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**Evaluating the Implementation of the MindOut Social and
Emotional Wellbeing Programme in Irish Post-Primary
Schools**

Thesis submitted for the Degree of Doctor of Philosophy

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DECLARATION

I declare that this thesis is entirely my own work, except where acknowledged.

I declare that the information contained in this thesis has not been used to obtain a degree at this or any other university.

Signed:  _____

Katherine Dowling

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ABSTRACT

Aims: The overarching aim of this thesis was to evaluate the implementation of the MindOut social and emotional learning (SEL) programme with disadvantaged post-primary school students (15-18 years old) in Ireland. This study was conducted in three phases, each of which have been published. *Phase 1* aimed to evaluate the immediate impact of the MindOut programme on students' social emotional skills, mental health and wellbeing and academic outcomes. *Phase 2* aimed to examine variability in implementation quality and to identify factors that contributed to this variability. *Phase 3* aimed to determine how implementation quality impacted on programme outcomes.

Methods: The study employed a cluster-randomised controlled design with mixed methods approaches. A total of 675 students from 32 disadvantaged schools participated at baseline and data were collected from students and teachers before, during and following programme delivery. *Phase 1* employed linear mixed models (LMM) to evaluate the effectiveness of the programme on students' outcomes. *Phase 2* used process measures to determine schools' level of implementation quality across four implementation dimensions, and to identify factors that contributed to implementation quality. *Phase 3* employed LMM's to assess the relationships between the implementation data and outcome data across three time-points and between three treatment groups (high-implementation, low-implementation and control).

Results: *Phase 1* demonstrated significant improvements in students' social and emotional skills: reduced suppression of emotions ($p=0.035$), use of more positive coping strategies [reduced avoidance coping $p=<0.001$) and increased social support coping $p=0.044$] and mental health and wellbeing: reduced levels of stress ($p=0.017$) and depressive symptoms ($p=0.030$) and reduced anxiety scores for females students ($p=0.044$). *Phase 2* detected variability in implementation quality between schools and assigned eight schools to both the high- and low-implementation groups. Influencing factors were categorised into five themes: Programme Factors, Participant Factors, Teacher Factors, School Contextual Factors and Organisational Capacity Factors. *Phase 3* revealed significant positive programme effects at post-intervention for the

high-implementation group only (reduced suppression of emotions [$p=.049$]; reduced avoidance coping [$p=.006$]; increased social support coping [$p=.009$]; reduced levels of stress [$p = .035$] and depressive symptoms [$p = .025$]. At 12-month follow-up, reduced avoidance coping [$p=.033$] was the only sustained outcome.

Conclusions: Overall, these findings demonstrate that the MindOut programme can be effective in producing positive outcomes for participants, particularly those students of disadvantaged status. However, these positive outcomes were only evident in schools that implemented the programme with high-quality, signifying the importance of implementation quality in the overall success of a programme. The findings from this study have clear implications for policy, practice and future research and highlight a number of important factors to enhance implementation quality and strengthen programme outcomes.

***Keywords:** Mental Health Promotion, Social and Emotional Learning, School-based Programmes, Adolescence, Implementation Quality, Cluster-Randomised Controlled Trial, Mixed Methods*

CONTRIBUTION TO PAPERS

Paper 1:

Dowling, K., Simpkin, A. J., & Barry, M. M. (2019). A Cluster Randomized-Controlled Trial of the MindOut Social and Emotional Learning Program for Disadvantaged Post-Primary School Students. *Journal of Youth and Adolescence*, 48(7), 1245-1263. doi:10.1007/s10964-019-00987-3

Contribution: Conceptualisation of the study, research design and methodology, developing student and teacher measures, recruitment of participants, data collection, analysis and write-up of findings.

Paper 2:

Dowling, K. Barry., M.M. (2020). Evaluating the implementation quality of a social and emotional learning program: A mixed methods approach. *International Journal of Environmental Research and Public Health*, 17 (9) 3249. doi:10.3390/ijerph17093249

Contribution: Conceptualisation of the study, research design and methodology, recruitment of participants, development of implementation measures, development of implementation index, data collection, quantitative and qualitative analysis and write-up of findings.

Paper 3:

Dowling, K. Barry., M.M. . (2020). The Effects of Implementation Quality of a School-Based Social and Emotional Well-Being Program on Students' Outcomes. *European Journal of Investigation in Health, Psychology and Education*, 10(2), 595-614. doi:10.3390/ejihpe10020044

Contribution: Conceptualisation of the study, research design and methodology, developing student and teacher measures, recruitment of participants, data collection, analysis and write-up of findings.

DEFINITION OF TERMS

To better understand and clarify the terms used in this study, the following definitions have been provided for the readers:

<i>Mental Health</i>	Mental health can be defined as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity” (WHO, 2001 pg.1).
<i>Mental Health Promotion</i>	Mental health promotion is based on a competence enhancement approach and is the process of strengthening the positive mental health and wellbeing of individuals, groups and populations (Barry et al., 2019; Jané-Llopis et al., 2005).
<i>SEL</i>	Social and Emotional Learning (SEL) in this study can be described as “the process of acquiring and effectively applying the knowledge, attitudes and skills necessary to understand and manage emotions, set and achieve positive goals, appreciate the perspective of others, establish and maintain positive relationships, make responsible decisions and handle interpersonal situations constructively.” (Elias et al., 1997).
<i>Adolescence</i>	Adolescence is a critical transitional period in a young person’s life which introduces a series of new biological, psychological and social factors that can significantly impact on person’s mental health and wellbeing. The World Health Organization (WHO) defines adolescents as those people between 10 and 19 years of age.
<i>SPHE</i>	Social Personal Health Education (SPHE) is a mandatory health education curriculum in Irish schools that aims to support the wellbeing and personal skill development of students so that they are better equipped to make informed decisions about their health, personal lives, and social development (NCCA, 2011; Nic Gabhainn, O’Higgins and Barry, 2010).
<i>Senior Cycle</i>	Senior cycle education is the period of education that follows the junior cycle in post-primary schools in Ireland and is generally taken by students between the ages of 15 and 18.
<i>Transition Year</i>	Transition Year (TY) is a one-year optional programme which acts as a bridge between the Junior Certificate programme (3 rd year; 13–15 yrs.), where learning happens in a highly structured environment; and the Leaving Certificate programme (6th year; 16–18 yrs.).
<i>Implementation</i>	Implementation refers to what a programme consists of when it is delivered in a particular setting (Durlak and Dupre, 2008).

<i>Implementation Quality</i>	Implementation quality refers to how well a programme has been delivered as intended. There are five different aspects to implementation as described by Dane and Schneider (1998), four of which are relevant to the current study: dosage, adherence/fidelity, quality of delivery, and participant responsiveness.
<i>Dosage</i>	Dosage refers to how much of the original programme has been delivered (quantity, intervention strength).
<i>Adherence/Fidelity</i>	Adherence/Fidelity refers to the extent to which specified programme components were delivered as prescribed in programme manuals.
<i>Quality of Delivery</i>	Quality of Delivery is a measure of how well the programme components were conducted that is not directly related to the implementation of prescribed content (e.g., implementer's enthusiasm, preparedness and attitudes toward programme).
<i>Participant Responsiveness</i>	Participant Responsiveness measures the degree to which the participants respond to the programme sessions (e.g., levels of participation, enthusiasm, interest).
<i>Programme Differentiation</i>	Programme Differentiation refers to the extent to which a programme's theory and practices differ from other programmes.

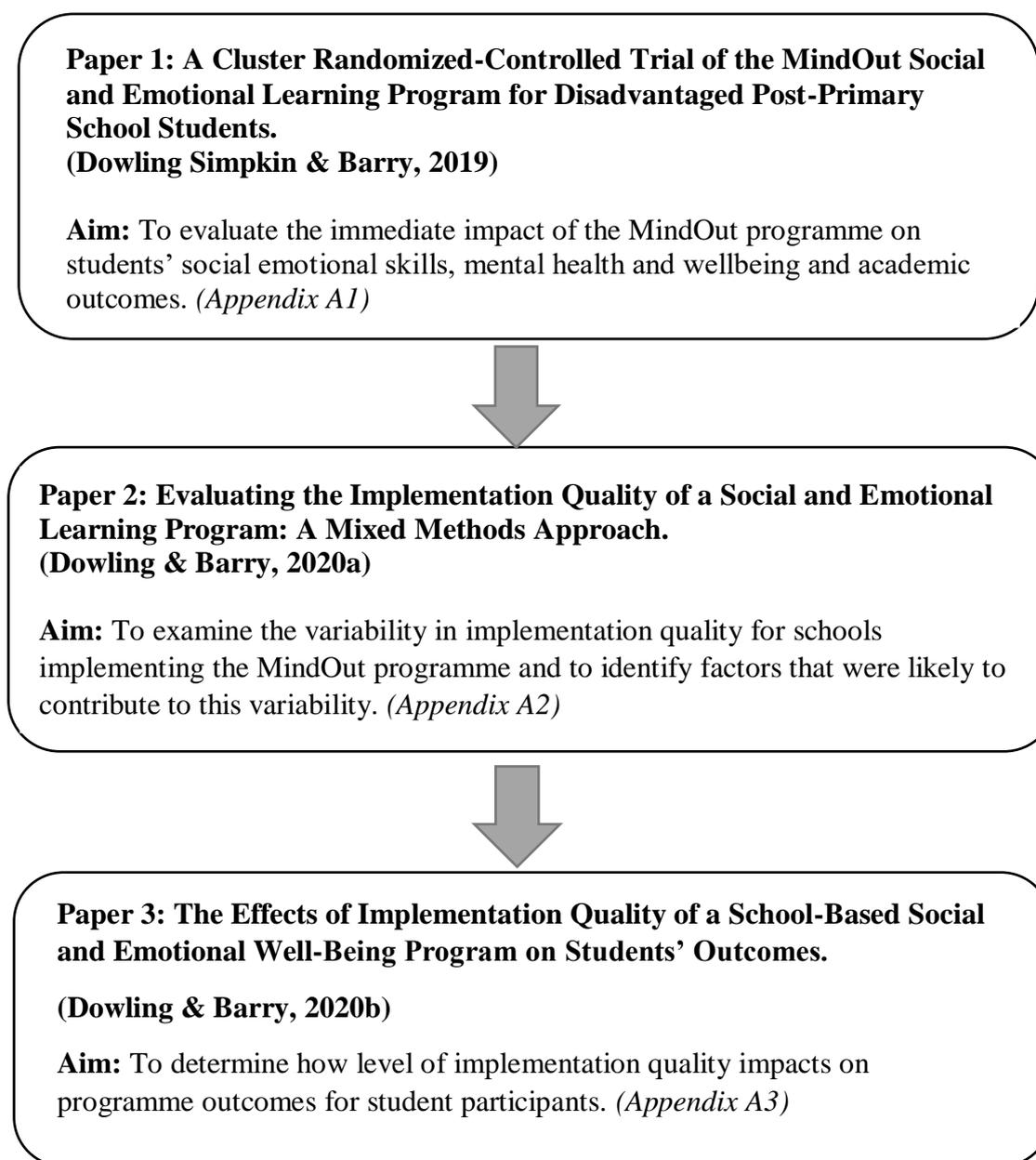
CHAPTER 1

INTRODUCTION

1.1 Purpose Statement

The overarching aim of this thesis is to evaluate both the effectiveness and implementation of the MindOut social and emotional learning (SEL) programme with post-primary school students (15-18 years old) in Ireland. The purpose of conducting this research is to contribute to the evidence, and advance knowledge in relation to the implementation and evaluation of school-based mental health promotion and SEL programmes. This study is carried out in three progressive phases, each of which, has a distinct research aim. In order to achieve all of these aims, a robust c-RCT design was used in order to evaluate the effectiveness of the programme while mixed methods approaches using both quantitative and qualitative data were used to assess implementation processes. The findings from each of the three phases of this study were submitted for publication producing three published papers. This thesis will report on and summarise the main points from each of these papers. Additional details on each phase of the study, can be found in the relevant journal articles (1-3) in Appendix A. An overview of the papers can be found in Figure 1.1 below. The remaining sections of this introductory chapter will examine the rationale for the study within the context of the current literature and will provide an outline of the structure of the thesis.

Figure 1.1: Overview of Published Papers



1.2 Rationale for the Study

The promotion of children and adolescents' mental health and wellbeing is essential to ensure healthy development and positive social and health outcomes in adulthood (OECD, 2015; Weare and Nind, 2011; WHO, 2013). The school is widely supported as an important setting for promoting social and emotional wellbeing, given its ability to reach a wide range of adolescents, including those most at-risk and who are less likely to access support and services when needed (Oberle and Schonert-Reichl, 2017; Barry, Clarke and Dowling, 2017; OECD, 2015; Durlak et al., 2011; Zins et al., 2004;

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Greenberg, 2010). Several studies support the effectiveness of school-based social and emotional learning (SEL) programmes in producing positive outcomes for young people including; improved social emotional skills, improved mental health, increased academic outcomes and the reduction of negative health and social behaviours such as substance misuse, bullying, aggression and risk-taking behaviours (Barry, Clarke and Dowling, 2017; Clarke et al., 2015; Durlak et al., 2011; Oberle and Schonert-Reichl, 2017; OECD, 2015; Sklad et al., 2012; Taylor et al., 2017; Weare and Nind, 2011). However, there are a limited number of programmes which are designed and evaluated outside of the USA and/or for older adolescents, especially those presenting higher needs such as those of lower socio-economic status (SES).

Still, the evidence in support of SEL programmes is promising, but variability and fragmentation in implementation quality of these programmes can lead to inconsistencies in outcome achievement, especially when evidence-based programmes are scaled up and delivered outside of controlled research conditions (Durlak, 2016; Durlak and Dupre, 2008; Spoth et al., 2013; Lendrum and Humphrey, 2012). Research demonstrates that the assessment of implementation quality, or rather, how well the programme delivered aligns with what was intended by developers (Carroll et al., 2007), is essential for determining the validity and overall success of a programme (Durlak, 2015; Durlak and Dupre, 2008). An essential aspect of understanding the implementation process in schools is identifying the contextual factors that influence implementation. A number of studies have explored how these external factors can impact on implementation (Fixsen et al., 2005; Schoenwald and Hoagwood, 2001) and implementation frameworks have been developed (Greenberg et al., 2005; Domitrovich et al., 2008; Durlak and Dupre, 2008) to show how factors operating at multiple levels can impact on implementation quality. A number of reviews have demonstrated the important relationship between implementation quality and programme outcomes (Durlak et al., 2011; Durlak, 2016; Wilson, Lipsey and Derzon, 2003; Rojas-Andrade and Bahamondes, 2019). However, many evaluation studies still fail to report on implementation, and those that do, do not relate implementation to outcomes. In conducting programme evaluation studies, it is essential that the systematic monitoring and evaluation of implementation is embedded as a core aspect (Durlak, 2016; Greenberg, 2010; Berkel et al., 2011).

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This study was undertaken to make a contribution to new knowledge and evidence in the fields of school-based mental health promotion and SEL. Several identified gaps which are discussed in greater detail in the literature review provide a clear rationale for carrying out this study. This study will evaluate the effectiveness and implementation of the MindOut programme with disadvantaged post-primary school students (15-18 years) in Ireland, an underrepresented population in the SEL literature. Employing a robust design (c-RCT, mixed methods, long-term), this study will not only evaluate the effectiveness of the programme through outcome assessment, but it will also examine the process of implementation and determine how level of implementation quality impacts on outcomes. The assessment of implementation quality alongside programme outcomes helps to explain variability in outcomes and clarifies why an intervention may have succeeded or failed (Dusenbury et al., 2003). Additionally, process evaluations allow for the identification of contextual factors that may impact positively or negatively on implementation quality. By studying implementation processes we can determine ‘why’ a programme worked or did not work and use this knowledge to replicate and sustain programmes in ‘real world’ settings. Therefore, this study has the potential to make a number of significant contributions to the SEL literature.

