Social and emotional training in Swedish schools for the promotion of mental health: an effectiveness study of 5 years of intervention

Birgitta Kimber, Rolf Sandell and Sven Bremberg

N.B.: When citing this work, cite the original article.

This is a pre-copy-editing, author-produced PDF of an article accepted for publication in HEALTH EDUCATION RESEARCH following peer review. The definitive publisher-authenticated version:

Birgitta Kimber, Rolf Sandell and Sven Bremberg, Social and emotional training in Swedish schools for the promotion of mental health: an effectiveness study of 5 years of intervention, 2008, HEALTH EDUCATION RESEARCH, (23), 6, 931-940

is available online at: http://dx.doi.org/10.1093/her/cyn040

Postprint available at: Linköping University Electronic Press http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-16152
Social and emotional training in Swedish schools for the promotion of mental health: an effectiveness study of five years of intervention

Kimber B., Department of Public Health Sciences, Division of Social Medicine, Karolinska Institute, SE-17177 Stockholm, Sweden; Sandell R., Department of Behavioral Sciences, Linköping University, SE-581 83 Linköping, Sweden; Bremberg S., Department of Public Health Sciences, Division of Social Medicine, Karolinska Institute, SE-17177 Stockholm, Sweden
Abstract

The school is an obvious arena for interventions designed to promote mental health among children. A set of educational techniques named social and emotional learning, which focuses on students’ self-control, social competence, empathy, motivation and self-awareness, has shown promising results in the US. This is a study of the application of a similar method in Sweden (referred to as social and emotional training) for school years 2000/2001 through to 2004/2005. It is an effectiveness rather than an efficacy study, largely administered by school personnel, which relates duration of the training (one to five years) to a set of outcomes previously found to be associated with mental health. Positive and significant effects were found on five of seven variables: internalising problems, externalising problems, mastery (reflecting self-efficacy or hopelessness), self-image and self-esteem, and contentment in school. Effect sizes were medium. Somewhat surprisingly, no relationship was found between the intervention and the promotion of social skills. Nor was there any detectable long-term impact on bullying. Controlling for student gender did not moderate any of the effects.

Key words: effectiveness study; mental health; school-based intervention; social and emotional learning.

Introduction

According to the World Health Organization (WHO), mental ill-health is – alongside cardiovascular disease – one of the two most important public-health problems worldwide.
Among people aged 1-44, mental ill-health, which includes depression, aggressive behaviour, feeling down, and alcohol and drug misuse, is the greatest health problem in high-income countries. Internalizing problems, such as anxiety and depression, have been shown to impose a greater burden on mental health than externalizing problems [1].

It is hard to predict who will develop mental disorders among the young, and this has implications for effective health promotion [2]. Since all children go to school, the school is an obvious arena for health-promoting activities. A set of educational techniques, Social Emotional Learning (SEL), based on the use by teachers of cognitive and behavioural methods, which concerns students’ self-control, social competence, empathy, motivation, and self-awareness, has shown promising results [3-8]. As a mechanism, it may be worth linking the SEL approach to the increasingly used concept of ‘mentalization’, which, inter alia, stresses sense of agency, social reciprocity, self-regulation of affects, toleration of frustration, goal-setting and capacity to symbolize [9].

Meta-analyses, e.g. that of Greenberg and colleagues [7], suggest that there are some shortcomings to school-based intervention programs and studies in the field of mental health. They tend to neglect internalizing problems, such as depression and anxiety, but concentrate largely on externalizing behaviours like aggression, violence, and alcohol and drug misuse. Only a few include a broad range of school grades, although it has been claimed that ‘short-term preventive interventions produce time-limited benefits, at best, with at-risk groups whereas multi-year programs are more likely to foster enduring benefits’ (p. 32). Further, most studies report on efficacy trials, undertaken with a research team in charge, rather than effectiveness trials in a community setting [10, 11].

This study of a Swedish program (the SET program, standing for social and emotional training) attempts to address these three issues. First, it includes internalizing mental-health
aspects as well as externalizing ones. Second, it considers the impact of the duration of SET (i.e. over a number of years). Third, it is an effectiveness rather than an efficacy study, since the program has been implemented by school personnel in a real-life setting.

