor and the investigator together examined each of the negative thoughts and came to a consensus on category definitions and the assignment of each of the negative thoughts to an appropriate category. An independent categorization of 20 randomly selected negative thoughts from the logbooks was subsequently conducted by a research assistant, using the same procedure as outlined for the stressful experiences, which yielded an inter-rater reliability of 1.00.

The four major categories that emerged from the negative thoughts reported by the children in this study were: 1) General negative thoughts; 2) Negative thoughts about specific events in the past; 3) Thoughts about things I am going to do wrong, poorly or not enjoy (negative anticipation); and 4) people related thoughts (general despair). The distribution of negative thoughts is presented in Figure 11.

General negative thoughts. Of the 30 negative thoughts reported, 17 (57%) were placed in this category. The average Likert scale rating of these negative thoughts was 1.94. Examples of thoughts in this category were: "I am stupid."; "I am retarded."; "I am crazy."; and "I am not good at anything."

Negative thoughts about specific events in the past. Of the 30 negative thoughts reported, six (20%) were placed in this category. The average Likert scale rating of the negative thoughts was 1.83. Examples of thoughts in this category were: "I wasn't good enough."; "I didn't do too well."; "That I wasn't very good at math."; and "That I couldn't play sports as good as my classmates."

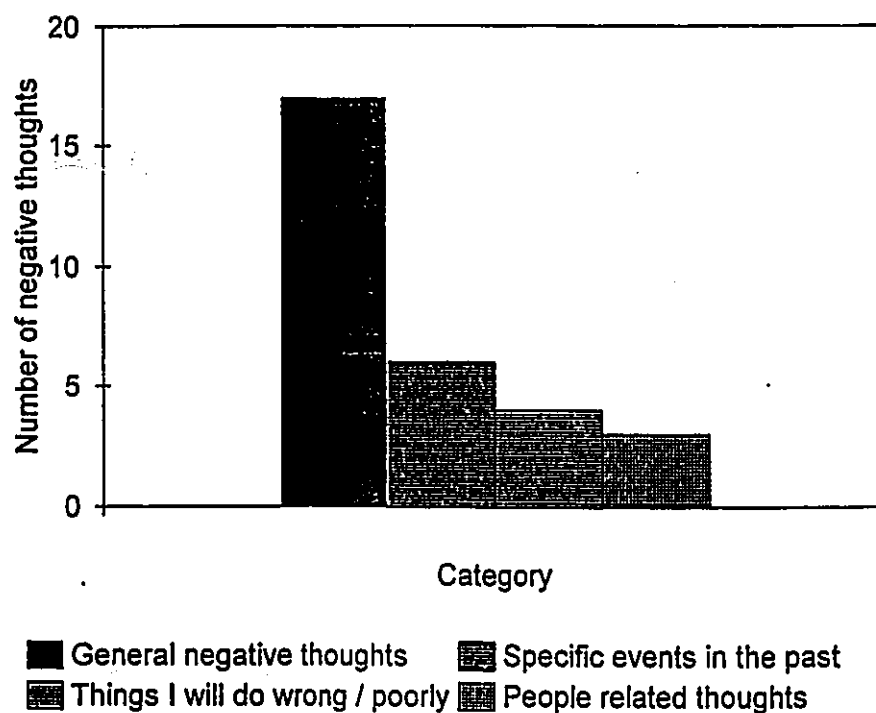


Figure 11. Distribution of the 30 negative thoughts reported in the logbooks by experimental subjects in grades three to six.

Thoughts about things I am going to do wrong, poorly, or not enjoy (negative anticipation). Of the 30 negative thoughts reported, four (13%) were placed in this category. The average Likert scale rating of these negative thoughts was 1.75. Examples of thoughts in this category were: "You're going to get your dictee wrong."; "I'm going to fail my exam."; and "I will never finish my homework."

People related thoughts (general despair). Of the 30 negative thoughts reported, three (10%) were placed in this category. The average Likert scale rating of these negative thoughts was 1.67. Examples of thoughts in this category were: "Nobody cares about me."; "People ignore me." ; and "I thought my parents didn't like my speech and that it wasn't good."

Questionnaire Results

Verbal questionnaires were administered to 33 of the 35 students in the experimental group. A copy of the questionnaire is provided in Appendix A.

In response to the question, "How did you feel about the positive thinking program that John and his friends did with you?", 23 of the subjects (70%) responded positively, i.e., "I liked it. It helped me feel better. It made me less worried"; "Liked it alot - helped me control my

temper, think more positive". Five subjects (15%) indicated a neutral response, i.e., "Felt in between about it - liked some things and not others"; "It was O.K.". The remaining five subjects (15%) had more negative responses, i.e., "Sort of boring. I liked it a bit".

In response to the question, "What did you like best (if anything)? Why?", 20 of the subjects (61%) reported that they liked the relaxation tapes and exercises the best. Four of the subjects (12%) reported that they liked writing positive thoughts about themselves and/or others the best, and a further 12% (4 subjects) indicated that they enjoyed all of the activities equally. Three of the subjects (9%) reported that they liked writing in their logbooks the most, and the remaining 2 subjects (6%) specified specific activities that they liked best (one each for the SEI questionnaire and a game of charades). It was interesting to note that all of the subjects in grade six and five of the six subjects in grade five reported that they liked the relaxation tapes and activities the best.

In response to the question, "Do you think you learned anything in the program? If yes, what did you learn?", all 33 subjects (100%) responded that they had learned something in the program. Eighteen of the subjects (55%) reported that they had learned to relax, five of the subjects (16%) reported that they had learned about positive and negative thoughts, five of the

subjects (16%) reported that they had learned to be positive with themselves and with others, and four of the subjects (13%) reported specific techniques that they had learned in the program (i.e., tree-ing it, changing channels). One subject's response did not relate to the question, and was not included in this summary.

In response to the question, "How can you help yourself think more positively?", eight of the 33 subjects (24%) responded that they would practice thinking positively. Five of the subjects (15%) indicated that they would use relaxation techniques, five subjects (15%) reported that they would think happy thoughts, and five subjects (15%) reported that they would use refocusing techniques learned in the program. Two of the subjects (6%) reported that they would list positive thoughts for future reference. Two of the subjects (6%) reported that they did not know how they could help themselves think more positively, and six subjects' answers (18%) did not relate to the question and were not included in this summary.

In response to the question, "Did you tell or teach anyone not in the program any activities or things we learned? If yes, who did you teach and what did you teach them?", 12 of the subjects (36%) reported that they did not tell anyone of the program contents. Twelve subjects (36%) reported that they had discussed the program with friends, and nine subjects (28%) had

discussed the program with family members (parents and/or siblings). Of the 21 subjects (64%) who reported discussing the program with others, only three reported the specific items that were related to others. One subject in grade three reported that he had taught his family the concept of tree-ing it., a subject in grade six reported teaching "One breath relaxation to a guy who was really hyper.", and another subject in grade six reported letting her parents read her logbook and explaining the activities to her brother.

DISCUSSION

This was an exploratory study in the truest sense of the word, which likely resulted in a series of shortcomings that may have affected the results.

Quantitative Results

A major purpose of this study was to assess the effects of the intervention program on positive thinking and self-esteem. The pre- and post-test means and standard deviations for each of the variables (Appendix D) indicated that the subjects in the control and experimental groups showed no significant differences on any of the variables. This finding indicated that either the instruments used did not accurately measure the phenomenon under study, or that the intervention program

was not powerful enough, long enough, or delivered well enough to change the subjects' scores on these variables.

The significant correlation between the newly created KISS scale and the SEI general subscale ($r = 0.62$) indicated that the two scales were measuring the same aspect of the subjects self-esteem, to some extent. The test-retest reliability of the KISS scale ($r = 0.95$, $n = 34$) was better than the test-retest reliability for the SEI ($r = 0.84$, $n = 62$) and any of the SEI subscales (see Table 2). The KISS scale took less than 30 sec. to complete, could be understood by very young children, and could be 'scored' by visual inspection; the SEI took 10 to 15 min. to complete, many of the questions were difficult to interpret, and the scoring was complex. Although further testing of this instrument is needed, the small sample size ($n = 66$) used in the development thus far, the ease with which the KISS scale could be administered relative to the SEI, and the fact that the KISS scale provided some of the information provided by the more complex SEI subscale indicated that the KISS scale could become a potentially useful tool in applied settings, either educational or research-oriented.