1.3 Structure of the Thesis

This thesis consists of six chapters. Following this introductory chapter, the thesis consists of a review of the literature, a summary of the methods used in each phase of the study, a summary of the findings, a discussion of these findings and a concluding chapter which discusses the implications and recommendations of the findings for research, practice and policy.

Chapter 2 will review the existing literature in relation to this study and will introduce the key concepts of this study (e.g., mental health promotion, social and emotional learning and implementation quality) by presenting the theoretical background, evidence of effectiveness and the gaps in the literature relevant to these concepts. This chapter also provides details on the MindOut programme which was evaluated in this study. The chapter will conclude with a description of the current study including the key aims of each of the three phases.

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Chapter 3 will outline the key methodological steps carried out in the study. The chapter will begin by examining the methods relevant to the study overall and following this, the chapter will explore the methods applicable to each of the three studies individually (e.g., aims and objectives, design, participants and analysis plan).

Chapter 4 presents a summary of the findings as reported in the three published papers. Additionally, it presents some additional results which were not covered in these papers but which are relevant to this study.

Chapter 5 will discuss the findings of the papers in the context of existing literature and the strengths and limitations of the study are considered.

Chapter 6 will describe the implications and recommendations of the findings for future research, practice and policy and the final conclusions to the study will be made.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive overview of the concepts surrounding the current study. To begin, this chapter will introduce the concepts of mental health and mental health promotion, specifically within the contexts of younger people, the school setting and Ireland. Next this chapter will examine the literature around two key areas of this current study, social and emotional learning (SEL) and implementation quality. The theoretical frameworks, evidence of effectiveness and identified gaps in the literature will be discussed for both of these concepts. This chapter will also outline the details of the MindOut programme including background on the development of the programme as well as a description of its key characteristics. Finally, this chapter will conclude with the proposed current study, aims and objectives.

2.2 Mental Health and Wellbeing

Mental health is a fundamental and critical aspect of an individual's overall health, wellbeing and quality of life. According to the World Health Organisation, health is defined as "*a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity*" (WHO, 2001 pg.1). This definition lends way to a number of important concepts about mental health. First, is the idea that mental health is a fundamental component of an individual's overall health and that there is "no health without mental health". Despite being recognised as central to WHO's definition of health, in comparison to physical health, mental health receives significantly less attention with regards to research, funding, and provision of services. Second, the definition highlights the interconnected relationship between mental health and physical health, whereby mental health can both influence and be influenced by physical health and vice versa. Third, the definition recognises that mental health is more than just the absence of mental illness or disorders but instead is seen as a positive concept. The WHO describes mental health specifically as "*a state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or*

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her community” (WHO, 2004, pg. 10). Therefore, mental health is viewed as a positive concept and is the foundation for wellbeing and effective functioning for individuals and whole populations.

Although the WHO defines mental health as a positive concept, this term is still largely viewed with negative connotations and often misinterpreted to mean mental ill-health. Likewise, the research and literature surrounding mental health largely focuses on treatment and prevention of mental illnesses and disorders and focuses less on positive mental health and mental health promotion (Barry et al., 2019). However, evidence suggests that the absence of mental illness does not necessarily indicate good mental health and that strategies which aim to promote positive mental health are more likely to contribute to better outcomes for individuals (Barry and Friedli, 2008; Friedli and Parsonage, 2007; Keyes, 2007; Herman and Jané-Llopis, 2005). Mental health is not a fixed state, and people experience varying levels of mental health during their lives. Stressful life events, such as losing a loved one, unemployment, bullying and relationship problems can have a negative impact on one’s mental health. On the other hand, if individuals are equipped with skills for dealing with these negative life events (e.g., coping skills, social support, resilience etc.) these can act as protective factors towards their mental health.

In light of these concepts, it is apparent that in addition to providing effective treatment for those experiencing mental ill-health, it is also necessary to implement strategies which focus on promoting and protecting individuals’ and populations’ positive mental health.

2.3 Mental Health Promotion

Mental health promotion is based on a socio-ecological model of mental health and draws on the fundamental concepts and principles of health promotion (WHO, 1986). Mental health promotion employs a competence enhancement approach and is concerned with strengthening the positive mental health and wellbeing of individuals, groups and populations (Barry et al., 2019; Jané-Llopis et al., 2005). The strategies used in mental health promotion relate to enhancing the competencies, resources and psychosocial strengths of individuals as well as enhancing the social, physical, cultural and economic environments that determine the mental health of individuals and populations (Barry et al., 2019). As a positive approach, mental health promotion

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focuses on strengthening protective factors such as assets and strengths rather than focusing on the problems, deficits or needs, and recognises that mental health is an integral part of overall health, and therefore, is of relevance to all (Barry et al., 2019; Barry and Jenkins, 2007).

Globally, there has been increasing recognition of the importance of promoting positive mental health, which has been reflected in a range of international policy documents. The WHO Mental Health Global Action Plan 2013-2020 (WHO, 2013) includes a clear focus on mental health promotion alongside prevention, treatment and recovery and recommends the adoption of a whole-of-government and whole-of-society approach to mental health promotion through four key objectives: (i) more effective leadership and governance for mental health, (ii) the provision of comprehensive, integrated mental health services in community-based settings (iii) implementation of strategies for promotion and prevention, and (iv) strengthened information systems, evidence and research.

The United Nations member states also adopted the 2030 Agenda for Sustainable Development (United Nations, 2015), which include 17 interconnected Sustainable Development Goals (SDG) for improving people's lives now and in the future. Goal #3 is *Good Health and Wellbeing*, and one of the main aims of this goal by 2030 is *“to reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and wellbeing.”* This is the first time that mental health has been recognised explicitly as an integral component of the global development agenda. The SDG's recognise the importance of addressing the wider determinants of mental health for human and global development. Many of the determinants of mental health and wellbeing (e.g., cultural, economic, environmental, political and social) are influenced by practices and policies beyond the health sector. Therefore, effective mental health promotion strategies require the development of inter-sectoral policy and actions which address the broader social determinants of population mental health (Barry et al., 2019; WHO and Calouste Gulbenkian Foundation, 2014).

2.3.1 Promoting Mental Health of Young People

Good mental health and wellbeing in childhood and adolescence is essential to ensure healthy development and positive social and health outcomes in adulthood (WHO, 2013; OECD, 2015; Weare and Nind, 2011). Investing in strengthening the

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competencies of individuals in early life prepares them for future success (Jones, Greenberg and Crowley, 2015). It is recommended that the promotion of mental health and wellbeing begins during the early developmental years and continues throughout the life course (Keyes, 2013). Whilst international research and evidence related to the promotion of positive mental health for children and young people is growing (OECD, 2015; Weare and Nind, 2011; WHO, 2013), the majority of this research tends to focus on the child and younger adolescent populations and there is a lack of evidence on the effectiveness of these strategies and interventions for older adolescents. This lack of continuity of programmes between the early years into adulthood not only places older adolescents at a disadvantage in regards to their mental health and wellbeing, but it is also likely to diminish any investments and efforts put in place during the early years.

Adolescence is a critical transitional period in a young person's life which introduces a series of new biological, psychological and social factors that can significantly impact on person's mental health and wellbeing. These vital adolescent years between childhood and adulthood (10-19 years; WHO, 2014) can be characterised by many significant changes such as identity formation, important life decision-making, the establishment of new social and intimate relationships, and an increased exposure to a series of stressors (e.g., bullying, social and academic pressures, relationships and body-image issues). These new unfamiliar changes and experiences can pose increased risks to young peoples' mental health and wellbeing if they are not equipped with the appropriate skills and competencies to deal with these. As well, the economic, social and cultural climate creates a number of challenges globally for young people such as youth unemployment, migration and increased levels of mental health problems and youth suicide (Thomson et al., 2014; Patel et al., 2007; European Union, 2016). Research suggests that half of lifetime mental disorders have arisen by the age of 14 years, with this rising to 75% between the ages of 15-25 (Kessler et al. 2005; Kim-Cohen et al. 2003; Cannon et al., 2013). Additionally, suicide is the second leading cause of death of 15-29 year olds worldwide with Ireland being among the highest youth suicide rates in the EU (Thomson et al., 2014). Young people from disadvantaged backgrounds are at an even higher risk of poor mental health, as well as early school leaving, youth unemployment and social exclusion (OECD, 2015; Kiely, Leahy-Warren and Weathers, 2014; Montgomery 2011; Patel et al., 2007). While early intervention is beneficial for young people's mental health and wellbeing, adolescence

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is identified as a particularly sensitive period for social and emotional skills development, which are regarded as being more malleable at this age (OECD, 2015). Therefore, more attention needs to be given towards strategies to promote the mental health and wellbeing of adolescents, particularly older adolescents and those who are disadvantaged.

2.4 Mental Health Promotion in Schools

The school is an ideal setting for promoting positive mental health and wellbeing of young people and the schools' role in promoting the social, emotional and mental wellbeing of students has been widely supported (Oberle and Schonert-Reichl, 2017; Barry, Clarke and Dowling, 2017; OECD, 2015, Durlak et al., 2011, Zins et al., 2004). Educational settings offer opportunities to promote mental health and wellbeing of all students universally while also providing opportunities to prevent mental health problems through more targeted and preventative approaches. There are several reasons that schools are optimal settings to deliver mental health promotion strategies. Other than the home, young people spend a majority of their waking time in schools, meaning that this is where a great deal of their learning and development happens during their formative years (Jones and Bouffard, 2012; Roeser, Eccles and Sameroff, 2000). The school environment can have a significant influence on young people's development and behaviour (Wells et al., 2003). Furthermore, the school setting provides opportunities to reach a majority of young people given that a large proportion of children and adolescents attend school. In fact, 90% of young people 4-17 years from OECD countries are in education (OECD, 2018). This makes it easier to reach a majority of young people, especially those at-risk youth that might be difficult to connect with through interventions offered in community settings. Although some vulnerable children and adolescents may be excluded from this demographic, schools still provide the best chance at reaching as many young people as possible through universal approaches. Additionally, the classroom environment and wider school setting provides a socialising context, which is conducive to the development of a number of personal and social life skills such as emotional regulation, coping skills, building and maintaining relationships, conflict resolution and problem-solving. Finally, given that the goals and missions of schools closely align with the goals of mental health promotion, as well as the pre-existing organisational structure of schools,

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schools are a natural environment for the introduction, delivery and sustainability of these programmes (O'Reilly et al., 2018).

Many educators, parents, policy makers and other members of the educational community agree, that it is the duty of schools today to teach beyond basic academic curriculum (reading, writing, numeracy etc.) towards a focus on the development of the 'whole child' (Greenberg et al., 2003; Bridgeland, Bruce and Hariharan, 2013; Hamilton, Doss and Steiner, 2019; Darling-Hammond et al., 2019; Greenberg et al., 2017). This requires educators to find a balance between teaching students cognitive, social, and emotional competencies which are essential in preparing them for school, work and life challenges, as well as academics (Greenberg et al., 2003; Domitrovich et al., 2017; Jones and Bouffard 2012; Elias et al., 1997). Evidence also suggests that promoting the positive mental health of students can have a direct positive impact on their academic performance and lifelong learning (Zins et al., 2004). Therefore, wellbeing and learning are inextricably connected and while academic outcomes remain the top priority for schools, by prioritising students' mental health and wellbeing, schools can improve educational outcomes as well (Kickbush, 2012).

The role of the school as a key setting for promoting mental health and wellbeing has been endorsed in a number of policy documents both internationally and nationally. The World Health Organization (WHO, 2013) acknowledges the role a school plays, not only in nurturing students' academic development, but their social and emotional development as well (WHO 1997; Elias et al. 1997; Weare 2000). Additionally, the *EU Joint Action for Mental Health and Wellbeing* (JA-MH-WB and EU, 2016), endorses the school as a core setting for promoting social, emotional and mental wellbeing and recognises the importance of implementing evidence-based interventions in schools to protect the mental health and wellbeing of children and adolescents. The WHO's *Health Promoting Schools* (HPS) framework recognises that all dimensions of health are interconnected and that they influence, and are influenced by the school environment (HSE, 2013). Evidence on HPS also suggests that social factors (e.g. student-teacher and teacher-teacher interactions, school culture, classroom climate, peer group relationships) have the greatest influence on learning, therefore, by adopting policies and practices which promote social inclusion, schools can facilitate increased learning outcomes, social-emotional wellbeing, and reduce young peoples' negative health outcomes and risk behaviours (DES, HSE, DoH, 2013).

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There are a range of approaches for promoting mental health in the school setting and extensive evidence which supports these different approaches (Clarke et al., 2015; Barry et al., 2019; Weare and Nind, 2011; O'Reilly et al., 2018). These can be divided into three key groups:

1. *Whole-school interventions* – create a supportive context within the school as a whole and involves coordinated action between three components: (1) curriculum and teaching, (2) school ethos and environment, (3) family and community partnerships.
2. *Universal classroom skills-based interventions* – teaches skills to all students in a classroom through a developmentally appropriate curriculum which aims to enhance their mental health and wellbeing.
3. *Targeted interventions* – designed for students identified as higher risk and aims to strengthen their coping skills and reduce the risk of negative mental health outcomes.

2.4.1 Best Practice for Promoting Mental Health in Schools

Clarke (2019) outlines eight best practice characteristics of successful school-based programmes based on current evidence regarding what works. These characteristics are explored in more detail below (Figure 2.1).

Figure 2.1: Best Practices for Promoting Mental Health in Schools

1. **Theory-based interventions:** Programme should be grounded on theoretically sound theories of child development and learning.
2. **Adopting a social competence approach:** Teaching cognitive, social and emotional skills and competencies rather than focusing on the prevention of specific problem behaviours or risks factors (Clarke et al., 2015; Greenberg, Domitrovich & Bumbarger, 2001; Weare and Nind, 2011).
3. **SAFE practices:** Four core practices which contribute to the effectiveness of social and emotional learning strategies (Durlak et al., 2011):

Sequenced activities that are coordinated and connected.

Active forms of learning which use dynamic and different forms of learning that engage students and enable them to actively practice the skills themselves.

Focused on developing on or more skills

Explicit about targeting social and emotional skills rather than positive development more generally.

4. **Interventions over multiple years:** Evidence indicates that once-off or short-term interventions are not likely to produce long-term effects and that interventions should start early and continue over multiple years (Weare and Nind, 2011).
5. **Adopting a whole-school approach:** Curriculum-based programmes alone are not enough for optimal and sustained impact. Therefore, curriculum strategies need to be placed within a whole school approach which takes into account the school environment as well as partnerships with the family and community (Clarke et al., 2015; Goldberg et al., 2018; Jane-Llopis et al., 2005; Oberle et al., 2016; Weare and Nind, 2011). However, whole school approaches require coordinated implementation approaches to be successful.
6. **High-quality implementation:** The level and quality of implementation can significantly impact the effectiveness of a programme and a number of contextual factors can impact quality implementation.
7. **System wide support:** Good quality SEL in classrooms is influenced by characteristics at the classroom, school and broader system level. Therefore support and active participation of stakeholders from relevant sectors such as education and health is necessary in supporting best practice SEL.
8. **Evaluation:** Incorporating systematic evaluation methods ensures the ongoing improvement and sustainability of school-based programmes. These evaluations should take into account both the immediate and long-term outcomes of the programme as well as the implementation process to ensure effective future delivery.

