



Evaluating the effectiveness of the PROMEHS Programme in improving students' and teachers' social and emotional competence, resilience and mental health

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Veronica Ornaghi | Alessia Agliati | Sabine Gandellini | Sanja Tatalovic Vorkapic | Maria Poulou | Baiba Martinsone
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L-Università ta' Malta
Centre for Resilience &
Socio-Emotional Health

Promoting Mental Health at School

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Resilience and Health Monograph Series

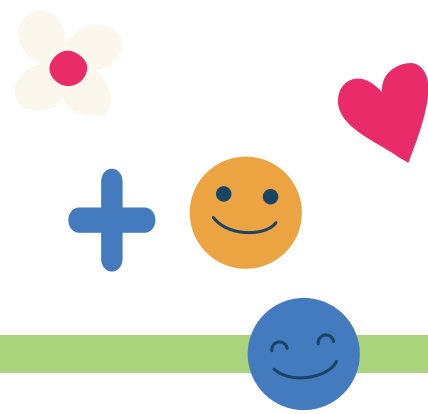
Series Editors: Carmel Cefai, Paul Cooper & Natalie Galea

We are pleased to publish the seventh monograph in the Resilience and Health series by the Centre for Resilience and Socio-Emotional Health at the University of Malta. The series aims to provide an open access platform for the dissemination of knowledge and research in educational resilience and social and emotional health. We have one e-publication per year in such areas as social and emotional development, health, resilience and wellbeing in children and young people, social and emotional learning, mental health in schools and professionals' health and wellbeing.

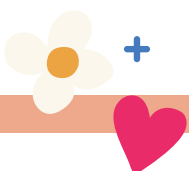
The publication of the Resilience and Health Monograph Series is based on the philosophy of the Centre for Resilience and Socio-Emotional Health, which develops and promotes the science and evidence-based practice of social and emotional health and resilience in children and young people.

We welcome contributions from colleagues who would like to share their work with others in the field.





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CHAPTER 1 The PROMEHS Programme

1.1 Introduction

Mental health is defined as a “state of well-being in which every individual realizes his or her own potential, copes with the normal stresses of life, works productively and fruitfully, and is able to make a contribution to her or his community” (WHO, 2005, p.12). Over the past twenty years, mental health difficulties among children and adolescents have increased worldwide, becoming a leading cause of disability (WHO, 2018). The incidence of diagnosable mental, emotional, or behavioural disorders has been estimated to be between 10% and 20% among school children (Erskine et al., 2015; WHO, 2020). The proportion of young people who experienced the onset of mental health issues before the ages of 14 and 18, was 35% and 48% respectively, with the peak age being 14.5 years (Solmi et al., 2022). Depression and anxiety are among the top five causes of illness, and suicide is the leading cause of death among adolescents in low- and middle-income countries and the second leading cause of death in high-income countries (WHO Regional Office for Europe, 2018). Thirty-five percent of 13 year old and 40% of 15 year old young people in Europe reported feeling low, nervous and experienced psychosomatic symptoms more than once a week (WHO Regional Office for Europe, 2020) while 20% of 11-17 year olds in Europe reported growing up unhappy and anxious about the future as a result of bullying, academic pressure and loneliness (UNICEF/European Union, 2021).

The public health emergency due to the Covid-19 pandemic has further brought attention to the mental health of children and adolescents and the adults involved in their education (Chang, 2009; Singh et al., 2020). As such, during the Covid-19 pandemic, high rates of people worldwide complained of symptoms of anxiety, depression, and post-traumatic stress disorders (Singh et al., 2020). Given these alarming statistics, the mental health of children, adolescents and adults has to be assigned priority status within the global child health agenda. One specific strategic objective listed by the WHO to support mental health worldwide is recognizing the key role of the education sector in addressing children’s

and young people’s mental health needs. Indeed, WHO recommends that schools function as one of the primary mental health support systems for both students and adults, enabling the planning and implementation of a broad spectrum of mental health actions that encompass promotion, prevention, and intervention (e.g. WHO, 2005). Around half of mental health issues develop before the age 14 when children and young people are still at school (WHO, Regional Office for Europe, 2018), with providing a window of opportunity for schools to actively promote mental health and prevent the onset of mental health issues at critical developmental periods in young people’s lives.

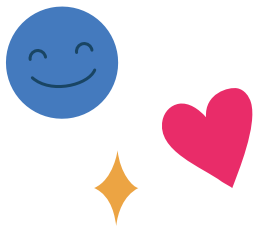
1.2 The PROMEHS project

Promoting Mental Health at Schools (PROMEHS¹) is an Erasmus+ Key Action 3 project co-funded by the European Commission (2019-2022) to develop, implement and evaluate a mental health curriculum in schools. It has been developed by researchers, policy-makers, and scientific associations from seven European countries namely Croatia, Greece, Italy, Latvia, Malta, Portugal, and Romania with the purpose of creating a bridge between school programs and educational institutions, thus linking research, practice and policies. PROMEHS provides a systematic framework for developing and implementing an evidence-based universal mental health curriculum in schools, including high-quality teacher training, supervision, meetings, handbooks and guidelines for school staff, students, parents, policy-makers and stakeholders respectively.

1.2.1 Theoretical framework

PROMEHS recognises the importance of improving the living conditions and environments that support mental health within the school context, allowing children, school staff, families, and communities to adopt and maintain optimal emotional functioning. The PROMEHS framework (Fig. 1) –grounded in existing research on school-based initiatives –represents school mental health across three domains. The first two aspects concern the promotion of protective factors in mental health, specifically, social

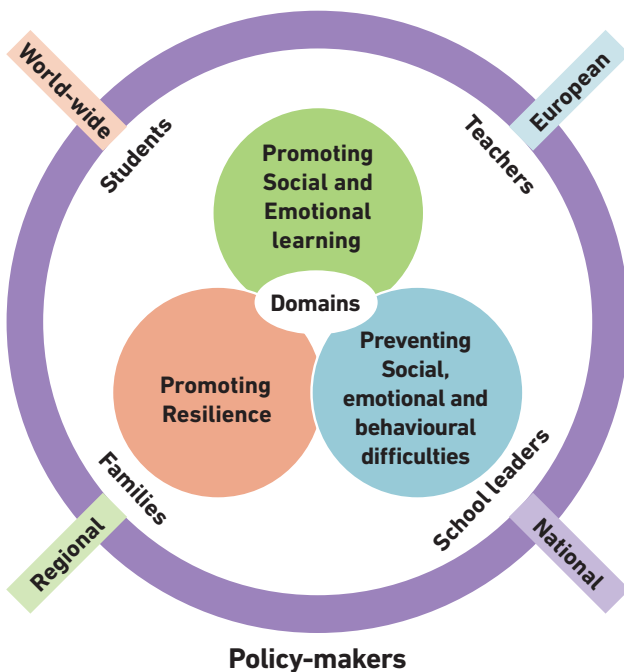
¹ For further information: www.promehs.org



and emotional learning (SEL) and resilience, while the third is linked to the prevention of social, emotional, and behavioural difficulties.

The PROMEHS curriculum includes three themes, namely the promotion of social and emotional learning, the promotion of resilience, and the prevention of social, emotional and behavioural problems (Fig. 1).

Figure 1.1 – The PROMEHS framework



1.2. 2 Principles

The curriculum is designed to follow the highest evidence-based principles identified by CASEL (2020) and other relevant international literature.

- *Whole school approach:* PROMEHS acknowledges the importance of working collaboratively among students, teachers, families, school leaders, community stakeholders and policy-makers.
- *Universal.* The implementation has been carried out for all school children as part of the curriculum.

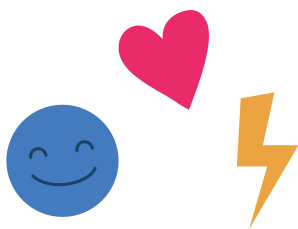
- *Components.* PROMEHS includes training courses and supervisions for teachers, meetings with school leaders, parents and policy-makers, the implementation of several manualized activities and guidelines at school and at home, and dissemination events for stakeholders.

- *Manualized and multi-year handbooks.* The PROMEHS programme consists of seven handbooks which offer multiyear programming for students from 3 up to 18 years, and for their parents and teachers. Four handbooks (two for kindergarten and primary school teachers and students, and two for middle and high secondary school teachers and students) include guided activities that teachers and students can carry out respectively at school, as part of the mainstream curriculum, and at home together with their parents. Activities have been developed according to the S.A.F.E. approach (Durlak et al., 2015). The other three volumes contain guidelines to promote mental health for teachers, parents and policy-makers. The handbooks are available in 7 languages (Croatian, English, Greek, Italian, Latvian, Portuguese, and Romanian) to support program implementation across multiple cultures and contexts and to address the diversity of participants' linguistic backgrounds.

- *Professional teachers' training.* The implementation included the delivery of high-quality training composed of initial training and ongoing support for teachers to ensure robust and reliable implementation. Teachers were required to deliver the PROMEHS activities on a weekly basis during the regular school day.

- *Themes.* The curriculum is composed of three themes: the first two cover the promotion of social and emotional learning and resilience, while the third concerns the prevention of social, emotional, and behavioural difficulties. These have been developed from the existing literature.

- *Evidence-informed and evidence-based approach.* The programme has been developed on the basis of existing evidence of what is effective in promoting mental health



in school. Its evaluation has been conducted analysing significant effects in teachers and students, comparing the outcomes between the intervention and waiting groups at two-time points. The evaluation has been carried out on a sample size that has met the ESSA (Every Student Succeeds Act) criterion to provide large power to detect the program effects (CASEL, 2020)

- *Independent evaluator.* An independent evaluation has been applied to reduce potential bias and ensure the reliability of the evaluation procedures and findings. Independent evaluators have not been involved in the programme’s development and its implementation.
- *Quality of the implementation.* The fidelity, dosage, quality, responsiveness, and adaptation of the programme have been assessed.
- *Multi-informant assessments.* Multiple informants (students, teachers and parents) have been used to assess the programme’s impact on students’ and teachers’ mental health.

- *Developmental perspective.* The PROMEHS curriculum acknowledges that students’ and teachers’ mental health competencies encompassed dynamic and multifaceted knowledge, skills, practices and attitudes that may change over time, and seeks to address children’s and young people’s developmental needs in their developmental trajectory.
- *Active family engagement.* The students’ and the parents’ handbooks have been designed to reinforce the skills and behaviours students learn at school. The take-home activities helped students apply the new competencies at home.
- *Sustainability.* The PROMEHS programme has been developed working collaboratively with local, regional national and international policymakers to maximise the impact and sustainability of the project’s results over time.

Table 1.1 provides the definition of the themes included in the PROMEHS framework

Table 1.1: PROMEHS Programme’s Themes and Topics

Theme	Topic
<p>Theme 1: Promoting social and emotional learning</p> <p>SEL is the process through which children and adults understand and manage emotions, set, and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions. SEL includes five core competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Elias et al., 1997; Durlak et al., 2015).</p>	<ol style="list-style-type: none"> 1) Self-awareness 2) Self-management 3) Social awareness 4) Relationship skills 5) Responsible decision making
<p>Theme 2: Promoting resilience</p> <p>Resilience is the dynamic “capacity, processes, or outcomes of successful adaptation in the context of significant threats to function or development” (Masten, 2011; Ungar, 2018; Rutter, 1999). In children, it includes the ability to deal with adversity and setbacks, rejection, family conflict, loss, bullying and conflicts, life changes and transitions (Cefai, 2008).</p>	<ol style="list-style-type: none"> 1) Dealing with psychosocial challenges 2) Dealing with traumatic experiences
<p>Theme 3: Preventing social, emotional and behavioural problems</p> <p>This category includes different types of challenging conduct that fall outside behavioural norms, including internalizing, externalising and at-risk behaviours (Achenbach et al., 2017).</p>	<ol style="list-style-type: none"> 1) Dealing with internalizing problems 2) Dealing with externalising problems 3) Dealing with risk behaviours



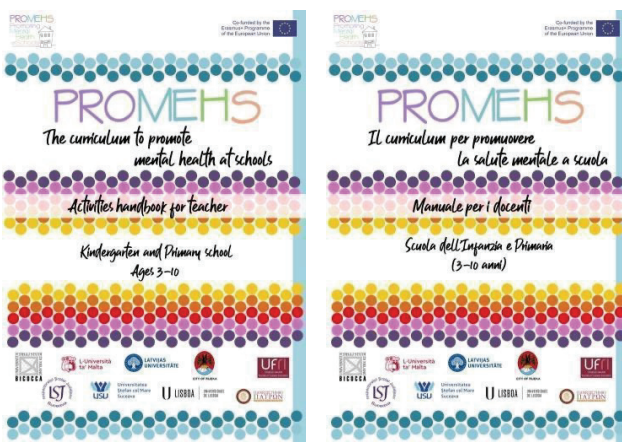
1.3 The Curriculum

Manualised activities and guidelines. The PROMEHS programme comprises seven handbooks that provide multi-year programming for students 3-18 years and their parents and teachers. Four handbooks (two for kindergarten and primary school teachers and students, and two for middle and high secondary school teachers and students) include step-by-step activities that teachers and students carried out respectively at school, as part of the mainstream curriculum, and at home between students and parents/caregivers. The other three volumes contain guidelines on how to promote mental health for teachers, parents and recommendations for policy-makers. Furthermore, two glossaries (for kindergarten and primary school teachers and middle and high secondary teachers) have been created to enhance teachers' mental health literacy. All materials for teachers, students, parents and policy-makers have been nationally adapted and translated into the seven languages of the countries involved in the experimentation (Croatian, English, Greek, Italian, Latvian, Portuguese and Romanian).

For teachers

- Training course delivered by project leaders and composed of theoretical and practical activities

Figure 1.2: Examples of the teacher's handbook covers for the English and Italian versions.



focused on promoting social and emotional learning and resilience, and preventing mental health difficulties.

- Teacher's handbooks (Fig. 1.2) to promote the mental health of students: 1) kindergarten and primary school version; 2) middle and high secondary school version.
- Handbook to promote teacher's own mental health.

For students

- Student's handbooks to promote their mental health: 1) kindergarten and primary school version; 2) middle and high secondary school version.

For families

- Meetings managed by the project leaders and focused on how to promote mental health at home.
- Handbook for parents to promote mental health at home.

For school leaders and policy-makers

- Meetings managed by the project leaders focused on how to promote mental health at school.
- Guidelines for school leaders and policy-makers on mental health promotion in school.

1.4 Structure of the Activities Handbooks

The three PROMEHS themes apply to all the students' age groups. Each theme includes a set of topics, each defined by a number of goals describing the specific developmentally-appropriate skills to be developed in the activities. Table 1.2 summarizes the themes, topics and goals of the PROMEHS curriculum listed by age groups.





Table 1.2 (a): PROMEHS themes, topics and goals: Kindergarten and Primary School

Themes	Topics for kindergarten and primary school students (4-11 years)
Theme 1: Promoting social and emotional learning	<p>Self-awareness</p> <ul style="list-style-type: none"> • Goal 1: To identify and label basic and complex emotions • Goal 2: To develop self-confidence, self-efficacy and self-esteem • Goal 3: To understand the relationship between emotions, thoughts and behaviours. <p>Self-management</p> <ul style="list-style-type: none"> • Goal 1: To improve effective strategies to manage emotion • Goal 2: To develop persistence, motivation and commitment toward personal and academic goals <p>Social awareness</p> <ul style="list-style-type: none"> • Goal 1: To develop perspective taking and empathy • Goal 2: To appreciate and value individual, social and cultural diversity <p>Relationship skills</p> <ul style="list-style-type: none"> • Goal 1: To cooperate and share • Goal 2: To create, maintain and repair friendships • Goal 3: To develop effective strategies to manage communication and assertiveness • Goal 4: To manage disagreement and solve conflict with others positively • Goal 5: To ask for and provide help <p>Responsible decision making</p> <ul style="list-style-type: none"> • Goal 1: To understand and respect norms and rules at school, at home and in society • Goal 2: To deal with ethical problems applying decision-making processes
Theme 2: Promoting resilience	<p>Dealing with psychosocial challenges</p> <ul style="list-style-type: none"> • Goal 1: To deal with transitions and changes • Goal 2: To deal with bullying and cyberbullying • Goal 3: To deal with school difficulties • Goal 4: To deal with negative peer pressure and social isolation/rejection <p>Dealing with traumatic experiences</p> <ul style="list-style-type: none"> • Goal 1: To deal with loss and bereavement • Goal 2: To deal with chronic diseases
Theme 3: Preventing social, emotional and behavioural problems	<p>Dealing with internalizing problems</p> <ul style="list-style-type: none"> • Goal 1: To deal with depression • Goal 2: To deal with anxiety and school phobia • Goal 3: To deal with social withdrawal • Goal 4: To deal with somatic problems <p>Dealing with externalizing problems</p> <ul style="list-style-type: none"> • Goal 1: To deal with hyperactivity • Goal 2: To deal with aggressive and antisocial behaviour <p>Dealing with at risk behaviours</p> <ul style="list-style-type: none"> • Goal 1: To identify and avoid risky behaviours that can cause body injuries • Goal 2: To deal with school violence • Goal 3: To deal with Internet and video-game addictions

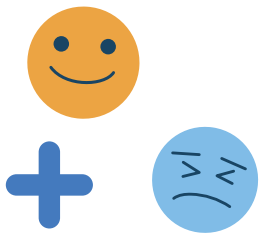
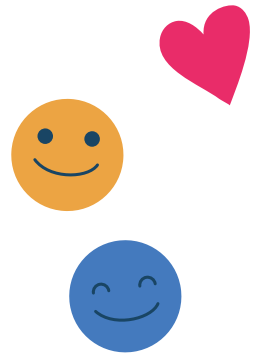


Table 1.2 (b): PROMEHS themes, topics and goals: Middle and Secondary School

Themes	Topics for middle and secondary school students (12-18 years)
Theme 1: Promoting social and emotional learning	<p>Self-awareness</p> <ul style="list-style-type: none"> • Goal 1: To improve the ability to understand and express complex emotions • Goal 2: To develop self-confidence, self-efficacy and self-esteem • Goal 3: To improve self-determination <p>Self-management</p> <ul style="list-style-type: none"> • Goal 1: To improve effective strategies to manage strong emotions • Goal 2: To develop persistence, motivation and commitment • Goal 3: To enhance the importance of having a positive and optimistic mindset. <p>Social awareness</p> <ul style="list-style-type: none"> • Goal 1: To reinforce the importance of perspective-taking and empathy • Goal 2: To appreciate and value individual, social, and cultural diversity <p>Relationship skills</p> <ul style="list-style-type: none"> • Goal 1: To cooperate and share • Goal 2: To create, maintain and repair friendships and affective relationship • Goal 3: To develop effective strategies to manage communication and assertiveness • Goal 4: To positively manage disagreement and to solve conflicts with others • Goal 5: To ask for help and provide help <p>Responsible decision making</p> <ul style="list-style-type: none"> • Goal 1: To understand and respect norms and rules at school, at home, and in the society • Goal 2: To deal with ethical problems by applying decision-making processes
Theme 2: Promoting resilience	<p>Dealing with psychosocial challenges</p> <ul style="list-style-type: none"> • Goal 1: To deal with transitions and changes • Goal 2: To deal with bullying and cyberbullying • Goal 3: To deal with school difficulties • Goal 4: To deal with negative peer pressure and social isolation/rejection • Goal 5: To deal with physical and psychological developmental changes <p>Dealing with traumatic experiences</p> <ul style="list-style-type: none"> • Goal 1: To deal with loss and bereavement • Goal 2: To deal with chronic diseases
Theme 3: Preventing social, emotional and behavioural problems	<p>Dealing with internalizing problems</p> <ul style="list-style-type: none"> • Goal 1: To deal with depression • Goal 2: To deal with anxiety and school phobia • Goal 3: To deal with social withdrawal • Goal 4: To deal with somatic problems <p>Dealing with externalizing problems</p> <ul style="list-style-type: none"> • Goal 1: To deal with hyperactivity • Goal 2: To deal with aggressive and antisocial behaviour <p>Dealing with at risk behaviours</p> <ul style="list-style-type: none"> • Goal 1: To identify and to avoid risky behaviours that can cause bodily injuries • Goal 2: To deal with school violence • Goal 3: To prevent internet, video games and gambling addictions • Goal 4: To identify and to avoid sexual risk behaviours and sexting • Goal 5: To identify and avoid alcohol, tobacco and substance use • Goal 6: To develop healthy behaviours and prevent eating disorders and sedentary lifestyle



The teacher implementing the activities is invited to select activities based on two levels of complexity: basic or advanced. Each session may last from one to two hours. Activities feature engaging storytelling, games, role plays, motor activities, songs, online resources, amongst others. Each activity briefly describes the students' learning outcomes, the targeted age and level of complexity (basic/advanced), and the materials needed. Each activity comprises the following steps:

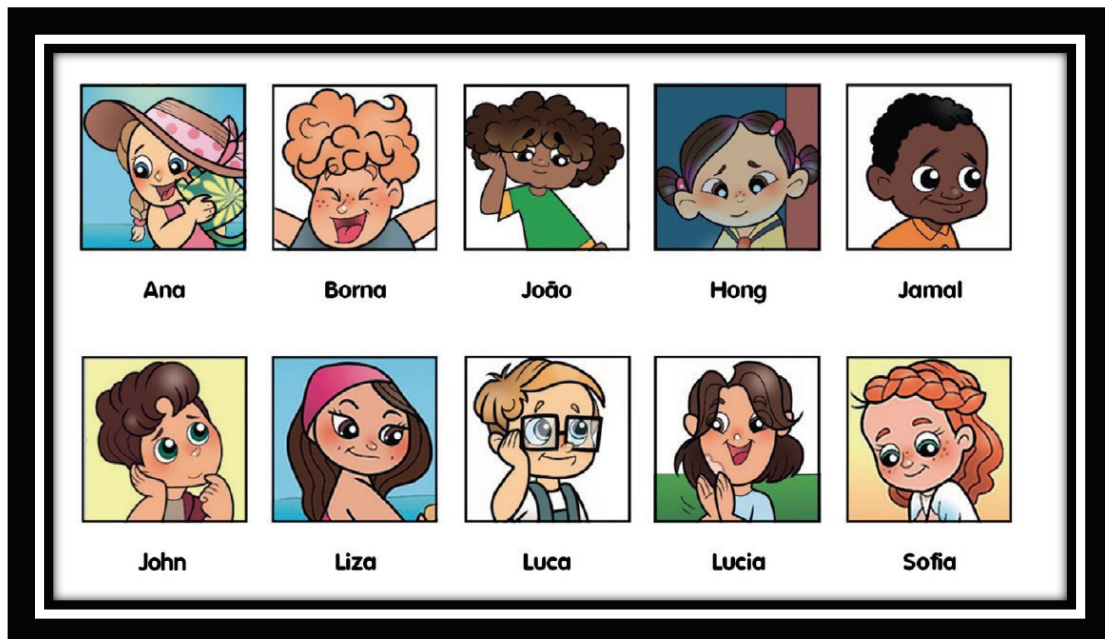
- Short story about one or more PROMEHS main characters (Fig. 1.3).
- Self-reflection questions to deepen the discussion.
- Practical activities using different methodologies.
- Evaluation chart to monitor students' learning.

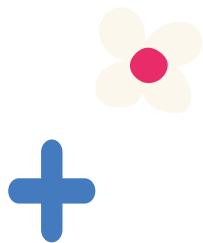
- Explanation of the aims of the activities.
- Instruction on how to embed the targeted skill into teachers' daily classroom practice.
- Further resources.

1.5. Conclusion

This chapter has set out the conceptualisation and structure of the PROMEHS program for the promotion of mental health in schools through teacher preparation and a curriculum addressing socio-emotional learning, resilience, and prevention of socio-emotional difficulties from pre-school to secondary education. The next chapter will provide an account of the programme's implementation and the method of evaluating its impact on students and teachers.

Figure 1.3: The PROMEHS programme characters





CHAPTER 2 Methodology

2.1 Introduction

The objective of this study was to assess whether the Promoting Mental Health in School (PROMEHS) programme was effective in enhancing students' social and emotional learning, resilience, mental health, and academic outcomes and whether implementing teachers, in contrast to waiting group teachers, reported enhanced social and emotional competence, resilience, self-efficacy and reduced burnout. More specifically, the study set out to test the following hypotheses:

- PROMEHS students, in contrast to waiting group students, will increase their social and emotional learning, resilience, mental health (decreased internalising and externalising behaviours and increased prosocial behaviour), and academic outcomes;
- the positive gains by the PROMEHS students will be across school age and gender;
- vulnerable students, such as students with learning difficulties, will benefit more from the programme when compared to typically developing students;
- trained implementing teachers, in contrast to waiting teachers, will increase their social and emotional competence, self-efficacy and resilience, whilst their level of burnout will decrease.

A quasi-experimental longitudinal design was used to evaluate the PROMEHS programme's impact on students' outcomes by comparing the groups' outcomes within times (pre-test vs post-test) and between groups (experimental vs waiting group).