A longitudinal study (B. Kimber, R. Sandell and S. Bremberg, in preparation) considered the effects of SET on students of all grades (junior and senior) during the first two years of program implementation. SET was found to promote mental health and reduce detrimental health-related behaviours in some respects, in particular through the promotion of aspects of students’ self-image, including well-being, and a reduction in externalizing problems and alcohol use. It was concluded that SET has the potential to operate effectively as a preventive intervention during the school period.

The aim of this second study of the program, based on five years of data collection, is to explore the longer term impact of SET on various aspects of the mental health and health-related behaviours of senior school students (grades 5 to 9 at time of measurement). Drug and alcohol use will be considered in a separate paper. Specifically, the current study relates duration of SET to a variety of outcome variables.

**Method**

**Population**

In Sweden, children begin compulsory school at age 7 in grade 1, and end at age 16 in grade 9. The intervention and the study were carried out in Botkyrka Municipality in the Stockholm metropolitan area. In Botkyrka there are eight schools covering all grades (junior and senior). Classes in two of these eight schools were chosen as intervention classes, with their students constituting the SET group. For comparative purposes, a school of similar size serving a socio-economically similar population was selected for each SET school, with students in corresponding classes constituting the No-SET group. Details of the sampling procedure are
given in B. Kimber, R. Sandell and S. Bremberg (in preparation). The current study covers only the intervention participants and controls who attended grades 5 to 9 in these four schools during the first year of program implementation. The students responded to a questionnaire in May each year during the first five years of the program, with measurements taken during school years 2000/2001 to 2004/2005, designated as t1 to t5.

Study design

For the current study we employed a mixed design, in which there is ‘a mixture of between-group and repeated-measures variables’ [12] (p. 483) to compare students in the SET and No-SET schools according to duration of SET or No-SET (1 to 5 years), regardless of grade (5 to 9).

Given a student’s grade at t1, t2, t3, etc., we formed a variable for duration of the SET program (number of years). Thus, the SET students in grade 5 when the questionnaire was administered at t1 had had one year of SET; students in grade 5 at t2 (grade 4 at t1) had had two years of SET; and, students in grade 5 at t3 (grade 3 at t1) three, and so on. We were able to secure a sizable number of observations (2,455 in total), for SET (1,857) and No SET (598), distributed across years. We then compared the mean trajectories on each outcome measure between students in the SET schools and the No-SET schools as a function of the number of years that the program had been running.

The intervention

The SET program, which was designed by the first author [13, 14], was delivered by regular class teachers during scheduled school hours. The teachers supplied SET to students in grades 4-5 twice a week, each session with a duration of 45 minutes, and gave students in grades 6-9 one 45-minute session a week over the total school year. The program was guided by detailed
Social and emotional training and mental health

manuals for the teachers, one volume for each grade, and also included a workbook for students of each grade.

SET covers the following five areas: self-awareness; managing one’s emotions; empathy; motivation; and, social competence. Typically, these five components merge into one another, and therefore an exercise according to the manual may address several functions. The intervention is described in greater detail in B. Kimber, R. Sandell and S. Bremberg (in preparation).

The first author trained the teachers in SET in the school year 1999/2000. During this school year they had an opportunity to try out the relevant exercises themselves, and test them in their classes. They were encouraged to raise methodological and technical issues, and discuss remaining problems. The teachers were supervised once a month during the school year 2000/2001 and offered supervision on a voluntary basis during 2001/2002. In order to enhance program integrity, the teachers were observed and supervised individually at least four times during the first two years of the intervention. The views of teachers on the program were ascertained in a survey conducted two years after program start, which showed general, albeit not universal, approval of its content and implementation [15].

Study procedures and instruments

Assessments, by questionnaire, of a panel consisting of all the students who remained in the classes from outset of the SET program, which started in August 2000, were made in May of each year, i.e. from 2001 (t1) until 2005 (t5). Questionnaires were administered to participants and controls during school hours by regular class teachers. All the instruments employed are well-established and have documented reliability and validity.