The significant correlation between the TALK scale and the SEI social self-esteem subscale ($r = 0.44$, $n = 66$) indicated that the two

scales may have been measuring a similar aspect of the subjects social self-esteem. The test-retest correlation of the TALK scale ($r = 0.91$, $n = 33$) was higher than the test-retest reliability for the SEI and all but one of its subscales (General self-esteem subscale $r = 0.93$). The TALK scale, like the KISS scale, took less than 30 sec. to complete, could be understood by very young children, and could be 'scored' by visual inspection. The ease of administration, and high reliability, of the TALK scale indicated that with further refinement it could become a useful tool.

The fact that the KISS and TALK scales appeared to have measured, at least to some extent, self-esteem, indicated that this component was accurately measured. Whether the TALK scale was capable of measuring changes in positive thinking, which it was designed to measure, is still unknown.

There are several possible reasons why no significant increase in the experimental subjects' scores on the KISS and TALK scales was found after the intervention program was completed. The first and most important reason was that the pre-test scores, in general, were very high (the pre- and post-test scale scores are presented in Appendix D). This left little room for the children to show improvement after the intervention program, even if they had improved. Subjects in both the experimental

and the control groups showed rather high pre-test scores, indicating that perhaps a rescaling of the instruments is required.

Another possible reason for the lack of significant findings in this study was that subjects were taken out of their regular classroom for the intervention program. This led to a decrease in the amount of time available for the program activities. Time was taken getting to and from the classes, settling the students down, and organizing the students once they were in the intervention classroom. In addition, the other studies in this series (Cox, 1994; St. Denis, 1994) that showed significant results used somewhat different methodologies. The studies were undertaken in the normal classroom with the subjects regular teacher in attendance, which eliminated class management and discipline problems. This allowed the researchers to involve the teachers in the project, gaining additional time, and support from the main influence in the students school lives. This option was not available in the current study, as the classes were split into the control and experimental groups only for the intervention sessions; the remainder of the time the groups interacted normally as classmates. In addition, Cox (1994) and St. Denis (1994) had larger group sizes (higher N), as they used entire classes as their experimental and control groups, rather than the split classes in the

current study. A larger sample size would probably have helped the current study, but this option was not available.

The most important difference between this study and the previous studies in the series (Cox, 1994; St. Denis, 1994) is that the previous studies each had only one clearly defined goal: Cox showed that young school children can learn to relax themselves, as measured with heart-rate monitors, and St. Denis showed that young children can learn to increase the number of highlights that they experience each day. The current study suffered because it attempted to do several things at once: to develop reliable and valid measurement tools for children's feelings of general happiness (KISS scale) and self-esteem (TALK scale); to determine whether children experience stress; if they do experience stress, what experiences do they find stressful and how stressful do they rate them; what kinds of positive and negative thoughts they have, if any; and whether or not they can learn to use refocusing strategies to feel less stressed, have more positive thoughts and less negative thoughts.

Qualitative Results

The results of the qualitative aspect of this study have opened some new and interesting doors. The information collected from the subjects' logbooks provided subjective ratings of how stressful their

stressful experiences were as well as some interesting data on children's positive and negative thoughts and how those thoughts made them feel. Neither of these areas were found in the review of literature.

Logbooks. The logbooks appeared to have been a useful research tool; the subjects were able to complete the pages with ease, and large quantities of information on the stressful experiences, positive and negative thoughts was obtained.

Some sections of the logbooks were not analyzed, for two reasons. The first problem was that only three of the 61 reported stressful experiences (5%) had completed the accompanying written description of how stressful the experience was. The second problem was the lack of information on the refocusing page: the purpose of this page was either not clearly understood by the subjects, or monitored by the researchers. Thus, there was very little useful information to be gained from this section of the logbooks, which otherwise could have provided interesting information.

Stressful experiences. For the first time, subjects not only reported the stressful events they experienced, but they also rated how stressful they found these experiences. This type of information was not available in the literature. The major categories of stressful experiences found in

the current study were similar to those found in previous studies (Omizo, Omizo & Suzuki, 1988; Dickey & Henderson, 1989; Cox, 1994). This indicates that the categories were well defined and inclusive. Omizo et al. (1988) reported the categories: Family problems, feeling different, school-related problems, fear of discipline, and general concerns. Dickey and Henderson (1989) reported similar categories: School work, peer relationships, homework, injury, loss, discipline, relations with teachers and family.

The categories of stressful experiences developed by Cox (1994) were used in the present study, and with the exception of the sleeping problems category reported by Cox, all were found in the present study. The people stress category used in the current study, and that of Cox (1994), represented the family concerns category of Omizo et al. (1988). Similarly, the peer relationships and relations with teachers and family categories reported by Dickey and Henderson (1989) were represented by the people stress category of the current study. The school stress category was common to all four studies. The differences in the other categories reported were minor; they are probably representative of the different foci or times of the studies rather than real differences between the populations. For example, in a study conducted in Ottawa in March

one would not expect as many sport-related responses as in a study conducted in July, simply due to the seasonal effect; not as many sports are played in Ottawa in March as in July. Similarly, one would not expect as many school-related stressful experiences in August as in December.

The subject's ratings on how stressful they felt during various experiences provided interesting comparative information. It was interesting to note that of all the stressful experiences reported, the most stressful (mean rating) category was people related stress at 1.44 or 'very stressful', and within that category, the experiences in the parent subcategory received a mean rating of 1.00, or 'very stressful'. Further research into this particular phenomenon is indicated.

Positive thoughts. The positive thoughts that the subjects reported in their logbooks provided a great deal of information about the kinds of things that elementary school children think about. This area shows great potential for application and further research. Now that the types of thoughts that children have are better understood, teachers are in a better position to teach children a variety of different types of positive thoughts that they can work on, including specific examples, to make them feel better about themselves.

Future positive thoughts. The positive thoughts which the subjects reported that they would try to have fit well into the previously defined categories. This indicates that the categories developed for this area were inclusive, in that all the positive thoughts reported were readily slotted into these categories. The fact that no subjects reported future positive thoughts that were placed into the category related to positive thoughts about things I enjoyed is not surprising; one would not expect subjects to anticipate thinking about something they enjoyed; rather, they would be expected to report that they were anticipating an event they would enjoy, which falls within the category related to specific things I am going to do.

Negative thoughts. The negative thoughts reported by the subjects in their logbooks provide interesting information about the kinds of negative things that some elementary school children think to themselves and how these negative thoughts made them feel. This is also an area which can be targeted for improvement with specific examples of children's thoughts which make them feel bad, as well as good.

Questionnaires. The results of the questionnaires indicated that, overall, the subjects enjoyed the program. The activities reported as most enjoyable, i.e., the relaxation exercises, must be given priority in future

studies; perhaps some of the less enjoyable activities can be adapted or removed altogether.

Not all of the questions asked of the subjects resulted in useful information, partly due to the lack of response (e.g. "Is having positive thoughts important?" and "Did the program help you in any way?") It is likely that more useful information would be forthcoming through individual interviews where concepts can be explained and subjects can discuss their feelings.

General Conclusions

The program would have benefited from more diversity of activities that were directly focused on the objective (i.e. positive thinking). In addition, the activities were focused on talking about positive qualities or positive thinking, and not enough actually involved the children in practicing or acting out or acting upon positive thinking. More activities similar to those in the Highlight program (St. Denis, 1994), where real world experiences and/or games are used, as well as more repetition of concepts would likely be helpful.