2.2 Teacher training and implementation

2.2.1 Training of teachers, parents and school leaders

The implementation of PROMEHS consisted of several aspects and stages. First, the teachers in the experimental condition were trained by expert trainers

for 16 hours and an additional 9 hours to supervise the curriculum implementation. The partners agreed to request the implementation of 12 activities (one per week) proportionally covering all parts of the program, namely SEL, promoting resilience and preventing behavioural problems. Table 2.1 summarizes the topics addressed by the trainers during the training course and supervision meetings for teachers.

Table 2.1: Topics addressed during the training course and supervision for teachers

Topics
<p>1. Introduction:</p> <ul style="list-style-type: none"> • Aims of the project • Research design • Policy on mental health promotion
<p>2. Promoting teachers' own mental health:</p> <ul style="list-style-type: none"> • Social and emotional skills for teachers • Resilience for teachers • Stress, burnout, and coping strategies
<p>3. Promoting students' mental health</p> <ul style="list-style-type: none"> • Teacher as a role model • Student-teacher relationship • PROMEHS themes: promoting SEL, resilience, and the prevention of social, emotional, and behavioural problems in children and adolescents • How to use project materials and how to implement PROMEHS activities at school and at home

Secondly, meetings with parents (6 hours) and school leaders (6 hours) have been carried out. Table 2.2 describes the topics addressed during such meetings.



Table 2.2 Topics addressed during meetings with parents and school leaders

Meeting for parents		
1st meeting	2st meeting	3st meeting
<ul style="list-style-type: none"> Mental health promotion at school and home PROMEHS model SEL, resilience and behavioural difficulties 	<ul style="list-style-type: none"> Discussion of case studies selected from the handbook for parents General discussion and suggestion led by PROMEHS trainer 	<ul style="list-style-type: none"> Role of parents in PROMEHS: how parents can support students' mental health at home Discussion of case studies selected from the handbook for parents
Meetings with school leaders		
1st meeting	2st meeting	3st meeting
<ul style="list-style-type: none"> Mental health definition Mental health at school Existing policy The PROMEHS model 	<ul style="list-style-type: none"> Promoting mental health as a school leader Discussion from practical activities reported in the teachers' handbook 	<ul style="list-style-type: none"> Whole school approach How can school leaders support the school system in promoting mental health? Planning further steps to promote sustainability

2.2.2 Implementation of the curriculum

During the implementation, which lasted over a period of 6 months, teachers also received 9 hours of mentoring and monitoring by qualified programme trainers. Implementation was planned to be held face to face, but due to COVID-19 regulations, this was not always possible, with some schools doing the program or parts of it online. A set of procedures were applied to monitor the quality of the implementation across schools and countries. These included: the assessment of the program's fidelity (the extent to which the implemented intervention corresponds to the initially intended program), dosage (which refers to how much of the intervention has been delivered), quality (related to how well different program components have been conducted), participants' responsiveness (referring to the degree to which the program stimulates the interest and engagement of participants namely teachers, students and parents) and adaptation (related to changes made in the original program during implementation). The PROMEHS programme was implemented in six countries involved in the project (Croatia, Greece, Italy, Latvia, Portugal, and Romania). Due to the COVID-19 situation, however, not all teachers were able to do 12 activities, with the number of sessions varying between countries due to health policies in place related to

the pandemic. The majority of the 423 implementing teachers (59%) completed ten or more activities, but 31% completed only four or fewer activities, with average number of implemented activities being 8.47.

2.3 Participants

2.3.1 Students' outcomes

The students were recruited from 434 classrooms in 124 schools in 6 countries, using cluster sampling to select schools by gender and school level. Stratified sampling was used to select the students from several classrooms within the selected schools. Teachers completed a set of questionnaires on their students twice: before the implementation of the programme and once the implementation was completed. The sample size of students assessed by teachers in the pre-test was 10209, while the sample size in the post-test was 7789 so the retention percentage is 76.3%. The reduced sample was still representative sample since the mean pre-test subscale scores for the sample of 10209 students and the reduced sample size of 7789 students were similar and differences were not significant. Table 2.3 shows that the sample of students assessed by their teachers in both pre- and post-evaluations consisted of 4501 participants in the experimental group and



3288 in the waiting group; 3825 male and 3964 female participants; 2505 participants attending kindergarten, 2641 primary school, 2015 lower secondary school, and 628 high school students; and 15.1% were disadvantaged

or marginalised (low socio-economic background, migrant background, individual educational needs and disability). This sample guarantees a maximum margin of error of 1.11%, assuming a 95% confidence level.

Table 2.3: Teachers' pre-post evaluations on students clustered by gender, disadvantage, school level, country and group

Group			
		Experimental	Waiting
Student	Male	2205 (49.0%)	1620 (49.3%)
Gender	Female	2296 (51.0%)	1668 (50.7%)
Disadvantaged/	Yes	661 (14.7%)	495 (15.1%)
Marginalised	No	3840 (85.3%)	2793 (84.9%)
School Level	Kindergarten	1369 (30.4%)	1136 (34.6%)
	Primary	1624 (36.1%)	1017 (30.9%)
	Lower Secondary	1124 (25.0%)	891 (27.1%)
	Higher Secondary	384 (8.5%)	244 (7.4%)
Country	Croatia	404 (9.0%)	386 (11.7%)
	Greece	423 (9.4%)	356 (10.8%)
	Italy	1073 (23.8%)	589 (17.9%)
	Latvia	800 (17.8%)	922 (28.1%)
	Portugal	906 (20.1%)	538 (16.4%)
	Romania	895 (19.9%)	497 (15.1%)
Total Sample Size		4501 (100%)	3288 (100%)



The sample size of students assessed by their parents in the pre-test was 8016, while in the post-test, it was 4628, so the retention percentage is 57.7%. Despite a high attrition rate, the reduced sample was still a representative sample since the mean pre-test subscale scores for the sample of 8016 students and the reduced sample size of 4628 students were comparable and differences were not significant. Table

2.4 shows that the sample of students assessed by their parents in both pre- and post-evaluations consisted of 2394 participants in the experimental group and 2234 in the waiting group; 1081 from the low socio-economic status, 2140 from the medium and 1407 from the high SES. This sample guarantees a maximum margin of error of 1.44%, assuming a 95% confidence level.

Table 2.4: Parents' pre-post evaluations on students clustered by education level, socio-economic status, country and group

		Group	
		Experimental	Waiting
Parent Education	Primary	238 (9.9%)	239 (10.7%)
	Secondary	623 (26.0%)	517 (23.1%)
	Post-Secondary	455 (19.0%)	459 (20.5%)
	Tertiary	764 (31.9%)	713 (31.9%)
	Post-Graduate	314 (13.1%)	306 (13.7%)
Socio Economic Status	Low	604 (25.2%)	477 (21.4%)
	Medium	1054 (44.0%)	1086 (48.6%)
	High	736 (30.8%)	671 (30.0%)
Country	Croatia	211 (8.8%)	242 (10.8%)
	Greece	135 (5.6%)	111 (5.0%)
	Italy	243 (10.2%)	256 (11.5%)
	Latvia	723 (30.2%)	807 (36.1%)
	Portugal	491 (20.5%)	391 (17.5%)
	Romania	591 (24.7%)	427 (19.1%)
Total Sample Size		2394 (100%)	2234 (100%)



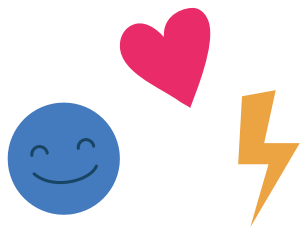
The sample size of students assessing themselves in the pre-test was 6292, while in the post-test, it was 3417, so the retention percentage is 54.3%. Despite a high attrition rate, the reduced sample was still a representative sample since the mean pre-test subscale scores for the sample of 6292 students and the reduced sample size of 3417 students were similar and differences were not significant. The experimental

group students who completed the questionnaires at both pre and post included 823 primary and 1022 secondary; 829 males and 1016 females, while the corresponding waiting group participants included 691 primary and 881 secondary; 767 males and 805 females (Table 2.5). This sample guarantees a maximum margin of error of 1.68%, assuming a 95% confidence level.

Table 2.5: Students' pre-post self-evaluations clustered by gender, school level, country and group

		Group	
		Experimental	Waiting
Student	Male	829 (44.9%)	767 (48.8%)
Gender	Female	1016 (55.1%)	805 (51.2%)
School Level	Primary	823 (44.6%)	691 (44.0%)
	Lower Secondary	578 (31.3%)	461 (29.3%)
	Higher Secondary	444 (24.1%)	420 (26.7%)
Country	Croatia	97 (5.3%)	103 (6.6%)
	Greece	129 (7.0%)	100 (6.4%)
	Italy	318 (17.2%)	291 (18.5%)
	Latvia	537 (29.1%)	588 (37.4%)
	Portugal	664 (36.0%)	387 (24.6%)
	Romania	100 (5.4%)	103 (6.6%)
Total Sample Size		1845 (100%)	1572 (100%)





2.3.2 Teachers' outcomes

The sample size of teacher self-evaluations in the pre-test was 1040, while the sample size in the post-test was 687, so the retention percentage is 66.1%. Table 2.6 shows that 646 (94.0%) of the teachers who completed both the pre and post-test were females, with 363 in the experimental group and 324 in the waiting group. The schools were randomly assigned to the experimental and waiting groups, while the teachers were recruited based on their interest in the PROMEHS project and the authorization of the Heads of school. They were recruited from 124 schools (state/

were aged between 30 and 49 (57.5%), with only 7.1% of teachers below 30 years old.

2.4 Measures

2.4.1 Student measures

The authors examined the impact of the programme on students in terms of social and emotional learning (*Social Skills Improvement System-Social and Emotional Learning Scale* completed by teachers, students and parents' evaluations), mental health (*Strengths and Difficulties*

Table 2.6: Teachers' pre-post self-evaluations clustered by gender, age, school level, country and group

		Group	
		Experimental	Waiting
Teacher	Male	19 (5.2%)	22 (6.8%)
Gender	Female	344 (94.8%)	302 (93.2%)
Age	18-29 years	23 (6.3%)	26 (8.0%)
	30-39 years	90 (24.8%)	82 (25.3%)
	40-49 years	122 (33.6%)	101 (31.2%)
	50-59 years	104 (28.7%)	86 (26.5%)
	60 years or more	24 (6.6%)	29 (9.0%)
School Level	Kindergarten	123 (33.8%)	108 (33.3%)
	Primary	108 (29.8%)	88 (27.2%)
	Lower Secondary	82 (22.6%)	80 (24.7%)
	Higher Secondary	50 (13.8%)	48 (14.8%)
Total Sample Size	Croatia	36 (9.9%)	40 (12.3%)
	Greece	41 (11.3%)	35 (10.8%)
	Italy	124 (34.2%)	91 (28.1%)
	Latvia	57 (15.7%)	77 (23.8%)
	Portugal	44 (12.1%)	38 (11.7%)
	Romania	61 (16.8%)	43 (13.3%)
Total Sample Size		363 (100%)	324 (100%)

non-state). 215 teachers were from Italy, 134 from Latvia, 104 from Romania, 82 from Portugal, 76 from Croatia, and 76 from Greece. Of these, 213 worked in kindergarten, 196 in primary school, 162 in lower secondary school, and 98 in higher secondary school. The majority of the teachers

Questionnaire measuring internalising, externalising and prosocial behaviours, completed by teachers, students (11+) and parents), resilience (*Connor Davidson Scale* completed by students), and academic outcomes (a brief questionnaire completed by teachers).



Social Skills Improvement System, Social Emotional Learning Edition Brief Scales – Student Form (SSIS-SELb-S, Elliott et al., 2020). This is a measure of social and emotional competence of children aged 3 to 18 years, completed by teachers, parents and students. It is developed on the five social and emotional learning domains, namely self-awareness, self-management, social awareness, relationship skills, and responsible decision making (CASEL, 2021). It consists of 20 items, with each of the five subscales (corresponding to the five domains) consisting of 4 items. An example of an item from the Social Awareness subscale is “Shows positive attitude in difficult social situations”. The SSIS-SELb-S has strong reliability, with Cronbach’s alphas of 0.91 for the composite score and 0.67 to 0.72 across the five subscales (Anthony et al., 2020). In this study, the Cronbach’s alpha of teachers’ evaluations ranged from 0.787 to 0.861 for the five subscales and 0.929 for the composite score. For parent evaluations, Cronbach’s alpha ranged from 0.638 to 0.789 for the five subscales and 0.870 for the composite score. For student evaluations, Cronbach’s alpha ranged from 0.561 to 0.731 for the five subscales and 0.822 for the composite score.

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The SDQ is a brief questionnaire measuring the mental health of 3– to 16-year-old children, completed by teachers, parents and students (11+). It consists of 25 items comprising five subscales, namely: conduct problems and hyperactivity (together Externalising Problems), emotional symptoms and peer relationships problems (together Internalising Problems), and the Prosocial Behaviour scale. An example of an item from the conduct and hyperactivity subscale is “Often has temper tantrums or hot tempers”. The first four subscales (problem subscales) give a Total Difficulty Score. Each item is rated on a 3-point Likert scale (not true, somewhat true, and certainly true). In the present study, the three-factor model was used, namely: Internalizing Problems, Externalizing Problems, and Prosocial Behaviour (Goodman et al, 2010). In the original instrument, Cronbach’s alphas were 0.66, 0.76, and 0.66 for Internalizing, Externalizing, and Prosocial scales, respectively (Goodman et al., 2010). In the present study, the internalizing, externalizing, and prosocial composite scales

have satisfactory internal consistency with Cronbach’s alphas of 0.787, 0.867 and 0.838 for teacher evaluations; 0.715, 0.774 and 0.680 for parent evaluations; and 0.732, 0.723 and 0.677 for student evaluations respectively.

Connor Davidson Resilience Scale (CD-RISC 10; Campbell-Sills & Stein, 2007). This is a self-report tool that measures the ability to cope with adversity. The short version of the scale has been developed from the CD-RISC (Connor & Davidson, 2003) and consists of 10 items on a 5-point Likert scale, ranging from 0 (not at all) to 4 (true nearly all of the time) and the total score ranges from 0 to 40. The age range for children is 13-17 years, though it can be used with children as young as 10. In the original instrument, Cronbach’s alpha was 0.85, while in the current study, Cronbach’s alpha was 0.844 indicating good internal consistency.

Academic outcomes Teachers also completed three questions examining students’ academic motivation, engagement in learning and academic performance (5-point scale from poor to excellent). An example of an item measuring academic engagement is “Engagement in the learning process”. A combined response score was used to measure students’ academic outcomes in this study. The three-item academic outcome questionnaire showed excellent internal consistency with Cronbach’s Alpha of 0.951

The questionnaire included also some demographic questions about the students’ age, school level, gender, disadvantage, socio-economic status, and country where the study was conducted.

2.4.2 Teacher measures

The authors also examined the programme’s impact on the experimental teachers themselves, namely the trained teachers who carried out the implementation. It was hypothesised that as a result of programme delivery, teachers would increase their social and emotional competence (*Social and Emotional Competence of Teachers, SECTRS*), self-efficacy (*Ohio State Teacher Efficacy Scale*) and resilience (*Connor Davidson Scale*).



Social and Emotional Competence of Teachers (SECTRS; Tom, 2012). SECTRS includes 52 items that measure teachers' social and emotional competence, providing four sub-scores, namely: Teacher-Student Relationships, which describes positive interactions between teachers and students; Emotion Regulation, reflecting teachers' ability to manage their emotions and to remain calm during challenging situations in the classroom; Social Awareness, describing teachers' sensitivity to diversity and understanding that their behaviours and decisions affect students; and Interpersonal Relationships, focused on teachers' relationships with parents and school staff. Teachers are asked to express their agreement or disagreement with the items on a 6-point Likert scale. In the original tool, Cronbach's alpha coefficients for the four subscales ranged between 0.69 and 0.81 (Tom, 2012). In the current study, Cronbach's alphas ranged from 0.661 to 0.831 for the four subscales and 0.818 for the composite score.

The 10-item Connor Davidson Resilience Scale (CD-RISC 10; Campbell-Sills & Stein, 2007) can be used with adults between 18-64 years (see previous section). In the original instrument, Cronbach's alpha was 0.85, while in the current study, Cronbach's alpha was 0.891 indicating good internal consistency.

Ohio State Teacher Efficacy Scale (OSTES; Tschannen-Moran & Woolfolk Hoy, 2001). OSTES is a self-report questionnaire that measures teachers' sense of efficacy, comprising three subscales: *Efficacy for Student Engagement*, *Efficacy for Instructional Strategies*, and *Efficacy for Classroom Management*. The short form comprises 12 items, each requiring a response on a 9-point Likert Scale, from 1 (nothing) to 9 (a great deal). The Cronbach's alphas obtained in the current study ranged between .82 and .86 at the pre-test and between 0.81 and 0.86 at the post-test for the three subscales, in line with the reliability coefficients of the original tool (ranges between .81 and .86; Tschannen-Moran & Woolfolk Hoy, 2001). In the current study, Cronbach's alphas ranged from 0.709 to 0.895 for the three subscales and 0.884 for the composite score.

Burnout single question measure – Participants answered only one question, "I feel exhausted at the end of the working day", on a 5-point scale ranging from excellent to poor.

2.5 Ethics

The study was approved by the Research Ethics Committees of the six countries evaluating the programme, namely the University of Milano-Bicocca (Italy), University of Latvia (Latvia), University of Rijeka (Croatia), the University of Ștefan cel Mare di Suceava (Romania), University of Lisbon (Portugal), and the University of Patras (Greece), as well as from the respective educational authorities in each country. Participants' informed consent was obtained for all teachers, parents, students and students' parents. Participants completed three online questionnaires via the platform "Survey Monkey". To ensure the participants' privacy and to help researchers link pre- and post-test data, teachers were assigned unique anonymized codes to be used when filling the questionnaires.

2.6 Analysis of data

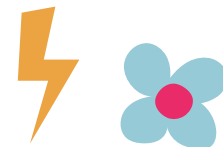
Students were matched by code to combine the pre-test and post-test scores, where only students who had scores in both tests were included in the data set. Missing values were replaced by the mean test item score. The Kolmogorov Smirnov test was used to investigate the shape of the score distribution of each subscale. The internalizing and externalizing problem score distributions were right-skewed, while prosocial behaviour, social emotional learning and academic achievement score distributions were also right-skewed and did not satisfy the normality assumption. To address this limitation, bootstrap standard errors and confidence intervals were provided to account for intrinsic asymmetry and non-Gaussian trends in the regression model. Unlike parametric approaches, bootstrapping resamples a single dataset to create many simulated samples without making any assumptions for the population distribution. This process enables



researchers to calculate standard errors, construct confidence intervals and perform hypothesis testing for various types of sample statistics.

General linear models were used to relate each latent variable (subscale score) to a number of predictors. For teacher evaluations assessing students, the predictors included student gender (male, female), school level (kindergarten, primary, lower secondary, higher secondary), marginalisation (advantaged, disadvantaged), group (experimental, waiting) and phase (pre-test, post-test). For parent evaluations assessing students, the predictors included socio-economic status (low, medium, high), group (experimental, waiting) and phase (pre-test, post-test). For student evaluations

assessing themselves, the predictors included student gender (male, female), school level (primary, lower secondary, higher secondary), group (experimental, waiting groups) and phase (pre-test, post-test). For teacher evaluations assessing themselves, the predictors included teacher gender (male, female), school level (kindergarten, primary, lower secondary, higher secondary), group (experimental, waiting) and phase (pre-test, post-test). Each general linear model included all predictors as main effects and pairwise interaction effects with phase. Undoubtedly, the most important interaction effect is Group*Phase because it quantifies the change in the mean subscale scores after the programme of the experimental group compared to the waitingwaiting group.



CHAPTER 3 Effectiveness in improving students' social and emotional learning, resilience, mental health and academic outcomes

3.1 Introduction

In this chapter, we present the evaluation of the programme's impact on students' outcomes, namely social and emotional learning, resilience, mental health and academic achievement, respectively. Then we analyse these findings by country, age, gender, vulnerability and SES. Five different measures were used. The SSIS-SEL scores (teachers, parents and student self-report versions) on self-awareness, self-management, social awareness, relationship skills and responsible decision making and overall SEL range from 1 to 4, where the larger the mean score the higher is the social emotional learning. The rating scores on the Connor Davidson Resilience Scale (completed by students) range from 1 to 5, where higher scores indicate better motivation, engagement and performance. On the Strengths and Difficulties Questionnaire (teachers, parents, and student self-report versions), three scores were generated. Internalizing and externalising difficulties range from 1 to 3, where the larger the mean score the higher is the difficulty, while prosocial behaviour range from 1 to 3, where the larger the mean score the higher is the intention to help others. The rating scores for academic motivation, engagement in learning and academic performance (completed by teachers) range from 1 to 5, where higher scores indicate higher motivation, engagement and performance.

Socio-economic status was generated by considering the parents' level of education and occupation. The SES score ranges from 0 to 10, where 0 corresponds to the SES of a child whose parents have primary education and who are unemployed or on state income, and 10 corresponds to the SES of a child whose parents have post-graduate education and who have professional jobs. The SES score was categorized into three categories. The low SES category ranged from 0 to 3 and comprised 21.4% of the sample; the medium SES category ranged from 4 to 7 and comprised 46.8% of the sample; and the high SES category ranged from 8 to 10 and comprised 29.9% of the sample.

3.2. Social and emotional learning

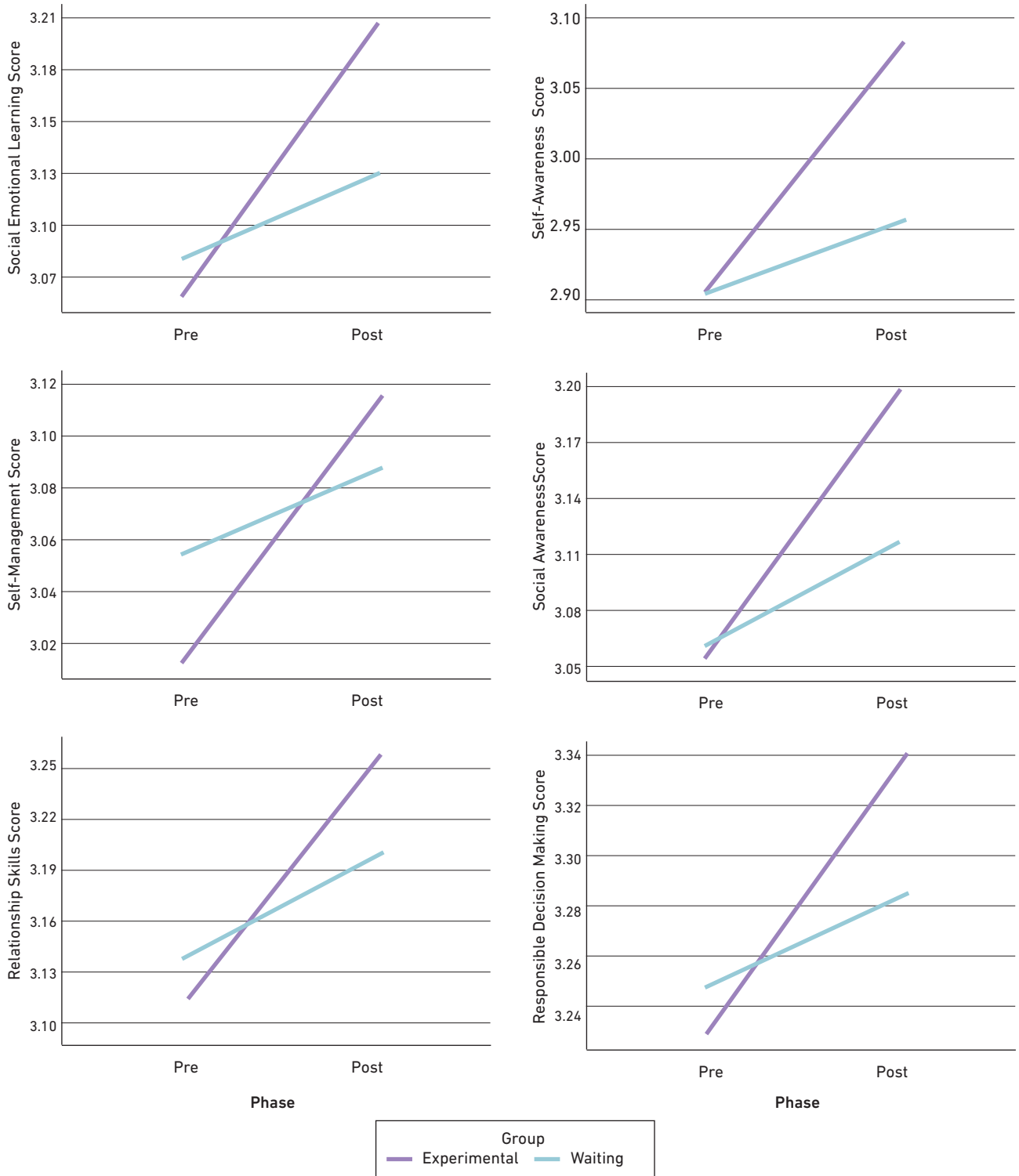
3.2.1 Teachers' evaluations of students' social and emotional learning

Figure 3.1 shows that the increment in the mean of social and emotional learning, self-awareness, self-management, relationship skills, social awareness, and responsible decision-making scores from pre- to post-test was significantly larger for the experimental group compared to the waiting group (Table 3.3 shows that the p-values of the interaction effect 'Group*Phase' are less than 0.05). According to teachers, the programme was most effective in enhancing self-awareness.