2.5 Social and Emotional Learning

In regards to promoting mental health and wellbeing within the context of schools, interventions which promote the development of social and emotional skills and competencies have been shown to be the most effective strategies for targeting all students at a universal level. Over the last three decades, the concept of Social and Emotional Learning (SEL) has been used as an umbrella term to describe these types of competence-enhancement approaches particularly within school settings. Elias et al., (1997) describes SEL as the process of acquiring and applying the knowledge, attitudes and skills necessary to understand and manage emotions, set and achieve positive goals, appreciate the perspectives of others, establish and maintain positive relationships, make responsible decisions and handle interpersonal situations constructively (Elias et al., 1997; Weissberg et al., 2015; Osher, et al., 2016).

According to the Collaborative for Academic, Social and Emotional Learning (CASEL) in the United States, SEL consists of five interrelated sets of cognitive, emotional and social competencies: self-awareness, self-management, social awareness, relationship management and responsible decision-making which create a framework for effective programme design, development and delivery (CASEL, 2015). These five competencies are described in greater detail below.

Competency 1: Self-Awareness

Self-awareness is defined as the ability to recognise and label one's emotions and understand what causes these feelings. It also involves accurately assessing one's strengths and challenges and possessing a well-grounded sense of confidence and self-esteem.

Competency 2: Self-Management

Self-management is described as the ability to regulate one's emotions, thoughts and behaviours effectively. It involves being able to manage stress and acquire effective coping strategies for dealing with stressful situations. Additionally, self-management includes being able to control impulses and the ability to motivate oneself to overcome obstacles and achieve personal goals.

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Competency 3: Social Awareness

Social Awareness is defined as the ability to take the perspective of and empathise with others. It involves being able to appreciate and respect diversity and recognise sources of support in one's family, school and community network.

Competency 4: Relationship Management

Relationship management involves being able to establish and maintain rewarding relationships with diverse individuals and groups. This involves communicating appropriately, resolving conflict constructively and resisting inappropriate social pressure. It also reflects being able to seek help and offer help to others when needed.

Competency 5: Responsible Decision Making

Responsible decision making is described as the ability to make constructive choices about behaviour and social interactions based on personal, moral and ethical responsibility. It involves being able to identify problems and use problem solving techniques while considering the wellbeing of oneself and others.

Through education and development of these social and emotional competencies, effective SEL programmes not only increase young people's wellbeing but can also demonstrate improvements in their academic outcomes and wider personal development (CASEL, 2003). CASEL's framework (Figure 2.2) is presented as a system, similar to that of Bronfenbrenner's ecological systems theory (1979) or Dahlgreen and Whitehead's Social Determinants of Health model (1991), whereby the individual's SEL core competencies are within the center, and surrounded by social and environmental systems/contexts. CASEL's framework proposes that social and emotional skill development occurs and is influenced by: (i) curriculum and classroom environment; (ii) wider school practices and policies; as well as (iii) family and community partnerships. These outer rings of CASEL's framework are a close reflection of the three levels of the WHO's Health Promoting Schools Framework which proposes that health can be promoted at three connecting levels within schools – the curriculum; the wider school ethos and environment; and family and community partnerships (Langford et al., 2017). Schools play a significant role in both developing these skills in young people and increasing access to wider opportunities that will enable the development of these skills (McNeil, Reeder and Rich, 2012).

Figure 2.2: CASEL’s Competency Framework



CASEL (2017)

2.5.1 Evidence for Social and Emotional Learning in Schools

The introduction of SEL into schools not only provides opportunities for young people to develop a number of critical skills for life (e.g., problem-solving, creativity, communication, responsible decision making and critical-thinking), but it can also positively impact a number of life outcomes including educational attainment, employment and health (Durlak et al., 2011; Taylor et al., 2017; Jones, Greenberg and Crowley, 2015). However, failure to achieve competence in these areas can lead to a number of personal, social and academic difficulties (Durlak et al., 2011; Epstein, Griffin and Botvin, 2002; Guerra and Bradshaw 2008; OECD, 2015).

There is well established and consistent evidence that delivering school-based SEL programmes can produce positive improvements on young people’s emotional, social and behavioural functioning as well as their mental health and wellbeing (Barry, Clarke and Dowling, 2017; Clarke et al., 2015; Barry et al., 2013; Weare and Nind, 2011; Durlak et al., 2011; Payton et al., 2008; Adi et al., 2007; Jané-Llopis et al., 2005; Zins et al., 2004; Wells et al., 2003; Greenberg, Domitrovich and Bumbarger, 2001). These programmes have also been shown to protect young people by reducing their emotional distress, conduct problems and risky behaviours (Taylor et al., 2017; Sklad et al., 2012;

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Durlak et al., 2011; Weare and Nind, 2011; Adi et al., 2007). There is also increasing evidence, mainly originating from the USA, which demonstrates the strong relationship between social and emotional wellbeing and academic success. A number of studies assessing the impacts of programmes that promote students' social and emotional skills have demonstrated a number of educational gains including improved school attendance, higher academic motivation, stronger feelings of school-connectedness, improved morale and higher academic achievement (Zins et al., 2004; Durlak et al., 2011; Payton et al., 2008; Durlak, 1995; Durlak and Wells, 1997; Catalano, 2002). On the other hand, evidence suggests that increased emotional, social and behavioural problems can act as barriers to learning and educational outcomes (Kremer et al., 2016; Rimm-Kaufman et al., 2009).

One of the most relevant meta-analyses in the area of social and emotional wellbeing programmes was conducted by Durlak et al. (2011), which examined 213 universal school-based interventions, a majority of which were implemented in the United States. The findings from this review demonstrated that students who participated in social and emotional learning programmes presented improvements in a number of outcomes including: improved social and emotional skills (mean ES=0.57); improved attitudes towards self, school and others (mean ES=0.23); increased positive social behaviour (mean ES=0.24); decreased conduct problems (mean ES=0.22); and reduced emotional distress (mean ES=0.24). The review also revealed that not only did these programmes impact students' social and emotional skills positively, they also significantly improved students' academic performance (mean ES=0.27), with an average of an 11 percentile-point gain.

A more recent meta-analysis examining the follow-up effects of these school-based SEL interventions was also conducted. Taylor et al. (2017) studied the longer-term effects of 82 school-based universal SEL interventions reviewed by Durlak et al., (2011). The findings show that at follow-up (ranging from 6 months to 18 years), students who participated in SEL interventions, in comparison to control groups, were more likely to have: improved SEL skills (mean ES =.23); improved attitudes towards self, school and others (ES=.13); positive social behaviour (ES = .13); decreased emotional distress (ES=.16); reduced conduct problems (ES=.14); and drug use (ES=.16). Students who participated in the SEL programmes were also more likely to show improved academic performance (ES= .33) in comparison to non-participating students. These findings endorse the durability of the impact of school-based SEL

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approaches in promoting the positive social, emotional and academic development of young people and reducing the risk of mental health and behavioural problems.

Another meta-analysis (Sklad et al., 2012), reviewed universal school-based SEL programmes and found a number of promising outcomes across several categories including social skills, prosocial behaviour, positive self-image, mental health, antisocial behaviour, substance misuse and academic achievement. In this study, they compared programmes in the USA to SEL programmes delivered in other countries and found similar effect sizes, which demonstrates that SEL programmes can be effective in different cultural contexts. There have been a number of additional reviews which support the above findings (Weare and Nind, 2011; Goldberg et al., 2018; Adi et al., 2007).

Additionally, a number of studies have evaluated the economic case for investing in school-based mental health promotion interventions. A review by Belfield et al., (2015) estimated an average return on investment for SEL programmes of \$11 for every dollar invested, while another study report a ratio of 25:1 for high-quality programmes that impact on young people's mental health and wellbeing. Additionally, Knapp and colleagues (2011) found that school-based programmes can save money for the public sector with savings related to reduced crime, improved education and improved employment outcomes. Improved outcomes in relation to earning power as an adult has also been reported for children who were exposed to SEL programmes (Heckman 2006).

2.6 Promoting Adolescent's Mental Health within the Irish Context

Findings from Ireland's national survey on youth mental health, *My World Survey* (Dooley and Fitzgerald, 2012; Dooley et al., 2019), indicate that a majority of mental health problems among young Irish people emerge in early adolescence and peak in late teens. One in five young Irish people (11-15 years) report experiencing two or more psychological symptoms (e.g., feeling low, irritability, nervousness, sleep difficulties etc.) more than once a week (UNICEF, 2017). Ireland is ranked well above the international average as the fourth highest country for adolescent (15-19 years) suicide across the 31 OECD and EU countries, and is the highest rated European country of female youth suicides (UNICEF, 2017). The economic crisis in Ireland and other European countries has also led to increased challenges for the younger

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generation, including rising youth unemployment, migration and school-drop out (European Union, 2016), placing youth facing this type of disadvantage at an increased risk of developing mental health difficulties, self-harming and death by suicide (Dooley et al., 2019; OECD, 2015). Ireland also had the highest rate of youth unemployment and disability benefit receipt across the 35 OECD member states (OECD, 2016) and 12% of young Irish people (15-29 years) are not in education, employment or training (NEETs) (OECD, 2020), which places them at greater risk of developing mental health difficulties (OECD, 2016).

2.6.1 Social Personal Health Education (SPHE) Curriculum

In Ireland, the Social, Personal and Health Education (SPHE) curriculum creates a space to support the delivery of SEL programmes. The SPHE curriculum was first introduced cross-nationally into post-primary schools in 2000. The curriculum provides a comprehensive approach and aims to provide young people with an opportunity to develop new skills and competences which enable them to participate as active and responsible adults in the personal and social aspects of society (NCCA, 2011). The SPHE framework suggests that *'a young person who has a high degree of self-worth, a sense of security and a positive self-image will be more pre-disposed to school life and the variety of learning situations it offers'* (NCCA, 2011).

SPHE in senior cycle is built around five areas of learning: mental health, gender studies, substance use, relationships and sexuality education and physical activity and nutrition. The objectives for SPHE in senior cycle as identified by the National Council for Curriculum and Assessment (NCCA, 2011) can be found in Figure 2.3.

Figure 2.3: SPHE Objectives Senior Cycle

<p>SPHE Objectives:</p> <ul style="list-style-type: none">• Develop self-awareness through opportunities to reflect on thoughts, values, attitudes and feelings.• Enhance students' knowledge and understanding of essential health concepts and the wider influences on health and wellbeing to enable informed decision making.• Develop students' self-efficacy; the confidence to think and behave independently especially in the face of social pressure.• Strengthen students' capacity to empathise with another person's situation, feelings and motives in order to enhance relationships with other people.• Develop coping strategies for adolescence and adult life in support of greater resilience.• Develop students' health literacy skills, including the ability to obtain, critically evaluate and act on health information in support of health and wellbeing.• Develop a willingness to participate in the creation and maintenance of healthy communities and environments.
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(NCCA, 2011)

The objectives of SPHE in senior cycle align closely with the core goals and aims of SEL, making the SPHE curriculum a supportive context for the adoption, delivery and sustainability of SEL and mental health promotion programmes. The SPHE framework also recognises the importance of a positive school climate in enhancing students' wellbeing by providing an environment in which the core principles of SPHE can thrive (NCCA, 2011).

2.6.2 Irish Policies and Frameworks

The importance of wellbeing and the potential of the school as a setting for mental health promotion has been endorsed in a number of major national policy documents. The *Wellbeing Policy Statement and Framework for Practice 2018-2023* prepared by the Department of Education and Skills (DES, 2018) recognizes that the promotion of wellbeing is central to the Department's mission to enable children and young people to achieve their full potential and contribute to Ireland's social, cultural and economic development. The DES acknowledge that the promotion of students' wellbeing is a top priority and that it is their role, in collaboration with the Department of Health (DoH) and the Department of Children and Youth Affairs (DCYA), to ensure that young

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people's wellbeing is promoted. The policy statement identifies the educational system as a key setting for promoting wellbeing by equipping young people with the knowledge, skills and competencies they need to deal with the challenges that impact on their wellbeing. Additionally, the *Wellbeing for Post- Primary Schools Guidelines* (2013), recognise schools as an ideal setting for promoting social and emotional wellbeing as they have the ability to reach a majority of young people during their formative years as well as provide a socialising context which can have a significant impact on their development (DES, HSE, DoH, 2013). Similarly, the *Healthy Ireland* (DOH, 2013) and the *Better Outcomes Brighter Futures* (DCYA, 2014) policy frameworks in Ireland acknowledge the critical role of schools in helping to protect young people's mental health and wellbeing. The Irish National Suicide Prevention Strategy, *Connecting for Life* (DOH, 2015), clearly identifies the need to support the mental health and wellbeing of young people as a priority group and takes this one step further in encouraging schools to deliver SPHE programmes at senior cycle level. The National Council for Curriculum and Assessment (NCCA) introduced the Framework for Junior Cycle (NCCA, 2017) which also acknowledges the importance of wellbeing in post-primary schools. This framework proposes that 300 mandatory hours are given to wellbeing within the new junior cycle (11-15 years) curriculum. As of yet, these hours have not been made mandatory during the senior cycle (15-18 years) curriculum in Ireland.

2.6.3 Existing SEL programmes

There have been evidence-based programmes implemented in Ireland such as *Zippy's Friends* and *FRIENDS for Life* which adopt a SEL approach in order to promote the use of skills to combat and protect against mental health risk factors. Both of these programmes have been shown to produce positive findings for participants (Clarke et al., 2014; Henefer and Rodgers, 2013). However, the majority of evidence-based SEL programmes in Ireland such as *Zippy's Friends* (5-8 years old) and *FRIENDS for Life* (9-16 years old) are primarily designed for younger audiences. While mental health and wellbeing is a concern for people of all ages and that early intervention is key, it is also vital that programmes do not overlook the older adolescent age group, a critical period when many new challenging experiences and stressors occur. Furthermore, it is important that programmes which aim to promote SEL are based on the most up-to-date evidence and best practice and are grounded in a structured framework. It is also

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essential that they reflect the current needs of, and are developmentally-appropriate and culturally relevant for the target population (Osher et al., 2016). Therefore, while Ireland has made promising efforts to develop and implement SEL in schools, there remains a gap in producing relevant and effective programmes for the older adolescent age group.

2.8.1 Re-development of the MindOut Programme

The MindOut programme is a universal school-based programme designed to be delivered by teachers to promote the social and emotional wellbeing of adolescents aged 15-18 years old in post-primary schools. This programme was first developed in 2004, with support from the national Health Service Executive (HSE) and has been successfully implemented through the SPHE senior cycle curriculum, in post-primary schools across Ireland. While initial evaluations of the MindOut programme showed a number of positive effects for students (Byrne, Barry and Sheridan 2004; Byrne, 2005; Byrne, Barry, Nic Gabhainn and Newell, 2005), teachers, students and other stakeholders expressed a desire for the programme be updated to be more relevant to the lives of young Irish people today and to reflect the most recent developments in research, policy and practice both internationally and within Ireland.