There were some shortcomings with respect to the delivery of the program, primarily due to taking the children out of their normal classroom to another room for the activities. The researcher taught the program

without the teacher present. These two factors resulted in loss of time getting children to and from the classroom and getting them to settle down upon arrival. It was often similar to a supply teacher in terms of discipline and control. At best the full-focus time in activities was half that experienced by Cox (1994) and St. Denis (1994), who taught the program in the classroom with the teacher in attendance. It is likely that there was not enough time in the program spent specifically on practicing positive thinking to effect changes. This could be remedied in future studies.

The overall self-esteem measures, the SEI, KISS and TALK scales, appear to have been adequate assessment inventories for general self-esteem. The SEI is an established inventory, though the children had difficulty understanding certain questions and the KISS and TALK scales were easily comprehensible, correlated positively with the SEI and had excellent test-retest reliability. However, the primary target area of positive thinking is likely one of the most difficult areas in which to establish accurate baselines and accurately assess change. The means for accomplishing this are not yet refined. Further creative thought and research is needed in this area. Given these potential short-comings, it is interesting that logbook analyses indicated that certain students, i.e., those in grade six, did begin to actively use some of the positive thinking

principles taught to them and provided specific examples of refocusing from negative to positive. However this appeared to be true for a minority of students and was not enough to influence overall significance in this study. The most significant finding lay in lessons or directions for future attempts at influencing and assessing concepts like positive thinking.

For future studies in this area, thought must be given to how we can ensure that students devote more time to practicing positive thinking and that they will receive more guidance, encouragement, and check-ups to act upon the concepts they are learning. In addition, careful thought must be put into developing questionnaires that can be used with both young children and older children; perhaps it would be best to use separate questionnaires for different age levels, but then care must be taken to ensure that the responses are comparable, if that is the purpose of the study.

The logbook approach appears to have been a very successful method of collecting the qualitative data that was requested, except for the refocusing information. Future studies may want to adapt the logbooks to obtain only the information required; those subjects that did not like the logbooks reported that they were time-consuming.

The focus of a future study should be whether children can be taught to think more positively, think positively more often, and/or think negatively less often. The assessment tools and methods of evaluation should be focused specifically on these objectives - positive thinking. Once it is determined whether children's positive thinking can be taught or enhanced, measures of overall self-esteem could be introduced into the assessment process. The logbook approach appears to have excellent potential for assessing the target behavior of positive thinking.

With the information gained from this study, perhaps the intervention program, program delivery and assessment focus can be refined and follow-up studies can be attempted. The goal remains the same, to increase positive thoughts and reduce negative thoughts among children and youth and to ultimately increase feelings of self-worth and personal satisfaction.

The most revealing comment was made by a student in grade 6, with respect to whether the program had helped her in any way. Her reply: "Yes, (I am) more positive and relaxed ... (it) will help later on if (I) keep practicing it."

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Appendix A

Copies of instruments used in the study.

KISS Scale
Talk Scale
SEI Questionnaire
Logbook Pages
Post-program Questionnaire

KISS Scale

TALK Scale

SEI Questionnaire

1. Boys and girls like to play with me.
2. I usually quit when my school work is too hard.
3. I only have a few friends.
4. I have lots of fun with my parents.
5. I like being a boy / I like being a girl.
6. I am a failure at school.
7. My parents make me feel that I am not good enough.
8. I usually fail when I try to do important things.
9. I am happy most of the time.
10. I wish I were younger.
11. I often feel ashamed of myself.
12. Most boys and girls play games better than I do.
13. I often feel that I am no good at all.
14. Most boys and girls are smarter than I am.
15. My parents dislike me because I am not good enough.
16. I am as happy as most boys and girls.
17. Most boys and girls are better than I am.
18. I like to play with children younger than I am.
19. I often feel like quitting school.
20. I can do things as well as other boys and girls.
21. I would change many things about myself if I could.
22. There are many times when I would like to run away from home.
23. My teacher feels I am not good enough.
24. My parents think I am a failure.
25. I worry a lot.

Logbook Page 1

Logbook Page 2

Logbook Page 3

Logbook Page 4

Post-program Questionnaire

1. How did you feel about the positive thinking program that John and his friends did with you?
2. What did you like best (if anything)? Why?
3. Was there anything you didn't like? Why?
4. Do you think you learned anything in the program? If yes, what did you learn?
5. Is having positive thoughts important?
6. How can you help yourself think more positively?
7. Did you tell or teach anyone not in the program any activities or things we learned? If yes, who did you tell or teach, and what did you tell or teach them?
8. Did the program help you in any way? If yes, how?

Appendix B

Relaxation Scripts (Orlick, 1993) used in the intervention program.

Animal Sounds
Butterfly/Flutterby
Changing Channels
Dual Focusing (Tree It and Be Happy)
Echo Lake (Terry)
Echo Lake (Nadeane)
Echo Lake 2
Floating on Clouds
Flowing Stream
Focusing Through Distractions 1 & 2
Follow Your Breathing
Fun Focusing
Happy Highlights
Imagine Game
Jelly Belly
Laughing
Rainbows & Magic Wands
Muscle Relaxation
One Breath Relaxation
Quiet Lake
Relaxed Breathing
Reminders for Feeling Good
Soaring
Sound Listening 1
Sound Listening 2
Spaghetti Toes
Special Place Relaxation
Standing Relaxation
Star Track
The Great Listener
The Quiet Lake
The Peaceful Sea
Umbalakiki
Your Own Special Place

Appendix C

Intervention schedule and description of activities.

Intervention One - "Worries"

The session began with a discussion of events that worried/bothered the subjects, and the methods they used (if any) of feeling better. Methods the subjects used were explored in terms of their effectiveness in alleviating the discomfort caused

Intervention Two - "Can't Do Magic"

Subjects listened to a description of Can't Do Magic (Orlick, 1992b), and then discussed when this could be a helpful method of dealing with minor stressful events.

Intervention Three - "Important Worries"

A discussion of events that worried the subjects was begun. The amount of control the subjects had over these worries was discussed. The experimenter explained that simple worries could be dealt with using the methods outlined in the program, but more serious worries should be discussed with parents/teachers.

Intervention Four - "Throwing Worries Away"

Each subject wrote a worry down on a piece of paper. The paper was crumpled, torn, or otherwise mutilated by the subjects as a symbol of

their control over the worry, and then the papers were collected by a worry-collector, who threw them in the garbage. The subjects were encouraged to forget the worries as they threw them away. Each subject took a turn collecting the groups worries and discarding them.

Intervention Five - "Umbalakiki"

The subjects listened to the audiotape of the Umbalakiki relaxation script, wherein Orlick explains the development of Tree-ing It. Each subject then took a turn touching each member of the group on the shoulder and "taking" each subjects worries from them, and then placing the "worries" in an inanimate object.

Intervention Six - "Tree-ing It"

Subjects were introduced to the concept of Tree-ing It. Tree-ing It was introduced as an alternative to the methods of dealing with minor worries that they used. Each subject placed a worry in a tree drawn on a blackboard, and the tree was then erased from the blackboard, freeing the subjects from further worry about the worry.

Intervention Seven - Introduction to Logbooks

Each subject was given a logbook. The purpose of the logbooks was explained to the subjects. The subjects were told how to complete each page of the logbook. Subjects in grades four, five and six were

allowed to keep their logbooks; the logbooks for subjects in grade three were kept by the experimenter.

Intervention Eight - Introduction to Logbooks, Day 2

The subjects completed one set of logbook pages (four separate sheets). The subjects were questioned as to how they had responded, in order to ensure that the subjects understood the questions asked in the logbooks.

Intervention Nine - "Positive Thoughts"

Subjects wrote down two positive thoughts and the names of two other subjects in their group on scraps of paper. The experimenter collected the papers, mixed them together, and then redistributed them to the subjects. Each subject in turn read aloud the positive thought and the person's name, giving each subject two positive thoughts they could have for that day.

Intervention Ten - "Changing Channels"

Subjects were introduced to the concept of Changing Channels (Orlick, 1992b) and a discussion of when this method of refocusing could be useful for dealing with minor stressful events.