Youth Self-Report [16], used here in an abbreviated Swedish version [17], measures mental-health symptoms and problems. There are 35 items, which are split into two subscales,
measuring internalizing problems and externalizing problems. Internalizing problems include Anxiety (feeling worthless or inferior, feeling unhappy, sad or depressed, and feeling nervous or tense), while externalizing problems encompass Aggression (threatening to hurt people or destroying property), Assertiveness (stubbornness, hot temper, etc.) and Attention-seeking (bragging, showing-off, clowning, etc.). The items are rated on three-step scales: ‘Not True’, ‘Somewhat or Sometimes True’, ‘Very True or Often True’. Scale scores were means across items, with higher scores indicating more problems.

Mastery [18], in one of its Swedish versions, is a nine-item scale measuring feelings of self-efficacy or hopelessness, defined as the extent to which one regards one’s life chances as being under personal control. Examples include: ‘There is really no way I can solve the problems I have’, and ‘I have little control over the things that happen to me’. Items are rated on four-step scales, ranging from ‘Strongly agree’ to ‘Strongly disagree’. The scoring of some of the items was inverted to make higher scores indicate stronger sense of self-efficacy.

I Think I Am (ITIA) is a Swedish self-rating instrument, ‘Jag tycker jag är’ [19], with roots in American research [20]. It is designed to assess the young person’s self-image and self-esteem, and has subscales for Body Image, Family Relations, Psychological Well-being, Relations with Others, and Talents/Abilities. There are two versions of the instrument: ITIA-I for younger students (grades 1-3) and ITIA-II for older ones (grades 4-9). Only findings from ITIA-II are reported here. In ITIA-II there are 72 items, such as: ‘I have a nice face’, ‘I like myself’, ‘I am often sad’, ‘My parents trust me’. Students respond to each statement on a four-point scale, from ‘Exactly like me’ to ‘Not at all like me’. The items are scored -2 to 2, where higher scores indicate a more positive self-image. There are a number of subscales, but in this study we only used the mean score across all items.
Contentment in School, or school satisfaction, by analogy with job satisfaction, refers to a single item, ‘How do you like it in school?’, from a Swedish health-behaviour questionnaire administered annually by the Swedish Council for Information on Alcohol and Other Drugs (CAN) [21]. Contentment was rated on a five-step response scale, ranging from ‘Very good’ to ‘Very bad’. Scoring was inverted so that higher scores indicate greater contentment.

Bullying is the mean of three items from the CAN questionnaire [21]. The aspects considered are being insulted, being physically assaulted, and ‘being sent to Coventry’. A three-step response scale was used: ‘Yes, often’, ‘Yes, sometimes’, ‘No, seldom or never’. Higher scores indicate fewer problems.

The Social Skills Rating System (SSRS) [22] consists of 34 items for grades 4-6, and 7 additional items for grades 7-9, all with four-point response scales, ‘Never’ (0), ‘Sometimes’ (1), ‘Often’ (2), ‘Very often’ (3). The ratings may be scored on four subscales (Assertion, Empathy, Cooperation, and Self-control), but in this study the mean score across all items was used. Higher mean scores indicate greater social skills.

The instruments and scales, and their reliabilities and re-test correlations, over the first two years of the intervention are shown in Table I.
Table I. Instruments and scales used, with reliabilities (Cronbach’s $\alpha$) for years 1 and 2 and re-test correlations between year 1 and year 2 (grades 4 to 9).

<table>
<thead>
<tr>
<th>Instrument/Scale</th>
<th>Cronbach’s $\alpha$</th>
<th>Re-test correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t1 (May 2001)</td>
<td>t2 (May 2002)</td>
</tr>
<tr>
<td></td>
<td>$\alpha$</td>
<td>$\alpha$</td>
</tr>
<tr>
<td></td>
<td>$r(t_1,t_2)$</td>
<td></td>
</tr>
</tbody>
</table>

**YSR**

- Internalizing: $.86$, $.88$, $.46$
- Externalizing: $.82$, $.81$, $.54$
- Total Score: $.89$, $.89$, $.51$
- Mastery: $.52$, $.59$, $.45$

**ITIA**

- Body Image: $.80$, $.77$, $.46$
- Family Relations: $.85$, $.83$, $.64$
- Psychological Well-being: $.83$, $.80$, $.52$
- Relations with Others: $.74$, $.65$, $.41$
- Talents/Abilities: $.81$, $.81$, $.48$
- Total Score: $.95$, $.93$, $.57$
Table I (continued)