The revision of the MindOut programme involved a thorough process that was informed by three principal sources; (i) a review of existing resources to identify common elements and core components of evidence-based interventions; (ii) consultation with programme users (e.g., teachers and youth); and (iii) consultation with a National Working Group representing key national stakeholder organisations. The three stages of the re-development process are described in further detail below:

- (i) In reviewing existing resources, successful evidence-based programmes were examined and the common elements of these interventions were identified. This process was based off of similar work done by Boustani et al., (2015) on adolescent prevention programmes. While a systematic coding process was not employed, a number of common practice and instructional elements were identified through a mapping process. The common practice elements that were present in all of the school/youth programmes examined included: recognizing and managing emotions, managing thoughts, positive thinking and coping

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skills. The most common instructional elements present in the reviewed programmes included: collaborative learning, group discussion, reflection, games and use of scenarios and worksheets. The MindOut programme is underpinned by the Collaborative for Academic Social and Emotional Learning (CASEL) theoretical framework for social and emotional learning (CASEL, 2015) and the most potent common practice and instructional elements identified during the mapping process were aligned with CASEL's five core competencies and embedded into the programme. The programme is also underpinned by some of the best practice guidelines for promoting mental health in schools including employing a social competence approach and the use of SAFE practices (Barry et al., 2019; Durlak et al., 2011; Greenberg, Domitrovich and Bumbarger, 2001; Weare and Nind, 2011).

- (ii) Consultations were carried out with students and teachers in an effort to identify programme user needs and ensure that these needs were met within the updated programme (Barry, Clarke and Dowling, 2017; Dowling et al., 2016; McCrohan, 2015). Interviews with teachers (n=5) and participatory workshops with students (n=55; 62% male) who had participated in the original programme were conducted to ascertain their feedback on core elements (e.g., content, instructional strategies, language etc.), priority issues for inclusion, and to ensure that the programme was age and culturally relevant for older Irish adolescents. A secondary consultation was conducted with a small group of youth (n=7) recruited through a national youth organization who assisted in drafting age-appropriate, real-life scenarios based on the priority issues previously defined by students. At a later stage in the development process, this group also contributed in reviewing and providing feedback on each of the revised programme sessions.
- (iii) Throughout the development process, a National Working Group, which included key stakeholders from education, health promotion, educational psychology and mental health services, were consulted to determine their recommendations for strengthening the programme and its potential outcomes. Further details on the development process can be found in relevant documents (Barry, Clarke and Dowling, 2017; Dowling et al., 2016). The revised programme, which was written in consultation with young people and the National Working Group, was piloted with five post-primary schools to assess

the feasibility of its implementation in schools (see Dowling, Clarke and Barry, 2016 report for further details). Feedback from the pilot phase was then used to make further adaptations to the programme.

2.7 Implementation Quality

Given the positive findings for SEL programmes cited in the literature, it would seem clear that schools would benefit from adopting these types of programmes. However, although evidence-based programmes show promising results, they are unlikely to have a positive effect on participant outcomes without high-quality implementation (Lipsey, 1999; Durlak and Dupre, 2008; Meyers, Durlak and Wandersman, 2012; Domitrovich et al., 2008; Durlak et al., 2011; Wilson, Lipsey, Derzon, 2003).

Implementation refers to a set of efforts to put a programme or initiative into practice (Fixsen et al., 2005; Durlak, 2015). Implementation quality refers to the degree to which programmes are implemented as intended by the programme developers (Dusenbury et al., 2003; Carroll et al., 2007; Durlak, 2016). Research indicates that implementation quality is a critical predictor of programme outcomes and the overall effectiveness of an intervention (Dusebury et al., 2003). This idea is also sometimes referred to as ‘fidelity’ or ‘integrity’ (Carroll et al., 2007; Dusenbury et al., 2003; Dane and Schneider, 1998). When implementation quality is strong, intervention effects are much higher, in the same way, programmes may fail to achieve intended outcomes when implementation quality is poor (Durlak and Dupre, 2008). To increase the likelihood of producing successful outcomes, programmes not only need to be underpinned by strong evidence-based approaches, but need to be implemented with high-quality as well (Metz, Blasé and Bowie, 2007).

There are several reasons that support the need to study implementation. For one, it provides information on what actually happened during the delivery of the programme (e.g., what was delivered, the quality of delivery and target audience reached). This information is useful in explaining variations in observed changes in outcomes and explaining why an intervention may have succeeded or failed (Dusenbury et al., 2003). Related to this, assessment of implementation helps establish the internal validity of a programme, thus strengthening any conclusions that can be made about the programme’s role in producing change (Domitrovich and Greenberg, 2000; Lendrum and Humphrey, 2012; Gresham et al., 1993). Furthermore, evaluating implementation

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helps to understand a programmes' strengths and weaknesses as well as the core elements of the intervention and/or support system that are associated with outcomes (Gottfredson et al., 2008; Domitrovich et al., 2008). This information provides feedback for continuous quality improvement in programme delivery. Early monitoring of implementation can identify problems in programme application that can be corrected quickly to ensure better outcomes (Durlak and DuPre, 2008; Domitrovich and Greenberg, 2000). Finally, by studying implementation we can also contribute to the advancement of knowledge on best practice for replication in 'real world' settings (Domitrovich and Greenberg, 2000; Lendrum and Humphrey, 2012). Barry and colleagues (2005) state that these data are critical to the effective dissemination of programmes, particularly when they are exchanged between different countries or settings.

2.7.1 Evidence for the Importance of Implementation Quality

A number of meta-analyses have shown a clear positive relationship between the quality of implementation and programme outcomes (Durlak and Dupre, 2008; Fixsen et al., 2005). For example, a review of school-based prevention programmes determined that implementation quality was the most important factor that influenced outcome achievement (Wilson, Lipsey and Derzon, 2003). Research studies have also shown how level of implementation quality can impact on outcomes demonstrating participants in higher implementation groups benefitting up to twelve times more from the programme in comparison to low implementation groups (DuBois et al., 2002; Durlak and Dupre, 2008; Smith et al., 2004; Wilson, Lipsey and Derzon, 2003). A meta-analysis of 196 school-based violence prevention programmes demonstrated that implementation quality was the single most important contributing factor to the programme achieving higher effects sizes (Wilson and Lipsey, 2000). Studies that have assessed the implementation quality of programmes have provided evidence that programmes implemented with a higher degree of quality are more likely to produce successful outcomes (Dane and Schneider, 1998; Durlak and Dupre, 2008; Sklad et al., 2012) and that effective best-practice programmes may not demonstrate promising outcomes if the quality of implementation of these is poor. Additionally in a review by Durlak and colleagues (2011), they concluded that schools that delivered SEL programmes with high implementation fidelity or high quality showed significantly

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higher student outcomes in comparison to schools where teachers delivered the programmes with low implementation. The findings from these meta-analyses indicate just how crucial quality of implementation is in producing positive outcomes. By ignoring implementation and the conditions under which a programme is delivered, it is impossible to determine what led to a programme's success or alternatively what caused it to fail. The absence of information on implementation could be detrimental to the future success and sustainability of SEL programmes. Not only that, but poor implementation quality could have negative short- and long-term costs on society. Therefore, given that there is strong evidence demonstrating the relationship between programme implementation and outcome attainment, it is essential that the systematic monitoring and evaluation of implementation is embedded as a core aspect of all programme evaluation studies (Durlak, 2016; Greenberg, 2010; Berkel et al., 2011).

2.7.2 Lack of Research on Implementation Quality

Although the evidence is growing in support of assessing implementation quality of programmes, a majority of programme evaluation studies still tend to direct their focus towards programme outcomes exclusively. For example, a review by Dane and Schneider (1998) of $n=132$ programmes found that only 24% of mental health prevention interventions assessed elements of implementation, with even fewer, 10%, considered how variability in implementation impacted on programme outcomes. A later review by Domitrovich and Greenberg (2000) found similar findings with only 11 out of 34 evidence-based mental health programmes using implementation data as a source to determine programme outcomes. Since these, more recent reviews have demonstrated that studies reporting on implementation data have been increasing over time. Durlak and colleagues (2011) found 57%, Wigglesworth et al., (2016) 69%, and Taylor et al., (2017) 79% of programmes reported on implementation data. While this increase in reporting on implementation is promising, it should be noted that these reviews do not include data on the extent to which implementation was reported in the studies. Therefore, based on the data offered in these review studies, it is impossible to conclude how these implementation data were used and whether or not implementation quality was measured.

A study by Bruhn, Hirsch and Lloyd (2015) explicitly assessed the extent to which treatment integrity (also known as implementation quality) was reported in studies ($n=79$) of school-based prevention programmes. Results from this study indicated that

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less than half of the studies (46%) included quantifiable treatment integrity data. This finding is in line with other research studies that examined the extent to which implementation quality data are reported more systematically (Hagermoser-Sanetti and Fallon, 2011; McIntyre et al., 2007; Power et al., 2005). Therefore, while the reporting of implementation data appears to be increasing, upon closer inspection of the data it is apparent that a majority of studies are providing implementation data that cannot be used to determine the quality of implementation or integrity of the programme (Humphrey, Barlow and Lendrum, 2018; Power et al., 2005) Therefore, a gap remains in producing studies which examine implementation quality and further how the quality of implementation impacts on participants' outcomes.

2.7.3 Conceptual Implementation Frameworks

A number of different theories, models and frameworks to promote the implementation and scale-up of programme interventions can be identified from the literature. According to Nilsen (2015), theoretical/framework approaches in implementation science have three key aims: (i) describing/guiding the translation of research into practice; (ii) understanding what influences implementation outcomes; and (iii) evaluating implementation. For the purpose of this study, the focus is placed on the second aim, through the identification and description of factors that have been found to influence implementation quality and in turn, the intended outcomes. These types of implementation frameworks have been described as gateways into the key enablers and barriers associated with implementation quality (Flaspohler, 2008).

The field of evaluation research has increasingly moved away from traditional programme evaluations, which rarely focus on why a programme is effective, towards the development and application of theory-driven evaluations (Chen, 1990, 1998; Chen and Rossi, 1992; Greenberg et al, 2003; Dariotis et al., 2008). Theory driven evaluations aim to: (i) utilise the essential components of the theory that underlies a particular programme to specify the design of the programme evaluation itself; (ii) understand *how* and *why* a particular programme resulted in certain outcomes; and (iii) use this information as a means to improve programme effectiveness (Chen, 1990, 1998; Greenberg et al., 2005).

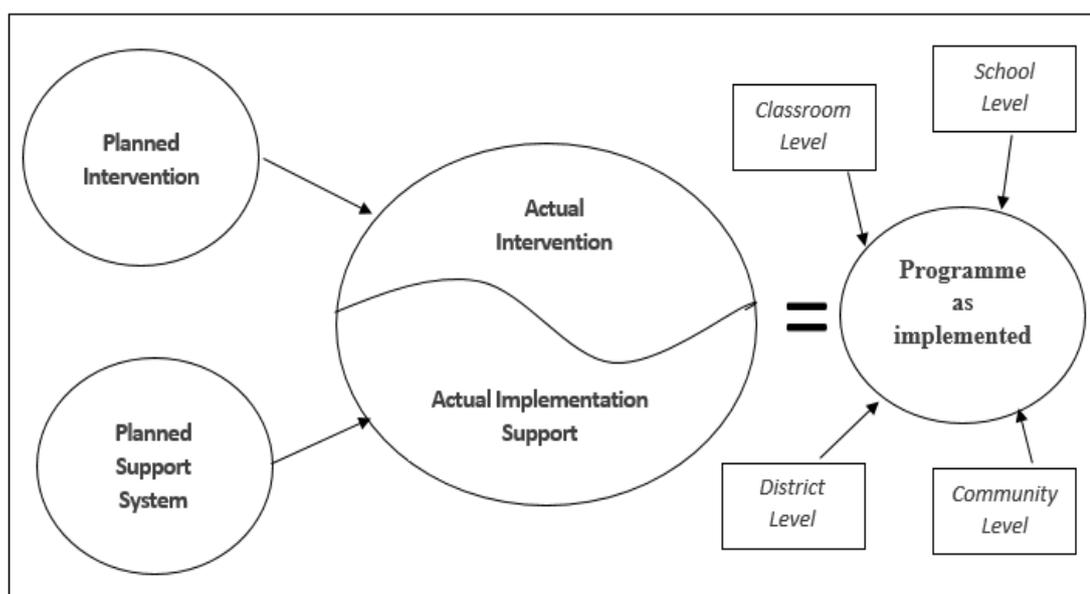
According to the Chen's theory driven model (1990, 1998), two distinct components must be considered for understanding implementation, the *intervention* itself and the

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implementation support system for the intervention. Interventions are strategies or innovations linked by a causal mechanism to specific, intended outcomes (Chen, 1998, 2003). On the other hand, the implementation support system reduces the variability in implementation quality by providing the means and establishing the context for the delivery of interventions (Greenberg, Domitrovich and Bumbarger, 2001; Domitrovich et al., 2008). Therefore, as well as having a clear intervention theory, it is also necessary to understand the conditions required for successful implementation and the contextual factors that may impact on this. Chen (1998) argues that while an intervention may be the main change agent of intended outcomes, the support system is just as important to a programme's success.

Chen's conceptual model of the implementation system has been expanded and applied to the school context by several authors (e.g. Greenberg et al., 2005; Durlak and DuPre, 2008; Domitrovich et al., 2008). Greenberg and colleagues (2005) developed a conceptual framework which explores a number essential aspects of implementation common to most school-based prevention and promotion programmes in relation to: (i) the intervention (ii) the implementation support system and (iii) the contextual factors that may affect programme quality (Figure 2.4).

Figure 2.4: Conceptual Implementation Framework (Greenberg et al., 2005)



Adapted from Chen, (1998) and Greenberg et al., (2005)

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According to Greenberg and colleagues (2005), implementation quality can be affected by the core elements of the *planned intervention* which includes: (i) the programme model – structure, content, timing, dosage and the nature of the intervention; (ii) quality of delivery – degree of engagement, use of implementation techniques and generalisation of skills; (iii) target audience; and (iv) participant responsiveness – perceptions, skills, knowledge and beliefs.

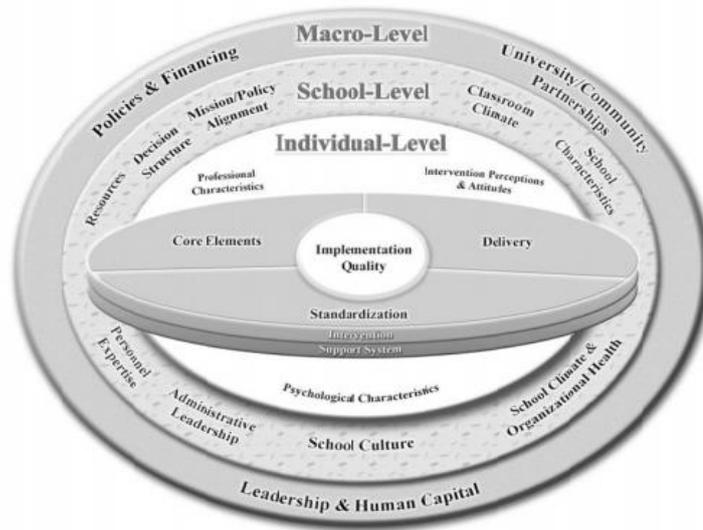
Second, implementation quality is affected by the *planned support system*. This includes: (i) pre-planning – the preparation made by the school before programme implementation in terms of school readiness, accurate assessment of needs and commitment or engagement in the change process; (ii) quality of materials – the design, format and content of instructor manual and workbooks; (iii) technical support available – structure, content and timing of training and supervision and implementation monitoring system; (iv) quality of technical support - characteristics of trainers, the quality of delivery during training and supervision, and the quality of working relationship between trainers and implementers; and (iv) implementer readiness – the degree to which the implementers are equipped with the skills and knowledge to carry out the intervention, feel positive about the programme and believe they can deliver it.

It is important to note that while the elements of the planned intervention and support system are critical, the adoption and implementation of a programme do not occur in a vacuum. Instead, a range of multi-level factors outside of the programme theory may affect the quality of implementation and the programme outcomes. Greenberg and colleagues (2005) categorise these factors as classroom, school, district and community level factors.