Figure 3.1: Mean SEL subscales scores, clustered by phase and group



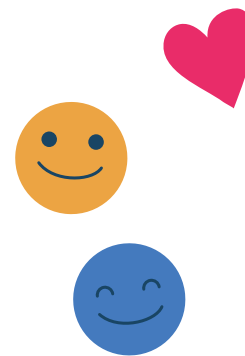


Table 3.1 shows that for the waiting and experimental groups, the mean subscale scores are significantly larger for non-disadvantaged students compared to marginalized/disadvantaged students, which applies to all school levels (Table 3.3 shows that the p-values of the main effect 'Disadvantage' are less than 0.05).

Table 3.1: Mean SEL subscale scores clustered by school level, disadvantage, group and phase

Group	School Level	Disadvantage	Social emotional learning			Self-awareness		Self-management	
			Phase	Mean	S.D	Mean	S.D	Mean	S.D
Experimental	Kindergarten	Yes	Pre	2.74	0.662	2.54	0.724	2.75	0.699
			Post	2.91	0.628	2.75	0.670	2.89	0.722
		No	Pre	3.04	0.500	2.88	0.553	2.97	0.593
			Post	3.19	0.530	3.10	0.584	3.07	0.605
	Primary	Yes	Pre	2.80	0.518	2.64	0.573	2.74	0.661
			Post	2.88	0.542	2.71	0.566	2.78	0.714
		No	Pre	3.17	0.488	3.03	0.553	3.08	0.610
			Post	3.30	0.521	3.18	0.588	3.18	0.618
	Lower Secondary	Yes	Pre	2.77	0.652	2.58	0.712	2.77	0.822
			Post	2.85	0.620	2.72	0.643	2.82	0.709
		No	Pre	3.20	0.529	3.03	0.594	3.20	0.609
			Post	3.29	0.510	3.16	0.577	3.26	0.575
Higher Secondary	Yes	Pre	2.61	0.573	2.49	0.619	2.71	0.744	
		Post	2.77	0.537	2.58	0.594	2.88	0.673	
	No	Pre	3.07	0.423	2.92	0.495	3.10	0.533	
		Post	3.17	0.549	3.06	0.634	3.17	0.622	
Waiting	Kindergarten	Yes	Pre	2.66	0.614	2.47	0.661	2.66	0.722
			Post	2.72	0.628	2.56	0.645	2.75	0.747
		No	Pre	3.03	0.509	2.85	0.571	3.03	0.589
			Post	3.10	0.523	2.95	0.576	3.07	0.593
	Primary	Yes	Pre	2.87	0.591	2.65	0.638	2.78	0.709
			Post	2.88	0.564	2.60	0.615	2.82	0.697
		No	Pre	3.21	0.502	3.05	0.550	3.13	0.581
			Post	3.25	0.487	3.10	0.538	3.17	0.556
	Lower Secondary	Yes	Pre	2.90	0.548	2.72	0.651	2.89	0.685
			Post	2.85	0.538	2.63	0.586	2.83	0.689
		No	Pre	3.16	0.494	2.99	0.555	3.15	0.572
			Post	3.19	0.510	3.00	0.583	3.17	0.582
	Higher Secondary	Yes	Pre	2.97	0.425	2.77	0.554	3.01	0.560
			Post	2.99	0.419	2.84	0.536	3.03	0.441
		No	Pre	3.26	0.518	3.08	0.635	3.26	0.581
			Post	3.27	0.533	3.09	0.643	3.26	0.562



Table 3.1: Mean SEL subscale scores clustered by school level, disadvantage, group and phase (Cont.)

Group	School Level	Disadvantage	Phase	Social awareness		Relationship skills		Responsible decision making	
				Mean	S.D	Mean	S.D	Mean	S.D
Experimental	Kindergarten	Yes	Pre	2.78	0.765	2.81	0.751	2.81	0.769
			Post	2.98	0.713	2.95	0.683	2.99	0.697
		No	Pre	3.05	0.589	3.16	0.545	3.14	0.599
			Post	3.23	0.608	3.28	0.567	3.27	0.596
	Primary	Yes	Pre	2.84	0.640	2.88	0.592	2.90	0.602
			Post	2.96	0.633	2.97	0.589	2.99	0.661
		No	Pre	3.18	0.584	3.23	0.539	3.35	0.564
			Post	3.31	0.594	3.37	0.557	3.45	0.572
	Lower Secondary	Yes	Pre	2.81	0.708	2.79	0.683	2.90	0.712
			Post	2.91	0.668	2.89	0.694	2.94	0.702
		No	Pre	3.15	0.618	3.21	0.591	3.43	0.572
			Post	3.23	0.608	3.33	0.557	3.49	0.547
Higher Secondary	Yes	Pre	2.51	0.584	2.47	0.638	2.87	0.718	
		Post	2.71	0.646	2.69	0.626	2.98	0.635	
	No	Pre	2.92	0.526	3.03	0.507	3.35	0.521	
		Post	3.05	0.618	3.13	0.617	3.44	0.607	
Waiting	Kindergarten	Yes	Pre	2.71	0.716	2.78	0.663	2.69	0.749
			Post	2.74	0.708	2.81	0.687	2.77	0.768
		No	Pre	3.00	0.597	3.13	0.567	3.14	0.621
			Post	3.08	0.618	3.22	0.571	3.20	0.607
	Primary	Yes	Pre	2.97	0.645	2.96	0.673	3.00	0.735
			Post	2.98	0.617	2.99	0.615	3.00	0.688
		No	Pre	3.20	0.590	3.28	0.558	3.40	0.588
			Post	3.25	0.586	3.31	0.553	3.44	0.556
	Lower Secondary	Yes	Pre	2.94	0.578	2.90	0.582	3.07	0.630
			Post	2.88	0.624	2.86	0.598	3.05	0.696
		No	Pre	3.09	0.614	3.19	0.549	3.40	0.554
			Post	3.14	0.613	3.21	0.570	3.43	0.569
	Higher Secondary	Yes	Pre	2.91	0.503	2.92	0.474	3.23	0.515
			Post	2.93	0.543	2.99	0.449	3.16	0.463
		No	Pre	3.20	0.605	3.25	0.549	3.50	0.516
			Post	3.27	0.587	3.28	0.559	3.44	0.549

Table 3.2 shows that for the waiting and experimental groups, the mean subscale scores are higher for female students compared to male students, which applies to all school levels.

Table 3.2: Mean SEL subscale scores clustered by school level, student gender, group and phase

Group	School Level	Disadvantage	Phase	Social emotional learning		Self-awareness		Self-management	
				Mean	S.D	Mean	S.D	Mean	S.D
Experimental	Kindergarten	Male	Pre	2.89	0.533	2.73	0.592	2.80	0.611
			Post	3.05	0.559	2.96	0.606	2.91	0.634
		Female	Pre	3.12	0.509	2.95	0.564	3.09	0.579
			Post	3.28	0.506	3.19	0.576	3.21	0.564
	Primary	Male	Pre	2.99	0.517	2.88	0.568	2.84	0.651
			Post	3.13	0.552	3.03	0.616	2.96	0.665
		Female	Pre	3.22	0.485	3.04	0.572	3.19	0.559
			Post	3.35	0.512	3.21	0.585	3.29	0.584
	Lower Secondary	Male	Pre	3.01	0.597	2.85	0.649	2.96	0.709
			Post	3.09	0.582	2.97	0.622	3.02	0.659
		Female	Pre	3.23	0.539	3.04	0.622	3.27	0.603
			Post	3.34	0.499	3.19	0.579	3.34	0.543
Higher Secondary	Male	Pre	2.80	0.534	2.62	0.575	2.85	0.697	
		Post	2.93	0.613	2.73	0.679	2.94	0.723	
	Female	Pre	3.03	0.472	2.91	0.528	3.08	0.557	
		Post	3.16	0.533	3.06	0.617	3.19	0.582	
Waiting	Kindergarten	Male	Pre	2.86	0.568	2.71	0.617	2.81	0.651
			Post	2.92	0.572	2.78	0.601	2.86	0.650
		Female	Pre	3.09	0.485	2.89	0.568	3.15	0.544
			Post	3.18	0.506	3.01	0.579	3.19	0.557
	Primary	Male	Pre	3.03	0.541	2.88	0.580	2.93	0.627
			Post	3.08	0.554	2.94	0.605	2.99	0.633
		Female	Pre	3.29	0.490	3.11	0.571	3.23	0.570
			Post	3.31	0.449	3.10	0.546	3.25	0.522
	Lower Secondary	Male	Pre	2.95	0.531	2.81	0.604	2.90	0.634
			Post	2.99	0.527	2.81	0.593	2.94	0.618
		Female	Pre	3.23	0.471	3.03	0.554	3.25	0.539
			Post	3.24	0.509	3.02	0.592	3.25	0.583
Higher Secondary	Male	Pre	3.01	0.445	2.81	0.586	3.01	0.529	
		Post	3.01	0.486	2.79	0.613	2.98	0.526	
	Female	Pre	3.31	0.522	3.13	0.627	3.32	0.589	
		Post	3.35	0.504	3.20	0.589	3.37	0.508	

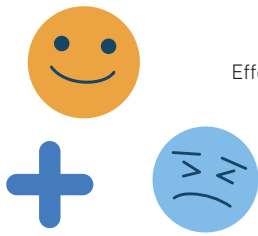


Table 3.2: Mean SEL subscale scores clustered by school level, student gender, group and phase (Cont.)

Group	School Level	Disadvantage	Phase	Social awareness		Relationship skills		Responsible decision making	
				Mean	S.D	Mean	S.D	Mean	S.D
Experimental	Kindergarten	Male	Pre	2.91	0.620	3.03	0.595	2.98	0.648
			Post	3.09	0.648	3.16	0.607	3.13	0.635
		Female	Pre	3.13	0.605	3.22	0.567	3.22	0.594
			Post	3.32	0.575	3.34	0.554	3.37	0.563
	Primary	Male	Pre	3.03	0.614	3.09	0.560	3.13	0.610
			Post	3.16	0.628	3.24	0.579	3.28	0.621
		Female	Pre	3.22	0.588	3.25	0.559	3.40	0.550
			Post	3.36	0.576	3.38	0.567	3.49	0.568
	Lower Secondary	Male	Pre	2.99	0.652	3.04	0.628	3.20	0.672
			Post	3.07	0.650	3.14	0.621	3.24	0.656
		Female	Pre	3.17	0.634	3.22	0.620	3.46	0.570
			Post	3.28	0.594	3.36	0.572	3.54	0.526
Higher Secondary	Male	Pre	2.69	0.572	2.74	0.616	3.08	0.671	
		Post	2.86	0.671	2.93	0.655	3.16	0.758	
	Female	Pre	2.89	0.558	2.97	0.570	3.30	0.566	
		Post	3.02	0.616	3.09	0.637	3.43	0.555	
Waiting	Kindergarten	Male	Pre	2.86	0.642	3.00	0.623	2.93	0.699
			Post	2.92	0.649	3.06	0.629	3.00	0.677
		Female	Pre	3.06	0.587	3.16	0.552	3.22	0.581
			Post	3.15	0.614	3.26	0.564	3.27	0.592
	Primary	Male	Pre	3.03	0.610	3.12	0.603	3.20	0.651
			Post	3.08	0.632	3.16	0.604	3.24	0.646
		Female	Pre	3.32	0.564	3.34	0.556	3.48	0.578
			Post	3.35	0.526	3.36	0.523	3.51	0.514
	Lower Secondary	Male	Pre	2.91	0.624	3.00	0.564	3.15	0.612
			Post	2.95	0.616	3.04	0.591	3.18	0.621
		Female	Pre	3.18	0.569	3.23	0.553	3.47	0.526
			Post	3.21	0.606	3.23	0.579	3.50	0.569
Higher Secondary	Male	Pre	2.94	0.541	3.00	0.499	3.31	0.470	
		Post	2.99	0.595	3.06	0.535	3.21	0.505	
	Female	Pre	3.26	0.597	3.29	0.551	3.52	0.547	
		Post	3.35	0.550	3.34	0.537	3.50	0.539	

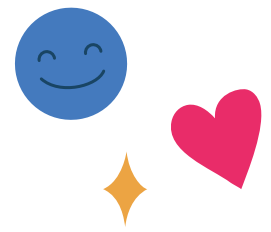


Table 3.3 shows the tests of between-subjects effects and parameter estimates for social and emotional learning and its five subscales. The increment in the mean of social and emotional learning scores from pre- to post-test was larger for the experimental group than the waiting group, given that the other effects (student gender, school level and marginalisation) were kept constant. This difference (0.084) is significant since the p-value of the interaction Group*Phase (approx. 0) is smaller than the 0.05 level of significance. School Level*Phase is also a significant interaction effect showing that the programme was more effective with kindergarten students, according to teachers. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

The increment in the mean self-awareness scores from pre- to post-test was larger for the experimental group than the waiting group, given that the other effects were kept constant. This difference (0.124) is significant since the p-value of the interaction Group*Phase (approx. 0) is smaller than the 0.05 level of significance. School Level*Phase is also a significant interaction effect showing that the programme was more effective with kindergarten students, according to teachers. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

The increment in the mean self-management scores from pre- to post-test was larger for the experimental group than the waiting group, given that the other effects were kept constant. This difference (0.061) is significant since the p-value of the interaction Group*Phase (0.002) is smaller than the 0.05 level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

The increment in the mean social awareness scores from pre- to post-test was larger for the experimental group than the waiting group, given that the other effects were kept constant. This difference (0.083) is significant since the p-value of the interaction Group*Phase (approx. 0) is smaller than the 0.05 level of significance. School Level*Phase is also a significant interaction effect (0.034) showing that the programme was more effective with kindergarten students, according to teachers. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

The increment in the mean relationship skill scores from pre- to post-test was larger for the experimental group than the waiting group, given that the other effects were kept constant. This difference (0.081) is significant since the p-value of the interaction Group*Phase (approx. 0) is smaller than the 0.05 level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

The increment in the mean responsible decision-making scores from pre- to post-test was larger for the experimental group than the waiting group, given that the other effects were kept constant. This difference (0.068) is significant since the p-value of the interaction Group*Phase (approx. 0) is smaller than the 0.05 level of significance. School level*Phase indicates that the programme was more effective with kindergarten and primary students, according to teachers. Although this interaction effect is not significant, the p-value (0.069) exceeds the 0.05 level of significance by a very small margin. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Table 3.3: Tests of Between-Subjects Effects and Parameter estimates for Social emotional learning and its subscales

Term	Social Emotional Learning			Self-Awareness			Self-Management		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	236471.6	<0.001	1	166166.9	<0.001	1	171665.9	<0.001
Group	1	3.924	0.048	1	30.945	<0.001	1	1.970	0.160
Phase	1	34.627	<0.001	1	36.142	<0.001	1	14.787	<0.001
Student Gender	1	738.875	<0.001	1	433.480	<0.001	1	962.019	<0.001
School Level	3	65.540	<0.001	3	45.775	<0.001	3	43.626	<0.001
Disadvantage	1	923.591	<0.001	1	890.340	<0.001	1	553.360	<0.001
Disadvantage *Phase	1	0.704	0.402	1	1.907	0.167	1	0.123	0.726
Group * Phase	1	25.205	<0.001	1	44.137	<0.001	1	9.851	0.002
School Level * Phase	3	2.863	0.035	3	6.673	<0.001	3	0.803	0.492
Student Gender * Phase	1	0.004	0.952	1	0.437	0.508	1	0.265	0.607
Error	15550			15550			15550		

Parameter	Social Emotional Learning			Self-Awareness			Self-Management		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	3.220	0.022	<0.001	3.050	0.025	<0.001	3.288	0.026	<0.001
Group=Experimental	-0.025	0.012	0.032	-0.010	0.013	0.445	0-.044	0.014	0.001
Phase=Post	0.036	0.032	0.250	0.028	0.036	0.435	0.022	0.037	0.546
Student Gender=Male	-0.224	0.012	<0.001	-0.187	0.013	<0.001	-0.303	0.014	<0.001
School Level=Kinder- garten	-0.058	0.023	0.011	-0.083	0.026	0.001	-0.112	0.027	<0.001
School Level=Primary	0.092	0.023	<0.001	0.082	0.026	0.001	-0.014	0.027	0.586
School Level=Lower Secondary	0.079	0.023	<0.001	0.054	0.026	0.041	0.044	0.027	0.105
Disadvantaged=Yes	-0.335	0.016	<0.001	-0.363	0.018	<0.001	-0.306	0.018	<0.001
Disadvantaged=Yes * Phase=Post	-0.019	0.023	0.402	-0.035	0.026	0.167	-0.009	0.026	0.726
Group=Experimental * Phase=Post	0.084	0.017	<0.001	0.124	0.019	<0.001	0.061	0.019	0.002
Sch. Level=Kinder * Phase=Post	0.038	0.033	0.248	0.081	0.037	0.028	0.018	0.038	0.637
Sch. Level=Primary * Phase=Post	0.004	0.032	0.892	0.010	0.036	0.785	0.010	0.038	0.789
Sch. Level=Lower Sec * Phase=Post	-0.026	0.033	0.444	-0.023	0.038	0.537	-0.020	0.039	0.611
Student Gender=Male * Phase=Post	-0.001	0.016	0.952	-0.012	0.019	0.508	0.010	0.019	0.607

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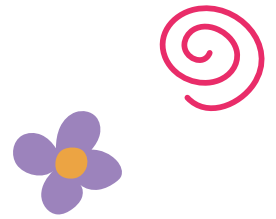


Table 3.3: Tests of Between-Subjects Effects and Parameter estimates for Social emotional learning and its subscales (Cont.)

Term	Social Awareness			Relationship Skills			Responsible Decision Making		
	Df	F	P-value	Df	F	P-value	df	F	P-value
Intercept	1	169757.3	<0.001	1	195477.9	<0.001	1	199194.0	<0.001
Group	1	7.968	0.005	1	1.819	0.177	1	0.153	0.696
Phase	1	36.076	<0.001	1	35.848	<0.001	1	14.912	<0.001
Student Gender	1	472.834	<0.001	1	348.013	<0.001	1	681.626	<0.001
School Level	3	63.222	<0.001	3	46.159	<0.001	3	147.569	<0.001
Disadvantage	1	450.505	<0.001	1	776.629	<0.001	1	925.915	<0.001
Disadvantage * Phase	1	0.680	0.409	1	0.255	0.614	1	0.370	0.543
Group * Phase	1	17.887	<0.001	1	19.217	<0.001	1	12.779	<0.001
School Level * Phase	3	2.893	0.034	3	0.873	0.454	3	2.367	0.069
Student Gender * Phase	1	0.294	0.588	1	0.057	0.812	1	0.036	0.849
Error	15550			15550			15550		

Parameter	Social Awareness			Relationship Skills			Responsible Decision Making		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	3.089	0.026	<0.001	3.163	0.025	<0.001	3.509	0.026	<0.001
Group=Experimental	-0.014	0.014	0.320	-0.028	0.013	0.032	-0.030	0.013	0.024
Phase=Post	0.072	0.037	0.053	0.056	0.035	0.111	0.004	0.036	0.921
Student Gender=Male	-0.206	0.014	<0.001	-0.174	0.013	<0.001	-0.249	0.013	<0.001
School Level=Kinder- garten	0.047	0.027	0.083	0.085	0.026	<0.001	-0.228	0.026	<0.001
School Level=Primary	0.207	0.027	<0.001	0.190	0.025	<0.001	-0.006	0.026	0.809
School Level=Lower Secondary	0.140	0.028	<0.001	0.128	0.026	<0.001	0.027	0.027	0.323
Disadvantaged=Yes	-0.272	0.018	<0.001	-0.345	0.017	<0.001	-0.388	0.018	<0.001
Disadvantaged=Yes * Phase=Post	-0.022	0.027	0.409	-0.013	0.025	0.614	-0.016	0.026	0.543
Group=Experimental * Phase=Post	0.083	0.020	<0.001	0.081	0.019	<0.001	0.068	0.019	<0.001
Sch. Level=Kinder * Phase=Post	0.025	0.038	0.519	0.004	0.036	0.902	0.061	0.037	0.105
Sch. Level=Primary * Phase=Post	-0.017	0.038	0.654	-0.013	0.036	0.709	0.033	0.037	0.381
Sch. Level=Lower Sec * Phase=Post	-0.049	0.039	0.208	-0.034	0.037	0.365	-0.002	0.038	0.964
Student Gender=Male * Phase=Post	-0.011	0.019	0.588	0.004	0.018	0.812	0.004	0.019	0.849

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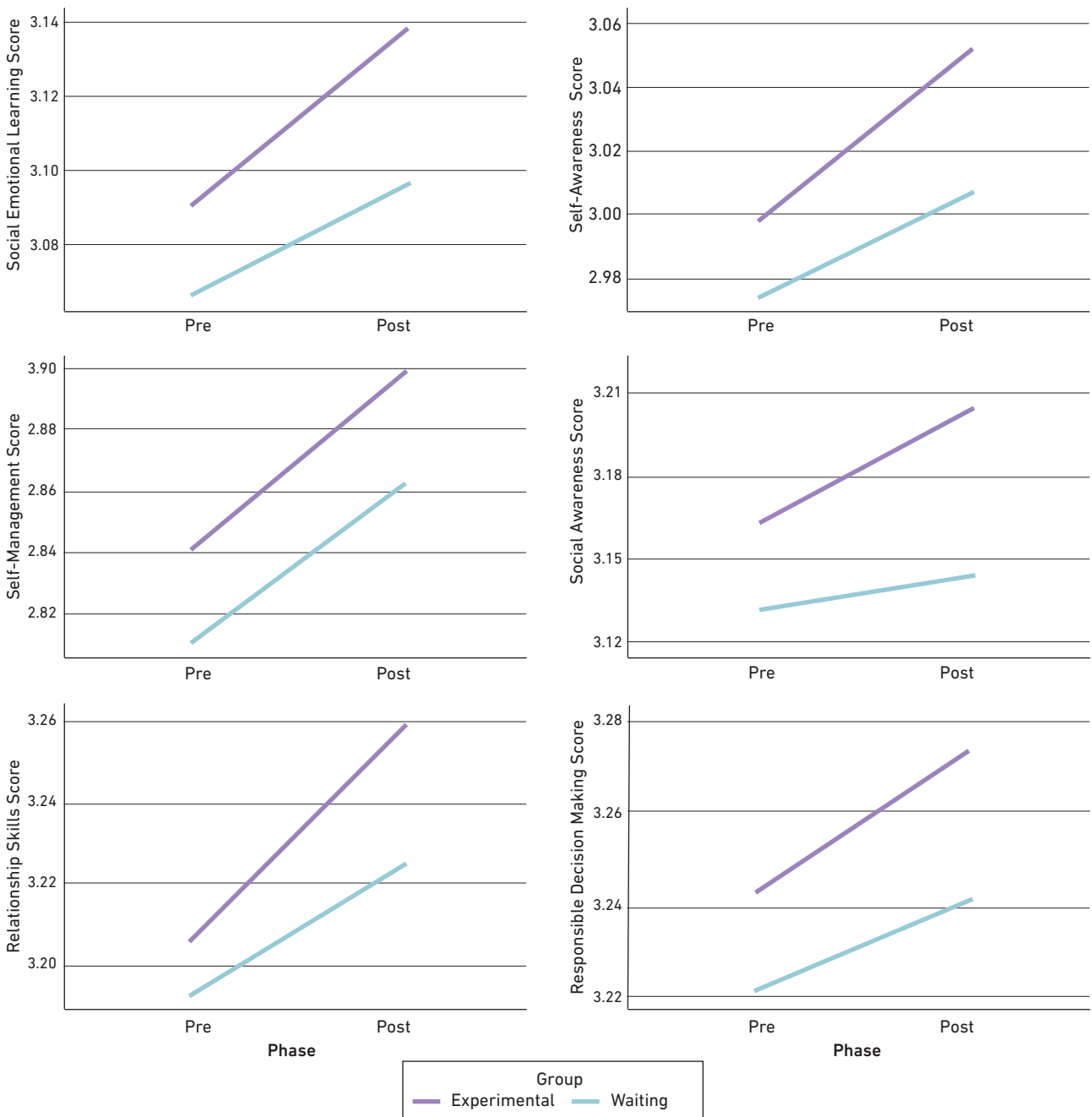


3.2.2 Parents' evaluations of students' social and emotional learning

Figure 3.2 shows that the increment in the mean of social and emotional learning, self-awareness, self-management, relationship skills, social awareness, and responsible

decision-making scores from pre- to post-test were marginally larger for the experimental group compared to the waiting group. (Table 3.5 shows that the p-values of the interaction effect 'Group*Phase' exceed 0.05). According to parents, the programme was most effective in enhancing social awareness.