Intervention Eleven - "Changing Channels, Part 2"

The discussion from the previous session was continued. The importance of maintaining a positive perspective was discussed in terms of enjoyment of life.

Intervention Twelve - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Thirteen - "Fun Focusing"

Orlick's (1992b) audiotape of Fun Focusing was played for the subjects, and they attempted to follow the activity. After the audiotape was finished, the subjects discussed the activity, which required the subjects to attempt to solve a mathematical problem given by one voice while a second voice attempted to distract them from the problem.

Intervention Fourteen - Review

The subjects were asked to review the concepts discussed in earlier sessions. The experimenters and the subjects discussed their use of these methods of maintaining a positive perspective, and the importance of maintaining this positive perspective.

Intervention Fifteen - Test-Retest of Scales

Subjects were administered the KISS and Talk scales, and then the scales were administered again. The subjects spent the rest of the session working on their logbooks.

Intervention Sixteen -"Positive Thoughts 2"

The positive thoughts activity (Intervention 9) was repeated, except the subjects had to write positive thoughts with their own name on the paper. The experimenter read these thoughts aloud for the group.

Intervention Seventeen - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Eighteen -"Soaring"

Orlick's (1992b)audiotape of Soaring was played for the subjects, and their feelings while listening to the audiotape were discussed.

Intervention Nineteen - "Positive Thought Eggs"

The positive thoughts activity (Intervention 9) was repeated, and the scraps of paper were placed inside plastic Easter eggs. Each subject took a turn choosing an Easter egg and reading the positive thought inside.

Intervention Twenty - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Twenty-one - Review

The subjects were asked to review the concepts discussed in earlier sessions. The experimenters and the subjects discussed their use of these methods of maintaining a positive perspective, and the importance of maintaining this positive perspective.

Intervention Twenty-two - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Twenty-three - "Reminders for Feeling Good"

Orlick's (1992b) audiotape of Reminders for Feeling Good was played for the subjects, and then they were asked to write down how many of the reminders they could remember. The subjects used the rest of the session to complete their logbooks.

Intervention Twenty-four - "Positive Thoughts"

The positive thoughts activity (Intervention 9) was repeated, only the subjects had to write positive thoughts with their own name on the paper. The experimenter read these thoughts aloud for the group.

Intervention Twenty-five - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Twenty-six - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Twenty-seven - Review

The subjects were asked to review the concepts discussed in earlier sessions. The experimenters and the subjects discussed their use of these methods of maintaining a positive perspective, and the importance of maintaining this positive perspective.

Intervention Twenty-eight - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Twenty-nine - Logbooks

The subjects were given time to complete pages of their logbooks and to discuss any events that they wished to share with the group. Individual discussions were held with the experimental assistants.

Intervention Thirty - Last Day

Discussions as to when the concepts learned in the intervention sessions could be used. Subjects were given the opportunity to ask any questions they had of the experimenters. Logbook pages were completed and the logbooks were collected by the experimenter.

Appendix D

Mean (Standard Deviation) for each cell of the analysis**Means and Standard Deviations for KISS Scale Scores (Range: 5 - 15)**

Grade	Control Pre-test	Control Post-test	Experimental Pre-test	Experimental Post-test
3	11.8 (1.8)	11.2 (3.2)	11.7 (2.3)	10.8 (2.7)
4	10.9 (2.8)	11.0 (3.5)	9.3 (2.3)	9.5 (3.4)
5	9.6 (2.7)	9.6 (2.3)	11.0 (1.0)	12.2 (1.4)
6	10.0 (4.0)	11.9 (2.3)	9.4 (3.3)	12.3 (1.6)

Means and Standard Deviations for Talk Scale Scores (Range: 5 - 15)

Grade	Control Pre-test	Control Post-test	Experimental Pre-test	Experimental Post-test
3	13.3 (1.6)	12.3 (2.4)	12.9 (2.3)	11.9 (2.3)
4	11.2 (3.5)	11.2 (2.9)	10.4 (1.9)	10.6 (2.7)
5	10.6 (2.2)	9.8 (2.3)	12.3 (1.6)	11.7 (1.3)
6	12.2 (2.2)	11.3 (2.3)	9.7 (1.3)	11.3 (1.9)

Means and Standard Deviations for SEI Scale Scores (Range: 0 - 25)

Grade	Control Pre-test	Control Post-test	Experimental Pre-test	Experimental Post-test
3	18.7 (0.8)	18.7 (1.0)	18.77 (0.9)	18.3 (0.9)
4	18.5 (1.1)	18.1 (1.4)	18.4 (1.3)	18.0 (1.3)
5	19.0 (1.3)	18.7 (1.6)	19.1 (0.7)	19.3 (0.8)
6	18.6 (0.5)	18.8 (1.2)	18.5 (1.8)	18.2 (1.5)

Means and Standard Deviations for SEI (General) Scores (Range: 0 - 10)

Grade	Control Pre-test	Control Post-test	Experimental Pre-test	Experimental Post-test
3	8.9 (1.2)	8.7 (1.5)	8.5 (2.3)	7.7 (2.4)
4	7.8 (2.1)	8.4 (2.0)	6.8 (2.7)	6.9 (3.2)
5	8.2 (2.3)	7.8 (3.1)	9.4 (1.0)	9.9 (0.4)
6	8.2 (3.5)	8.3 (1.9)	8.4 (2.5)	8.2 (2.1)

Means and Standard Deviations for SEI (Social) Scores (Range: 0 - 5)

Grade	Control Pre-test	Control Post-test	Experimental Pre-test	Experimental Post-test
3	4.1 (0.5)	4.0 (1.0)	3.7 (1.0)	3.4 (1.3)
4	3.5 (1.4)	2.9 (1.2)	3.8 (1.4)	3.3 (1.4)
5	3.8 (1.2)	3.5 (2.1)	4.3 (0.5)	4.4 (0.5)
6	4.0 (1.0)	3.7 (1.8)	3.6 (1.7)	3.5 (1.4)

Means and Standard Deviations for SEI (Academic) Scores (Range: 0 - 5)

Grade	Control Pre-test	Control Post-test	Experimental Pre-test	Experimental Post-test
3	4.4 (0.8)	4.6 (0.5)	4.2 (1.3)	4.2 (1.3)
4	3.9 (1.2)	4.2 (1.1)	3.7 (1.3)	3.6 (1.4)
5	4.7 (0.8)	4.5 (0.8)	4.9 (0.4)	4.9 (0.4)
6	4.0 (1.7)	4.8 (0.4)	4.6 (0.9)	4.5 (1.2)

Means and Standard Deviations for SEI (Parental) Scores (Range: 0 - 5)

Grade	Control Pre-test	Control Post-test	Experimental Pre-test	Experimental Post-test
3	4.5 (0.7)	4.2 (1.1)	4.7 (0.9)	4.6 (0.5)
4	4.8 (0.4)	4.6 (0.7)	4.2 (0.8)	3.8 (1.8)
5	4.5 (0.8)	4.0 (0.9)	4.9 (0.4)	4.7 (0.5)
6	4.0 (2.2)	3.8 (1.5)	4.8 (0.4)	4.7 (0.5)

Appendix E

ANOVA source tables for each of the quantitative variables in the analysis.