Domitrovich and colleagues (2008) developed a multi-level implementation framework, similar to that of Greenberg et al., (2005), which also recognises that implementation quality is influenced by both the *intervention* and the *support system*, presenting these as layers at the centre of the conceptual framework. They also suggest that the intervention and support system is standardised in terms of the core elements and the delivery model. In this framework, the influence of contextual factors is also acknowledged but these are categorised at the macro level, school level and individual level.

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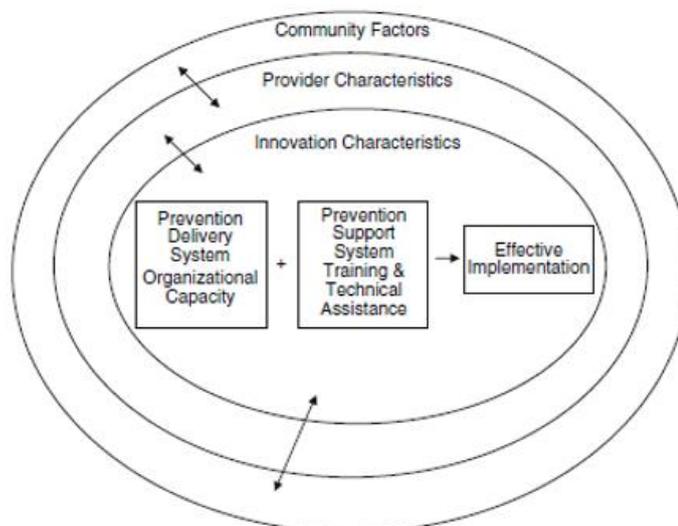
Figure 2.5: Multi-level Implementation Framework



Domitrovich et al., (2008)

Durlak and Dupre (2008) also developed their ecological implementation framework, which reflects the key elements of the other frameworks with minor alterations. In this framework, they suggest that implementation quality is influenced by key elements of the *prevention delivery system* (e.g., organisational capacity), the *prevention support system* as well as factors that extend to a wider ecological context (e.g., innovation characteristics, provider characteristics and community factors).

Figure 2.6: Ecological Implementation Framework



Durlak and Dupre (2008)

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Though slight differences can be detected between these three school-based implementation frameworks, they all recognise that schools' implementation quality is dependent on several factors which operate at multiple levels (Greenberg et al., 2005; Domitrovich et al., 2008; Durlak and Dupre, 2008). These factors will now be explored in further detail below drawing on the parallels between the different frameworks.

Classroom Level

Classroom level factors identified by Greenberg et al., (2005) include teachers' characteristics and classroom climate. In terms of teachers' characteristics and behaviours, teachers' skills and experience (Ringwalt et al, 2002; Rohrbach, Graham and Hansen, 1993; Wang et al., 2015), attitudes and acceptance towards the intervention (Rohrbach, Graham and Hansen, 1993; Elias et al, 2003; Pankratz, Hallfors and Cho, 2002; Parcel et al, 1991; Ringwalt et al, 2003; Beets et al., 2008; Mihalic, Fagan and Argamaso, 2008; McIntosh et al., 2013; Wang et al., 2015) and self-efficacy (Kallestad and Olweus, 2003; Rohrbach, Graham and Hansen, 1993) can all be directly related to the implementation quality of programmes. Similarly, Durlak and Dupre (2008) identify provider characteristics (e.g., perceptions of the need for and potential benefits of the innovation, self-efficacy and skill proficiency) as a key contributor to implementation quality, which can be linked to both classroom-level factors as well as implementer readiness. Related to Domitrovich's et al., (2008) framework, they identify teachers' professional (e.g., skills, knowledge and experience) and psychological characteristics (e.g., implementers' anxiety with delivering programmes, their own stress, depression and burnout, self-efficacy and perceptions and attitudes towards the intervention) as influential factors. Factors related to classroom climate and management (e.g., relationships, norms, conflict) can positively or negatively influence both teachers' adoption, motivation to deliver and quality of delivery of an intervention as well as students' engagement and programme participation (Low et al., 2014; Evans et al., 2009; Allodi, 2010; Opoku-Asare, Takyi and Owusu-Mensah, 2015; Koth, Bradshaw and Leaf, 2008; Kellam et al, 1998; Botvin, 2004). Similar to Greenberg and colleagues (2005), Domitrovich et al., (2008) also recognise the classroom climate (sense of belonging, the level of cooperation and mutual respect among classroom members, and the relationships between teacher and students) as a key factor related to implementation quality.

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School Level

Next, at the school level, factors such as administrative support, the goals and missions of the school, and overall school climate can all impact on implementation quality. School leaders and administrators can have a significant positive or negative impact on the successful implementation of evidence-based interventions (Gottfredson and Gottfredson, 2002; Gregory, Henry and Schoeny, 2007; Elliott and Mihalic, 2004; Kam, Greenberg and Walls, 2003; Beets et al., 2008). School leaders are in a position to organise timetables and allocate sufficient administrative support for a new programme to be implemented with high quality (Greenberg et al., 2005), on the other hand, lack of school leadership and administration has been linked to teachers' loss of motivation for the programme and in turn poorer implementation quality (Mihalic et al., 2004). Schools with increased positive school climate (e.g., openness in communication, ability to change, support and collaboration), can position teachers better to take on new initiatives and provide quality implementation, whereas poor school climate (e.g., poor staff morale, low interaction and involvement, a history of failed intervention attempts etc.) is associated with increased difficulties in implementing and sustaining interventions (Domitrovich et al., 2017; Gregory, Henry and Schoeny, 2007; Parcel et al., 2003; Kallestad and Olweus, 2003; Gottfredson and Gottfredson, 2002; Beets et al., 2008). Additionally, interventions that align directly with a school's mission or goals are more easily integrated into the school's policies and practices and are therefore, more likely to be prioritised, implemented well and sustained over time (Datnow et al., 2002; Kallestad and Olweus, 2003). Domitrovich and colleagues (2008) also highlight a number of similar school-level factors (e.g., mission-policy alignment, resources, administrative leadership, school culture, school climate) as well as acknowledge the characteristics of the school (e.g., school size, school mobility, location, number of at-risk students) that can impact on implementation quality as well. Durlak and Dupre (2008) also identify relevant factors at this level including organisational factors (e.g., positive work climate, shared vision, integration of new programming) and staffing considerations (e.g., administrative support, leadership, programme champion).

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District Level

At the district level, implementation quality is affected by the attitudes and beliefs of teachers, school administrators, support staff and members of the community who make school-related decisions (e.g. parent representatives and board members) (Greenberg et al., 2005). Similar to the importance of teachers' views and attitudes towards a programme for quality implementation, the views and beliefs of other key stakeholders can be just as important. Programmes are more likely to receive endorsement and support if they reflect aspects of the districts mission statement. Domitrovich et al, (2008) identify a number of other district level factors which can impact on implementation quality including, the availability of qualified professionals to implement programmes, availability of trainers to support implementation in schools and allocation of professional development days.

Community Level

Finally at the community level, the relationships between the school and the family, and the school and the community can have a strong impact on the quality of implementation. By establishing partnerships with the broader community the intervention will receive increased support. Policies and legislative action at the national level can also influence the implementation process, by supporting the increase of attention and time devoted to mental health promotion interventions (Greenberg et al., 2005). Durlak and Dupre (2008) also identify community level factors impacting on implementation quality which include policies, funding and politics. Additionally they highlight the importance of coordination with other agencies, shared decision making and community involvement. Similarly, Domitrovich et al., (2008) acknowledge a number macro-level factors within their framework which includes policies, legislative action and financing, leadership and human capital and community-university partnerships.

2.7.4 Measuring Implementation Quality

Implementation Quality Dimensions

In order to accurately measure implementation quality of an intervention, assessments across several dimensions and through multiple measures or indicators is recommended (Domitrovich et al., 2008; Berkel et al., 2011). Many researchers recognise that

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implementation quality is a multi-dimensional construct and, therefore, should be measured as such (Durlak, 2016; Dane and Schneider, 1998; Berkel et al., 2011; Buckley and Sheehan, 2009; Dusenbury et al., 2005; Durlak and Dupre, 2008). Dane and Schneider (1998) suggest that implementation is reflective of five core dimensions: *dosage* (quantity of programme delivered); *fidelity/adherence* (how many core components were delivered as prescribed); *quality of delivery* (how well the facilitator delivers the programme); *participant responsiveness* (how participants respond to or are engaged with an intervention); and *programme differentiation* (how unique the programme characteristics are compared to other programmes).

Despite the recognition that multiple dimensions of implementation quality should be used in implementation research, a majority of studies still focus primarily on a singular dimension, most commonly dosage or fidelity/ adherence (Domitrovich and Greenberg, 2000; Durlak and Dupre, 2008; Rojas-Andrade and Bahamondes, 2018). For example, in Domitrovich and Greenberg's (2000) review, they reported that only 7 out of 34 studies (21%) assessed more than one implementation dimension and no study reported investigating more than two dimensions. Additionally, in Durlak and Dupre's (2008) review of studies assessing implementation quality, they reported 63% of studies assessed fidelity/adherence, 49% assessed dosage, while only 17% assessed a different dimension. Additionally, only 18 out of the 59 studies in this review assessed more than one dimension during the evaluation. Similarly, in a review by Rojas-Andrade and Bahamondes (2018), which included 31 school-mental health programme evaluations and found that 77% reported on fidelity/adherence, 58% dosage, 26% quality of delivery and 19% participant responsiveness. This review also found that only 3 studies (10%) combined dimensions to produce a total implementation composite score.

By focussing exclusively on one aspect of implementation, studies may be missing important information on the role other dimensions play in outcome achievement which may be equally or more important (Berkel et al. 2011; Durlak, 2015; Lendrum, Humphrey and Greenberg, 2016; Humphrey, Barlow and Lendrum, 2018). Also, though fewer numbers of studies have examined dimensions such as quality of delivery and participant responsiveness, those which did have found that these dimensions could be equally if not more important for achieving programme outcomes compared to dimensions such as adherence and dosage that are typically presented in the literature (Durlak et al., 2015; Dusenbury et al., 2005; Rojas-Andrade and Bahamondes, 2018).

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Rojas-Andrade and Bahamondes' (2018) review found that adherence was only weakly associated with outcome variables whereas both quality of delivery and participant receptiveness were both strongly associated with outcome achievement. Additional programme evaluation studies have found similar results. The Steps to Respect bullying prevention programme evaluation, which was conducted in 33 primary schools in California, USA, found that adherence was not significantly associated with any of the outcomes, whereas higher levels of student engagement were related to a number of positive outcomes (Low et al., 2014). Another study evaluated the Keepin' it REAL drug prevention programme with 25 primary schools in Ohio, USA by observing two dimensions of implementation: adherence and delivery (combined score of teacher engagement, student engagement and quality of delivery). The findings revealed that delivery significantly influenced substance use and norms whereas adherence significantly predicted norms but only marginally predicted substance use (Pettigrew et al., 2015). Furthermore, a study of the PATHS programme (Humphrey, Barlow and Lendrum, 2018) conducted with 23 primary schools in Manchester, UK evaluated implementation quality across five dimensions: dosage, fidelity/adherence, quality of delivery, participant responsiveness and reach. In this study, higher implementation for quality of delivery and participant responsiveness resulted in lower externalizing behaviours, whereas higher levels of programme reach and fidelity were not associated with any of the outcomes. Most surprisingly perhaps was that higher levels of dosage were associated with significantly lower ratings of students' pro-social behaviour and social-emotional skills (Humphrey, Barlow and Lendrum, 2018). The above studies all establish the importance of including multiple dimensions of implementation measurement in order to have a more accurate understanding of implementation quality as a whole.

Implementation Index

Implementation dimensions though conceptually distinct, are interrelated, and therefore, it is important to determine the combined effect of these dimensions in order to fully understand the quality of implementation. As a way to measure implementation quantitatively across multiple dimensions, some studies have adopted an approach that employs an a priori index of indicators to calculate a cumulative total implementation index score (Bast et al., 2016; Dix et al., 2012; Saunders et al., 2006; van Nassau et al., 2016). For example, the Australian KidsMatter programme evaluation combined three

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dimensions of implementation quality (dosage, adherence/fidelity and quality of delivery) to create a total index score, and used this score to categorise schools into high- and low-implementation groups. Groups were then compared in relation to outcomes (Dix et al., 2012). Based on the total implementation index score, the findings demonstrated that students in high-implementation schools had significantly greater improvements in SEL skills as well as higher academic outcomes similar to six additional months of schooling. Few other SEL studies however, have employed this approach (Rojas-Andrade and Bahamondes, 2018).

Qualitative Data

While quantitative data are important for determining levels of implementation quality and linking implementation data to outcomes, in contrast, qualitative data provide information on participants' own experiences and often provide a great deal of vital information for 'how' and 'why' type questions that cannot be answered through quantitative data (Domitrovich and Greenberg, 2000; Elias, 2000). Therefore, in measuring implementation quality it is also important that qualitative data are collected to provide a deeper understanding of what is happening during delivery, what may be contributing to variability in implementation (e.g., barriers and facilitators), and what support and resources are required to ensure the best outcomes and sustainability of the programme. Qualitative information can also provide programme developers, practitioners and researchers with knowledge on the factors influencing implementation quality so that effective implementation strategies can be used to successfully replicate programmes across different settings (Greenberg et al., 2005; Durlak and Dupre, 2008; Domitrovich et al., 2008).

2.8 Current Study

The following section will provide details on the revised MindOut programme which was evaluated in the current study, including the key characteristics, programme theory and logic model. Following this, the overall aim of the current study is presented as well as the specific aims for each of the three phases of the study.

2.8.1 MindOut Programme

The revised MindOut programme consists of 13 weekly sessions, which are intended to be delivered by teachers within the Social Personal Health Education (SPHE) curriculum for 15-18 year old students. The content of the programme is based on CASEL's five core competencies for social and emotional learning i.e., self-awareness, self-management, social awareness, relationship management and responsible decision making (CASEL, 2015). The programme is comprised of a teacher manual, with structured activities and resource materials which promote the development of these social and emotional competencies. The programme employs interactive teaching strategies (e.g., collaborative learning, structured games, scenarios, videos etc.) to engage students in a number of skill-building activities such as: identifying and managing emotions, coping with challenges, overcoming negative thinking, communication, empathy, relationship skills etc. Additionally, the programme promotes whole-school approaches by providing staff with a menu of strategies for promoting social and emotional development at a wider school level (e.g., practice-at-home activities; teacher reflection; whole-school activities; whole-school tips for staff and for engaging students, parents and the community etc.). These whole-school resources, in combination with the MindOut curriculum, aim to support students' wellbeing not only at the classroom level but at the wider school level. A summary of the programme content (Table 2.1) as well as the logic model (Figure 2.7) can be found below.