Figure 3.2: Mean SEL subscales scores, clustered by phase and group



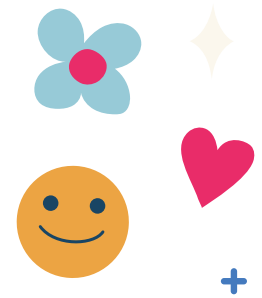


Table 3.4 shows that children from low socio-economic status families have a larger mean on social and emotional learning, self-awareness, self-management, social awareness, relationship skills, and responsible decision-

making scores than children with higher SES; however, the differences are not significant. This trend applies to both children in the experimental and waiting groups.

Table 3.4: Mean SEL subscales scores clustered by socio-economic status, phase and group

Group	Socio-economic status	Phase	Social Emotional Learning		Self-Awareness		Self-Management	
			Mean	S.D.	Mean	S.D.	Mean	S.D.
Experimental	Low	Pre	3.15	0.443	3.03	0.546	2.92	0.592
		Post	3.22	0.455	3.14	0.524	2.99	0.601
	Medium	Pre	3.06	0.444	2.97	0.516	2.81	0.560
		Post	3.10	0.439	3.00	0.509	2.86	0.566
	High	Pre	3.09	0.407	3.01	0.481	2.83	0.516
		Post	3.13	0.430	3.05	0.487	2.88	0.526
Waiting	Low	Pre	3.16	0.442	3.05	0.515	2.93	0.569
		Post	3.15	0.443	3.04	0.527	2.94	0.561
	Medium	Pre	3.02	0.426	2.92	0.490	2.77	0.551
		Post	3.05	0.433	2.97	0.501	2.82	0.549
	High	Pre	3.08	0.438	3.00	0.508	2.79	0.535
		Post	3.12	0.418	3.05	0.493	2.88	0.531

Group	Socio-economic status	Phase	Social awareness		Relationship skills		Responsible decision making	
			Mean	S.D.	Mean	S.D.	Mean	S.D.
Experimental	Low	Pre	3.26	0.553	3.25	0.501	3.29	0.560
		Post	3.31	0.538	3.31	0.517	3.34	0.565
	Medium	Pre	3.12	0.548	3.18	0.537	3.22	0.556
		Post	3.15	0.563	3.24	0.510	3.23	0.529
	High	Pre	3.15	0.528	3.21	0.528	3.24	0.497
		Post	3.20	0.559	3.26	0.530	3.28	0.519
Waiting	Low	Pre	3.25	0.533	3.27	0.510	3.31	0.558
		Post	3.22	0.538	3.28	0.515	3.28	0.559
	Medium	Pre	3.07	0.575	3.15	0.542	3.17	0.559
		Post	3.10	0.571	3.19	0.522	3.20	0.538
	High	Pre	3.15	0.599	3.21	0.539	3.23	0.553
		Post	3.17	0.568	3.25	0.499	3.28	0.508

Table 3.5: Tests of Between-Subjects Effects and Parameter estimates for Social and emotional learning and its subscales

Term	Social Emotional Learning			Self-Awareness			Self-Management		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	432729.9	<0.001	1	299765.7	<0.001	1	226377.4	<0.001
Group	1	9.858	0.002	1	8.006	0.005	1	5.920	0.015
Phase	1	14.941	<0.001	1	16.228	<0.001	1	18.695	<0.001
SES	2	48.373	<0.001	2	31.068	<0.001	2	41.912	<0.001
Group * Phase	1	0.904	0.342	1	1.012	0.314	1	0.064	0.801
SES * Phase	2	0.614	0.541	2	0.104	0.901	2	0.733	0.480
Error	9170			9170			9170		

Parameter	Social Emotional Learning			Self-Awareness			Self-Management		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	3.070	0.013	<0.001	2.996	0.016	<0.001	2.793	0.017	<0.001
Group=Experimental	0.020	0.013	0.121	0.019	0.015	0.197	0.025	0.016	0.123
Phase=Post	0.041	0.019	0.030	0.035	0.022	0.120	0.068	0.024	0.005
SES=Low	0.079	0.018	<0.001	-0.035	0.021	0.086	0.126	0.023	<0.001
SES=Medium	-0.042	0.015	0.006	-0.059	0.017	<0.001	-0.018	0.019	0.354
Group=Experimental * Phase=Post	0.017	0.018	0.342	0.021	0.021	0.314	0.006	0.023	0.801
SES=Low * Phase=Post	-0.028	0.025	0.268	0.005	0.029	0.874	-0.039	0.032	0.226
SES=Medium * Phase=Post	-0.013	0.021	0.540	-0.007	0.025	0.774	-0.017	0.027	0.521

Aliased terms are not displayed





Table 3.5: Tests of Between-Subjects Effects and Parameter estimates for Social and emotional learning and its subscales (Cont.)

Term	Social Awareness			Relationship Skills			Responsible Decision Making		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	272782.2	<0.001	1	322574.0	<0.001	1	305141.8	<0.001
Group	1	12.382	<0.001	1	3.532	0.060	1	4.047	0.044
Phase	1	3.725	0.054	1	12.347	<0.001	1	3.721	0.054
SES	2	49.412	<0.001	2	22.866	<0.001	2	21.395	<0.001
Group * Phase	1	1.490	0.222	1	0.876	0.349	1	0.204	0.652
SES * Phase	2	1.103	0.332	2	0.126	0.882	2	1.154	0.316
Error	9170			9170			9170		

Parameter	Social Awareness			Relationship Skills			Responsible Decision Making		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	3.129	0.017	<0.001	3.208	0.016	<0.001	3.224	0.017	<0.001
Group=Experimental	0.027	0.017	0.104	0.010	0.015	0.504	0.018	0.016	0.270
Phase=Post	0.032	0.025	0.197	0.032	0.023	0.168	0.042	0.024	0.080
SES=Low	0.117	0.023	<0.001	0.047	0.021	0.026	0.067	0.022	0.002
SES=Medium	-0.044	0.019	0.022	-0.051	0.018	0.005	-0.036	0.019	0.057
Group=Experimental * Phase=Post	0.029	0.023	0.222	0.020	0.022	0.349	0.010	0.023	0.652
SES=Low * Phase=Post	-0.048	0.032	0.138	-0.010	0.030	0.745	-0.047	0.031	0.132
SES=Medium * Phase=Post	-0.020	0.027	0.473	0.004	0.026	0.872	-0.025	0.026	0.344

Aliased terms are not displayed

Table 3.5 shows the tests of between-subjects effects and parameter estimates for social and emotional learning and its five subscales. The increment in the mean of social and emotional learning scores from pre- to post-test is 0.017 larger for the experimental group than the waiting group, given that the other effect (socio-economic status) is kept constant. However, this difference is not significant since the p-value of the interaction Group*Phase (0.342) is larger than the 0.05 level of significance. The other interaction effects are not significant since their p-value exceeds the 0.05 criterion.

The pre to post-increment in the self-awareness (0.021), self-management (0.006), social awareness (0.029), relationship skills (0.020), and responsible decision-making (0.010) scores are larger for the experimental group than the waiting group, given that the other effect is kept constant. However, these differences are not

significant since the p-value of the interaction Group*Phase is larger than the 0.05 level of significance. Furthermore, the other interaction effects are not significant since their p-value exceeds the 0.05 criterion.

3.2.3: Students' self-evaluation of social and emotional learning

Figure 3.3 shows that the increment in the mean of social and emotional learning, self-awareness, self-management, relationship skills, social awareness, and responsible decision-making scores from pre- to post-test were marginally larger for the experimental group compared to the waiting group. (Table 3.7 shows that the p-values of the interaction effect 'Group*Phase' exceed 0.05). According to students, the programme was most effective in enhancing self-awareness and relationship skills.



Figure 3.3: Mean SEL subscales scores, clustered by phase and group

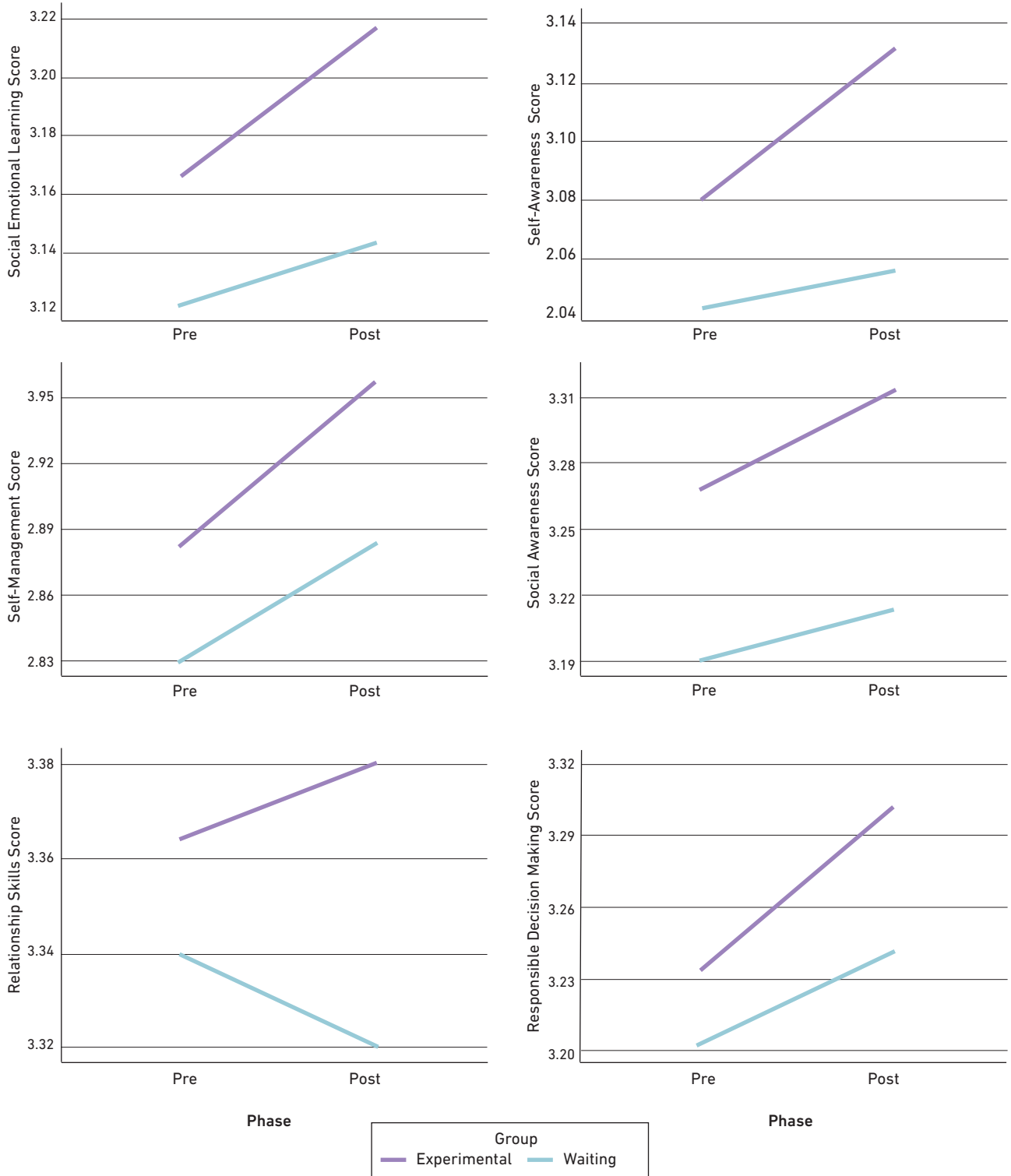


Table 3.6 shows that girls have a larger mean on social and emotional learning, self-awareness, self-management, social awareness, relationship skills, and responsible decision-making scores compared to boys, and this applies to both the experimental and waiting groups. Primary and lower secondary school students have larger mean on

social and emotional learning, self-awareness, relationship skills, and self-management scores compared to higher secondary school students. Primary school students have larger mean in social awareness and relationship skills scores compared to lower and higher secondary school students.

Table 3.6: Mean SEL subscale scores clustered by school level, gender, phase and group

Group	School Level	Gender	Phase	Social emotional learning		Self-awareness		Self-management	
				Mean	S. D.	Mean	S. D.	Mean	S. D.
Experimental	Primary	Male	Pre	3.14	0.412	3.10	0.534	2.85	0.615
			Post	3.23	0.422	3.19	0.500	2.96	0.595
		Female	Pre	3.27	0.356	3.18	0.496	2.95	0.556
			Post	3.34	0.376	3.28	0.511	3.04	0.546
	Lower Secondary	Male	Pre	3.09	0.377	3.04	0.473	2.86	0.541
			Post	3.12	0.387	3.05	0.492	2.94	0.515
		Female	Pre	3.22	0.369	3.10	0.481	2.93	0.525
			Post	3.25	0.351	3.12	0.483	2.99	0.521
	Higher Secondary	Male	Pre	3.05	0.384	2.87	0.511	2.87	0.530
			Post	3.06	0.407	2.96	0.520	2.90	0.552
		Female	Pre	3.13	0.419	3.02	0.537	2.80	0.609
			Post	3.17	0.395	3.04	0.505	2.86	0.578
Higher Secondary	Male	Pre	2.80	0.534	2.62	0.575	2.85	0.697	
		Post	2.93	0.613	2.73	0.679	2.94	0.723	
	Female	Pre	3.03	0.472	2.91	0.528	3.08	0.557	
		Post	3.16	0.533	3.06	0.617	3.19	0.582	
Waiting	Primary	Male	Pre	3.10	0.441	3.07	0.576	2.82	0.608
			Post	3.16	0.397	3.13	0.519	2.89	0.588
		Female	Pre	3.25	0.435	3.19	0.538	2.92	0.588
			Post	3.28	0.402	3.21	0.503	2.98	0.585
	Lower Secondary	Male	Pre	3.01	0.394	2.97	0.491	2.77	0.544
			Post	3.05	0.391	3.00	0.494	2.88	0.495
		Female	Pre	3.18	0.384	3.08	0.500	2.90	0.564
			Post	3.13	0.418	3.01	0.529	2.89	0.563
	Higher Secondary	Male	Pre	2.99	0.370	2.88	0.461	2.73	0.545
			Post	3.02	0.374	2.91	0.464	2.79	0.540
		Female	Pre	3.12	0.348	2.95	0.462	2.78	0.557
			Post	3.12	0.376	2.96	0.488	2.83	0.522
Higher Secondary	Male	Pre	3.01	0.445	2.81	0.586	3.01	0.529	
		Post	3.01	0.486	2.79	0.613	2.98	0.526	
	Female	Pre	3.31	0.522	3.13	0.627	3.32	0.589	
		Post	3.35	0.504	3.20	0.589	3.37	0.508	

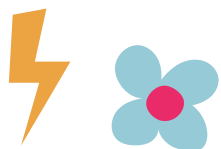


Table 3.6: Mean SEL subscale scores clustered by school level, gender, phase and group (Cont.)

Group	School Level	Gender	Phase	Social awareness		Relationship skills		Responsible decision making	
				Mean	S. D.	Mean	S. D.	Mean	S. D.
Experimental	Primary	Male	Pre	3.20	0.607	3.37	0.487	3.17	0.538
			Post	3.29	0.581	3.42	0.499	3.29	0.529
		Female	Pre	3.37	0.513	3.47	0.430	3.37	0.440
			Post	3.44	0.506	3.52	0.421	3.42	0.467
	Lower Secondary	Male	Pre	3.08	0.567	3.31	0.453	3.14	0.522
			Post	3.13	0.580	3.29	0.454	3.19	0.501
		Female	Pre	3.36	0.529	3.40	0.426	3.30	0.514
			Post	3.40	0.524	3.38	0.423	3.36	0.438
	Higher Secondary	Male	Pre	3.17	0.561	3.25	0.443	3.09	0.468
			Post	3.09	0.587	3.24	0.452	3.13	0.453
		Female	Pre	3.34	0.568	3.28	0.478	3.23	0.494
			Post	3.35	0.516	3.30	0.472	3.30	0.466
Waiting	Primary	Male	Pre	3.11	0.621	3.38	0.512	3.14	0.564
			Post	3.17	0.561	3.38	0.470	3.21	0.491
		Female	Pre	3.35	0.585	3.48	0.464	3.32	0.533
			Post	3.39	0.513	3.44	0.471	3.39	0.495
	Lower Secondary	Male	Pre	2.97	0.577	3.24	0.494	3.08	0.521
			Post	3.00	0.602	3.27	0.432	3.09	0.531
		Female	Pre	3.32	0.534	3.34	0.489	3.25	0.473
			Post	3.27	0.515	3.26	0.508	3.24	0.546
	Higher Secondary	Male	Pre	3.03	0.564	3.19	0.427	3.10	0.504
			Post	3.03	0.576	3.24	0.423	3.13	0.500
		Female	Pre	3.29	0.546	3.29	0.441	3.28	0.425
			Post	3.29	0.540	3.24	0.430	3.29	0.456
	Lower Secondary	Male	Pre	2.91	0.624	3.00	0.564	3.15	0.612
			Post	2.95	0.616	3.04	0.591	3.18	0.621
		Female	Pre	3.18	0.569	3.23	0.553	3.47	0.526
			Post	3.21	0.606	3.23	0.579	3.50	0.569
	Higher Secondary	Male	Pre	2.94	0.541	3.00	0.499	3.31	0.470
			Post	2.99	0.595	3.06	0.535	3.21	0.505
		Female	Pre	3.26	0.597	3.29	0.551	3.52	0.547
			Post	3.35	0.550	3.34	0.537	3.50	0.539

Table 3.7 shows the tests of between-subjects effects and parameter estimates for social and emotional learning and its five subscales. The increment in the mean of social and emotional learning scores from pre- to post-test is 0.030 larger for the experimental group than the waiting group, given that the other effects (students' gender and school level) are kept constant. However, this difference is not significant since the p-value of the interaction Group*Phase (0.119) is larger than the 0.05 level of significance. The other interaction effects are not significant since their p-values exceed the 0.05 criterion.

The pre to post-increment in the self-awareness (0.039), self-management (0.022), social awareness (0.022), relationship skills(0.037), and responsible decision-making (0.029) scores are larger for the experimental group than the waiting group, given that the other effect is kept constant. However, these differences are not significant since the p-values of the interaction Group*Phase (Table 3.7) are larger than the 0.05 level of significance. The other interaction effects are not significant since their p-value exceeds the 0.05 criterion.

Table 3.7: Tests of Between-Subjects Effects and Parameter estimates for Social emotional learning and its subscales

Term	Social Emotional Learning			Self-Awareness			Self-Management		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	408857.5	<0.001	1	233213.7	<0.001	1	166577.0	<0.001
Group	1	29.322	<0.001	1	16.032	<0.001	1	16.731	<0.001
Phase	1	12.239	<0.001	1	6.506	0.011	1	21.142	<0.001
Student Gender	1	165.533	<0.001	1	45.437	<0.001	1	20.300	<0.001
School Level	2	78.530	<0.001	2	110.250	<0.001	2	23.581	<0.001
Gender * Phase	1	1.275	0.259	1	1.070	0.301	1	0.685	0.408
School Level * Phase	2	2.510	0.081	2	2.777	0.062	2	0.590	0.555
Group * Phase	1	2.436	0.119	1	2.551	0.110	1	0.668	0.414
Error	6824			6824			6824		

Parameter	Social Emotional Learning			Self-Awareness			Self-Management		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	3.117	0.016	<0.001	2.968	0.021	<0.001	2.798	0.023	<0.001
Group=Experimental	0.037	0.014	0.006	0.030	0.017	0.089	0.045	0.019	0.021
Phase=Post	-0.001	0.022	0.977	0.000	0.029	0.986	0.034	0.032	0.292
Gender=Male	-0.134	0.014	<0.001	-0.096	0.017	<0.001	-0.073	0.019	<0.001
School Level=Primary	0.121	0.017	<0.001	0.201	0.022	<0.001	0.099	0.024	<0.001
School Level=Lower Secondary	0.056	0.018	0.002	0.113	0.023	<0.001	0.087	0.026	<0.001
Gender=Male * Phase=Post	0.022	0.019	0.259	0.026	0.025	0.301	0.023	0.027	0.408
Sch. Level=Primary * Phase=Post	0.038	0.023	0.105	0.034	0.030	0.257	0.029	0.033	0.391
Sch. Level=Lower Sec * Phase=Post	-0.010	0.026	0.705	-0.036	0.033	0.279	-0.003	0.037	0.941
Group=Experimental * Phase=Post	0.030	0.019	0.119	0.039	0.025	0.110	0.022	0.027	0.414

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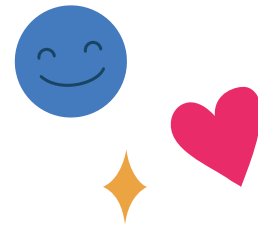


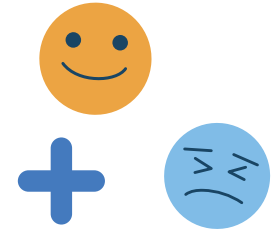
Table 3.7: Tests of Between-Subjects Effects and Parameter estimates for Social emotional learning and its subscales (Cont.)

Term	Social Awareness			Relationship Skills			Responsible Decision Making		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	214790.1	<0.001	1	334201.9	<0.001	1	270212.1	<0.001
Group	1	33.850	<0.001	1	10.300	0.001	1	10.315	0.001
Phase	1	3.410	0.065	1	0.003	0.958	1	16.068	<0.001
Student Gender	1	291.558	<0.001	1	43.700	<0.001	1	186.804	<0.001
School Level	2	23.795	<0.001	2	96.910	<0.001	2	26.780	<0.001
Gender * Phase	1	0.119	0.730	1	2.049	0.152	1	0.580	0.446
School Level * Phase	2	2.602	0.074	2	1.203	0.300	2	1.824	0.162
Group * Phase	1	0.668	0.414	1	2.709	0.100	1	1.392	0.238
Error	6824			6824			6824		

Parameter	Social Awareness			Relationship Skills			Responsible Decision Making		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	3.286	0.023	<0.001	3.285	0.019	<0.001	3.248	0.020	<0.001
Group=Experimental	0.068	0.019	<0.001	0.018	0.016	0.269	0.025	0.017	0.151
Phase=Post	-0.024	0.032	0.444	-0.029	0.026	0.267	0.016	0.028	0.575
Gender=Male	-0.236	0.019	<0.001	-0.090	0.016	<0.001	-0.175	0.017	<0.001
School Level=Primary	0.057	0.024	0.018	0.175	0.020	<0.001	0.076	0.021	<0.001
School Level=Lower Secondary	-0.017	0.026	0.516	0.077	0.021	<0.001	0.021	0.023	0.358
Gender=Male * Phase=Post	0.009	0.027	0.730	0.032	0.022	0.152	0.018	0.024	0.446
Sch. Level=Primary * Phase=Post	0.073	0.033	0.026	0.012	0.027	0.670	0.041	0.029	0.160
Sch. Level=Lower Sec * Phase=Post	0.029	0.036	0.419	-0.030	0.030	0.317	-0.009	0.032	0.771
Group=Experimental * Phase=Post	0.022	0.027	0.414	0.037	0.022	0.100	0.029	0.024	0.238

Aliased terms are not displayed





3.3: Students' resilience

Figure 3.4 shows that the increment in the mean resilience scores from pre- to post-test was larger for the experimental group than the waiting group. Table

3.8 shows that boys have larger mean resilience scores compared to girls and that higher secondary school students have larger mean resilience scores compared to lower secondary school students.