KISS Scale

Tests of Between-Subjects Effects

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	700.06	62	11.29		
Constant	14821.97	1	14821.97	1312.69	0.000
Group	0.04	1	0.04	0.00	0.950
Grade	33.55	3	11.18	0.99	0.403
Group X Grade	48.09	3	16.03	1.42	0.246

Tests involving Within-Subjects Effect (Test)

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	187.64	62	3.03		
Test	11.65	1	11.65	3.85	0.054
Group X Test	1.85	1	1.85	0.61	0.438
Grade X Test	41.76	3	13.92	4.60	0.006
Group X Grade X Test	3.55	3	1.18	0.39	0.760

Talk Scale

Tests of Between-Subjects Effects

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	505.94	61	8.29		
Constant	16057.15	1	16057.15	1935.96	0.000
Group	1.50	1	1.50	0.18	0.673
Grade	87.63	3	29.21	3.52	0.020
Group X Grade	37.88	3	12.63	1.52	0.218

Tests involving Within-Subjects Effect (Test)

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	145.53	61	2.39		
Test	4.08	1	4.08	1.71	0.196
Group X Test	2.60	1	2.60	1.09	0.301
Grade X Test	8.95	3	2.98	1.25	0.300
Group X Grade X Test	3.77	3	1.26	0.53	0.666

SEI Scores

Tests of Between-Subjects Effects

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	128.55	55	2.34		
Constant	40509.53	1	40509.53	17331.41	0.000
Group	0.20	1	0.20	0.09	0.769
Grade	9.93	3	3.31	1.42	0.248
Group X Grade	2.27	3	0.76	0.32	0.808

Tests involving Within-Subjects Effect (Test)

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	20.63	55	0.38		
Test	0.40	1	0.40	1.07	0.305
Group X Test	0.33	1	0.33	0.87	0.356
Grade X Test	0.90	3	0.30	0.80	0.497
Group X Grade X Test	1.47	3	0.49	1.30	0.282

SEI General Subscale Scores

Tests of Between-Subjects Effects

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	509.97	54	9.44		
Constant	7746.01	1	7746.01	820.21	0.000
Group	0.51	1	0.51	0.05	0.817
Grade	34.00	3	11.33	1.20	0.318
Group X Grade	34.22	3	11.41	1.21	0.316

Tests involving Within-Subjects Effect (Test)

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	47.22	54	0.87		
Test	0.06	1	0.06	0.07	0.795
Group X Test	1.01	1	1.01	1.16	0.287
Grade X Test	1.29	3	0.43	0.49	0.691
Group X Grade X Test	3.09	3	1.03	1.18	0.327

SEI Academic Subscale Scores

Tests of Between-Subjects Effects

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	96.02	54	1.78		
Constant	2114.99	1	2114.99	1189.40	0.000
Group	0.06	1	0.06	0.03	0.855
Grade	13.29	3	4.43	2.49	0.070
Group X Grade	2.05	3	0.68	0.38	0.765

Tests involving Within-Subjects Effect (Test)

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	32.15	54	0.60		
Test	0.52	1	0.52	0.87	0.354
Group X Test	0.97	1	0.97	1.64	0.206
Grade X Test	0.56	3	0.19	0.31	0.815
Group X Grade X Test	0.97	3	0.32	0.54	0.654

SEI Parental Subscale Scores

Tests of Between-Subjects Effects

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	83.96	54	1.55		
Constant	2201.95	1	2201.95	1416.24	0.000
Group	2.04	1	2.04	1.31	0.257
Grade	0.63	3	0.21	0.13	0.939
Group X Grade	11.99	3	4.00	2.57	0.064

Tests involving Within-Subjects Effect (Test)

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	22.88	54	0.42		
Test	1.52	1	1.52	3.59	0.064
Group X Test	0.01	1	0.01	0.03	0.867
Grade X Test	0.22	3	0.07	0.17	0.914
Group X Grade X Test	0.33	3	0.11	0.26	0.853

SEI Social Subscale Scores

Tests of Between-Subjects Effects

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	145.35	54	2.69		
Constant	1568.15	1	1568.15	582.58	0.000
Group	0.07	1	0.07	0.02	0.877
Grade	7.13	3	2.38	0.88	0.456
Group X Grade	9.64	3	3.21	1.19	0.321

Tests involving Within-Subjects Effect (Test)

Source of Variation	SS	DF	MS	F	Sig of F
Within Cells	24.76	54	0.46		
Test	1.34	1	1.34	2.92	0.093
Group X Test	0.06	1	0.06	0.14	0.711
Grade X Test	1.13	3	0.38	0.82	0.486
Group X Grade X Test	0.99	3	0.33	0.72	0.546

Appendix F

Proposal.

**The Development and Assessment of a Co-operative
Games Program to Teach Young Children
Positive Perspectives**

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Running Head: Shifting Focus for Stress Management

The Development and Assessment of a Co-operative
Games Program to Teach Young Children
Positive Perspectives

Hans Selye, the famous stress researcher, said "I have often equated stress with life, and yet children have been consistently omitted from stress research as if life did not apply to them" (Miller, 1982, p.vii).

"It is common knowledge that children experience stress, but we know surprisingly little about the nature of stress and coping among most children on everyday life. Most relevant child research has focused on the extraordinary: youngsters who are ill or handicapped, have lost significant caregivers, or face serious socio-economic and psychological risks" (Band & Weisz, 1988, p. 247).

In response to these short-comings, Orlick (1992c) has introduced an innovative method of teaching children life-skills using co-operative games. These general life-skills, derived from Orlick's years of experience working with elite athletes (Orlick, 1986, 1990, 1992e; Orlick & Partington 1986b, 1988) and previous work with children (see Li-Wei, Qi-Wei, Orlick & Zitzelsberger, 1992; Orlick, 1992a-c; Orlick & McCaffrey, 1991) include Positive Thinking, Focusing in the Face of Distraction,

Shifting Focus (Positive Perspectives), Relaxation, Mental Imagery and Self-Esteem/Self-Confidence (Orlick, 1992c).

Goals Of The Study

The purpose of this study is to develop an effective and entertaining method of teaching young school children to focus "fully in the moment (in joyful, positive, uplifting and helpful ways)" (Orlick, 1992c, p. 123), and to shift their focus from negative to positive, or destructive to constructive, in various situations (positive perspectives).

Hypothesis

It is expected that the students who receive the focusing and refocusing training through participation in the co-operative games-based program will have more positive perspectives, increased ability to shift their focus (from negative to positive), and an increased level of general happiness; students who do not receive the training will not show a change, or will show less of a change, in their perspective on situations, focusing ability or level of general happiness.

Definitions

Focus - the concentration of one's attention on a single thought, task or feeling. Orlick (1990) describes several vivid examples of focusing: the single-

mindedness of the cat pursuing its prey, ignoring the car that nearly hits it (p. 15); the concentration of the young child playing with a toy truck, oblivious to the numerous activities occurring around him (p. 15).

Shift focus - to change the thought, task or feeling that one is concentrating on.

Perspective - one's general outlook on life; specifically the way in which one approaches the situations one faces: with fear (negative); or with interest (positive), seeking the good in every situation and striving to learn from each new experience.

Significance

Previous researchers in the field of mental training with children have concluded that the use of mental training "may be particularly promising for children; it offers a means of learning skills faster and more easily, as well as an opportunity to learn mental skills at an early age that can give children greater control over their personal destiny." (Li-Wei, Qi-Wei, Orlick & Zitzelsberger, 1992, p. 240).

This type of thinking emphasises the philosophy underlying the present study: that mental training skills can and should be taught to

young children. In particular, developing a positive perspective, learning to focus one's attention away from destructive or unproductive areas, and focusing on healthy and constructive areas, can have a healthy and long-lasting impact on life-long learning and personal satisfaction.

REVIEW OF LITERATURE

"Shifting focus from negative to positive is one of the most important and least practised of all human skills." (Orlick, 1992b, p. 123).

The idea that children experience and need to cope with stress is no longer a subject of debate. The ways that they perceive and actually cope with stress are still not well understood; theoretical bases and applied interventions are constantly being evaluated and modified. What children find stressful is still not well understood; they find many, but not all, of the same things adults find stressful to be stressful, but in different ways and for different reasons, it appears. The best methods of helping children cope with the stresses they encounter are still being sought; most studies to date have involved teaching children adult coping methods.

Stress and Children

"To create a society of coping adults, we must recognise stress in children and help them to learn to function effectively Fortunately,

children are no longer excluded from the study of stress or the development of means to handle it." (Allen & Green, 1988, p. 10).

"While the professional literature deals almost exclusively with adults, there is growing evidence that children experience stress as well and that their health and adjustment may be affected by it." (Dise-Lewis, 1988, p. 484).