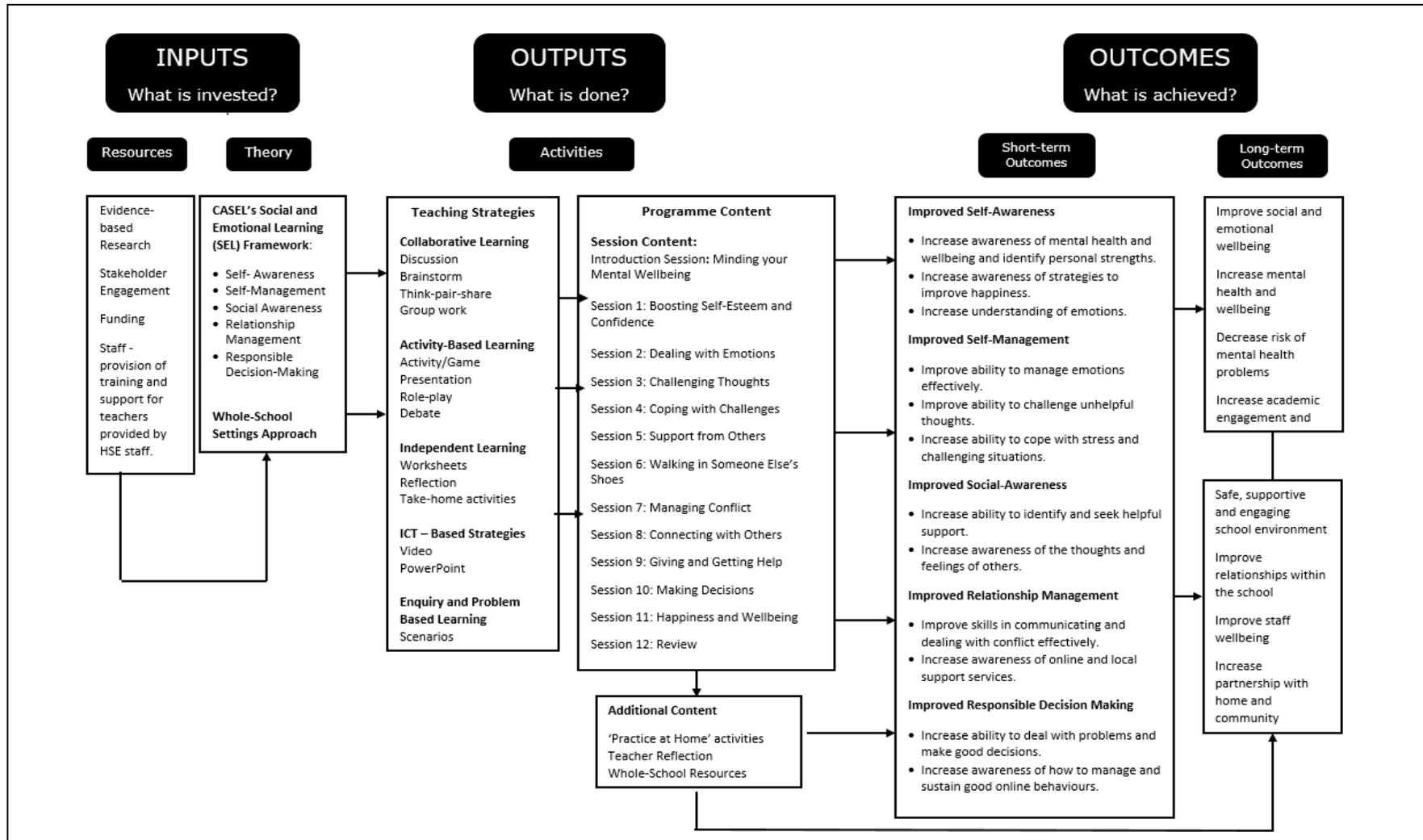
The logic model provides a visual for the inputs, outputs and outcomes of the MindOut programme. The programme is underpinned by both CASEL's competencies for SEL as well as a whole-school settings approach. The outputs for the programme include both the interactive teaching strategies and programme content which were based on the common elements approach. Finally the outcomes for the programme revolve around the five core competencies identified by CASEL (self-awareness, self-management, social awareness, relationship management and responsible decision-making). This logic model is provided within the MindOut manual to guide the implementation process, it was also used to guide the evaluation of the process of delivery and the expected outcomes.

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Table 2.1: MindOut Programme Content

Session Title	Session Goal
Intro Session: Minding your Mental Wellbeing	To introduce the MindOut programme and to explore ideas around mental health and wellbeing.
Session 1: Boosting Self-Esteem and Confidence	To help students build skills to increase their self-esteem and confidence.
Session 2 :Dealing with Emotions	To recognize and explore a range of emotions and learn how to manage these effectively.
Session 3: Challenging Thoughts	Understand the connection between thoughts, feelings and actions and learn how to challenge unhelpful thoughts.
Session 4: Coping with Challenges	To identify a range of helpful coping strategies that can be used to deal with stressful situations.
Session 5: Support from Others	To increase awareness of supports and recognize the differences between helpful and unhelpful sources of support.
Session 6: Walking in Someone Else’s Shoes	To help students increase their awareness of the thoughts and feelings of others and to show compassion.
Session 7: Managing Conflict	To encourage students to practice skills for communicating successfully with others and manage conflict effectively.
Session 8: Connecting with Others	To encourage students to think about their relationships and how they can make successful connections with others.
Session 9: Giving and Getting Help	To discuss how to overcome barriers to help-seeking and to help students learn how to be there for others.
Session 10: Making Decisions	To introduce students to a three-step problem- solving approach and encourage them to use this to make informed responsible decisions.
Session 11: Happiness and Wellbeing	To explore practical strategies for happiness.
Session 12: Review	To encourage students to reflect upon the range of skills they developed throughout the course of the programme.

Figure 2.7: MindOut Logic Model



2.8.2 Present Study

In view of the substantive revisions made during the re-development of MindOut, it was deemed necessary to determine if the new programme would lead to positive outcomes for students, especially for those recognised as disadvantaged. The current study aims to evaluate the effectiveness of the revised MindOut programme and the process of implementation when delivered with disadvantaged post-primary school (DEIS) students in Ireland. More specifically, this study has three core aims which are divided into the three phases of the study:

1. To evaluate the immediate impact of the MindOut programme on students' social emotional skills, mental health and wellbeing and academic outcomes (Phase 1).
2. To examine the variability in implementation quality for schools implementing the MindOut programme and to identify factors that were likely to contribute to this variability (Phase 2).
3. To determine how level of implementation quality impacts on programme outcomes for student participants (Phase 3).

In view of the current research and gaps identified within this chapter, this study represents an important addition to the international literature by contributing to new knowledge and evidence in the field of mental health promotion, SEL and implementation research.

CHAPTER 3

METHODS

3.1 Introduction

This chapter describes the methodological steps that were taken in order to carry out the research study. The overall aim of this study is to evaluate the effectiveness of the revised MindOut programme and the process of implementation when delivered with disadvantaged post-primary school (DEIS) students in Ireland. This thesis was conducted in three interlinked phases. The specific objectives for each of these three phases are presented below:

Objectives:

Phase 1:

- To determine whether the MindOut programme had a significant impact on students' (i) social and emotional skills (ii) mental health and wellbeing and (iii) academic outcomes.

Phase 2:

- To assess the variability in implementation quality of schools using indicators across four dimensions of implementation and to use this information to determine each schools level of implementation grouping (high/low) (*quantitative*).
- To identify factors that may have contributed to the variability in implementation quality as identified by both teachers and students (*qualitative*).
- To examine the similarities and differences of these identified factors between the schools categorized as high-implementers and those that were considered low-implementers (*integration*).

Phase 3:

- To determine whether or not level of implementation (high/low) based on the total implementation quality score significantly impacts programme outcomes at post-intervention or 12-month follow-up when compared to the control group.

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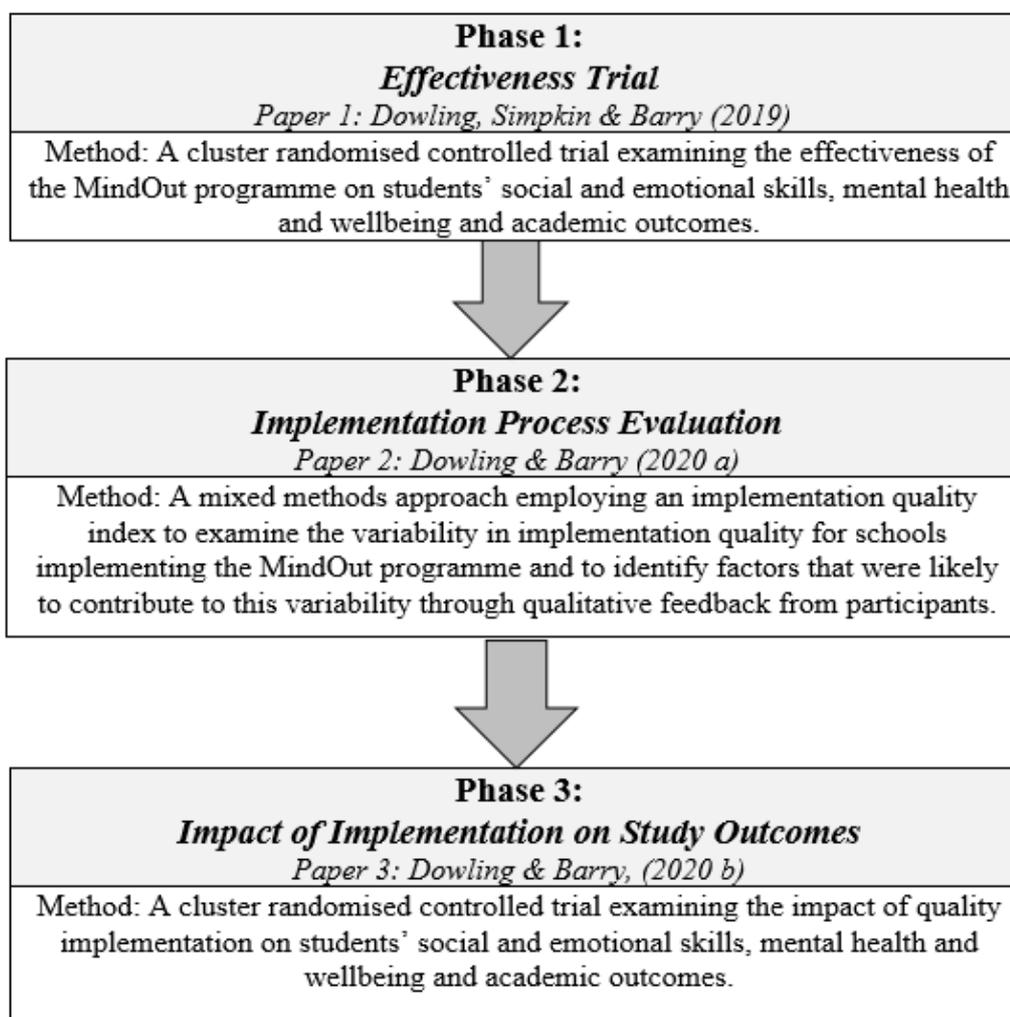
- To examine the role each of the four implementation dimensions of; (i) dosage, (ii) adherence (iii) quality of delivery and (iv) participant responsiveness, play in influencing programme outcomes.

This chapter will start by discussing the methods that were used in the overall study and which relate to all three phases. In this section the overall study design, recruitment and sampling methods, participants, measures, data collection and management processes and ethical approval will be discussed. Following this, the methods and approaches which were specific to each phase of the study will be presented individually in more detail.

3.2 Design

Employing a c-RCT design as well as mixed methods approaches, the overall study aims to evaluate the effectiveness of the MindOut programme and the process of implementation when delivered to post-primary school students in Ireland. The intervention group received the 13-week programme, and the control group continued with their normal SPHE curriculum. Outcome assessments were carried out across three time points (baseline, post-intervention and follow-up) while process evaluations were conducted during programme delivery and post-intervention. The study employed both quantitative and qualitative methods to assess programme outcomes, the process of implementation and the interaction between the two. The study was conducted in three phases as depicted in the flow chart below (Figure 3.1).

Figure 3.1: Flow Chart of the Three Study Phases



3.3 Sample and Recruitment

3.3.1 Eligibility Criteria

In order to qualify for selection in this study, schools needed to meet a number of eligibility criteria, which included: (i) holding the designated disadvantage status (DEIS) by the Department of Education and Skills; (ii) providing education at a post-primary level; and (iii) English-speaking (i.e., not Irish only speaking schools “Gael Scoileanna”). Delivering Equality of Opportunity in Disadvantaged Schools (DEIS) address the educational needs of children and youth from disadvantaged communities, from pre-school through second-level education. Schools are given disadvantaged status if 70% of the students are classified as educationally disadvantaged by the Department of Education and Skills. Further details on eligibility criteria for DEIS schools is available (DES, 2005). A total of 185 schools met these criteria. Students

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attending the participating schools who were in 4th/Transition Year (15-17 years) or 5th year (16-18 years) at baseline were the target population. Only full-time students (i.e., not exchange or short-term visiting students) were considered for inclusion in this evaluation.

3.3.2 Sample Size

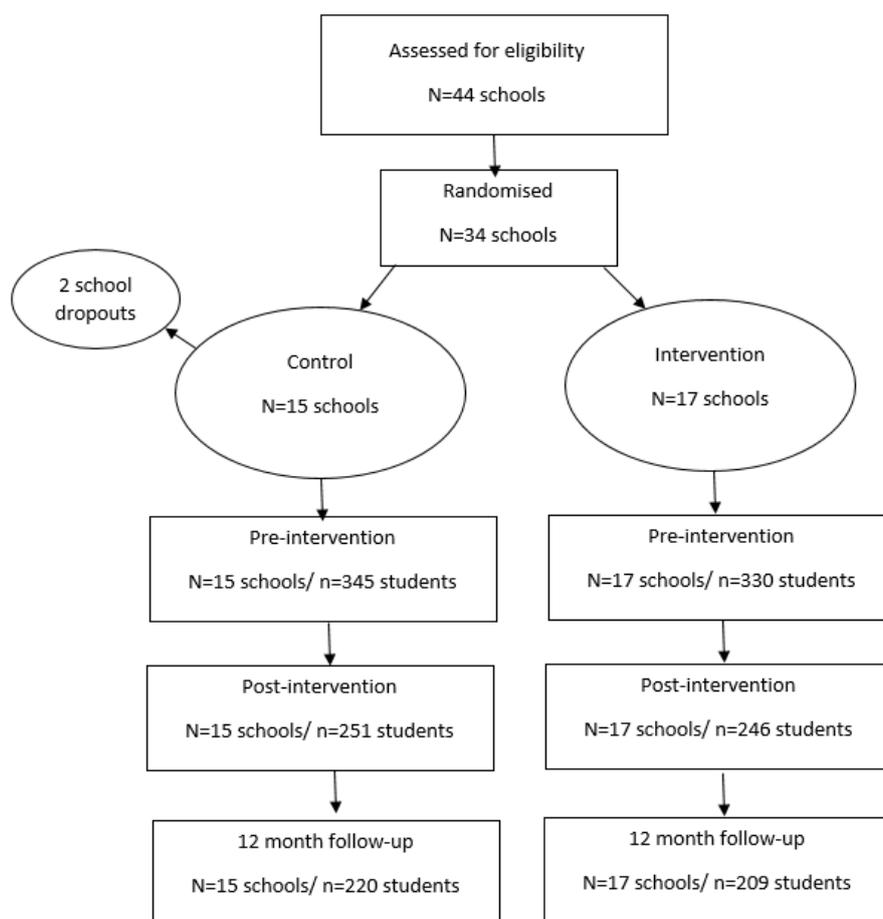
In order to determine the sample size for this study an intervention study employing comparable measures was consulted (Kuyken et al., 2013), which indicated a likely effect size of 0.29. Based on previous research, it was also anticipated that there would be an intra-class correlation of 0.02 and a non-participation rate of 20%. Using these data and assuming an average class size of 20 pupils, a sample size calculation was conducted using Winpepi COMPARE2 statistical software programme. This power calculation resulted in a suggested sample size of 600 students in 30 schools (15 control; 15 intervention) (Appendix B1). It was decided that in order to deal with dropouts at a school (cluster) level, schools would be oversampled. Therefore, for this study, a total of 34 schools (17 control; 17 intervention) were recruited.