Figure 3.4: Mean resilience scores, clustered by phase and group

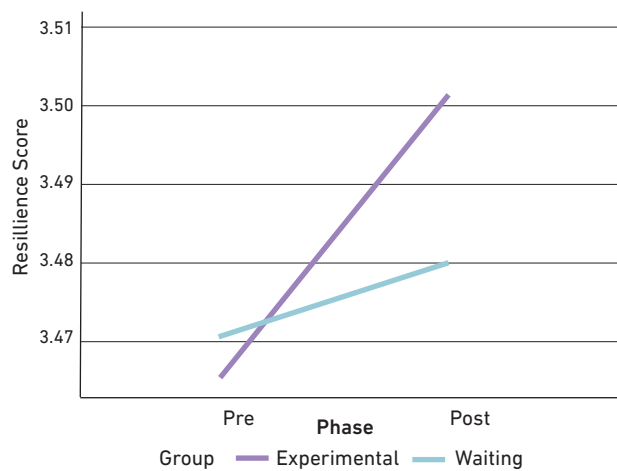


Table 3.8: Mean resilience scores clustered by school level, gender, phase and group

Group	School Level	Student Gender	Phase	Mean	Std. Deviation
Experimental	Lower Secondary	Male	Pre	3.61	0.650
			Post	3.59	0.679
		Female	Pre	3.35	0.736
			Post	3.37	0.739
	Higher Secondary	Male	Pre	3.68	0.685
			Post	3.70	0.706
		Female	Pre	3.36	0.774
			Post	3.44	0.744
Waiting	Lower Secondary	Male	Pre	3.55	0.688
			Post	3.57	0.676
		Female	Pre	3.31	0.727
			Post	3.27	0.803
	Higher Secondary	Male	Pre	3.68	0.637
			Post	3.65	0.659
		Female	Pre	3.39	0.768
			Post	3.43	0.767

Table 3.9 shows that the increment in the mean resilience scores from pre- to post-test is 0.026 larger for the experimental group than the waiting group, given that the other effects (student gender and school level) are kept constant. However, this difference is not significant since

the p-value of the interaction Group*Phase (0.582) is larger than the 0.05 level of significance. The other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Table 3.9: Tests of Between-Subjects Effects and Parameter estimates for Resilience

Term	Sum of Squares	df	Mean Square	F	P-value	P-value
Intercept	45078.713	1	45078.713	86896.557	<0.001	<0.001
Group	0.776	1	0.776	1.495	0.222	0.089
Phase	0.178	1	0.178	0.343	0.558	0.986
Student Gender	64.611	1	64.611	124.548	<0.001	<0.001
School Level	6.258	1	6.258	12.064	<0.001	<0.001
Gender * Phase	0.167	1	0.167	0.321	0.571	<0.001
School Level * Phase	0.430	1	0.430	0.829	0.363	0.301
Group * Phase	0.158	1	0.158	0.304	0.582	0.257
Error	1970.262	3798	0.519			0.279
Group=Experimental * Phase=Post	0.030	0.019	0.119	0.039	0.025	0.110

Parameter	B	Std. Error	t	P-value
Intercept	3.373	0.033	101.449	<0.001
Group=Experimental	0.016	0.033	0.475	0.635
Phase=Post	0.036	0.046	0.774	0.439
Gender=Male	0.277	0.033	8.289	<0.001
School Level=Lower Secondary	-0.060	0.033	-1.810	0.070
Gender=Male * Phase=Post	-0.027	0.047	-0.567	0.571
School Level=Lower Sec * Phase=Post	-0.043	0.047	-0.911	0.363
Group=Experimental * Phase=Post	0.026	0.047	0.551	0.582
Error	1970.262	3798	0.519	
Group=Experimental * Phase=Post	0.030	0.019	0.119	0.039

Aliased terms are not displayed

3.4: Mental health: externalizing, internalizing, and prosocial behaviours

3.4.1 Teachers' evaluations of students' internalising and externalising difficulties and prosocial behaviour

Figure 3.5 shows that the reduction in the mean internalizing and externalizing difficulties scores as well as the increment in the mean prosocial behaviour scores from pre- to post-test were larger for the experimental group compared to the waiting group. The programme also appears to be more effective in enhancing prosocial behaviour than reducing internalizing and externalizing difficulties. Tables 3.10 and 3.11 show that male students have higher mean internalizing and externalizing difficulties scores than females, while female students have higher mean prosocial behaviour scores than males. Marginalized/disadvantaged students have higher mean internalizing and externalizing difficulties scores, whereas advantaged students have higher mean prosocial behaviour scores. Mean internalizing difficulties scores are highest for higher secondary school students and lowest in kindergarten; mean externalizing difficulties scores are highest for kindergarten and lowest in lower secondary school children; and mean prosocial behaviour scores are highest for primary school children and lowest for higher secondary school students.



Figure 3.5a: Mean internalising difficulties scores, clustered by phase and group

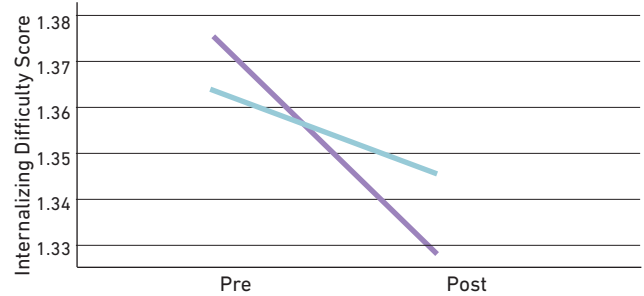


Figure 3.5b: Mean externalising difficulties scores, clustered by phase and group

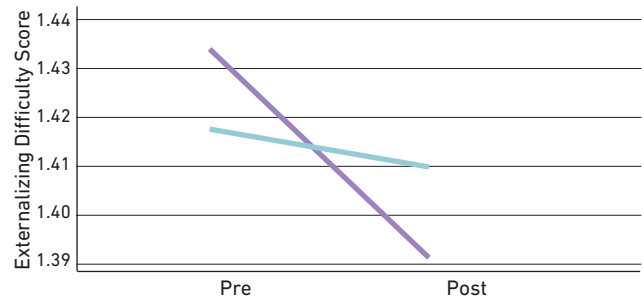


Figure 3.5c: Mean prosocial behaviour scores, clustered by phase and group

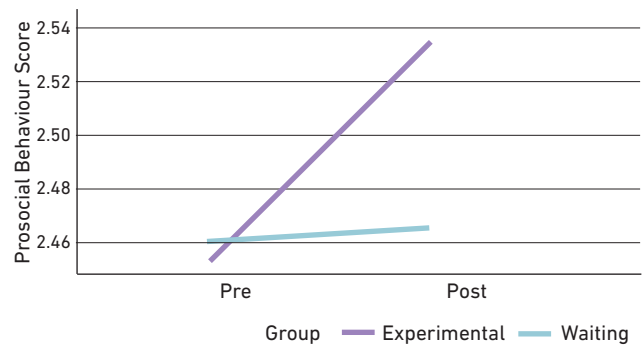




Table 3.10: Mean internalizing and externalizing difficulties and prosocial behaviour scores by school level, disadvantage, phase, and group

Group	School Level	Disadvantage	Phase	Internalizing Difficulties		Externalizing Difficulties		Prosocial Behaviour	
				Mean	S. D	Mean	S. D	Mean	S. D
Experimental	Kindergarten	Yes	Pre	1.47	0.375	1.62	0.432	2.24	0.548
			Post	1.38	0.325	1.58	0.443	2.37	0.515
		No	Pre	1.30	0.306	1.44	0.392	2.46	0.453
			Post	1.26	0.289	1.38	0.384	2.56	0.436
	Primary	Yes	Pre	1.57	0.380	1.67	0.461	2.33	0.495
			Post	1.55	0.394	1.68	0.473	2.37	0.501
		No	Pre	1.35	0.304	1.40	0.375	2.54	0.432
			Post	1.31	0.306	1.36	0.365	2.61	0.430
	Lower Secondary	Yes	Pre	1.58	0.387	1.66	0.480	2.24	0.514
			Post	1.56	0.381	1.64	0.461	2.33	0.519
		No	Pre	1.33	0.297	1.33	0.357	2.51	0.447
			Post	1.27	0.270	1.30	0.328	2.55	0.443
Higher Secondary	Yes	Pre	1.79	0.366	1.68	0.444	2.08	0.478	
		Post	1.78	0.379	1.63	0.425	2.21	0.503	
	No	Pre	1.42	0.300	1.32	0.316	2.37	0.429	
		Post	1.38	0.328	1.33	0.391	2.46	0.486	
Waiting	Kindergarten	Yes	Pre	1.45	0.386	1.69	0.452	2.21	0.548
			Post	1.44	0.371	1.64	0.479	2.26	0.533
		No	Pre	1.32	0.317	1.41	0.374	2.44	0.440
			Post	1.30	0.298	1.41	0.386	2.47	0.453
	Primary	Yes	Pre	1.50	0.390	1.66	0.459	2.45	0.472
			Post	1.45	0.323	1.67	0.475	2.41	0.506
		No	Pre	1.33	0.303	1.39	0.394	2.55	0.445
			Post	1.32	0.295	1.37	0.368	2.54	0.437
	Lower Secondary	Yes	Pre	1.58	0.402	1.54	0.413	2.35	0.449
			Post	1.61	0.356	1.56	0.417	2.30	0.490
		No	Pre	1.34	0.299	1.33	0.359	2.49	0.470
			Post	1.34	0.317	1.34	0.358	2.48	0.480
Higher Secondary	Yes	Pre	1.58	0.444	1.48	0.310	2.21	0.419	
		Post	1.42	0.443	1.36	0.278	2.16	0.424	
	No	Pre	1.31	0.283	1.27	0.325	2.46	0.427	
		Post	1.29	0.281	1.30	0.322	2.49	0.449	

Table 3.11: Mean internalising and externalising difficulties and prosocial behaviour scores grouped by school level, gender, phase, and group

Group	School Level	Gender	Phase	Internalizing Difficulties		Externalizing Difficulties		Prosocial Behaviour	
				Mean	S. D	Mean	S. D	Mean	S. D
Experimental	Kindergarten	Male	Pre	1.34	0.328	1.56	0.418	2.34	0.483
			Post	1.29	0.302	1.50	0.414	2.46	0.474
		Female	Pre	1.31	0.314	1.35	0.354	2.54	0.437
			Post	1.26	0.288	1.30	0.345	2.64	0.399
	Primary	Male	Pre	1.40	0.329	1.56	0.418	2.42	0.464
			Post	1.36	0.336	1.51	0.422	2.48	0.471
		Female	Pre	1.38	0.331	1.33	0.357	2.59	0.419
			Post	1.33	0.322	1.29	0.334	2.67	0.399
	Lower Secondary	Male	Pre	1.39	0.338	1.51	0.440	2.37	0.479
			Post	1.33	0.318	1.46	0.418	2.42	0.482
		Female	Pre	1.36	0.323	1.29	0.330	2.54	0.450
			Post	1.31	0.302	1.26	0.299	2.60	0.432
Higher Secondary	Male	Pre	1.53	0.379	1.55	0.433	2.16	0.475	
		Post	1.52	0.386	1.55	0.497	2.26	0.527	
	Female	Pre	1.50	0.346	1.34	0.340	2.36	0.437	
		Post	1.44	0.375	1.32	0.344	2.47	0.471	
Waiting	Kindergarten	Male	Pre	1.36	0.343	1.55	0.432	2.31	0.467
			Post	1.35	0.315	1.55	0.440	2.34	0.485
		Female	Pre	1.32	0.316	1.35	0.329	2.52	0.436
			Post	1.29	0.309	1.33	0.340	2.55	0.431
	Primary	Male	Pre	1.37	0.328	1.55	0.447	2.44	0.470
			Post	1.35	0.318	1.52	0.430	2.41	0.472
		Female	Pre	1.36	0.324	1.31	0.343	2.64	0.402
			Post	1.32	0.285	1.31	0.338	2.64	0.392
	Lower Secondary	Male	Pre	1.43	0.351	1.51	0.418	2.33	0.482
			Post	1.40	0.336	1.50	0.417	2.34	0.492
		Female	Pre	1.36	0.325	1.27	0.310	2.57	0.432
			Post	1.39	0.344	1.28	0.315	2.53	0.467
Higher Secondary	Male	Pre	1.37	0.357	1.42	0.341	2.27	0.434	
		Post	1.34	0.340	1.44	0.338	2.27	0.461	
	Female	Pre	1.37	0.335	1.25	0.311	2.49	0.418	
		Post	1.31	0.308	1.23	0.269	2.53	0.433	

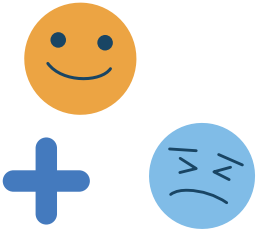


Table 3.12 shows the tests of between-subjects effects and parameter estimates for the internalizing and externalizing difficulties and prosocial behaviour subscales, respectively. The reductions in the mean internalizing and externalizing difficulties scores from pre- to post-test were larger for the experimental group than the waiting group, given that other effects (students' gender, school level, and marginalization) were kept constant. These differences (0.025 and 0.031) are significant since the p-value of the interaction Group*Phase (0.014 and 0.009) are smaller than the 0.05 level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

The increment in the mean prosocial behaviour scores from pre- to post-test was larger for the experimental group than the waiting group, given that the other effects

were kept constant. This difference (0.075) is significant since the p-value of the interaction Group*Phase (< 0.001) is smaller than the 0.05 level of significance. School Level*Phase has also a significant interaction effect ($p = 0.009$) showing that the programme was more effective with kindergarten and higher secondary school students, according to teachers. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Using the post-test scores of the sample of students assessed by teachers, Table 3.13 shows that, according to teachers' evaluations, internalizing and externalizing difficulties scores are negatively and significantly related to prosocial behaviour, social and emotional learning, self-awareness, self-management, relationship skills, social awareness, and responsible decision-making scores.



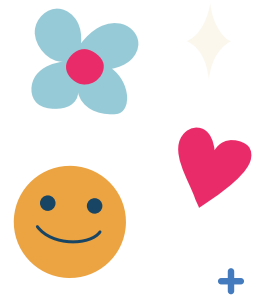


Table 3.12: Tests of Between-Subjects Effects and Parameter estimates for internalising and externalising difficulties and prosocial behaviour

Term	Internalizing Difficulties			Externalizing Difficulties			Prosocial Behaviour		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	142490.8	<0.001	1	111471.8	<0.001	1	198001.5	<0.001
Group	1	0.191	0.662	1	0.307	0.579	1	11.949	<0.001
Phase	1	22.798	<0.001	1	2.870	0.090	1	15.383	<0.001
Student Gender	1	17.556	<0.001	1	1174.608	<0.001	1	677.144	<0.001
School Level	3	39.028	<0.001	3	27.746	<0.001	3	60.805	<0.001
Disadvantage	1	885.981	<0.001	1	898.524	<0.001	1	360.600	<0.001
Disadvantage * Phase	1	1.411	0.235	1	0.205	0.651	1	0.049	0.824
Group * Phase	1	5.990	0.014	1	6.746	0.009	1	26.724	<0.001
School Level * Phase	3	0.327	0.806	3	0.710	0.546	3	3.883	0.009
Student Gender * Phase	1	0.000	0.991	1	0.016	0.901	1	0.046	0.829
Error	15550			15550			15550		

Parameter	Internalizing Difficulties			Externalizing Difficulties			Prosocial Behaviour		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	1.391	0.014	<0.001	1.230	0.016	<0.001	2.455	0.020	<0.001
Group=Experimental	0.010	0.007	0.155	0.019	0.009	0.026	-0.012	0.010	0.226
Phase=Post	-0.023	0.020	0.247	0.013	0.023	0.561	0.031	0.028	0.261
Student Gender=Male	0.021	0.007	0.003	0.206	0.008	<0.001	-0.186	0.010	<0.001
School Level=Kindergarten	-0.104	0.014	<0.001	0.078	0.017	<0.001	0.095	0.020	<0.001
School Level=Primary	-0.066	0.014	<0.001	0.054	0.017	0.001	0.194	0.020	<0.001
School Level=Lower Secondary	-0.066	0.015	<0.001	0.003	0.017	0.843	0.136	0.020	<0.001
Disadvantaged=Yes	0.217	0.010	<0.001	0.243	0.011	<0.001	-0.186	0.014	<0.001
Disadvantaged=Yes * Phase=Post	-0.017	0.014	0.235	0.007	0.016	0.651	-0.004	0.020	0.824
Group=Experimental * Phase=Post	-0.025	0.010	0.014	-0.031	0.012	0.009	0.075	0.015	<0.001
Sch. Level=Kinder * Phase=Post	0.004	0.020	0.824	-0.029	0.024	0.220	0.003	0.029	0.917
Sch. Level=Primary * Phase=Post	0.009	0.020	0.670	-0.022	0.023	0.343	-0.040	0.028	0.160
Sch. Level=Lower Sec * Phase=Post	0.016	0.021	0.438	-0.012	0.024	0.621	-0.055	0.029	0.060
Student Gender=Male * Phase=Post	<0.001	0.010	0.991	-0.001	0.012	0.901	-0.003	0.014	0.829

Aliased terms are not displayed

Table 3.13: Pairwise correlations between Social Emotional Learning, Internalising and Externalising Difficulties and Prosocial Behaviour subscales using post-test scores

		Internalizing Difficulties	Externalizing Difficulties	Prosocial Behaviour	Self-Awareness	Self-Management	Social Awareness	Relationship Skills	Responsible Decision Making	Social Emotional Learning
Internalizing	Correlation	1	0.397	-0.393	-0.448	-0.297	-0.391	-0.512	-0.398	-0.462
	P-value		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Externalizing	Correlation	0.397	1	-0.523	-0.549	-0.779	-0.498	-0.554	-0.712	-0.702
	P-value	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Prosocial	Correlation	-0.393	-0.523	1	0.630	0.497	0.766	0.698	0.653	0.735
	P-value	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Self-Awareness	Correlation	-0.448	-0.549	0.630	1	0.616	0.751	0.782	0.770	0.886
	P-value	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
Self-Management	Correlation	-0.297	-0.779	0.497	0.616	1	0.580	0.622	0.767	0.814
	P-value	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
Social Awareness	Correlation	-0.391	-0.498	0.766	0.751	0.580	1	0.827	0.738	0.882
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
Relationship Skills	Correlation	-0.512	-0.554	0.698	0.782	0.622	0.827	1	0.794	0.910
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
Responsible Decision Making	Correlation	-0.398	-0.712	0.653	0.770	0.767	0.738	0.794	1	0.923
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001
Social Emotional Learning	Correlation	-0.462	-0.702	0.735	0.886	0.814	0.882	0.910	0.923	1
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	

N = 7789



3.4.2 Parents' evaluations of internalizing and externalizing difficulties and prosocial behaviour

Figure 3.6 shows that the reduction in the mean internalizing and externalizing difficulties scores, as well as the increment in the mean prosocial behaviour scores from pre- to post-test, were larger for the experimental group compared to the waiting group. The programme

appears to be more effective in enhancing prosocial behaviour than in reducing internalizing and externalizing difficulties. Tables 3.14 shows that students with low SES have larger mean internalizing and externalizing difficulties scores than children with higher SES; and that students with high SES also have smaller mean prosocial behaviour scores than children with lower SES. However, these differences are not significant.

Figure 3.6a: Mean internalising difficulties scores, clustered by phase and group

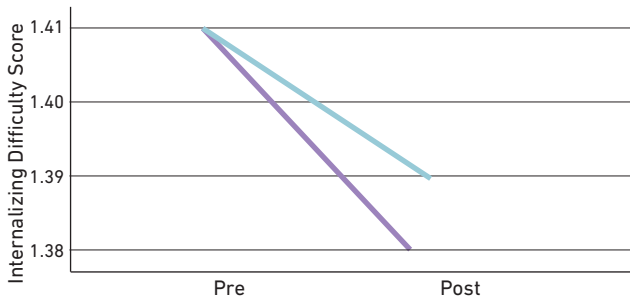


Figure 3.6b: Mean externalising difficulties scores, clustered by phase and group

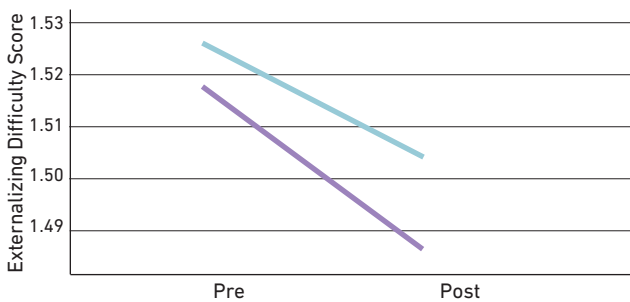


Figure 3.6c: Mean prosocial behaviour scores, clustered by phase and group

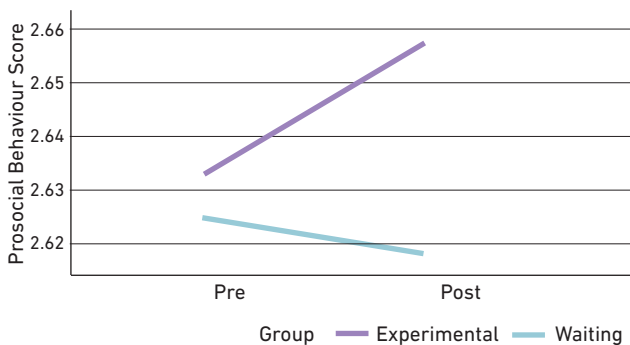




Table 3.14: Mean internalising and externalising difficulties and prosocial behaviour scores by socio-economic status, phase, and group

Group	Socio-economic status	Phase	Internalizing Difficulties		Externalizing Difficulties		Prosocial Behaviour	
			Mean	S.D.	Mean	S.D.	Mean	S.D.
Experimental	Low	Pre	1.45	0.318	1.54	0.335	2.66	0.350
		Post	1.41	0.327	1.49	0.357	2.70	0.328
	Medium	Pre	1.42	0.307	1.52	0.329	2.62	0.338
		Post	1.40	0.312	1.50	0.327	2.63	0.337
	High	Pre	1.37	0.292	1.49	0.321	2.63	0.339
		Post	1.34	0.277	1.47	0.305	2.65	0.328
Waiting	Low	Pre	1.43	0.314	1.52	0.337	2.66	0.331
		Post	1.42	0.309	1.52	0.353	2.66	0.345
	Medium	Pre	1.43	0.315	1.54	0.336	2.60	0.350
		Post	1.40	0.302	1.52	0.338	2.60	0.351
	High	Pre	1.36	0.291	1.50	0.319	2.64	0.351
		Post	1.36	0.310	1.48	0.323	2.61	0.358

Table 3.15 shows that the reduction in the mean internalizing difficulties scores from pre- to post-test is 0.136 larger for the experimental group than the waiting group, given that the other effect (socio-economic status) is kept constant. This difference is significant since the p-value of the interaction Group*Phase (<0.001) is smaller than the 0.05 level of significance. The other interaction effect is not significant since their p-value exceeds the 0.05 criterion.

The reduction in the mean externalizing difficulties scores from pre- to post-test is 0.011 larger for the experimental group than the waiting group, given that the other effect is kept constant. However, this difference is not significant since the p-value of the interaction Group*Phase (0.421) is larger than the 0.05 level of significance. The other interaction effect is not significant since their p-value exceeds the 0.05 criterion.

The increment in the mean prosocial behaviour scores from pre- to post-test is 0.030 larger for the experimental group than the waiting group, given that the other effect is kept constant. This difference is significant since the p-value of the interaction Group*Phase (0.036) is smaller than the 0.05 level of significance. The other interaction effect is not significant since their p-value exceeds the 0.05 criterion.

Using the post-test scores of the whole sample of students assessed by parents, Table 3.16 shows, according to parents' evaluations, internalizing and externalizing difficulties scores are negatively and significantly related to prosocial behaviour, social and emotional learning, self-awareness, self-management, relationship skills, social awareness, and responsible decision-making scores.

Table 3.15: Tests of Between-Subjects Effects and Parameter estimates for Internalising and Externalising Difficulties and Prosocial Behaviour

Term	Internalizing Difficulties			Externalizing Difficulties			Prosocial Behaviour		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	87374.1	<0.001	1	175135.5	<0.001	1	501141.6	<0.001
Group	1	79.197	<0.001	1	2.837	0.092	1	8.307	0.004
Phase	1	35.498	<0.001	1	9.438	0.002	1	1.154	0.283
SES	2	29.969	<0.001	2	12.145	<0.001	2	15.152	<0.001
Group * Phase	1	51.999	<0.001	1	0.648	0.421	1	4.418	0.036
SES * Phase	2	2.796	0.061	2	0.281	0.755	2	0.015	0.985
Error	9170			9170			9170		

Parameter	Internalizing Difficulties			Externalizing Difficulties			Prosocial Behaviour		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	1.363	0.014	<0.001	1.495	0.010	0.000	2.625	0.011	<0.001
Group=Experimental	0.016	0.013	0.237	-0.006	0.010	0.534	0.006	0.010	0.581
Phase=Post	-0.009	0.020	0.633	-0.012	0.015	0.412	-0.006	0.015	0.674
SES=Low	0.087	0.019	<0.001	0.038	0.013	0.005	0.033	0.014	0.018
SES=Medium	0.060	0.016	<0.001	0.043	0.011	<0.001	-0.016	0.012	0.182
Group=Experimental * Phase=Post	-0.136	0.019	<0.001	-0.011	0.014	0.421	0.030	0.014	0.036
SES=Low * Phase=Post	0.028	0.026	0.286	-0.003	0.019	0.893	0.000	0.020	0.991
SES=Medium * Phase=Post	-0.028	0.022	0.204	-0.011	0.016	0.483	-0.002	0.017	0.885

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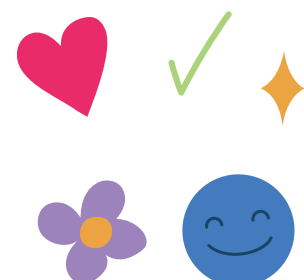


Table 3.16: Pairwise correlations between Social Emotional Learning, Internalising and Externalising Difficulties and Prosocial Behaviour subscales using post-test scores

		Internalizing Difficulties	Externalizing Difficulties	Prosocial Behaviour	Self-Awareness	Self-Management	Social Awareness	Relationship Skills	Responsible Decision Making	Social Emotional Learning
Internalizing	Correlation	1	0.234	-0.136	-0.194	-0.170	-0.128	-0.251	-0.125	-0.212
	P-value		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Externalizing	Correlation	0.234	1	-0.306	-0.419	-0.593	-0.337	-0.279	-0.560	-0.541
	P-value	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Prosocial	Correlation	-0.136	-0.306	1	0.432	0.363	0.602	0.461	0.430	0.565
	P-value	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Self-Awareness	Correlation	-0.194	-0.419	0.432	1	0.582	0.616	0.585	0.615	0.832
	P-value	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
Self-Management	Correlation	-0.170	-0.593	0.363	0.582	1	0.518	0.433	0.700	0.801
	P-value	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
Social Awareness	Correlation	-0.128	-0.337	0.602	0.616	0.518	1	0.603	0.592	0.824
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
Relationship Skills	Correlation	-0.251	-0.279	0.461	0.585	0.433	0.603	1	0.487	0.762
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
Responsible Decision Making	Correlation	-0.125	-0.560	0.430	0.615	0.700	0.592	0.487	1	0.838
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001
Social Emotional Learning	Correlation	-0.212	-0.541	0.565	0.832	0.801	0.824	0.762	0.838	1
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	

N= 4628



3.4.3: Students' self-evaluation of internalizing and externalizing difficulties, and prosocial behaviour

Figure 3.7 shows that the reduction in the mean internalizing and externalizing difficulties scores, as well as the increment in the mean prosocial behaviour scores, from pre- to post-test were larger for the experimental group compared to the waiting group. The programme appears to be more effective in enhancing prosocial behaviour than reducing internalizing and

externalizing difficulties. Tables 3.17 shows that female students have larger mean internalizing difficulty and mean prosocial behaviour scores but smaller mean externalizing difficulties scores compared to males. Moreover, higher secondary school students have larger mean internalizing and externalizing difficulties scores but smaller mean prosocial behaviour scores compared to lower secondary school students. However, these differences are not significant.