<table>
<thead>
<tr>
<th>Instrument/Scale</th>
<th>Cronbach’s α t1</th>
<th>Cronbach’s α t2</th>
<th>Re-test correlation r(t1 t2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(May 2001)</td>
<td>(May 2002)</td>
<td></td>
</tr>
<tr>
<td>Contentment in School</td>
<td>n.a. a</td>
<td>n.a. a</td>
<td>.44</td>
</tr>
<tr>
<td>Bullying</td>
<td>.71</td>
<td>.65</td>
<td>.25</td>
</tr>
<tr>
<td>Social Skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperation</td>
<td>.76</td>
<td>.75</td>
<td>.53</td>
</tr>
<tr>
<td>Assertion</td>
<td>.60</td>
<td>.61</td>
<td>.52</td>
</tr>
<tr>
<td>Empathy</td>
<td>.79</td>
<td>.76</td>
<td>.48</td>
</tr>
<tr>
<td>Self-Control</td>
<td>.58</td>
<td>.59</td>
<td>.40</td>
</tr>
<tr>
<td>Total Score</td>
<td>.89</td>
<td>.89</td>
<td>.53</td>
</tr>
</tbody>
</table>

*a* a Not applicable; scale had only one item.
Statistical analyses

Differences between the groups (SET and No-SET) in their development from t1 to t5 were tested in three different ways. SPSS version 12 was used for the statistical calculations.

(a) For each of the outcome variables a linear regression was performed for each student group, which provides measures of the linear trends as effects of the intervention. Thus, each outcome variable was regressed on number of years (at t1, t2 …t5) among the SET students and the No-SET students separately. This permitted direct tests of the trend-across-years differences between the groups based on estimates of the mean change rate in the groups provided by the unstandardized slope parameters, $b$s. The standardized (z-transformed) regression coefficients, $\beta$s, were taken as within-conditions (or within-groups) effect-size estimates, and the differences between the unstandardized regression coefficients, $b$s, were tested according to Cohen [23]: $z = (b_1 - b_2)/[(se_1^2 + se_2^2)^{1/2}]$.

(b) Adopting Becker’s approach [24], between-groups effect sizes were computed for each dependent variable. A within-group $d$ was first computed for each intervention group by dividing the $t5 - t1$ means difference by the standard deviation at $t1$, and then subtracting the $d$ in the No-SET group from that in the SET group. This gives a change effect size parameter (Becker’s $\Delta$). Cohen’s classification of effect sizes (small =.2, medium=.5, large=.8) was employed [23].

(c) ANOVAs (or MANOVAs, when we analyzed an instrument with subscales, such as the YSR and the ITIA) were run on the outcome scale (or subscales), with intervention (SET or No SET), number of years (t1, t2 …t5), and student gender as independent variables. It is assumed that there are no SET/No SET by study years or grade interaction, which assumes that duration of SET acts independently of age of student. Although the design was mixed, partly within-subjects and partly between-subjects, duration (number of years) was analyzed...
as a between-subjects factor, which introduced a conservative bias to the tests. Given significantly different mean changes on the unstandardized regression coefficients, the critical effect was the intervention-by-years interaction. The GLM routine of SPSS, version 12, was used.

Results

Attrition

Since the study was based on the responses of a panel, there was progressive sample attrition over the years due to normal turnover. Also, there was variable, temporary absence of students at time of testing, which in some cases resulted in more respondents one year than the year before. See Table II.
Table II. Frequency distribution of respondents across grades and number of years (sample sizes in parentheses*).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Time of assessment</th>
<th>t1</th>
<th>t2</th>
<th>t3</th>
<th>t4</th>
<th>t5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>138 (141)</td>
<td>61 (65)</td>
<td>76 (78)</td>
<td>41 (63)</td>
<td>53 (68)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>111 (116)</td>
<td>136 (140)</td>
<td>51 (61)</td>
<td>61 (68)</td>
<td>59 (60)</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>87 (118)</td>
<td>91 (106)</td>
<td>112 (116)</td>
<td>48 (49)</td>
<td>42 (46)</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>106 (106)</td>
<td>67 (73)</td>
<td>65 (82)</td>
<td>75 (78)</td>
<td>48 (51)</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>82 (101)</td>
<td>72 (106)</td>
<td>59 (65)</td>
<td>72 (75)</td>
<td>44 (68)</td>
</tr>
<tr>
<td>No SET</td>
<td></td>
<td>31 (46)</td>
<td>16 (28)</td>
<td>43 (46)</td>
<td>22 (43)</td>
<td>1 (18)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>29 (35)</td>
<td>31 (33)</td>
<td>12 (25)</td>
<td>37 (39)</td>
<td>39 (43)</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>29 (32)</td>
<td>21 (32)</td>
<td>21 (30)</td>
<td>13 (25)</td>
<td>30 (32)</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>31 (31)</td>
<td>23 (31)</td>
<td>19 (21)</td>
<td>15 (28)</td>
<td>23 (25)</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>24 (35)</td>
<td>25 (31)</td>
<td>18 (21)</td>
<td>20 (21)</td>
<td>25 (28)</td>
</tr>
</tbody>
</table>