Research involving children, stress, and their means of coping with it is finally coming into fashion. While the majority of information on stress still comes from investigations involving adults, the focus is starting to shift to children and their methods of dealing with stress.

Borbas (1986) stated "Stress, like death and taxes, is inevitable. It is a normal response to normal life events. It is the sign that one's body is out of psychological equilibrium in the face of a threat or imagined threat to one's self-concept or security." (p. 17).

Omizo, Omizo and Suzuki (1988) discard the notion that children do not experience stress: "Many adults believe that children do not experience much stress because they are not expected to be responsible for many things in their lives, they have others to depend on, and they can do a variety of acceptable things to relieve stress. In fact, the opposite is true partly because they don't understand what is happening and partly

because they don't know what to do about it" (p. 267). They also note that "No study has provided data on stressors and symptoms from studying school-age children" (p. 267).

Adults and children do not see eye to eye on a variety of things, as any parent knows. It would be wrong to assume children see stress in the same way adults do. Allen and Green (1988) point out that adults and children view the same situations in vastly different ways. Garnezy (1974) demonstrated empirically that "adults and children have very different perceptions of what constitutes a stressful event and of how stressful it is for them".

Miller (1982) found that the ways children relax are "either frowned upon or so highly organised as to be no longer relaxing" (p. 37). This finding should disturb stress researchers deeply: While trying to help our children cope with stress, we may in fact be causing them more stress by imposing an adult structure upon their natural relaxation methods.

Erik Erikson (Miller, 1982) found that adults and children share many of the same basic fears that lead to stress (i.e., withdrawal of emotional support; being deprived of a valuable possession; having no imposed controls). Further, children fear suddenness. While a divorce or a family move may seem to develop over a long period of time for adults,

for a variety of reasons (notwithstanding the adults desire to avoid causing children unnecessary stress), children tend to see these things as suddenly occurring events. They tend to grasp the realities of the situation only when they awaken in a 'strange' house, or when they want something from a Mom or Dad who is no longer readily available.

Hiebert (1983) stated "Stress arises from a demand placed on a person. The demand may be internal or external, real or imagined" (p. 53). Essentially, stress occurs when people perceive themselves as not being able to handle the demands of a situation they encounter. Whether the situation and the demands are real or imagined, the reaction is the same, physiologically and psychologically. This finding suggests that if we can help children change their ways of perceiving (i.e., positive perspectives), then perhaps we can change their reactions to stressful situations from negative to positive.

The notion that children lead "carefree lives free of the tensions and pressures experienced by adults" is dismissed by Edwards and Miller (1988, p. 10). They state that "childhood and adolescence are two of the most stressful periods of life." (p.10). They attribute this to the fact that children today are forced to respond not only to adult problems such as divorce, separation, and relocation, but they are also under pressure to

excel at school, in sports, and in many other areas of life. Methods of coping with stress have not kept pace with the changing realities of modern life.

Omizo, Omizo and Suzuki (1988) report that the major stressors for elementary school children were (in descending order of frequency of report by children): Family Problems; Feeling Different; School-related Problems; Fear of Discipline; and General Concerns (insecurity, general fear of the unknown). These stressors are perceptual in nature; if we can change the observer's perspective, we may be able to change the perception of these stressors.

Allen and Green (1988) emphasise that adults should not attempt to eliminate all stress from the lives of the children they interact with. Adults should try to help children avoid unnecessary stress, and help them learn to cope with the rest. Dize-Lewis (1988, p. 498) concurs: "Many of the stresses of life cannot be prevented. Indeed, if they could be, it is not clear that this would be desirable."

Ryan (1989) defined 'stressful events', or stressors, as "things that make children 'feel bad, nervous or worried'" (p. 113). Using this definition, she studied the strategies children employ in anticipation of, during, and after stressful events. Ryan found that children use both

cognitive (appraisal of stressors, appraisal of resources to cope with stressors, plan ways to avoid or deal with stressors) and behavioural (change the subject, run away, kick objects) strategies to cope with stressors.

Obviously, stress in adults and stress in children are two different things. The same event experienced by an adult and a child may cause each different amounts of stress, if any, just as it would cause two different adults, or two different children, different amounts of stress.

Mental Training and Children

Research in the area of mental training with children has been somewhat limited in scope for a variety of reasons (see Li-Wei, Qi-Wei, Orlick & Zitzelsberger, 1992; Orlick, 1992a, 1992c; Solin, 1991).

Orlick (1992c) stated that "Researchers agree that many potential problems could be avoided and benefits accrued by teaching children effective ways to cope with the demands and stresses of contemporary society" (p. 1). He concludes that despite the consensus opinion of the value of teaching children to prevent and cope with stress, because the currently available programs are based upon adult stress control methods, none of them do full justice to children and their special needs. That is, they fail to address the specific stressors which children deal with,

or, what does a child find stressful? Secondly, they fail to take advantage of the greater creativity and adaptability of children relative to adults.

Orlick and McCaffrey (1991) applied the mental training expertise they have gleaned from years of work with elite athletes (Orlick, 1990; Orlick & Partington, 1986a) to child athletes, kindergarten and elementary school students, and children attempting to overcome serious illnesses. They found that their best results occurred when the interventions included the use of concrete strategies, an element of fun, and a positive, individualised approach. Other important observations include the trust and mutual caring that develops when the child sees the adult cares enough to go to the child's place of action, as well as the difference in behaviour that occurs in the various locales that children frequent. Ongoing contact was also found to be very important in developing a successful intervention. These findings would be helpful to anyone planning an intervention program with children.

Co-operative Games

Orlick's success using co-operative games with children (see Orlick, 1976, 1978, 1982; Orlick & Botterill, 1975; Orlick, McNally & O'Hara, 1978) led to the development of the co-operative games approach to teaching children stress-free perspectives.

The philosophy of co-operative games as defined by Orlick (1978) is that "everybody co-operates ... everybody wins ... and nobody loses. Children play with one another rather than against one another" (p. 3). The underlying purpose is to "eliminate the fear of failure and the feeling of failure" (p.3). Orlick's intent was to improve not just the quality of the games children play, but also the quality of their lives through the games they participate in.

The rules of these games, and most others, are not nearly as important as the concepts they are designed to teach; too many valuable learning experiences are missed due to rigid adherence to rules that can and should be adapted in order to enhance the learning experience.

One advantage to co-operative games is that they can be modified for use as teaching aids in a wide variety of situations. A co-operative games-based program allows the flexibility to meet the varying demands of a wide variety of programs and participants.

Stress Management

Stress management can be divided into two main areas: the theoretical frameworks underlying the programs, and the actual programs, or 'techniques', themselves.

Theoretical Frameworks

Band and Weisz (1988) stated "The adult literature cannot tell us how children respond to stress, but it does provide conceptualisations that may help guide research with children." (p. 247). They suggested two interesting perspectives: The adult-based 'ways of coping' model and the primary-secondary control model. The 'ways of coping' model dichotomises coping behaviours: Problem management or modification behaviours are problem-focused; emotional management or modification behaviours are emotion-focused. The primary control approach is characterised by an attempt to influence external conditions, while secondary control seeks to maximise one's fit to conditions as they exist.

Wilson (1984) points out that "reactions to stress and anxiety can be either positive or negative. Because negative reactions frequently hinder performance, we need to learn what the symptoms are and how to counteract them" (p. 26). She emphasises the need for further work in the area of children's stress management techniques and abilities: "Just as we collect data on the skills and physical condition of children, so too do we need to collect data about children's ability to cope with the psychosocial aspects of sport" (p. 26). These needs are not being met in many areas of stress research with children. In the context of the present study,

by changing the perspective we may be able to change the stress response from negative to positive.

Hiebert's (1988) model of stress as a multidimensional response provides some insights into coping strategies. He differentiates between STRESSOR management (procedures aimed at reducing a demand-coping imbalance) and STRESS management (procedures that focus on calming the physiological and cognitive reactions to stressors). The important factors associated with cognitive stress management are unrealistic beliefs about: the demands placed on the individual; the outcomes or consequences of actions or inaction; and the individual's ability to cope with these situations. Hiebert emphasised that "procedures that promote self-supportive and self-encouraging cognitions show promise for stress management" (p. 236). Strategies that promote positive self-talk and those that change underlying belief systems also have empirical bases which attest to their effectiveness.