Figure 3.7a: Mean internalising difficulties scores, clustered by phase and group

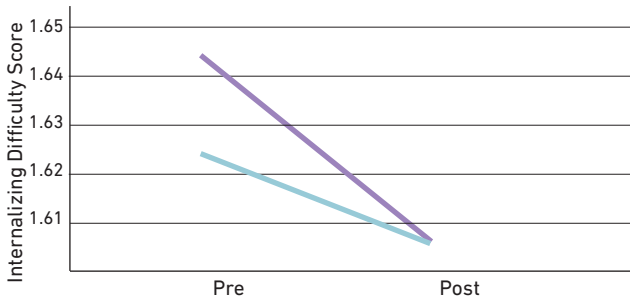


Figure 3.7b: Mean externalising difficulties scores, clustered by phase and group

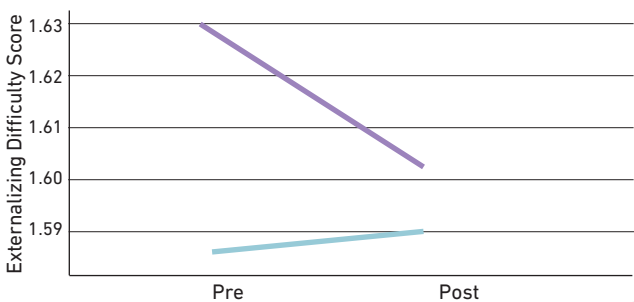
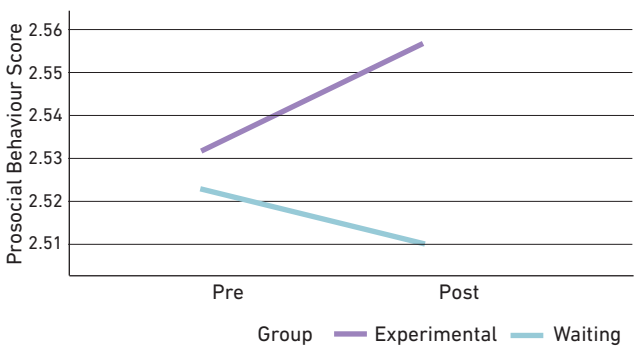


Figure 3.7c: Mean prosocial behaviour scores, clustered by phase and group



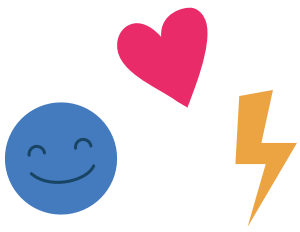


Table 3.17: Mean internalising and externalising difficulties and prosocial behaviour scores by socio-economic status, phase, and group

Group	School Level	Gender	Phase	Internalizing Difficulties		Externalizing Difficulties		Prosocial Behaviour	
				Mean	S. D.	Mean	S. D.	Mean	S. D.
Experimental	Lower Secondary	Male	Pre	1.59	0.366	1.65	0.368	2.46	0.393
			Post	1.51	0.348	1.61	0.357	2.52	0.367
		Female	Pre	1.65	0.388	1.61	0.369	2.57	0.427
			Post	1.65	0.361	1.59	0.350	2.62	0.354
	Higher Secondary	Male	Pre	1.58	0.335	1.63	0.330	2.51	0.392
			Post	1.62	0.334	1.65	0.340	2.47	0.399
		Female	Pre	1.73	0.367	1.65	0.351	2.56	0.420
			Post	1.71	0.379	1.63	0.343	2.58	0.365
Waiting	Lower Secondary	Male	Pre	1.56	0.315	1.62	0.320	2.47	0.352
			Post	1.52	0.317	1.60	0.322	2.46	0.382
		Female	Pre	1.67	0.354	1.57	0.306	2.58	0.320
			Post	1.72	0.399	1.60	0.355	2.55	0.374
	Higher Secondary	Male	Pre	1.56	0.374	1.63	0.300	2.43	0.379
			Post	1.53	0.339	1.63	0.328	2.45	0.380
		Female	Pre	1.76	0.364	1.64	0.347	2.59	0.366
			Post	1.75	0.367	1.62	0.329	2.56	0.352

Table 3.18 shows that the reduction in the mean internalizing and externalizing difficulties scores from pre- to post-test are 0.008 and 0.017 larger for the experimental group than the waiting group, respectively, given that the other effects (students' gender and school level) are kept constant. However, these differences are not significant since the p-value of the interaction Group*Phase (0.740 and 0.444) are larger than the 0.05 level of significance. The other interaction effects are not significant since their p-values exceed the 0.05 criterion. Similarly, while the increment in the mean prosocial behaviour scores from pre- to post-test is 0.037 larger

for the experimental group than the waiting group, given that the other effects are kept constant, the difference is not significant.

Using the post-test scores of the whole sample of students, Table 3.19 shows, according to students' evaluations, internalizing and externalizing difficulties scores are negatively and significantly related to prosocial behaviour, social and emotional learning, self-awareness, self-management, relationship skills, social awareness, and responsible decision-making scores.

Table 3.18: Tests of Between-Subjects Effects and Parameter estimates for Internalising and Externalising Difficulties and Prosocial Behaviour

Term	Internalizing Difficulties			Externalizing Difficulties			Prosocial Behaviour		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	75501.5	<0.001	1	83609.7	<0.001	1	164333.5	<0.001
Group	1	0.169	0.681	1	2.117	0.146	1	3.129	0.077
Phase	1	1.337	0.248	1	0.640	0.424	1	0.529	0.467
Student Gender	1	140.604	<0.001	1	2.459	0.117	1	74.288	<0.001
School Level	1	14.476	<0.001	1	6.843	0.009	1	0.918	0.338
Gender * Phase	1	2.507	0.113	1	0.294	0.588	1	0.134	0.714
School Level * Phase	1	0.166	0.684	1	0.006	0.938	1	0.770	0.380
Group * Phase	1	0.110	0.740	1	0.585	0.444	1	2.251	0.134
Error	3798			3798			3798		

Parameter	Internalizing Difficulties			Externalizing Difficulties			Prosocial Behaviour		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	1.720	0.017	<0.001	1.617	0.016	<0.001	2.572	0.017	<0.001
Group=Experimental	-0.001	0.017	0.955	0.025	0.016	0.117	0.003	0.017	0.849
Phase=Post	0.014	0.023	0.553	0.006	0.022	0.768	-0.025	0.024	0.307
Gender=Male	-0.122	0.017	<0.001	0.024	0.016	0.136	-0.112	0.018	<0.001
School Level=Lower Secondary	-0.040	0.017	0.016	-0.028	0.016	0.073	0.001	0.017	0.954
Gender=Male * Phase=Post	-0.038	0.024	0.113	-0.012	0.022	0.588	0.009	0.025	0.714
Sch. Level=Lower Sec * Phase=Post	-0.010	0.024	0.684	-0.002	0.022	0.938	0.022	0.025	0.380
Group=Experimental * Phase=Post	-0.008	0.024	0.740	-0.017	0.022	0.444	0.037	0.025	0.134

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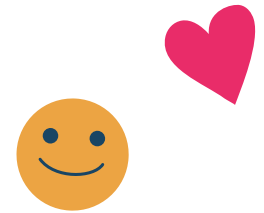


Table 3.19: Pairwise correlations between Social Emotional Learning, Internalising and Externalising Difficulties and Prosocial Behaviour subscales using post-test scores

		Internalizing Difficulties	Externalizing Difficulties	Prosocial Behaviour	Self-Awareness	Self-Management	Social Awareness	Relationship Skills	Responsible Decision Making	Social Emotional Learning
Internalizing	Correlation	1	0.454	-0.099	-0.248	-0.219	-0.058	-0.261	-0.115	-0.232
	P-value		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Externalizing	Correlation	0.454	1	-0.242	-0.356	-0.450	-0.174	-0.316	-0.381	-0.439
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Prosocial	Correlation	-0.099	-0.242	1	0.406	0.340	0.579	0.456	0.375	0.570
	P-value	<0.001	<0.001		<0.001	<0.001	0.000	<0.001	<0.001	0.000
Self-Awareness	Correlation	-0.248	-0.356	0.406	1	0.490	0.479	0.554	0.490	0.782
	P-value	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
Self-Management	Correlation	-0.219	-0.450	0.340	0.490	1	0.394	0.471	0.541	0.764
	P-value	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001
Social Awareness	Correlation	-0.058	-0.174	0.579	0.479	0.394	1	0.498	0.451	0.746
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001
Relationship Skills	Correlation	-0.261	-0.316	0.456	0.554	0.471	0.498	1	0.490	0.771
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001
Responsible Decision Making	Correlation	-0.115	-0.381	0.375	0.490	0.541	0.451	0.490	1	0.771
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001
Social Emotional Learning	Correlation	-0.232	-0.439	0.570	0.782	0.764	0.746	0.771	0.771	1
	P-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	

N=3417





3.5: Students' academic outcomes

Table 3.20 shows that the mean scores in academic motivation, engagement in learning and academic performance scores are highest for primary school children and lowest for secondary school children. On average, females have larger mean scores in academic motivation, engagement in learning and academic performance than males.

Figure 3.8a: Mean academic motivation scores, clustered by phase and group

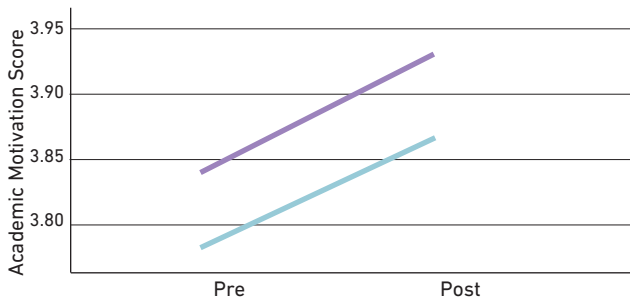


Figure 3.8b: Mean engagement in learning scores, clustered by phase and group

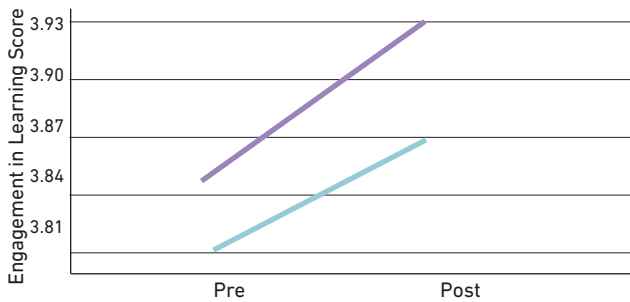


Figure 3.8c: Mean academic performance scores, clustered by phase and group

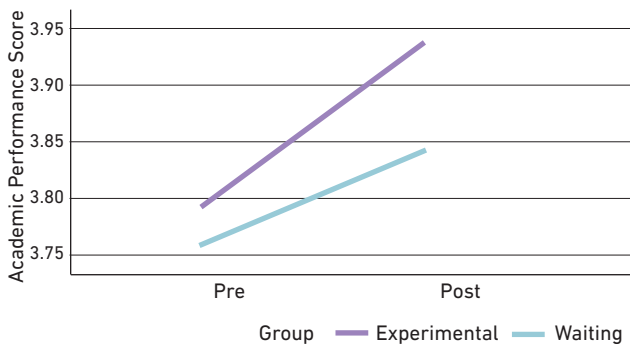


Table 3.20: Mean academic outcomes by school level, gender, phase and group

Group	School Level	Gender	Phase	Academic Motivation		Engagement in Learning		Academic Performance	
				Mean	S. D.	Mean	S. D.	Mean	S. D.
Experimental	Kindergarten	Male	Pre	3.66	0.981	3.69	1.011	3.69	1.008
			Post	3.83	0.946	3.86	0.959	3.87	0.982
		Female	Pre	4.03	0.914	4.03	0.927	4.03	0.929
			Post	4.19	0.898	4.21	0.905	4.21	0.875
	Primary	Male	Pre	3.83	0.976	3.85	0.976	3.83	0.983
			Post	3.89	1.012	3.89	1.003	3.92	0.998
		Female	Pre	4.03	0.961	4.01	0.982	3.94	1.019
			Post	4.09	0.967	4.03	1.006	4.02	1.011
	Lower Secondary	Male	Pre	3.62	1.053	3.59	1.035	3.54	0.993
			Post	3.62	1.058	3.57	1.055	3.62	0.995
		Female	Pre	3.93	0.964	3.90	1.012	3.77	0.995
			Post	3.97	1.018	3.97	1.018	3.95	0.990
Higher Secondary	Male	Pre	3.37	0.987	3.39	1.042	3.39	0.957	
		Post	3.52	1.122	3.52	1.143	3.59	1.098	
	Female	Pre	3.92	0.987	3.88	0.963	3.81	0.965	
		Post	4.01	1.004	4.02	1.006	3.96	0.974	
Waiting	Kindergarten	Male	Pre	3.57	0.997	3.57	1.028	3.58	1.000
			Post	3.76	0.963	3.74	0.987	3.76	0.980
		Female	Pre	3.88	0.959	3.95	0.982	3.94	0.956
			Post	4.02	0.897	4.04	0.912	4.02	0.914
	Primary	Male	Pre	3.81	1.003	3.82	1.021	3.79	1.004
			Post	3.83	1.019	3.81	1.048	3.80	1.025
		Female	Pre	4.05	0.966	4.08	0.961	3.96	0.987
			Post	4.13	0.940	4.14	0.928	4.03	0.981
	Lower Secondary	Male	Pre	3.51	1.014	3.61	0.978	3.87	0.999
			Post	3.59	1.036	3.64	1.015	3.90	1.011
		Female	Pre	3.86	0.960	3.84	0.965	3.50	1.004
			Post	3.91	0.973	3.85	0.977	3.59	1.021
Higher Secondary	Male	Pre	3.29	0.957	3.29	0.923	3.73	0.928	
		Post	3.20	1.022	3.29	0.980	3.84	0.932	
	Female	Pre	4.05	0.960	4.00	0.944	3.24	0.991	
		Post	4.01	1.074	4.08	1.025	3.31	0.916	

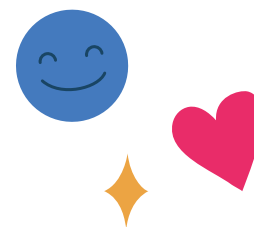


Table 3.21 shows that the mean scores in academic advantaged students compared to marginalized/ motivation, engagement in learning and academic disadvantaged students, and this applies at all school performance scores are significantly higher for levels

Table 3.21: Mean academic outcomes by school level, disadvantage, phase and group

Group	School Level	Disadvantage	Phase	Academic Motivation		Engagement in Learning		Academic Performance	
				Mean	S. D.	Mean	S. D.	Mean	S. D.
Experimental	Kindergarten	Yes	Pre	3.20	1.012	3.17	1.055	3.14	1.092
			Post	3.40	1.017	3.37	1.042	3.25	1.099
		No	Pre	3.93	0.923	3.96	0.931	3.96	0.920
			Post	4.07	0.905	4.10	0.909	4.12	0.884
	Primary	Yes	Pre	3.16	1.017	3.12	1.031	2.95	1.046
			Post	3.11	1.108	3.05	1.038	2.93	1.039
		No	Pre	4.09	0.881	4.10	0.881	4.08	0.870
			Post	4.13	0.899	4.11	0.921	4.13	0.895
	Lower Secondary	Yes	Pre	2.84	0.959	2.74	0.932	2.71	0.877
			Post	2.86	0.954	2.87	0.935	2.93	0.897
		No	Pre	4.00	0.904	3.98	0.911	3.88	0.895
			Post	3.99	0.969	3.96	0.984	3.96	0.939
Higher Secondary	Yes	Pre	3.12	1.053	3.12	0.992	2.96	0.967	
		Post	3.34	1.013	3.33	1.057	3.21	1.019	
	No	Pre	3.94	0.922	3.92	0.946	3.91	0.866	
		Post	3.99	1.042	4.01	1.038	4.02	0.962	
Waiting	Kindergarten	Yes	Pre	3.14	1.107	3.11	1.169	3.01	1.097
			Post	3.22	1.088	3.24	1.133	3.22	1.134
		No	Pre	3.82	0.936	3.86	0.956	3.88	0.920
			Post	4.00	0.862	4.00	0.882	4.00	0.874
	Primary	Yes	Pre	3.28	1.068	3.20	1.060	3.06	0.998
			Post	3.24	1.095	3.19	1.098	3.05	1.057
		No	Pre	4.05	0.922	4.10	0.916	4.04	0.913
			Post	4.12	0.899	4.13	0.907	4.09	0.901
	Lower Secondary	Yes	Pre	3.12	1.016	3.16	1.000	2.98	0.924
			Post	3.15	0.941	3.19	0.950	3.03	0.887
		No	Pre	3.87	0.933	3.90	0.910	3.81	0.903
			Post	3.91	0.976	3.89	0.964	3.90	0.928
Higher Secondary	Yes	Pre	3.25	0.959	3.26	0.923	3.08	0.997	
		Post	3.42	1.138	3.44	1.179	3.31	1.145	
	No	Pre	3.89	1.002	3.85	0.981	3.86	1.004	
		Post	3.75	1.113	3.84	1.041	3.90	0.968	

Table 3.22 shows that the increment in the mean academic motivation, engagement in learning and academic performance scores from pre- to post-test were marginally larger for the experimental group than the waiting group, given that the other effects (student gender, school level and marginalisation) are kept constant. These differences (0.007, 0.011 and 0.029, respectively) are not significant since the p-values of the interaction

Group*Phase (0.809, 0.730 and 0.337, respectively) are larger than the 0.05 level of significance. However, in the case of academic motivation and engagement, the School Level*Phase is a significant interaction effect showing that the programme was more effective in these areas with kindergarten students, according to teachers. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Table 3.22: Tests of Between-Subjects Effects and Parameter estimates for Academic Outcomes

Term	Academic Motivation			Engagement in Learning			Academic Performance		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	99785.4	<0.001	1	98170.8	<0.001	1	99108.1	<0.001
Group	1	9.482	0.002	1	3.442	0.064	1	9.478	0.002
Phase	1	6.002	0.014	1	8.040	0.005	1	20.190	<0.001
Student Gender	1	349.473	<0.001	1	300.848	<0.001	1	217.510	<0.001
School Level	3	32.478	<0.001	3	31.535	<0.001	3	36.142	<0.001
Disadvantage	1	1538.805	0.000	1	1646.822	0.000	1	2137.695	0.000
Disadvantage * Phase	1	0.260	0.610	1	0.111	0.739	1	0.000	0.993
Group * Phase	1	0.059	0.809	1	0.119	0.730	1	0.921	0.337
School Level * Phase	3	4.987	0.002	3	5.696	<0.001	3	2.383	0.067
Student Gender * Phase	1	0.008	0.930	1	0.128	0.720	1	0.171	0.679
Error	15550			15550			15550		



Table 3.22: Tests of Between-Subjects Effects and Parameter estimates for Academic Outcomes (Cont.)

Parameter	Academic Motivation			Engagement in Learning			Academic Performance		
	B	Std. Error	P-value	B	Std. Error	P-value	B	Std. Error	P-value
Intercept	4.003	0.041	<0.001	4.000	0.041	<0.001	3.957	0.040	<0.001
Group=Experimental	0.051	0.022	0.019	0.023	0.022	0.285	0.032	0.021	0.134
Phase=Post	0.035	0.058	0.548	0.077	0.058	0.186	0.103	0.057	0.071
Student Gender=Male	-0.281	0.021	<0.001	-0.258	0.021	<0.001	-0.213	0.021	<0.001
School Level=Kindergarten	0.001	0.042	0.981	0.039	0.042	0.355	0.066	0.041	0.111
School Level=Primary	0.168	0.042	<0.001	0.194	0.042	<0.001	0.166	0.041	<0.001
School Level=Lower Secondary	0.000	0.043	0.998	0.015	0.043	0.731	-0.049	0.042	0.249
Disadvantaged=Yes	-0.802	0.029	<0.001	-0.853	0.029	<0.001	-0.944	0.028	<0.001
Disadvantaged=Yes * Phase=Post	-0.021	0.041	0.610	0.014	0.042	0.739	0.000	0.041	0.993
Group=Experimental * Phase=Post	0.007	0.030	0.809	0.011	0.031	0.730	0.029	0.030	0.337
Sch. Level=Kinder * Phase=Post	0.130	0.060	0.029	0.064	0.060	0.284	0.034	0.059	0.567
Sch. Level=Primary * Phase=Post	0.018	0.059	0.763	-0.068	0.060	0.257	-0.063	0.058	0.282
Sch. Level=Lower Sec * Phase=Post	-0.005	0.061	0.935	-0.076	0.061	0.213	-0.019	0.060	0.749
Student Gender=Male * Phase=Post	-0.003	0.030	0.930	-0.011	0.030	0.720	-0.012	0.030	0.679

Aliased terms are not displayed

3.6 Perceived engagement and improvement

3.6.1 Students' evaluations

Secondary students were asked whether they enjoyed the activities and how useful they found the students' handbook. The mean rating scores ranged from 1 (not enjoyable/not useful) to 5 (extremely enjoyable/extremely useful), where the larger the mean score, the higher is the enjoyment/ usefulness. Table 3.23 shows that, on average, secondary school children enjoyed the lessons and found the student handbook useful.

Students were also asked about their perceived improvement in social and emotional learning and in dealing with challenges and problems. These mean rating scores ranged from 1 (not useful) to 5 (extremely useful), where the larger the mean score, the higher the improvement. Table 3.24 shows that according to students, the programme was most effective in helping children deal with traumatic experiences. This is followed by dealing with internalizing/externalizing problems, dealing with risk behaviours and dealing with psychosocial challenges. The programme was less effective in improving social emotional learning.

Table 3.23: Student perceived enjoyment and usefulness of handbook

	Mean rating score	Std. Deviation
I enjoyed these lessons	3.93	0.863
How useful was the student's handbook?	3.42	1.585

Table 3.24: Students' perceived improvement in in SEL, resilience and risk behaviours

Outcome	How much do you think you have improved in:	Mean rating score	Std. Deviation
SEL	Self-awareness	2.48	1.072
	Self-management	2.51	1.058
	Social awareness	2.26	1.082
	Relationship skills	2.31	1.094
	Responsible decision making	2.27	1.083
Resilience	Dealing with psychosocial challenges	2.64	1.280
	Dealing with traumatic experiences	2.92	1.281
Risk Behaviours	Dealing with internalizing problems	2.79	1.250
	Dealing with externalizing problems	2.84	1.276
	Dealing with at risk behaviours	2.65	1.367

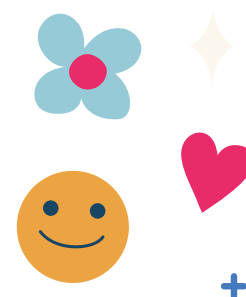
3.6.2 Teachers' evaluations

Teachers were asked about the perceived improvement in students' social and emotional learning and in dealing with challenges and problems. The mean rating scores ranged from 1 (not useful) to 5 (extremely useful), where the larger the mean score, the higher the improvement.

Table 3.25 shows that according to teachers, the programme was most effective in helping children deal with traumatic experiences, followed by dealing with internalizing/externalizing problems, dealing with risk behaviours and dealing with psychosocial challenges. The programme was seen to be less effective in improving social and emotional learning.

Table 3.25: Teachers' perceived improvement in in SEL, resilience and risk behaviours

Outcome	How much do you think you have improved in:	Mean rating score	Std. Deviation
SEL	Self-awareness	2.19	0.919
	Self-management	2.25	0.913
	Social awareness	2.24	0.955
	Relationship skills	2.19	0.940
	Responsible decision making	2.22	0.979
Resilience	Dealing with psychosocial challenges	2.67	1.285
	Dealing with traumatic experiences	2.99	1.415
Risk Behaviours	Dealing with internalizing problems	2.77	1.299
	Dealing with externalizing problems	2.72	1.316
	Dealing with at risk behaviours	2.72	1.372



3.6.3 Parents’ evaluations

Parents were also asked to evaluate the usefulness of the handbooks for parents and for students. The mean rating scores ranged from 1 (not useful) to 5 (extremely useful), where the larger the mean score, the higher the usefulness. Table 3.26 shows that according to parents, the handbook for parents and students were both found to be useful.