* That is, both respondents and non-respondents in the classes under study.

Note. The table can be read across rows or along columns, in which cases the comparisons are between different student cohorts (between-subjects); reading along the upper-left – lower-right diagonals enables comparisons between students from the same classes over time (within-subjects), which shows the rates of progressive panel mortality.
Attrition can be determined by looking at the diagonals in Table II. For example, at t1 (May 2001) there were 138 grade-5 respondents out of the 141 students in the SET classes that year (upper-left cell of Table II, upper part: grade 5 at t1), while at t5 (May 2005) there were 44 respondents out of 68 (lower-right cell: grade 9 at t5); these were the remaining original students (from grade 5 at t1) who had progressed to grade 9. Overall, there was gradual dropout of 15-19% each year in the SET group. The overall response rate (rate of return of fully filled-in questionnaires) for the SET group was 88%, and for the No-SET group 77% (figures not shown in Table II). Over the years, response rates for SET ranged from 65% to 100%, and for No-SET from 51% to 100% (excluding a single case where there was only one respondent, due to administrative error). Response rates in the No-SET group were more variable than in the SET group.

We needed to establish whether our results were biased by selective sample attrition, i.e. whether any apparent positive or negative effects of SET might instead be attributable to differences in dropout between high-scoring and low-scoring students. Improving mean scores along the diagonals (e.g. from grade-5 students at t1 to grade-9 students at t5, i.e. the same students minus dropouts) would imply greater dropout of low-scoring students (negative attrition), and deteriorating scores greater dropout of high-scoring students (positive attrition). ANOVAs were conducted on five of the outcome scales (YSR Total, Mastery, ITIA Total, Contentment in School, and Social Skills) for each of the seven cohorts (diagonals) in the SET group. There were significant changes on only seven of the 35 resulting tests. Of these, four were cases of negative attrition and three of positive attrition. We concluded that attrition in the SET sample had not been biased towards either low- or high-scoring students.
Findings

An overall picture of developments over the years is given in Figure 1. All relationships were in the expected direction; that is, SET students consistently reported more favourable outcomes over time than did No-SET students. There was a time lag with regard to some of the effects, and there were greater fluctuations in effects according to duration in the No-SET group.
Social Skills

Figure 1. Relations between duration of SET/No SET and the outcome variables, with raw scores on the vertical axes and number of years on the horizontal axes.
Regression coefficients and effect sizes by outcome variable and group are shown in Table 3. Of the βs, differences between the two groups were statistically significant on all but two (Bullying and Social Skills) of the seven outcome variables. On the five significant variables (YSR Internalizing, YSR Externalizing, Mastery, ITIA Total and Contentment in School) effect sizes (Δ) were small to medium on Cohen’s criteria [23]. It should be noted that βs between.10 and.15 correspond to d's between 0.20 and 0.31, and that Δ is the difference between the d's of the two groups.
Table III. Regression coefficients and effect sizes for SET/No SET by groups and outcome variables.