Hiebert (1991) advanced a transactional model which emphasised that stress must be viewed as an individual and perspective-based phenomenon. Traditionally, stress has been viewed as either an external phenomenon or a Pavlovian reaction to an external cue. Both of these views fail completely in explaining the greatly varied reactions of different

people to the same 'stressor' (stressful situation), as well as the varied reactions of the same person to the same stressor at different times. Within the transactional framework, pressures are demands that are perceived to lie within the individual's coping ability, while stressors are demands that are perceived as being beyond the individual's coping ability, at a given point in time. Thus, the transactional model accounts for different stress responses by individuals, and different responses by the same individual at different times, by allowing the individual's coping resources and perceptions to vary. Hiebert cautions that, when dealing with children, careful consideration must be given to the fact that children do not perceive stressors in the same way adults do (Allen & Green, 1988; Dise-Lewis, 1988; Omizo, Omizo & Suzuki, 1988). In addition, children's perceptions of their coping resources may differ greatly from adult perceptions of the child's resources. Two main types of coping resources are highlighted: Skills the child possesses, and other people/institutions that can assist in coping with the demand. When dealing with the child's own resources, Hiebert emphasised the importance of determining what the child perceives the demands to be, and how intense these demands are. Then the methods of coping currently being used should be determined, as well as the child's

perception of the efficacy of these methods. Hiebert concludes that adults should assess the lifestyles of the children they interact with and determine how they may best help the children: By reducing the number or severity of stressful situations the children encounter; by increasing their coping resources; by teaching them stress management techniques such as relaxation or cognitive control.

In general, it can be said that the current research emphasises the personal and situational aspects of stress – that it is a highly individualised response to that individual's perception of the demands of a situation.

Stress Management 'Techniques'

There are several types of coping strategies, or techniques: active, passive, reactive, proactive, STRESSOR management and STRESS management. Most of the coping strategies currently used with children are adaptations of adult methods.

Several active techniques of coping with stress are suggested by Webb, Meckstroth and Tolan (1983). Their main focus is the concept of attribution: Whose problem is it? Much stress is caused by misinterpretation of, and assumptions about, others' goals and expectations. Children especially have trouble with this; they tend to

assume responsibility for things that others desire of or for them, and their own goals are either not well expressed or misinterpreted. Children can and should be taught to question and evaluate, as well as to express themselves clearly and confidently.

Another useful technique is Active Ignoring (Webb et al., 1983): The mind cannot concentrate on two things at once; forcing yourself to concentrate on something positive or constructive prevents you from dwelling on negative or destructive things.

Werner (1984) reported several common characteristics among children who were 'resilient' to stress: A tendency to perceive even negative events constructively, and an ability to use faith to create a positive attitude so that things will work out as well as possible.

Blom, Cheney and Snoddy (1986) distinguished between reactive and proactive strategies for dealing with stress. Reactive strategies are those which are implemented after a stress event has occurred i.e., providing information and support after the fact. Proactive strategies anticipate or prepare for future stress events i.e., a fire or hurricane evacuation drill. On a cognitive level, a reactive intervention would tend to deal with connecting the stressful event and the resultant behavioural and physiological reactions, while a proactive intervention would attempt

to foster the development of means-end thinking. Conclusions regarding the proactive teacher interventions currently available were that they lack systemisation and represent an area of developing knowledge and experience. Many of the interventions remain purely experimental, never having been adapted for use in the classroom. Little evidence exists to show that the existing programs are either beneficial or that they continue to be effective after the intervention is complete. "... proactive intervention is a field where much developmental, implementation and evaluation work remains to be done, ..." (Blom et al., 1986, p. 164).

Borbas (1986) stated the importance of reassuring children that feeling stress is normal, as are their reactions to it and their methods of coping with it. "Children are often concerned that they are not normal, sometimes that they are even going crazy" (p. 18).

Gunnar (1987) questioned the utility of physiological measures in the study of stress in children. Because physiological measures do not provide a certain measure of psychological state, there is often no need to include them in studies of stress in children. "This is especially true when the sole reason for adding the measure(s) is to prove that the children are stressed or that some children are more stressed than others. In such cases, appending a measure of physiological response

may add little except expense and the complications of potential dissociations" (p. 1406). This is not to say that physiological measures have no place in studies of stress in children; their inclusion should be justified, not their absence.

Allen and Green (1988) presented several methods of dealing with stress, all of which are reactive, such as dealing with stress after it is experienced, and all of which are based upon, or adapted from, adult stress-coping methods. "One of the most obvious methods of helping a child cope with stress is simply positive, loving attention" (p.8).

Hiebert, Kirby and Jaknavorian (1989) warn about the dangers of "outside experts" conducting training programs. Their main concern is the expectation effect, wherein substantial cognitive and physiological changes can often be attributed not to the intervention but to the subjects expectations that the "experts" and their intervention will have an effect similar to the placebo effect observed in biochemical studies.

Recent research (Chamberlain & Zika, 1990) has de-emphasised the life-events, or major life-changes, approach to stress. The focus has shifted to an analysis of minor or everyday events: Daily hassles. Hassles are seen as "experiences and conditions of daily living that have been appraised as salient and harmful or threatening to the endorser's

well-being" (Lazarus, 1984, as cited in Chamberlain & Zika, 1990, p.469).

The relationship between daily hassles and both positive and negative outcomes has been established; a relationship that outperforms even the more widely known and accepted life-events model in predicting these measures. They conclude that daily hassles provide a reliable and sensitive means of assessing stress.

There seems to be no general consensus about the best methods of teaching children to deal with stress. One thing is clear: little, if any, research has explored the methods children use to cope with stress, without trying to impose an adult-based framework. In addition, the methods used to help children deal with stress are simply adaptations of adult methods; perhaps there are better ways, using the creativity and imagination that children have to help them help themselves.

Self-Monitoring with Students

Gardner and Cole (1988) make several recommendations when using self-monitoring techniques with young children. They stress that target behaviours must be explicitly defined for the children; counting and recording procedures must be very simple; the time period during which self-monitoring is expected must be short and well-defined; frequent reliability checks must be made of the recordings, with appropriate

feedback given; sufficient practice must be provided to ensure that procedures are clearly understood.

Gardner and Cole also noted that there are a variety of variables that influence the accuracy of self-monitoring in children. The most important of these is the time when self-recording is done: It should be done as soon after the monitored behaviour as possible. The longer the delay, the less accurate the self-monitoring. Other important items are the amount and quality of practice with the self-monitoring tools that the children receive, the difficulty of recording the information required (simpler is better), and the amount of feedback the children receive, coupled with the interest shown by the teacher, in a classroom situation.

The advantages of the Self-Report procedure over other behavioural-observation techniques are outlined by Witt, Cavell, Heffer, Carey and Martens (1988). The main advantage is that it can allow access to information that is otherwise inaccessible - thoughts and feelings that cannot be accurately observed externally.

Witt et al. (1988) also discuss the reliability and validity of self-report procedures when used with children. Developmental issues are of prime import; the cognitive and social constraints under which children develop have a large effect on their responses to both interview and

written self-reports. Another issue is the simplistic and constantly changing manner in which young children tend to classify things: typically all-or-nothing. For example, on one day a child may report that he/she 'hates' school, due to something negative that happened recently, when in fact this may be totally inconsistent with his/her normal attitude. Although this inconsistency occurs in all age groups, children, and especially young children, oscillate more rapidly and more extremely than other groups.

While far from perfect, the self-report method of collecting data about unobservable behaviours is firmly grounded. Care must be taken to ensure that the respondents understand what is being asked of them and how it is to be recorded. Equally importantly, time and facilities must be conveniently available in order to maximise response rate and accuracy of response.