Parents were also asked about their children’s improvement in social and emotional learning and in dealing with challenges and problems. These mean

rating scores assessing the child’s improvement ranged from 1 (no improvement) to 5 (considerable improvement). The larger the mean score, the higher the improvement in social and emotional learning and in dealing with challenges and problems. Table 3.27 shows that according to parents, the programme was most effective in helping children deal with traumatic experiences, followed by dealing with internalizing/externalizing problems, dealing with risk behaviours and dealing with psychosocial challenges. The programme was perceived to be less effective in improving social and emotional learning.

Table 3.26: Parents’ perceived usefulness of parents’ and students’ handbooks

	Mean rating score	Std. Deviation
Handbook for parents	3.73	1.549
Handbook for students	3.78	1.601

Table 3.27: Parents’ perceived improvement in in SEL, resilience and risk behaviours

Outcome	How much do you think you have improved in:	Mean rating score	Std. Deviation
SEL	Self-awareness	2.40	0.991
	Self-management	2.44	0.976
	Social awareness	2.35	1.007
	Relationship skills	2.30	0.994
Resilience	Responsible decision making	2.30	0.998
	Dealing with psychosocial challenges	2.81	1.260
	Dealing with traumatic experiences	3.22	1.406
Risk Behaviours	Dealing with internalizing problems	3.14	1.326
	Dealing with externalizing problems	3.12	1.357
	Dealing with at risk behaviours	2.93	1.329

CHAPTER 4 Effectiveness in improving teachers' self-efficacy, social and emotional competence and resilience

4.1: Introduction

This chapter evaluates the programme's impact on the trained and implementing teachers on four outcomes, namely: an increase in their social and emotional competence, self-efficacy and resilience and burnout. Teachers were matched by code to combine the pre-test and post-test scores, where only teachers who had scores on both tests were included in the data set, yielding a sample size of 687 teachers. Missing values were replaced by the mean test item score. Ten subscales were then generated by averaging the rating scores of their respective items. Efficacy in student engagement, efficacy in instructional strategies and efficacy in classroom management range from 1 to 9, where the larger the mean score the higher is the teacher's self-efficacy. Resilience ranges from 1 to 5, where the larger the mean score, the higher the teacher's capacity to recover quickly from difficulties. Burnout ranges from 1 to 5, where the larger the mean score, the higher the teacher's emotional, physical, and mental exhaustion caused by excessive and prolonged stress. Teacher-student relationship, emotion regulation, social awareness, interpersonal relationships, and SEC range from 1 to 6,

where the larger the mean score, the higher the social and emotional competence.

4.2: Teachers' social and emotional competence

Figure 4.1 and Table 4.1 show that the increment in the mean teacher-student relationship, emotion regulation, social awareness, and interpersonal relationships scores from pre- to post-test are larger for the experimental group compared to the waiting group. Moreover, this applies both across school levels and teacher genders. Male teachers scored, on average, lower than female teachers on teacher-student relationships, emotion regulation, social awareness and interpersonal relationships. Teachers in kindergarten, primary and lower secondary schools scored marginally higher than higher secondary school teachers on teacher-student relationships and interpersonal relationships; while higher secondary school teachers scored marginally higher than teachers in kindergarten, primary and lower secondary schools on emotion regulation. Teachers in primary schools had significantly higher scores on social awareness than teachers in kindergarten and lower/higher secondary schools.

Figure 4.1: Mean social and emotional competence scores, clustered by phase and group

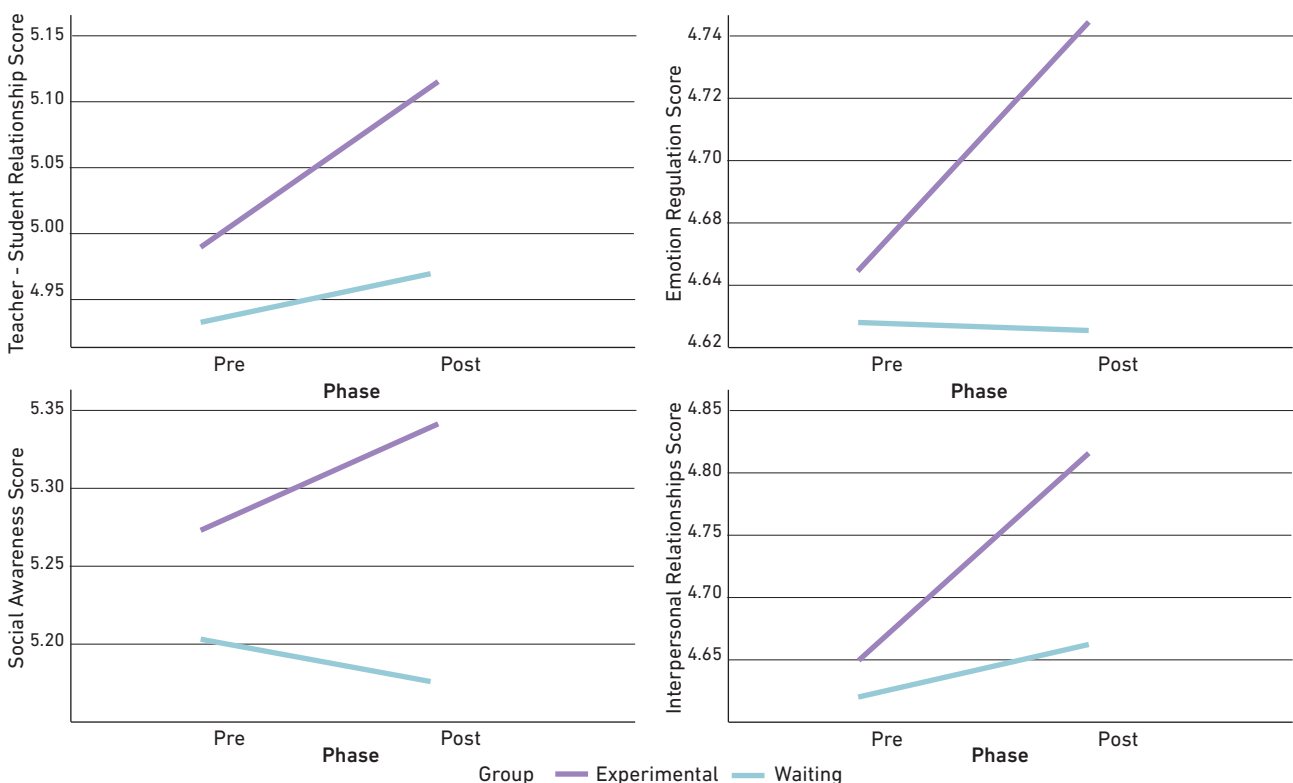
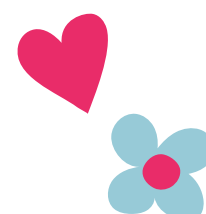


Table 4.1: Mean social emotional competence by school level, teacher gender, phase and group

Group	Gender	School Level	Phase	Teacher-student relationship		Emotion Regulation	
				Mean	S. D.	Mean	S. D.
Experimental	Male	Primary school	Pre	4.43	0.404	4.67	0.471
			Post	4.64	0.101	4.42	0.825
		Lower secondary	Pre	5.05	0.484	4.58	0.648
			Post	5.26	0.635	4.94	0.735
		Higher secondary	Pre	4.51	0.701	4.86	0.627
			Post	4.57	0.709	4.98	0.550
	Female	Kindergarten	Pre	5.04	0.583	4.64	0.563
			Post	5.15	0.572	4.71	0.545
		Primary school	Pre	5.04	0.564	4.57	0.659
			Post	5.19	0.529	4.67	0.558
		Lower secondary	Pre	4.98	0.538	4.61	0.691
			Post	5.08	0.507	4.79	0.595
Higher secondary	Pre	4.79	0.681	4.87	0.679		
	Post	4.98	0.524	4.91	0.547		
Waiting	Male	Primary school	Pre	5.32	0.244	4.71	0.798
			Post	5.39	0.338	4.63	0.832
		Lower secondary	Pre	4.75	0.566	4.57	0.983
			Post	4.73	0.582	4.59	0.878
		Higher secondary	Pre	3.83	0.630	4.04	0.633
			Post	3.92	0.351	4.35	0.549
	Female	Kindergarten	Pre	5.02	0.544	4.71	0.603
			Post	5.09	0.576	4.73	0.602
		Primary school	Pre	5.15	0.552	4.61	0.672
			Post	5.15	0.523	4.64	0.624
		Lower secondary	Pre	4.82	0.583	4.61	0.687
			Post	4.81	0.531	4.49	0.699
Higher secondary	Pre	4.64	0.533	4.61	0.623		
	Post	4.79	0.563	4.65	0.610		

Table 4.1: Mean social emotional competence by school level, teacher gender, phase and group (Cont.)

Group	Gender	School Level	Phase	Social awareness		Interpersonal relationships	
				Mean	S. D.	Mean	S. D.
Experimental	Male	Primary school	Pre	4.23	0.613	3.83	0.236
			Post	5.00	0.471	4.33	0.236
		Lower secondary	Pre	5.14	0.440	4.67	0.587
			Post	5.39	0.479	5.08	0.621
		Higher secondary	Pre	5.17	0.610	4.53	0.464
			Post	5.03	0.694	4.64	0.414
	Female	Kindergarten	Pre	5.26	0.549	4.64	0.578
			Post	5.27	0.507	4.77	0.600
		Primary school	Pre	5.32	0.499	4.64	0.632
			Post	5.44	0.467	4.82	0.617
		Lower secondary	Pre	5.32	0.511	4.71	0.576
			Post	5.40	0.470	4.85	0.610
Waiting	Male	Primary school	Pre	5.75	0.215	5.08	0.289
			Post	5.71	0.479	5.08	0.347
		Lower secondary	Pre	5.13	0.650	4.70	0.611
			Post	5.33	0.500	4.74	0.602
		Higher secondary	Pre	4.65	0.757	3.96	0.721
			Post	4.65	0.729	4.39	0.507
	Female	Kindergarten	Pre	5.13	0.556	4.71	0.563
			Post	5.10	0.587	4.74	0.611
		Primary school	Pre	5.41	0.429	4.69	0.628
			Post	5.33	0.504	4.66	0.632
		Lower secondary	Pre	5.14	0.456	4.62	0.575
			Post	5.13	0.445	4.60	0.543
Higher secondary	Pre	5.15	0.421	4.42	0.733		
	Post	5.09	0.511	4.56	0.558		



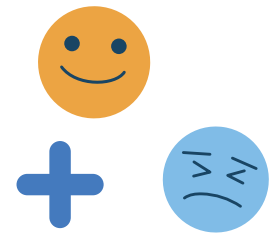


Table 4.2 shows that teachers who implemented five or more activities had significantly higher increments in teacher-student relationships, emotional regulation,

level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Table 4.2: Teacher-student relationship scores clustered by implemented activities and phase

Implemented activities	Phase	Teacher-student relationship		Emotion Regulation		Social awareness		Interpersonal relationships	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
0-4 activities	Pre	4.86	0.610	4.65	0.662	5.24	0.487	4.57	0.525
	Post	4.89	0.528	4.63	0.521	5.22	0.477	4.65	0.571
5-9 activities	Pre	4.76	0.624	4.56	0.689	5.24	0.656	4.48	0.884
	Post	4.90	0.578	4.77	0.486	5.31	0.454	4.65	0.656
10 activities or more	Pre	5.11	0.577	4.73	0.644	5.36	0.565	4.75	0.615
	Post	5.28	0.509	4.88	0.605	5.46	0.493	4.95	0.577

social awareness and interpersonal relationships than those who implemented four or less activities.

Table 4.3 shows that the increase in the mean teacher-student relationships and emotion regulations scores from pre- to post-test are 0.087 and 0.103 larger for the experimental group than the waiting group, respectively, given that other effects (teacher gender and school level) are kept constant. However, these differences are not significant since the p-value of the interaction Group*Phase (0.156 and 0.129) are larger than the 0.05

On the other hand, the increase in the mean social awareness and inter-personal relationship scores from pre- to post-test are 0.111 and 0.136 larger for the experimental group than the waiting group, respectively, given that other effects are kept constant. These differences are significant since the p-value of the interaction Group*Phase (0.047 and 0.038) are smaller than the 0.05 level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.



Table 4.3: Tests of Between-Subjects Effects and Parameter estimates for Social Emotional Competence

Relationship	Teacher-student Relationships			Emotion Regulation			Social Awareness			Interpersonal Relationship		
	df	F	P-value	df	F	P-value	df	F	P-value	df	F	P-value
Term	df	F	P-value	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	22499	<0.001	1	16711	<0.001	1	30888	<0.001	1	18110	<0.001
Group	1	8.190	0.004	1	3.966	0.047	1	17.789	<0.001	1	6.626	0.010
Phase	1	1.712	0.191	1	1.649	0.199	1	0.628	0.428	1	4.622	0.032
Teacher Gender	1	15.340	<0.001	1	0.645	0.422	1	3.854	0.050	1	0.723	0.395
School Level	3	22.725	<0.001	3	1.907	0.127	3	11.742	<0.001	3	1.722	0.161
Teacher Gender * Phase	1	.019	0.891	1	0.419	0.518	1	0.327	0.568	1	0.443	0.506
School Level * Phase	3	.323	0.809	3	0.017	0.997	3	0.334	0.801	3	0.476	0.699
Group * Phase	1	2.019	0.156	1	2.309	0.129	1	3.951	0.047	1	4.326	0.038
Error	1362			1362			1362			1362		

Parameter	Teacher-student relationship			Emotion Regulation			Social awareness			Interpersonal relationships		
	B	S.E.	P-value	B	S.E.	P-value	B	S.E.	P-value	B	S.E.	P-value
Intercept	4.641	0.064	<0.001	4.703	0.071	<0.001	5.122	0.059	<0.001	4.497	0.069	<0.001
Group= Experimental	0.044	0.043	0.308	0.016	0.048	0.739	0.062	0.039	0.115	0.016	0.046	0.727
Phase=Post	0.108	0.091	0.233	0.001	0.101	0.992	-0.076	0.083	0.361	0.118	0.097	0.224
Teacher Gender=Male	-0.253	0.095	0.008	-0.108	0.105	0.305	-0.155	0.087	0.073	-0.109	0.101	0.284
School Level= Kindergarten	0.371	0.071	<0.001	-0.039	0.078	0.620	0.046	0.064	0.471	0.159	0.076	0.035
School Level= Primary	0.425	0.072	<0.001	-0.112	0.080	0.159	0.205	0.066	0.002	0.165	0.077	0.032
School Level=Lower Secondary	0.261	0.073	<0.001	-0.094	0.081	0.247	0.082	0.067	0.220	0.174	0.078	0.026
Teacher Gender=- Male * Phase=Post	-0.018	0.134	0.891	0.096	0.149	0.518	0.070	0.122	0.568	0.096	0.143	0.506
Sch. Level= Kinder * Phase=Post	-0.066	0.100	0.507	-0.015	0.111	0.891	0.009	0.091	0.918	-0.107	0.107	0.319
Sch. Level=Primary * Phase=Post	-0.065	0.102	0.524	-0.001	0.113	0.990	0.047	0.093	0.615	-0.112	0.109	0.304
Sch. Level=Lower Sec * Phase=Post	-0.102	0.103	0.325	-0.018	0.115	0.877	0.073	0.094	0.438	-0.123	0.110	0.265
Group= Experimental * Phase=Post	0.087	0.061	0.156	0.103	0.068	0.129	0.111	0.056	0.047	0.136	0.065	0.038

Aliased terms are not displayed

Table 4.4 shows that according to teachers' evaluations, teacher-student relationship, emotion regulation, social awareness, and interpersonal relationships scores are positively and significantly related to each other.

Table 4.4: Pairwise correlations between the social emotional competence subscales using post-tests

		Teacher-student relationship	Emotion regulation	Social awareness	Interpersonal relationships
Teacher-student relationship	Correlation	1	0.494	0.650	0.629
	P-value		<0.001	<0.001	<0.001
Emotion regulation	Correlation	0.494	1	0.391	0.489
	P-value	<0.001		<0.001	<0.001
Social awareness	Correlation	0.650	0.391	1	0.554
	P-value	<0.001	<0.001		<0.001
Interpersonal relationships	Correlation	0.629	0.489	0.554	1
	P-value	<0.001	<0.001	<0.001	
	Dealing with externalizing problems	2.72	1.316		
	Dealing with at risk behaviours	2.72	1.372		





4.3: Teachers' self-efficacy

Figure 4.2 shows that the increment in the mean teachers' self-efficacy scores for student engagement, instructional strategies and classroom management from pre- to post-test is larger for the experimental group compared to the waiting group.

Figure 4.2: Mean teachers' self-efficacy scores clustered by phase and group

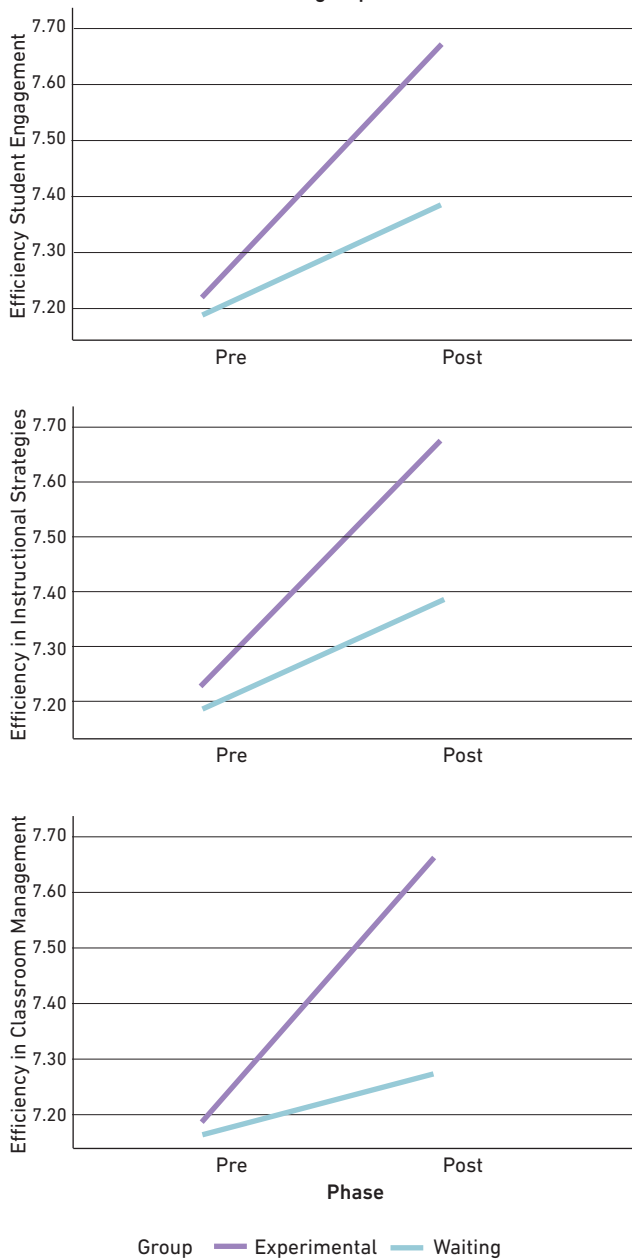


Table 4.5 shows that the increments of mean teachers' self-efficacy scores from pre- to post-test are larger for the experimental group than the waiting group, and this applies both across school levels and teacher genders. Female teachers have marginally higher scores than males on efficacy to engage students and efficacy in instructional strategies. On the other hand, male teachers scored marginally higher than females on efficacy in classroom

management. Kindergarten and primary school teachers scored significantly higher on efficacy to engage students and efficacy in classroom management than teachers in lower and higher secondary schools. Teachers in primary schools have significantly higher scores on efficacy in instructional strategy than teachers in kindergarten and lower/higher secondary schools.

Table 4.5: Mean teachers' self-efficacy by school level, teacher gender, phase and group

Group	Gender	School Level	Phase	Efficacy in student engagement		Efficacy in instruction strategy		Efficacy in class management	
				Mean	S. D.	Mean	S. D.	Mean	S. D.
Experimental	Male	Primary school	Pre	6.38	0.177	6.50	0.707	7.00	1.414
			Post	7.75	0.354	7.50	0.354	7.75	0.707
		Lower secondary	Pre	6.75	1.173	7.17	1.301	8.00	1.173
			Post	7.54	0.914	8.17	0.736	8.04	0.886
		Higher secondary	Pre	6.50	0.844	7.36	1.262	7.02	1.306
			Post	7.36	0.710	7.66	0.937	7.30	0.967
	Female	Kindergarten	Pre	7.25	0.870	7.15	0.951	7.12	0.917
			Post	7.67	0.798	7.58	0.878	7.55	0.851
		Primary school	Pre	7.20	1.001	7.29	0.929	7.23	0.956
			Post	7.56	0.905	7.76	0.782	7.68	0.801
		Lower secondary	Pre	6.82	1.087	7.15	1.003	7.05	0.994
			Post	7.28	0.895	7.56	0.819	7.37	0.836
Higher secondary	Pre	6.97	1.141	7.42	0.989	7.25	1.000		
	Post	7.40	0.888	7.90	0.727	7.69	0.830		
Waiting	Male	Primary school	Pre	7.63	0.479	7.63	0.777	8.00	0.612
			Post	7.88	0.595	8.19	0.591	8.13	0.878
		Lower secondary	Pre	6.92	1.146	7.14	1.180	7.69	0.818
			Post	7.19	1.029	7.64	0.993	7.75	0.820
		Higher secondary	Pre	6.53	0.701	6.28	0.879	6.11	1.306
			Post	6.44	0.635	6.69	0.635	6.36	1.069
	Female	Kindergarten	Pre	7.16	0.984	7.17	0.996	7.18	0.846
			Post	7.40	0.824	7.31	0.911	7.32	0.855
		Primary school	Pre	7.32	1.042	7.42	1.008	7.32	1.083
			Post	7.35	0.905	7.59	0.874	7.48	0.916
		Lower secondary	Pre	6.63	1.053	7.09	1.025	6.88	0.964
			Post	6.72	1.139	7.36	0.946	7.05	1.075
Higher secondary	Pre	6.95	0.923	7.15	0.988	7.10	0.892		
	Post	7.14	0.843	7.19	0.706	7.24	0.877		

Table 4.6 shows that the mean teachers' efficacy scores in student engagement, instructional strategies and classroom management is significantly higher when a larger number of activities are implemented.

Table 4.6: Teacher-student relationship scores clustered by implemented activities and phase

Implemented activities	Phase	Efficacy in student engagement		Efficacy in instruction strategy		Efficacy in classroom management	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
0-4 activities	Pre	4.86	0.610	4.65	0.662	5.24	0.487
	Post	4.89	0.528	4.63	0.521	5.22	0.477
5-9 activities	Pre	4.76	0.624	4.56	0.689	5.24	0.656
	Post	4.90	0.578	4.77	0.486	5.31	0.454
10 activities or more	Pre	5.11	0.577	4.73	0.644	5.36	0.565
	Post	5.28	0.509	4.88	0.605	5.46	0.493

Table 4.7 shows that the increase in the mean efficacy score in student engagement, instructional strategy and classroom management from pre- to post-test are 0.304, 0.267 and 0.252 larger for the experimental group than the waiting group respectively, given that other effects (teacher gender and school level) are kept constant. These differences are significant since the p-value of the interactions Group*Phase (0.003,

0.008 and 0.013) are smaller than the 0.05 level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Table 4.7 shows that efficacy in instructional strategies, student engagement and classroom management are positively and significantly related with each other.