<table>
<thead>
<tr>
<th>Outcome variables</th>
<th>SET</th>
<th>No SET</th>
<th>Δ</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>d_{1-5}</td>
<td>β</td>
<td>d_{1-5}</td>
</tr>
<tr>
<td>YSR, Internalizing</td>
<td>.14</td>
<td>0.37</td>
<td>-.05</td>
<td>-0.19</td>
</tr>
<tr>
<td>YSR, Externalizing</td>
<td>.13</td>
<td>0.37</td>
<td>.03</td>
<td>-0.05</td>
</tr>
<tr>
<td>Mastery</td>
<td>.11</td>
<td>0.42</td>
<td>.00</td>
<td>0.06</td>
</tr>
<tr>
<td>ITIA, Total</td>
<td>.11</td>
<td>0.44</td>
<td>-.03</td>
<td>-0.10</td>
</tr>
<tr>
<td>Contentment in School</td>
<td>.06</td>
<td>0.19</td>
<td>-.11</td>
<td>-0.41</td>
</tr>
<tr>
<td>Bullying</td>
<td>.03</td>
<td>0.11</td>
<td>-.02</td>
<td>-0.24</td>
</tr>
<tr>
<td>Social Skills, Total</td>
<td>.11</td>
<td>0.26</td>
<td>.10</td>
<td>0.19</td>
</tr>
</tbody>
</table>

*Note.* All figures in the table are adjusted to show positive values to indicate improvement and negative values to indicate deterioration. $\beta =$ standardized regression coefficient when the outcome variable is regressed on years (1 – 5). $d_{1-5} =$ (M year 1 – M year 5)/pooled SD. $\Delta = d_{1-5}$ in SET – $d_{1-5}$ in No SET. $z_\beta$ refers to the difference between the SET and No-SET $\beta$s.

*p < .05; ** p < .01; *** p < .001 (one-tailed tests).
The results of the ANOVAs are displayed in Table IV. These show the statistical significances of the interactions between SET/No SET and the durations (1 to 5 years) in relation to the outcome variables rather than the linear trends (in which there is just one comparison for each variable). All but one of the seven interactions were found to be statistically significant, the exception being Social Skills. On the YSR, there was a significant SET/No SET-by-years interaction. The interaction was significant on both subscales, although with a stronger effect on internalizing than on externalizing problems.

The total ITIA score showed a univariately significant SET/No SET-by-years interaction, but there was a clear differentiation between the groups only at t5. It should be noted that there were significant univariate effects on three of the subscales, i.e. Body Image, $F(4; 2252)=3.71, p=.005$, Relations with Others, $F(4; 2252)=3.33, p=.010$, and Well-being, $F(4; 2252)=2.64, p=.032$ (figures not shown in Table IV). Student gender did not complicate the two-way interaction on any of the scales.
Table IV. F-tests of interactions between SET/No SET and number of years by outcome variable.

<table>
<thead>
<tr>
<th>Outcome variable</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>YSR, Internalizing</td>
<td>4; 2337</td>
<td>4.86</td>
<td>0.001</td>
</tr>
<tr>
<td>YSR, Externalizing</td>
<td>4; 2337</td>
<td>2.50</td>
<td>0.041</td>
</tr>
<tr>
<td>Mastery</td>
<td>4; 2340</td>
<td>3.43</td>
<td>0.008</td>
</tr>
<tr>
<td>ITIA, Total</td>
<td>4; 2253</td>
<td>3.48</td>
<td>0.008</td>
</tr>
<tr>
<td>Contentment in School</td>
<td>4; 2312</td>
<td>4.77</td>
<td>0.001</td>
</tr>
<tr>
<td>Bullying</td>
<td>4; 2255</td>
<td>3.86</td>
<td>0.004</td>
</tr>
<tr>
<td>Social Skills, Total</td>
<td>4; 2356</td>
<td>0.71</td>
<td>0.588</td>
</tr>
</tbody>
</table>
Contentment in school also showed a significant univariate SET/No SET-by-years interaction, with no further interaction with student gender.

Although Bullying had a small effect size, it showed a highly significant SET/No SET-by-years interaction. This is explained by the fact that there was a stable mean level over the years in the SET group and a quite variable one in the No-SET group, which ends up only slightly higher than the SET group at t5. Student gender did not affect developments in the two groups.

The Social Skills scale did not differentiate between the SET and No-SET groups. None of the subscales even approached a significant SET/No SET-by-years interaction.