Conclusion

Ryan (1989) cautioned that "It may be premature to teach coping strategies such as relaxation and imagery to children without assessing the extent and effectiveness of strategies already in their coping repertoire" (p. 121).

Angus (1989), in his review of stress management strategies for children, noted that "A complete stress management program would

include attention to nutrition, appropriate exercise, and healthy attitude" (p. 32).

Both of these views are strongly supported by the literature. There is an obvious need for a more holistic approach to stress management with children, one which takes into account the methods that children already are using to deal with stress. Children are finally being included in the study of stress. Their 'natural' methods of dealing with stress have not been explored in great detail, but their success in using adult methods of coping have been studied.

The preliminary work by Orlick and McCaffrey (1991) on teaching mental training skills to children is encouraging: children can learn to use the mental skills that high-performance athletes use. Further work on the best methods of teaching these skills, and which of the skills are most useful to young children, needs to be done.

The co-operative games approach to teaching children has been shown to be both popular and effective. The adaptation of the games to aid in the development of positive perspectives and the ability to shift focus may provide new ideas for the use of the co-operative games teaching approach.

Stress management research with children has focused broadly on two areas: theoretical bases and coping techniques. Both the theoretical frameworks and the techniques for coping with stress are direct adaptations of the frameworks developed to explain adult stress; little inductive work has been done to determine whether children have a different way of looking at and coping with stress.

The need for an inclusive stress management program prepared specifically for children is obvious. It would be useful to evaluate and assess the methods that children are already using to cope with stress before implementing an intervention program. Further, the very fact that children have methods that help them cope with stress that are obviously different, at least in appearance, from adult methods obviates the need to consider the invaluable input that the children can and should be allowed to make in the development of new stress management programs.

METHOD

Subjects

The subjects will be two classes (Grade Two and Grade Three) at Vincent Massey Public School in Ottawa. There will be approximately 22 students per class. Existing classes will be used to group the subjects in

order to avoid unnecessary complications. Students within each class will be randomly assigned to the experimental and control conditions.

Materials

Scales will be developed specifically for use in this study to measure general perspective. A logbook will be developed to obtain qualitative information from the subjects on a daily basis.

Audiotapes of various activities, produced by Terry Orlick and Nadeane McCaffrey, will be used in some sessions.

The introductory and post-intervention sessions, and others when possible, will be openly recorded using an audio tape recorder or a video tape recorder.

Procedure

Informed consent will be obtained from the parents of all students before the program is begun. Students not participating will work on normal school activities under the supervision of their regular classroom teacher during the training sessions.

The first three sessions will be spent obtaining pre-test measures from all subjects on the scales. All pre-tests will be conducted in the regular classroom by an the experiment co-ordinator with all students and their teacher in attendance.

Prior to the first intervention session, the subjects will be assigned to the control and experimental conditions ensuring approximately equal numbers of males and females in each group by random draw.

The intervention program will be implemented for the next 8-10 weeks. Discussions of things the students find stressful, and their methods of coping with these things, will be held. The subjects will be introduced to the skills of "Can't Do Magic", "Tree It", and "Changing Channels" (see Appendix A for an explanation of these skills) in the context of obtaining and maintaining a Positive Perspective and the ability to shift one's focus. Time will be spent practising the skills involved. Examples of when the skills might be used will be discussed. Students will be instructed in the use of the logbooks, and the logbooks will be used to collect thoughts and ideas on a daily basis. The teachers assistance will be solicited to facilitate this on days the trainers are not present. Completed pages of the logbooks will be removed and examined weekly in order to monitor the subject's progress.

At the end of the intervention session, post-test measures identical to the pre-test measures will be taken, using the entire subject pool from each class.

The scales will be used periodically throughout the intervention period, to provide interim measures of general happiness and perspective. Feedback from the subjects on the various instructional techniques used will be obtained on an ongoing basis, both through direct questioning and simple Likert scale ratings of enjoyment. In addition, as many sessions as possible will be audio-recorded or videotape-recorded.

All data collected will be kept strictly confidential, and will only be used for the purpose of this study. No person outside the project will be permitted access to the Logbooks or any other data.

Data Analysis

The pre-test/post-test scale data will be analysed in two ways. First, an inspection and comparison of each student's scores before and after the intervention will be done to determine whether there has been noticeable improvement or not. Second, a purely descriptive ANOVA analysis of the scores will be done (Dr. B. Zumbo, personal communication, February, 1993) to determine whether membership in the control or experimental groups made any difference on the pre- and post-test scores of the subjects.

The logbooks will be examined by the researcher to determine whether the subjects learned to use, and actually did use, the techniques taught

during the intervention program. In addition, lists of the types of stressors that the subjects cope with will be compiled, along with the frequency of their occurrence, and the methods they use to cope with these stressors.

The subjects' Likert scale and verbal evaluations of the program will be used on an ongoing basis to improve the quality of the intervention.

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Appendix A

The following concepts/ideas used in the study are taken from Games for Positive Living (Orlick 1992b, pp. 33 - 49):

Can't Do Magic

"Can't Do Magic" (Orlick 1992b) is a simple concept that helps children to understand that some things are beyond their control (part of stress-free perspectives), discovered while working with five year-old pre-school children. Orlick explained in "adult language" how things sometimes happen that cannot be helped, and that worrying about them after they have happened is a waste of time and energy. After one of the children carelessly slipped off a log while on a field-trip, another young child quickly reassured him that, although he had wet his shoes and socks, "... it doesn't matter because it's already did, and we can't do magic." (p. 34).

The children had grasped the concept that the situation existed and there was nothing that could be done to change it now (this is not to say it might not be prevented from happening again, but there is no point worrying about it now).

This positive perspective, that we all make mistakes and that's okay, helps alleviate the guilt associated with having made a mistake. It also paves the way for constructive discussion of the situation that led to the

mistake, for example the dangers of playing near water. Lessons can be drawn from the experience by all involved. If the situation had been handled in a more traditional manner (i.e. yelling at the child for playing around and getting wet), the mood would be confrontational and not very conducive to learning.

Tree It

The concept/skill of "Tree-ing It" (Orlick, 1992b) is based on the highly successful "Park It" focusing construct used by elite athletes. Orlick found the same basic concept, the idea of removing negative/conflicting/destructive thoughts from the mind by "parking" them, for example, in a mental parking lot, in several geographically isolated cultures: In Papua, New Guinea, aboriginal natives would "collect" all their bad feelings, anxiety and animosity after competition and "place" "it" in a nearby tree, thus eliminating any negative consequences; children in Guatemala are often instructed to place their worries in the hands of tiny dolls before they go to bed, in order to ensure a good night's sleep; a Chilean ski instructor alleviates young skiers' fears by digging a hole in the snow and having the children put their fear away before attempting the slope. Other places children place their worries and fears include:

walls, rocks, desks, tables, floors, boxes, jars, and boards around skating rinks.

This simple yet highly effective exercise helps children understand that, while we don't always have control over what happens to us, we can control how we react to it.

Changing Channels

"The goal of changing mental channels is to put you back on a positive path and to allow you to regain a sense of positive control" (Orlick, 1992b, p. 48). The idea here is that you can control what you are focusing on (the "channel" you are watching). Children are quick to grasp the TV remote control analogy - they can shift "mental channels" by thinking of pressing buttons on a mental remote control, as if they were changing channels while watching TV at home.

Orlick explains channel changing: "Parents often help crying infants, or very young children, to change channels by holding them, rocking them, ... , or giving them objects with which to play or chew on. When this works it is because the child shifts focus or awareness from something unpleasant to something else which is different, interesting, more pleasant or more absorbing. Parents essentially change channels for the

infant by removing him from the stressful situation, by introducing him to a different activity, or by guiding him into an alternate focus" (p. 46).

"Teaching children to become proficient at 'Changing Channels' is an excellent way to help them gain a greater sense of personal control over themselves and the situations they face" (p. 48). Changing channels helps children to exercise greater control over their moods and performance. "Every child is capable of doing this. However, it takes practice and lots of patience" (p.49).