Table 4.7: Tests of Between-Subjects Effects and Parameter estimates for Teachers' Efficacy

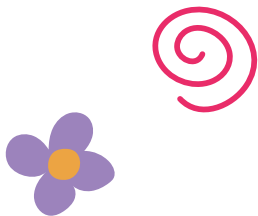
Term	Efficacy in student engagement			Efficacy in instruction strategy			Efficacy in class management		
	df	F	P-value	df	F	P-value	df	F	P-value
Intercept	1	17358.7	<0.001	1	19172.9	<0.001	1	18700.6	<0.001
Group	1	11.633	<0.001	1	9.514	0.002	1	8.612	0.003
Phase	1	12.432	<0.001	1	16.239	<0.001	1	5.367	0.021
Teacher Gender	1	0.202	0.653	1	0.242	0.623	1	0.975	0.324
School Level	3	20.697	<0.001	3	4.642	0.003	3	6.084	<0.001
Teacher Gender * Phase	1	0.919	0.338	1	1.362	0.243	1	0.108	0.743
School Level * Phase	3	0.321	0.810	3	0.215	0.886	3	0.093	0.964
Group * Phase	1	8.789	0.003	1	7.099	0.008	1	6.202	0.013
Error	1362			1362			1362		

Parameter	Teacher-student relationship			Emotion Regulation			Social awareness		
	B	S.E.	P-value	B	S.E.	P-value	B	S.E.	P-value
Intercept	6.889	0.108	<0.001	7.228	0.105	<0.001	7.017	0.106	<0.001
Group=Experimental	0.023	0.072	0.752	0.021	0.071	0.766	0.022	0.071	0.753
Phase=Post	0.140	0.152	0.360	0.087	0.149	0.560	0.172	0.151	0.253
Teacher Gender=Male	-0.158	0.159	0.320	-0.183	0.156	0.241	0.146	0.157	0.353
School Level=Kindergarten	0.307	0.118	0.010	-0.091	0.116	0.431	0.119	0.117	0.309
School Level=Primary	0.356	0.121	0.003	0.119	0.118	0.315	0.247	0.119	0.038
School Level=Lower Secondary	-0.148	0.122	0.227	-0.101	0.120	0.400	0.001	0.121	0.994
Student Gender=Male * Phase=Post	0.216	0.225	0.338	0.257	0.220	0.243	-0.073	0.222	0.743
Sch. Level=Kinder * Phase=Post	0.034	0.168	0.838	0.081	0.164	0.621	-0.004	0.165	0.978
Sch. Level=Primary * Phase=Post	-0.091	0.170	0.592	0.100	0.167	0.549	0.010	0.168	0.954
Sch. Level=Lower Sec * Phase=Post	-0.011	0.173	0.951	0.133	0.169	0.431	-0.060	0.171	0.727
Group=Experimental * Phase=Post	0.304	0.102	0.003	0.267	0.100	0.008	0.252	0.101	0.013

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Table 4.8: Pairwise correlations between the teachers' efficacy subscales using post-test scores

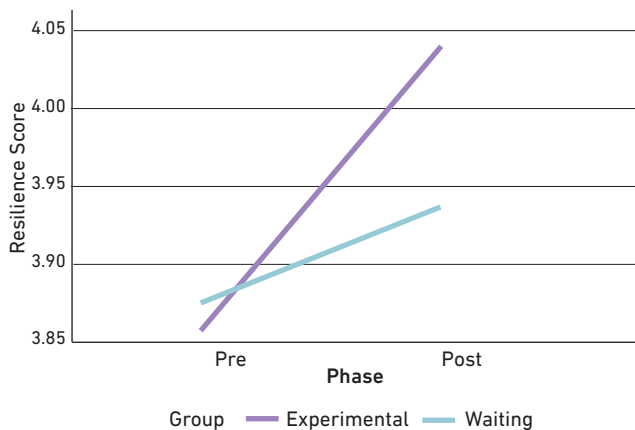
		Efficacy in student engagement	Efficacy in instructional strategies	Efficacy in classroom management
Efficacy in student engagement	Correlation	1	0.731	0.733
	P-value		<0.001	<0.001
Efficacy in instructional strategies	Correlation	0.731	1	0.690
	P-value	<0.001		<0.001
Efficacy in classroom management	Correlation	0.733	0.690	1
	P-value	<0.001	<0.001	
	Dealing with traumatic experiences	2.99	1.415	
Risk Behaviours	Dealing with internalizing problems	2.77	1.299	
	Dealing with externalizing problems	2.72	1.316	
	Dealing with at risk behaviours	2.72	1.372	



4.4: Teachers' Resilience

Figure 4.3 and Table 4.9 show that the mean teacher resilience score increase is larger for the experimental group than for the waiting group. Moreover, this applies both across school levels and teacher genders. Male teachers scored marginally lower on resilience than female teachers, while teachers in lower secondary schools scored marginally higher on resilience than teachers in kindergarten, primary and higher secondary schools.

Figure 4.3: Mean teachers' resilience scores clustered by phase and group



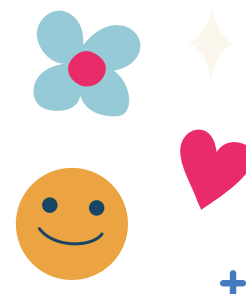


Table 4.9: Mean resilience scores by school level, teacher gender, phase and group

Group	Gender	School Level	Phase	Mean	Std. Deviation
Experimental	Male	Primary school	Pre	3.70	0.141
			Post	3.70	0.424
		Lower secondary	Pre	3.87	0.398
			Post	4.32	0.538
		Higher secondary	Pre	3.95	0.545
			Post	4.07	0.456
	Female	Kindergarten	Pre	3.76	0.634
			Post	3.95	0.693
		Primary school	Pre	3.82	0.617
			Post	4.01	0.591
		Lower secondary	Pre	3.95	0.562
			Post	4.15	0.465
Waiting	Male	Primary school	Pre	4.25	0.420
			Post	4.13	0.457
		Lower secondary	Pre	3.98	0.636
			Post	4.17	0.482
		Higher secondary	Pre	3.23	0.418
			Post	3.46	0.448
	Female	Kindergarten	Pre	3.90	0.609
			Post	3.97	0.607
		Primary school	Pre	3.92	0.563
			Post	4.00	0.527
		Lower secondary	Pre	3.89	0.573
			Post	3.92	0.602
Higher secondary	Pre	3.71	0.735		
	Post	3.71	0.675		



Table 4.10 shows that the increase in the mean resilience score from pre- to post-test is 0.130 larger for the experimental group than the waiting group, given that other effects (teacher gender and school level) are kept constant. This difference is significant since the p-value of the interaction Group*Phase (0.046) is smaller than the 0.05 level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Table 4.10: Tests of Between-Subjects Effects and Parameter estimates for Teachers' Resilience

Terms	Sum of Squares	df	Mean Square	F	P-value
Intercept	4657.997	1	4657.997	12918.572	<0.001
Group	0.967	1	0.967	2.682	0.102
Phase	1.801	1	1.801	4.994	0.026
Teacher gender	0.090	1	0.090	0.249	0.618
School level	2.230	3	0.743	2.062	0.103
Teacher gender * Phase	0.145	1	0.145	0.401	0.527
School level * Phase	0.170	3	0.057	0.157	0.925
Group * Phase	1.440	1	1.440	3.993	0.046
Error	491.091	1362	0.361		

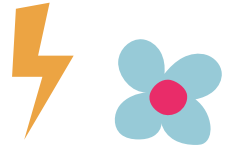
Parameters	B	Std. Error	t	P-value
Intercept	3.859	0.068	56.418	<0.001
Group=Experimental	-0.012	0.046	-0.255	0.799
Phase=Post	-0.006	0.097	-0.057	0.954
Teacher gender=Male	-0.081	0.101	-0.801	0.423
School level=Kindergarten	-0.023	0.075	-0.302	0.762
School level=Primary	0.021	0.076	0.272	0.786
School level=Lower secondary	0.075	0.078	0.968	0.333
Teacher gender=Male * Phase=Post	0.090	0.143	0.633	0.527
School level=Kindergarten * Phase=Post	0.066	0.106	0.621	0.535
School level=Primary * Phase=Post	0.067	0.108	0.618	0.536
School level=Lower secondary * Phase=Post	0.064	0.110	0.579	0.563
Group=Experimental * Phase=Post	0.130	0.065	1.998	0.046

Aliased terms are not displayed

Table 4.11 shows that the increase in the mean teacher resilience score is higher when a larger number of activities were implemented.

Table 4.11: Resilience scores clustered by implemented activities and phase

Activities implement from the Handbook	Phase	Mean	Std. Deviation
0-4 activities	Pre	4.86	0.610
	Post	4.89	0.528
5-9 activities	Pre	4.76	0.624
	Post	4.90	0.578
10 activities or more	Pre	5.11	0.577
	Post	5.28	0.509



4.5: Teacher burnout

Figure 4.4 and Table 4.12 show that the decrease in the mean teacher burnout score is larger for the experimental group than for the waiting group, which applies across school levels and teacher genders. Male teachers scored marginally higher on burnout than female teachers, while teachers in primary and kindergarten schools scored marginally higher on burnout than teachers in lower and higher secondary schools.

Figure 4.4: Mean teachers' burnout scores clustered by phase and group

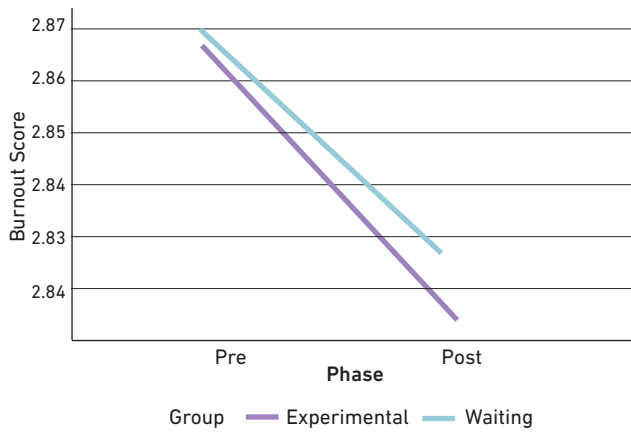


Table 4.12: Mean burnout scores by school level, teacher gender, phase and group

Group	Gender	School Level	Phase	Mean	Std. Deviation
Experimental	Male	Primary school	Pre	3.50	0.707
			Post	4.00	0.000
		Lower secondary	Pre	3.00	1.265
			Post	3.17	1.602
		Higher secondary	Pre	3.09	0.831
			Post	2.91	1.044
	Female	Kindergarten	Pre	2.88	1.122
			Post	2.79	0.991
		Primary school	Pre	2.91	1.046
			Post	2.74	1.003
		Lower secondary	Pre	2.67	0.958
			Post	2.75	0.960
Higher secondary	Pre	3.00	1.277		
	Post	3.08	1.109		
Waiting	Male	Primary school	Pre	3.00	1.414
			Post	3.00	0.816
		Lower secondary	Pre	2.89	0.928
			Post	3.11	0.782
		Higher secondary	Pre	2.44	1.130
			Post	2.89	0.928
	Female	Kindergarten	Pre	2.97	0.976
			Post	2.99	1.046
		Primary school	Pre	2.90	1.013
			Post	2.81	1.058
		Lower secondary	Pre	2.92	1.118
			Post	2.75	1.024
Higher secondary	Pre	2.51	0.942		
	Post	2.49	1.048		

Table 4.13: Burnout scores clustered by implemented activities and phase

Activities from Teachers' Handbook	Phase	Mean	Std. Deviation
0-4 activities	Pre	2.81	1.160
	Post	2.68	1.015
5-9 activities	Pre	2.79	1.351
	Post	2.92	1.018
10 activities or more	Pre	3.07	0.991
	Post	3.02	1.000

Table 4.13 shows that the reduction in the mean teacher burnout score is significantly higher when a smaller number of activities were implemented.

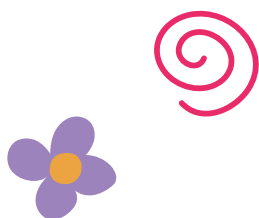
Table 4.14 shows that the reduction in the mean burnout score from pre- to post-test is 0.007 larger for the

experimental group than the waiting group, given that other effects (teacher gender and school level) are kept constant. However, this difference is not significant since the p-value of the interaction Group*Phase (0.948) is larger than the 0.05 level of significance. Other interaction effects are not significant since their p-values exceed the 0.05 criterion.

Table 4.14: Tests of Between-Subjects Effects and Parameter estimates for Teachers' Burnout

Terms	Sum of Squares	df	Mean Square	F	P-value
Intercept	2596.884	1	2596.884	2403.232	<0.001
Group	0.025	1	0.025	0.023	0.879
Phase	0.105	1	0.105	0.097	0.755
Teacher gender	2.962	1	2.962	2.741	0.098
School level	4.807	3	1.602	1.483	0.217
Teacher gender * Phase	0.537	1	0.537	0.497	0.481
School level * Phase	0.921	3	0.307	0.284	0.837
Group * Phase	0.005	1	0.005	0.004	0.948
Error	1466.347	1357	1.081		

Parameter	B	Std. Error	t	P-value
Intercept	2.744	0.118	23.168	<0.001
Group=Experimental	-0.005	0.080	-0.061	0.951
Phase=Post	0.009	0.168	0.054	0.957
Teacher gender=Male	0.117	0.175	0.672	0.502
School level=Kindergarten	0.180	0.130	1.383	0.167
School level=Primary	0.169	0.132	1.278	0.202
School level=Lower secondary	0.050	0.134	0.374	0.709
Teacher gender=Male * Phase=Post	0.174	0.247	0.705	0.481
School level=Kindergarten * Phase=Post	-0.037	0.184	-0.199	0.842
School level=Primary * Phase=Post	-0.143	0.187	-0.765	0.444
School level=Lower secondary * Phase=Post	-0.041	0.190	-0.218	0.827
Group=Experimental * Phase=Post	-0.007	0.113	-0.066	0.948



CHAPTER 5 Conclusion

5.1 Summary of Findings

The evaluation of the PROMEHS programme with more than 10,000 students from six different countries indicates that the programme positively impacted both students' and teachers' behaviours in the experimental group compared to the waiting group. There was an improvement amongst students in all five areas of social and emotional learning based on teachers' evaluations (but only marginally according to parents' and students' evaluations), with the biggest increase in self-awareness and social awareness skills. The programme appeared to have more impact on kindergarten children in contrast to older children. No significant difference in impact was found by student gender (though overall, girls have a higher level of SEL), disadvantage or socio-economic status. Similarly, a positive impact was found on students' mental health, with an increase in prosocial behaviour and a decrease in both internalising and externalising difficulties according to teachers' and parents' evaluations (in the case of the parents, there was only a marginal decrease in externalising behaviour). The students' self-evaluations suggest that the programme did not significantly impact their social and emotional competences, behaviour difficulties or prosocial behaviour, though there was a marginal change in the three sets of behaviours in the expected direction. There was a bigger impact on increasing prosocial behaviour than on reducing internalising and externalising difficulties. Again the programme appeared to be more effective with kindergarten children, as well as in higher secondary school in contrast to students in primary and lower secondary schools. No significant difference was found by student gender, disadvantage or socio-economic status. The teachers' evaluations show that, in general, male students have higher internalising and externalising problems compared to female students, while the opposite is true of prosocial behaviour.

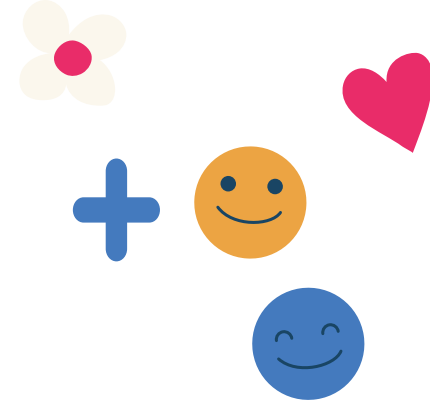
When teachers, secondary school students and parents were asked about the impact of the intervention on students' behaviour, they all agreed that the programme was more effective in reducing internalised and externalised difficulties and in improving resilience (e.g. dealing with traumatic experiences, psychosocial

challenges and risk behaviours) than in enhancing social and emotional learning.

On the other hand, the programme had only a marginal effect on students' resilience and educational engagement. However, there was a significant increase in educational engagement in kindergarten compared to the other school levels. Overall, male and older students have higher resilience scores while female, non-disadvantaged and primary school students scored higher on educational engagement in contrast to male, disadvantaged and secondary school students.

The lack of impact of the programme on academic outcomes may be partly explained by how academic outcomes were measured in the study, namely the teachers' perception of students' motivation, engagement and performance (a three-item questionnaire). Further research may evaluate both perceived students' academic motivation, engagement and motivation making use of teachers', students' and parents' evaluations, as well as students' grades in formal assessment where applicable. Furthermore, the programme was implemented during the COVID-19 pandemic when many schools were closed and there was a disruption in learning. A more extended period of implementation spread over the whole scholastic year is also more likely to produce an effect in academic learning and achievement.

The teachers implementing the programme reported a significant increase in self-efficacy, specifically in their student engagement, instructional, and classroom management efficacy across all school levels and teacher gender. Primary school teachers reported higher self-efficacy than secondary school teachers and, in the case of instructional strategy, higher also than kindergarten teachers. The programme was also found to be related to increased teachers' social awareness and interpersonal relationships, though not their relationships with students and emotional regulation. The implementing teachers also reported an increase in their resilience. On the other hand, there was only a marginal decrease in teachers' level of burnout; in part, this could be explained by the one-item measure used to measure burnout as well as the Covid-19 complications; further studies need to use



more robust instruments of burnout. Finally, teachers' increase in self-efficacy, social and emotional competence and resilience was higher when a larger number of activities were implemented in contrast to four or less activities. Programme effectiveness increased as the implementation dosage increased across all teacher outcomes, underlining the need for a curricular, structured and sequential approach to programme implementation rather than one-off, short-term implementation.

The overall analysis shows that, though this experimental implementation was limited in time span and the amount of activities undertaken, there was an increase in students' social and emotional skills and prosocial behaviour and a decrease in internalised and externalised difficulties. The programme appeared to be particularly effective in Kindergarten, whilst no significant effect was found by gender, disadvantage or socio-economic status. Implementing teachers also improved their self-efficacy, social competence and resilience. These results were reported six months from the beginning of the implementation; further studies may evaluate whether this effect is influenced by fuller programme implementation and whether the impact is maintained at follow-up trials.

5.2 Implications

PROMESH is a promising universal mental health programme for early years, primary and secondary schools in Europe, particularly in enhancing students' social and emotional competence and prosocial behaviour, decreasing internalising and externalising difficulties, and in enhancing teachers' self-efficacy, social competence, and resilience. It is effective across the school years with all children, including vulnerable and marginalised ones, and with both males and females. The data shows that the largest impact was in the early years, with better behavioural adjustment and higher learning outcomes (Martinsone et al, 2022). Social and emotional learning in the early years is crucial as an early intervention and is related to positive outcomes in adolescence and adulthood (Jones et al, 2012). The findings from the teachers' self-report show that in contrast to a low dosage of activities, a medium to high number of implemented activities is more likely to be effective. Despite the restrictions

and disruptions caused by the COVID-19 pandemic, the majority of the teachers implemented ten or more sessions (average=8.47). Although further research is needed to examine the relationship between dosage and student outcomes, the programme is set to have more impact when it is integrated into the curriculum and held regularly over the scholastic year rather than as short-term, stand-alone sessions (cf. Durlak et al, 2011; diMooij et al., 2020; Grazzani et al., 2022a). However, this requires quality implementation and monitoring to make sure that the impact will be sustained over an extended period of time (di Mooij et al, 2020).

This study also shows that classroom teachers can effectively implement social and emotional learning, resilience and mental health promotion programmes in their classroom, if they are adequately trained and supported (Cefai et al., 2018; Durlak et al., 2011; Sklad et al., 2012). Adequate teacher training is a key determining factor in programme effectiveness (Domitrovich et al., 2017; Goldberg et al., 2019). Teacher education in programme implementation and in mental health literacy, resilience building, social and emotional competence, positive classroom management, and collaborative and learner-centred pedagogy, is essential for quality implementation, as well as in creating a safe, nurturing and caring environment where the programme is going to be implemented (Cavioni et al., 2020; Cefai et al, 2021). Furthermore, the teachers' own mental health and well-being is inextricably linked with that of the students, and teachers need active support to deal effectively with the challenges of their profession and to take care of their health. A recent report by Eurydice report (2021) found that almost half of teachers in lower secondary schools in the EU experience stress in their work, while close to one fourth reported that stress had a negative impact on their physical and mental health. The results of the present study show a positive effect for both students' and teachers' outcomes, clearly confirming the statement by McCallum and Price (2010): "Well teachers, well students".

PROMEHS is a whole-school mental health programme with manuals for students, teachers, parents and policy makers. A whole-school approach involving the whole-school community and both students' and adults' well-

being and mental health, requires considerable planning, resources, training and organisational support to ensure quality implementation and sustainability (Goldberg et al., 2019). Meetings with the policymakers and school leaders were held at the commencement of the project to ensure their support in the implementation, which is crucial to quality implementation and sustainability. The teacher training and manual address the teachers' self-care and well-being while the parents' meetings and manual similarly focus on how parents may promote mental health in the family, besides collaborating with the school in the implementation of the curriculum. The involvement of parents and the local community is integral to a whole-school approach to well-being and mental health (Goldberg et al., 2019), and, as in the PROMEHS programme, schools need to invest time and effort in securing the collaboration and active participation of the parents and the local community within a systemic approach to mental health promotion in school. Although the parents reported that they saw an improvement in their children's behaviour, further studies may also evaluate the programme's impact on the family.

In the implementation of the programme, the researchers worked in close collaboration with the school leaders, the teachers and the parents, providing training, resources, support and mentoring during the implementation. The teachers, parents and students were actively involved in this process. In the implementation of the programme in schools, it is recommended that schools take a bottom-up, participatory approach with the active involvement of the whole school community and make the necessary adaptations to tailor the programme to the needs of the school without, however, compromising the programme integrity (Cefai et al., 2021; Weare and Nind, 2011). Students need to be actively involved in this process, participating in the programme's planning, implementation and evaluation. A strong student voice ensures that students find the programme relevant, meaningful and easy to engage with.

Universal social and emotional learning and mental health programmes such as PROMEHS are beneficial for all students in the classroom, but they are particularly effective for disadvantaged and marginalised students

(Domitrovich et al., 2017; Durlak et al., 2011; Weare and Nind, 2011). PROMEHS had an impact on both non-disadvantaged and disadvantaged students, with no significant difference between the two. However, students from disadvantaged backgrounds had lower levels of resilience and mental health than their more advantaged peers, and they may benefit from additional targeted interventions besides the universal programme (Goldberg et al., 2019; Weare and Nind, 2011). Further studies may also focus on whether universal programmes such as PROMEHS have a differential impact on different types of disadvantage and marginalisation, such as low socio-economic level, disability and learning difficulties, and students from a migrant and refugee background. It would also be interesting to investigate whether PROMEHS, which also includes a component on resilience building and risk behaviour reduction, operates as a resilience programme by preventing the onset of mental health difficulties amongst students at risk, particularly during windows of vulnerability such as school transitions and early adolescence (Wigglesworth et al., 2020; Woods and Pooley, 2015).

5.3 Conclusion

The PROMEHS programme is a comprehensive mental health programme for early years, primary and secondary schools implemented within a whole-school approach driven and supported by the school leaders in collaboration with the whole-school community, addressing both students' and teachers' mental health and wellbeing and involving parents and families. It is one of a few programmes that seek to address both students' and teachers' well-being and mental health. Its implementation in six European countries indicates that it enhances students' social and emotional competence and prosocial behaviour and decreases internalising and externalising difficulties, and that it improves teachers' self-efficacy, resilience and social competence. Further research making use of a randomised control trial, longitudinal design with follow-up trials and supported by rich qualitative data from students, teachers and parents, is needed to confirm PROMEHS as an effective, evidence-based programme for the promotion of mental health and well-being in school.

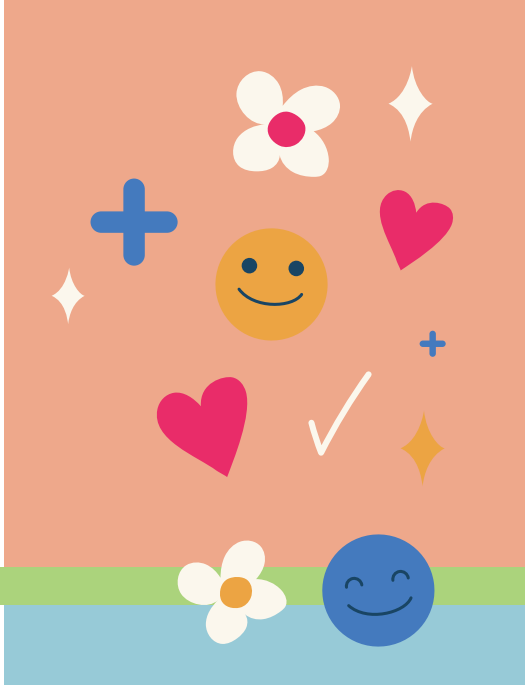
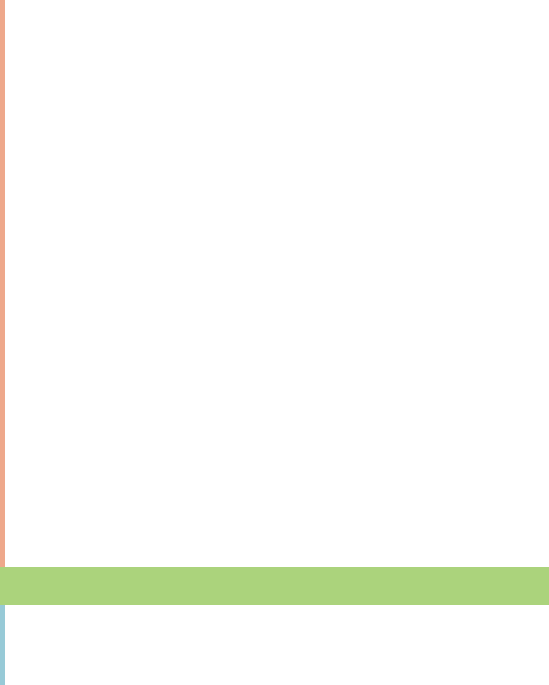
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PROMEHS
 Promoting
 Mental
 Health
 at School




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