3.3.3 Recruitment and Randomisation Process

Randomisation was conducted at a cluster (school) level as the intervention was designed to be implemented with groups of students (classes) rather than individual students. Cluster randomisation accounts for the nested nature of the data and helps avoid potential contamination bias. A list of all post-primary DEIS schools in Ireland was retrieved from the Department of Education and this yielded a total of 185 schools. Schools were stratified based on gender and geographical location prior to randomisation to ensure a reflective sample with four identifiable groups (urban mixed, rural mixed, urban boys, urban girls) (Appendix B1). An external statistician (CSTAR) was consulted to undertake the independent selection of the 34 schools from the eligible list using a computerised random number generator (Appendix B2). Schools were then recruited in order of their appearance on the randomised list. Principals of selected schools were posted and/or emailed an information sheet with details of the study (Appendix B3). Following this, the principals were contacted by the researchers regarding participation in the study and were asked to nominate and select one teacher/class (TY or 5th) in their school to participate in this study. Schools that declined to participate were replaced by contacting the next school on the stratified list. This

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procedure was continued until all 34 slots had been filled by schools that agreed to participate. Once all 34 schools had agreed, the same independent statistician randomly allocated the schools into either a (i) control group (n=17) or (ii) an intervention group (n=17). Schools were then contacted and informed of the group to which they had been assigned. For the intervention schools, it was recommended that the teachers chosen to participate in this study and deliver the programme were either trained in SPHE or had previous experience in delivering SPHE to classes prior to this evaluation. Teachers did not have to meet a pre-requisite of a certain number of years of teaching experience nor did they need to have experience in delivering the original MindOut programme. All intervention teachers were required to participate in a 1-day in-person training prior to implementation of the programme, which was facilitated by the national Programme Manager for Mental Health and Wellbeing at the Health Service Executive. Support for implementation of the programme in terms of technical support was provided by the research team but this was quite minimal and informal. Following group randomisation, one of the selected control schools had also participated in the pilot study, therefore, it was necessary to remove this school from the main study to avoid issues with cross contamination. Another control school had arranged for a 3rd year group to participate, and as this did not match the selection criteria requirements, this school was also excluded from the study. Therefore, during the data collection stage, there were 32 schools remaining (n=15 control; n=17 intervention). Staff and students were not blinded to their group allocation. Both intervention and control group schools were asked informally to report on whether or not any other SEL or mental wellbeing programmes were being delivered in their classes at the beginning of the study. This information was used to determine programme differentiation in participating schools and to ensure that any positive outcomes could be attributed to the MindOut programme in the intervention schools and to be aware of any other ongoing initiatives or programmes that may have been implemented in the control schools. Students and teachers in this study remained the same across all three study phases. The main reasons for dropout at an individual level was largely due to students' absence on the days of follow-up data collection or no longer attending the school. In total, there were 44 schools contacted during the recruitment process, with a 77% retention rate. An overview of the recruitment process can be seen in the flowchart Figure 3.2.

Figure 3.2: CONSORT diagram of recruitment of schools and students

3.4 Measures

This study employed both outcome and process evaluation components. The outcome measures were used to determine whether or not the MindOut programme could significantly impact on students' outcomes, whereas the process measures were used to evaluate the schools' implementation of the programme. All of the measures used in the study are described in detail below and have been organised into outcome and process measures.

3.4.1 Outcome Measures

Student outcome data were collected via paper questionnaires composed of multiple scales, which assessed social emotional skills, mental health and wellbeing outcomes and academic outcomes. Scales were carefully selected to ensure that the outcome measures provided an accurate assessment of the SEL skills taught within the MindOut programme in accordance with CASEL's five core competencies (CASEL, 2015). A

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number of other scale criteria were used in the selection process including age-appropriateness, ability to determine outcome changes, length, cost and psychometric properties. These measures also included demographic questions, which asked students to report on their gender, age, school year, nationality and parent demographics (education and employment). All measures were piloted with groups of Irish students to identify any problematic questions and to ensure that the questions were age and culturally appropriate for Irish adolescents. A copy of the final student outcomes questionnaire can be found in the appendices (Appendix C1).

Social Emotional Skills

- ***Self-esteem:*** The Rosenberg Self-esteem Scale (Rosenberg, 1965) is a 10-item scale that measures respondents' self-esteem. It was originally designed for use with high-school students. Items are answered on a four-point Likert scale. The scale showed high internal consistency ($\alpha = 0.87$) in the current study.
- ***Emotional regulation:*** The Emotional Regulation Questionnaire (Gross and John, 2003) is a 10-item scale which was used to assess respondents' (i) cognitive reappraisal and (ii) expressive suppression. This scale has been used in a number of studies with adolescents 10-18 years old (Dingle, Hodges and Kunde 2016; Jennings et al., 2013; Kuosmanen et al., 2017). Respondents are asked to rate how much they agree or disagree with items on a 7-point Likert scale. Good internal reliability was found for the subscale cognitive reappraisal ($\alpha = 0.85$) and acceptable reliability for the subscale expressive suppression ($\alpha = 0.67$).
- ***Emotional intelligence:*** The Trait Meta-Mood Scale (TMMS), was originally developed by Salovey et al., (1995) as a 48-item scale used to measure people's ability to manage and regulate their moods and emotions. The TMMS-24 was adapted in Spain (Fernandez-Berrocal, Extremera and Ramos, 2004) and validated for use with youth (Garaigordobil and Pena-Sarrionandia, 2015; Pedrosa et al., 2014; Salguero et al., 2010). The scale measures emotional intelligence and has three subscales: attention to feelings, emotional clarity and emotional repair with items scored on a five point Likert scale. Acceptable internal consistencies were

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found for the subscales emotional clarity ($\alpha=0.70$) emotional repair ($\alpha=0.80$) and attention to feelings ($\alpha =0.66$) as well as total emotional intelligence ($\alpha=0.72$).

- ***Coping skills:*** The Coping Strategy Indicator (CSI-15; Ellis, 2004) is a 15-item short form of the original 33 item scale (Amirkhan, 1990), which evaluates three types of coping strategies (Subscales: Problem Solving, Avoidance, Social Support). This scale has been successfully used in a number of studies with adolescents ranging from 11-25 years in Ireland and internationally (Dooley and Fitzgerald, 2012; Kuosmanen et al., 2017; Shandley et al., 2010). The subscale measures displayed adequate to high internal consistencies (problem solving, $\alpha =0.83$.; avoidance, $\alpha=0.76$; social support, $\alpha=0.91$).
- ***Social self-efficacy:*** The Self-Efficacy Questionnaire (SEQ-C; Muris, 2001) is a 24 item scale designed for youth aged 13 –18 and is comprised of three main subscales: academic self-efficacy, emotional self-efficacy and social self-efficacy. Only the latter was utilised in this study. The social self-efficacy scale is an 8-item subscale that measures respondents' self-assessment of their ability to navigate through social situations and engage successfully with others. Each of the items are scored on a five-point Likert scale. The scale showed good internal consistency ($\alpha =0.77$) in the current study.
- ***Asserting influence and conflict resolution:*** The Adolescent Interpersonal Competence Questionnaire (AICQ; Buhrmester, 1990) assesses adolescents' interpersonal skills and is composed of five subscales: initiating relationships, providing emotional support, self-disclosure, asserting influence and conflict resolution. Only the two latter subscales were used for the purpose of this study, each of which contains 8-items. Respondents are given a number of brief interpersonal situations and rate on a 5-point scale their level of competence and ease in handling these situations. The subscale measures displayed high internal consistencies (asserting influence, $\alpha =0.85$; conflict resolution, $\alpha=0.81$) in this study.
- ***Decision-making:*** The Making Decisions in Everyday Life Scale (Mincemoyer and Perkins, 2003) includes 20 items and assesses adolescent participants' use of skills

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during the decision-making process. This scale was adapted (Cater et al., 2010) to a short form, which is composed of five items. Respondents are asked to rate how often they engage in certain actions of the decision making process on a four point Likert scale. The scale showed good internal consistency ($\alpha = 0.79$) in the current study.

Mental Health and Wellbeing

- ***Mental health:*** The Depression Anxiety Stress Scale (DASS-21; Lovibond and Lovibond, 1995) is a 21-item self-report scale designed to measure levels of symptoms related to three subscales: depression, anxiety and stress. Although this scale was originally developed for adults, it has been validated and used in a number of studies with adolescents within Ireland and internationally (Da Silva et al., 2016; Dooley and Fitzgerald, 2012; Tully, Zajac and Venning, 2009). Each of the three subscales is composed of 7 scale items. High internal consistencies were shown for all three subscales (stress, $\alpha = 0.85$; anxiety, $\alpha = 0.84$; depression, $\alpha = 0.90$).
- ***Mental wellbeing:*** The Warwick Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2007) is a 14-item scale used to assess participants' mental wellbeing. This scale was originally designed for use with adult populations, however, it has also been validated with adolescents (Clarke et al., 2011). The minimum score is 14 and the maximum score is 70 with higher scores indicating higher levels of mental wellbeing. The WEMWBS demonstrated high internal consistency (Cronbach $\alpha = 0.91$) in this study.

Academic Outcomes

- ***Attitudes toward school:*** The Attitudes towards School scale (Anderson, 1999) was used to measure students' (12-17 years) attitudes toward their school environment (e.g., teachers, homework, grades and learning) and their feelings toward school. A higher score on this a 15-item scale indicates a more positive attitude toward school. The scale showed high internal consistency ($\alpha = 0.87$) in the current study.

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- ***School achievement motivation:*** The School Achievement Motivation Rating Scale (SAMRS; Chiu, 1997) was also employed to assess students' academic motivation. This 15-item scale is designed for use by teachers to rate the achievement motivation demonstrated by their students (5-18 years) in the classroom. Achievement motivation includes the students' desire to do well, ability to overcome challenges, maintain a high standard of work and surpass others. Teachers rate students on a five-point scale. The SAMRS demonstrated high internal consistency (Cronbach $\alpha = 0.92$) in this study. Due to the lack of returned teacher questionnaires at 12-month follow-up, this outcome variable was only assessed during Phase 1.
- ***Grades:*** Both student and teacher reported student grades for Maths, English and Irish were collected and analysed between pre- and post-test. However, due to the absence of standardised test scores, self-report and teacher-report data were the only feasible way to obtain this information. Following the analysis, it was clear that the data from these two sources did not correlate with each other and therefore, the data were deemed insufficient for use in this study.

3.4.2 Reliability of measures

In order to test the reliability of the scales within the student outcome questionnaires used at baseline, post-intervention and 12-month follow-up, a reliability analysis for each individual measure was completed (Table 3.1). The reliability analysis was conducted through SPSS and produced a Cronbach's alpha for each scale/subscale. Cronbach's alpha measures the internal consistency of a scale, or rather, how closely related the items of the scale are with each other (Cronbach, 1951). Previous authors have acknowledged that Cronbach's alpha above 0.6 can be considered an acceptable measure of reliability (Nunnally, 1978; Churchill and Peter, 1984; Murphy and Davidshofer, 1988; Kline, 1999; Cortina, 1993; Field, 2009). The results from the reliability analysis for each of the scales demonstrated Cronbach's alpha's greater than 0.6 confirming their reliability.

Table 3.1: Reliability analysis of scales

Scale	Subscale	Cronbach's Alpha	N of Items
RSES	Self-esteem	.870	10
TMMS	Emotional Intelligence	.721	24
TMMS	Attention to Feelings	.662	8
TMMS	Emotional Clarity	.754	8
TMMS	Emotional Repair	.801	8
CSI	Avoidance Coping	.762	6
CSI	Problem Solving Coping	.825	5
CSI	Social Support Coping	.905	4
ERQ	Cognitive Appraisal	.846	6
ERQ	Emotional Suppression	.672	4
SEC-Q	Social Self-efficacy	.772	8
AICQ	Assertiveness	.849	7
AICQ	Conflict Resolution	.813	7
DM	Decision Making	.786	5
ATS	Attitudes towards school	.868	15
DASS-21	Stress	.853	7
DASS-21	Anxiety	.835	7
DASS-21	Depression	.900	7
WEMWBS	Wellbeing	.933	14
SAMRS	School Achievement Motivation	.922	15

3.4.3 Process Measures

Process measures were used to evaluate the implementation of MindOut from both the teachers' and students' perspectives. A variety of measures were used for this including; teacher weekly reports, student review questionnaire, classroom observations, student participatory workshops and teacher telephone interviews.

Teacher Weekly Reports: Teachers in the intervention group were asked to complete Weekly Reports online following delivery of each of the 12 weekly sessions. These weekly questionnaires were designed to collect information on the implementation of each individual session and included questions on; the delivery and implementation of the programme such as adherence to programme content, suitability of content, strengths and difficulties with implementation, students' engagement with the session and activities and suggestions for improvement. An example of one of the Weekly Reports used in this study can be found in the appendices (Appendix C2).

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Student Review Questionnaire: At the end of programme delivery, students from the intervention schools completed a written questionnaire reporting on their experiences of the programme (e.g., attendance for specific sessions; teacher's quality of delivery; their own response to, and engagement with, the programme etc.). The Student Review Questionnaire was comprised of Likert scale type questions and also contained open-ended questions that gathered more qualitative information on the students' programme experience. The Student Review Questionnaire can be found in the appendices (Appendix C3).

Classroom Observations: Classroom observations were conducted by the researcher with a random sub-sample of schools during the first and second half of the programme (N = 6; 35%). Schools were ranked in random order using Microsoft Excel and the first six schools were visited. Another independent researcher accompanied the main researcher in undertaking these classroom observations. Observations were guided by a structured questionnaire, which was completed by both researchers independently first, followed by a consultation whereby a final score for each item was agreed. Inter-rater reliability for items achieved 83% agreement. These questionnaires were designed to assess a number of implementation factors including adherence to core components, adaptation, quality of delivery and participant responsiveness as well as additional factors that might have impacted implementation. As it was not feasible, due to timing and resources, to conduct classroom observations in all intervention schools, this measure was used as a validation tool. An example of the classroom observation questionnaire can be found in the appendices (Appendix C4).

Telephone Interviews: Within two weeks of completing the programme, all intervention teachers (n=17) were contacted by the researcher via telephone and were asked a series of semi-structured interview questions (Appendix C5). These interviews explored the teachers' overall experience of the programme, the perceived impact of the programme on the students, themselves and the wider school community, their experience of the training, whole-school resources, organizational support and recommendations for improvements.

Student Participatory Workshops: Participatory-based workshops were conducted with a random sub-sample of schools (n=5). The workshops were adapted based on the workshop design used in other studies (Byrne, et al., 2005; Clarke, Sixsmith and Barry, 2014) and included interactive student-centered approaches including voting games, group work, and post-card activities which were used to explore students' views on their experience of the MindOut programme. The areas explored included: (i) what they liked/didn't like about the programme; (ii) suggestions for improvement; (iii) skills they felt they developed/improved during the programme; and (iv) whole-school practices in their school that promoted mental wellbeing. Students were also asked to rate the key skills they learned during the programme which they felt impacted them the most. A guide for the participatory workshops can be found in the appendices (Appendix C6).

3.5 Ethical Approval

Ethical approval for this study was obtained from the NUI Galway Research Ethics Committee (ref: 16-Jul-01) in August 2016 (Appendix B4). The researcher was Garda vetted prior to visiting the schools.

Steps were taken to ensure that no teacher or child would be identifiable from the questionnaires. When completing the questionnaires, students and teachers were asked not to write their names on the questionnaire and the confidentiality of the data was stressed with all participants. Each school was assigned a random identification number. Each student was assigned their own personal identification number based on their date of birth, school number and other demographic details. These ID numbers were used not only to ensure anonymity of participants but also allow for data to be matched across time-points. All data files were stored on a password protected computer and data were not linked to participants' names/school names. Consent to record the teachers' telephone interviews was sought prior to recording and these recordings were deleted immediately following transcription of the data.