**Discussion**

First, the impact of an SEL intervention in Sweden (the SET training program) showed generally favourable results in the longer run, as shown by the comparisons between the SET and No-SET regressions. Second, the results of the intervention are important but not dramatic, as reflected in generally medium effect sizes. Third, there is considerable short-term variation in the No-SET group; although this does not appear in the comparisons between regression coefficients, it is evident from visual inspection of the regression lines and from the SET/No SET-by-years interactions in the ANOVAs. Fourth, there is no evidence of any gender effect. Fifth, Social Skills seem to be a special case, out of line in terms of outcome comparisons concerning the other variables, in that there is no difference between the SET and No-SET groups, i.e. parallel regression lines.

Relating duration of social emotional training to various outcomes associated with mental health (summarized in Table III), significant positive connections were found on five out of the seven dependent variables considered: YSR Internalizing, YSR Externalizing, Mastery, ITIA (total), and Contentment in School. Effect sizes were medium. With regard to
the ITIA, there were significant univariate effects on the total scale and three of the subscales: Body image, Relations with Others and Well-being. Student gender did not complicate the two-way interaction on any of the scales.

In the SET schools bullying was at a continuously low level, whereas in the No-SET schools the level varied strongly from year to year. Considering duration, it was found that there was no difference in trend between the SET and No-SET groups. SET may offer a means of providing greater continuity in this arena in that low and peak incidences in the level of bullying are consistently avoided.

The changes either reflect real differences between the SET and No-SET groups with regard to the outcomes under study or may be an artefact of the investigation. For example, SET students may have become more familiar than their No-SET counterparts with the ‘vocabulary’ of the SET questionnaire, and this reflected itself in greater consistency of questionnaire responses. The issue of what is artefactual and what is not is of substantive importance; enhancing capacity to give names to feelings has for long been regarded as a promoter of mental health [25].

The current study reveals significant duration lags on some variables. It now appears that there is a greater beneficial effect of SET on internalizing than externalizing problems, but this only emerged after three to four years. In the case of Mastery (which, inter alia, measures depressive feelings) three years of SET seem to have been needed before the program had a detectable impact, and in the case of the ITIA (which measures self-image and self-esteem) four years. It seems that SET, as a form of health promotion, requires a long time of regular systematic implementation to be effective. This is in line with earlier studies [7]. It should be re-emphasized that in a real-life effectiveness study, by contrast with a controlled experimental efficacy one, beneficial outcomes may take longer to appear or detect.
Social Skills is a remarkable exception to the rest. There was no recorded differential SET impact on Social Skills (measuring assertion, cooperation, empathy, and self-control [22]). Indeed, even in terms of variability by duration, the SET group was mirrored by the No-SET group. The possibility that the instrument lacks sensitivity is contradicted by the fact that there was detectable positive change on the social-skills scales. What we did not expect is that this would apply equally to both the SET group and the No-SET group. Thus, there is reason to question whether the positive emotional effects of the SET program were moderated by improved social skills or capacities. Maybe, as suggested by Durlak and Wells in their review [6], SEL programs have a greater impact on emotional than on social skills.

Although the repeated-measures analyses were cross-sectional, for which by definition there is no dropout, the sample on which these analyses were performed was subject to attrition. Obviously, some SET participants and controls did not respond over five years, or even over two. We have, however, shown that the differential outcomes between the SET and No-SET groups cannot be explained away by selective attrition within the SET group, i.e. that students with poorer mental health were less likely to respond over longer periods. We looked at the YSR Total, Mastery, ITIA Total, Contentment in School and Social Skills Total scales, and the general picture was of little systematic change in either direction. Also, we know that some positively scoring students moved to a new school (a so-called ‘free’ school, with higher academic ambitions) when it opened in the vicinity of the SET schools. Although there was also some movement from the No-SET schools, which were further away, the recruitment differential might mean that the recorded positive effects of SET were underestimated.

The study did reveal clear positive effects of SET on mental health, which was the ultimate aim of the program. Continued analysis of the SET program is ongoing with regard to drug, alcohol, volative-substance use and smoking outcomes, and to issues of
implementation and attitudes of the SET teachers. There is considerable turnover of school personnel in some areas in Sweden, which makes continuous training and supervision important. Another question to examine is whether subgroups, defined according to household income etc., responded differentially to the intervention.
References