Teachers delivering the programme underwent extensive training by HSE staff prior to implementation of the programme, which included detailed strategies for handling difficult situations and disclosures and helpful support services. Additional support was available through Health Promotion Officers (HPO) and the National Educational Psychology Service (NEPS) to both students and teachers should any mental health

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issues arise in the course of implementing the programme and/or completing the study questionnaires.

Finally, due to the randomisation process, a number of schools were unable to participate in the programme during the evaluation. These schools were given the opportunity to deliver the programme once the study had ceased. Teachers from these waitlist-control schools were offered priority places on the next planned training sessions.

3.6 Data collection

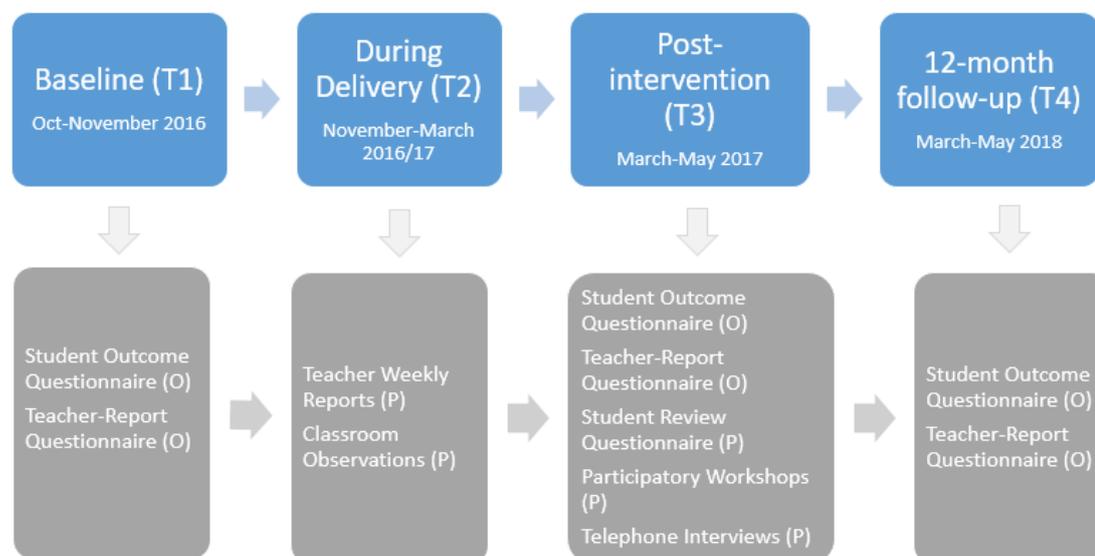
3.6.1 Outcome Data

The outcome data were collected during three time points (baseline, post-intervention, 12-month follow-up) (Figure 3.3). Study information sheets describing the nature of the study and passive consent forms were forwarded to the students' parent(s) in October 2016 (Appendix B5). Parents were asked to sign the consent form if they did not want their son/daughter participating. Teachers were also sent information sheets and consent forms to complete (Appendix B6). At the time of data collection, students were provided with information sheets and the researcher explained the study in person to all participants. Students were given a consent form and were required to read the information sheet and sign the consent form before they were allowed to take-part in the study (Appendix B7). Consent forms were required from students at each of the three data collection time points. It was made clear to all participants that they could opt-out of the study at any time and were under no obligation to participate. The researchers visited each of the schools in person at baseline, where students were given an entire class period (35 minutes) to complete the written questionnaires. This similar process was repeated at post-intervention and 12-month follow-up.

The teacher-reported outcome questionnaires were left with teachers during the three data collection visits to the schools and teachers posted these back to the research centre once completed via free-post envelopes provided. If teacher-report questionnaires had not been received within the two week time-frame, schools received a weekly phone call to remind teachers to send these back.

3.6.2 Process Data

All of the process data for this phase of the study were collected from participants either during programme delivery or post-intervention (Figure 3.3). For the Teacher Weekly Reports, which were completed online, teachers were asked to complete these following the delivery of each session when it was still fresh in their minds. The researcher could access these reports at any time via [surveymonkey.com](https://www.surveymonkey.com) and if a teacher was falling behind on these reports they were contacted by the research to prompt them to complete these. The classroom observations were also completed during programme delivery. A random group of schools (n=6) were selected from the intervention schools to be observed by two researchers. At the beginning of the session the researchers explained to the students the reason for the visit. Following the introduction, the researchers sat in separate discreet locations in the room and the teacher delivered a session from the programme for an entire class period (approximately 35 min). During the classroom observations both researchers completed the structured observation questionnaires independently. Following the session, the researchers compared notes and came to an agreement on their ratings of different aspects of the session until there was a single rating for each item on these questionnaires. The Student Review Questionnaires were distributed to all intervention students on the same day as post-intervention outcome data collection. Students were asked to complete these during the allocated class time but were provided with additional time if they needed. A select number of schools (n=5) were randomly selected from the intervention schools that did not participate in the classroom observations. These participatory workshops occurred on the same day that the post-intervention outcome data were collected, as this was most feasible. During the participatory workshops the teacher was not present as this could to have impacted the way students discussed their experiences of the programme. One researcher facilitated the workshop with the students which involved group discussion, brainstorming and activities, while the other researcher recorded notes. Students who participated in the participatory workshops were required to complete an additional consent form. A few weeks following the delivery of the programme, telephone interviews were conducted with all teachers who implemented MindOut. Teachers were contacted via email to arrange a suitable time to conduct the interview. The interviews lasted between 15-30 minutes approximately. All interviews were audio-recorded and all teachers granted permission for the recording at the beginning of the interview.

Figure 3.3: Data Collection Methods across Four Time-points

*Outcome measures (O); Process measures (P)

3.7 Data Management

3.7.1 Outcome Data

All student outcome data were entered into SPSS (version 26) and were recorded as numerical values for further analysis. Each school was given a random code (1-32) in order for their school grouping, in an effort to control for researcher bias. Each participant was given a unique ID code based on merging their school code and date of birth. In the case that students had the same code (in the same class and same date of birth), a '1' was added to the end of the code and a note of this was made to ensure the student's data were correctly matched. These codes were used to match participants' data across the three time points. Three separate SPSS files were created for each of the time-points and two additional datasets were created in order to compare the data between time-points: one file with baseline and post-intervention data only, and one file with baseline, post-intervention and follow-up data. This process was also completed for the teacher-reported outcome data and matched with the student data according to student ID. Steps were taken to ensure that the missing data were dealt with appropriately. After consulting the relevant literature on missing data techniques (Kang, 2013; Roth, 1994), it was decided that pairwise exclusion would be used. As there was a very low proportion of missing data both at baseline (< 3%) and post-intervention ($\leq 3.1\%$), follow-up imputation was deemed unnecessary. Cases were

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excluded if they were missing the data required for the specific analysis and were included in any of the analyses for which they had the necessary information. The main quantitative analysis technique used in this study was linear mixed modelling (LMM), this type of analysis deals with the missing data and handles the missing cases appropriately.

3.7.2 Process Data

Process data had to be dealt with differently as these measures included both quantitative and qualitative data. The ways in which these data were managed is described in detail below. For the telephone interviews, audio recordings were saved in a safe place without any identifying information being linked to the interviewee. Once all teachers were interviewed, the recordings were sent to an external company to be transcribed verbatim to a word document. Once the researcher had all 17 transcripts, the audio files were deleted. All transcripts were saved under the School ID number. The Teacher Weekly Reports and the Student Review Questionnaires were managed in a similar way. In terms of the quantitative data, a separate SPSS file for each measure was created (e.g., 'Teacher Weekly Report SPSS file' and 'Student Review Questionnaire SPSS file'). The data were added to these files and organised according to the School ID or Student ID codes. For the qualitative data, these were transferred to word documents along with the identifying school code for future analysis. Participatory workshop data including flipchart data, recorded researcher notes and worksheet answers were collated onto a single word document and organised according to school. Classroom observation data were largely quantitative and therefore, an additional SPSS file was created to input these data in accordance with the School ID code. There were some qualitative researcher notes taken during classroom observations and these were transferred to a word document and organised by school.

3.7.3 Merging Outcome and Process Data

The outcome and process data were merged in order to allow for these data to be analysed together. Five new columns were created at the beginning of the SPSS outcome datasets and these variables were called 'Total Implementation Quality Treatment Group', 'Dosage Treatment Group', 'Adherence Treatment Group', 'Quality of Delivery Treatment Group' and 'Participant Responsiveness Treatment Group'. All control schools received a '0' across all columns as there were no implementation data

for these schools. For the ‘Total Implementation Quality’ column, a ‘1’ was inputted to all students of schools that were identified as low-implementing whereas a ‘2’ was inputted for students of high-implementing schools. This same procedure was carried out for implementation level groupings across the four implementation dimensions.

Methods used in Study Phases 1-3

This section of the thesis will now examine the methods that were specific to each of the three study phases. For each phase of the study, the (i) aim and objectives, (ii) research design, (iii) participants, and (iv) analysis; will be explored in greater detail.

3.8 Study Phase 1: Effectiveness Trial

(Paper 1 – Dowling, Simpkin and Barry, 2019 – Journal of Youth and Adolescence)

3.8.1 Aim & Objectives

The specific aim of the first phase of the study was to determine if the revised MindOut programme had a significant immediate impact on student’s outcomes when delivered to disadvantaged post-primary schools. More specifically, this phase of the study has three objectives which are reflected in the three key student outcomes assessed:

- (i) To investigate the immediate impact of the MindOut programme on students’ social and emotional skills;
- (ii) To determine if the MindOut programme impacted students’ mental health and wellbeing; and
- (iii) To examine if the MindOut programme improved students’ academic outcomes.

3.8.2. Design

This study used a cluster randomised controlled design (c-RCT) with schools as the unit of randomisation. RCT studies are seen as the best way to compare a new treatment (intervention) to a standard treatment (control). The randomisation in a research design reduces any potential bias and allows for the cause-effect relationships between an intervention and outcome to be determined (Hariton and Locascio 2018). Within a cluster-RCT, randomisation occurs at the level of the group rather than individuals. The clustering design provides an opportunity to control for contamination across students within the same class/school. Baseline (T1) measures were collected approximately 1-

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2 weeks prior to programme delivery and post-intervention (T2) measures were collected within 1-2 weeks following programme delivery.

3.8.3 Participants

A total of 32 schools participated in this phase of the study. At baseline there were 675 students (intervention $n=330$; control $n=345$) who participated. At post-intervention a total of 497 students from 32 schools remained in the study (intervention $n=246$; control $n=251$). Almost equal numbers of males (50.1%) and females took part in this study overall. Students ranged in age from 15 to 18 years old at baseline ($M=15.87$, $SD=.69$) (Males $M=15.85$, $SD=.719$; Females $M=15.88$, $SD=.66$).

3.8.4 Analysis Plan

The data obtained from the student and teacher questionnaires were inputted and analysed using SPSS (version 26). Intention to treat (ITT) analysis was employed in this study by using all available data. In accordance with the CONSORT 2010 statement (Schulz, Altman and Moher, 2010), all randomised students that were present at both baseline and post-intervention ($n=497$) were analysed in the groups they were originally assigned to, irrespective of their characteristics and how much or little of the intervention they actually received. The data set was cleaned by running descriptive and frequency outputs for each item and identifying any outliers. Baseline differences between males and females as well as between control and intervention groups were examined through independent sample t-tests to determine whether gender and/or baseline scores would need to be controlled for in the model. Intervention effects were determined through the use of linear mixed models (LMM). Mixed models are advantageous in comparison to standard regression models for a number of reasons, one being that they are able to handle missing data points and a second reason is that this type of analysis recognises that data points are likely not independent of each other. Put another way, mixed models acknowledge that students within the same school/class (cluster) are likely to report more similarly to each other than students from different schools (Demidenko, 2013; Krueger and Tian, 2004; Wainwright, Leatherdale and Dubin, 2007). Therefore, given its ability to handle missing data appropriately and the clustered nature of the data within this study, the linear mixed model was deemed the most appropriate analysis method. In order to determine the intervention effects, a LMM was run for each outcome measure. Within each LMM, the treatment group

(intervention vs. control) was modelled as the fixed effect and the School ID was modelled as the random intercept to account for the clustering. The random intercept alleviates the issues of inflated standard errors, which would occur in a simple regression model (Steenbergen and Jones, 2002). Post-test outcome scores were modelled as the dependent variable while baseline scores and gender were controlled for by adding these as covariates. The Bonferroni correction was applied to adjust for multiple comparisons and the a priori alpha level set for this study was 0.05.

3.9 Study Phase 2: Implementation Process Evaluation

(Paper 2 – Dowling and Barry, 2020a – International Journal of Environmental Research and Public Health)

3.9.1. Aim & Objectives

The overall aim of the second phase of the study was to carry out a mixed methods evaluation to examine the variability in implementation quality for schools that participated in the MindOut programme and to identify the factors that may have contributed to this variability. In order to carry out the aim of this phase of the research, three core objectives needed to be completed which align with the three stages in a mixed methods design (quantitative, qualitative, integration). These objectives included:

1. To assess variability in implementation quality across four dimensions and determine schools' overall level of implementation (high/low) using an implementation quality index (*quantitative*);
2. To identify factors that may have influenced the variability in implementation quality as identified by teachers and students (*qualitative*); and
3. To examine the relationship between schools' level of implementation quality and these reported implementation factors (*integration*).

3.9.2 Design

This phase of the study employed a mixed methods design using both quantitative and qualitative research methodologies to investigate intervention schools' process of implementation. Mixed methods designs draw on the strengths of both quantitative and qualitative methods while at the same time offsetting the weaknesses of these approaches (Bryman, 2006). These type of designs have also been favoured for a

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number of additional reasons such as producing more comprehensive results, ability to answer different research questions, credibility and integrity of the findings, improved usefulness of the findings, among other reasons (Greene, Caracelli and Graham, 1989; Bryman, 2006). The mixed methods process was completed by using the concurrent triangulation method. The concurrent triangulation analysis technique involves three stages. The first two stages involve the separate analysis of the quantitative and qualitative data. These data can be analysed in any order but analysis should not be done simultaneously. The third and final stage of the concurrent triangulation method is the integration of these data. Integrating the quantitative and qualitative data provides richer data and enhances the validity and credibility of the findings (Creswell et al., 2003; Bryman, 2006).

Within the context of this study, the quantitative data were used to determine schools' level of implementation quality based on indicator scores across four dimensions: (i) dosage; (ii) adherence; (iii) quality of delivery; and (iv) participant responsiveness (Dane and Schneider, 1998). The qualitative data were then used to identify key factors that may have affected implementation (either positively or negatively) as reported by teachers and students. Finally, during the integration phase, the reported implementation factors (qualitative) were examined according to schools' group allocation (quantitative). This phase allowed for the exploration of the similarities and differences between high- and low-implementing schools in relation to the reported implementation factors.

3.9.3 Participants

Teachers (n=17; 93% female) who implemented MindOut and students (n=280; 53.6% male) who participated in the programme were the sample participants for this phase of the study. One of the teachers completed less than 50% of the Teacher Weekly Reports and therefore, this school could not be included in the analysis and had to be dropped from the study. However, the qualitative feedback from this teacher and the students on implementation factors was still included. Therefore, in the end, a total of 16 schools (n=264 students) were included in this phase of the study.

3.9.4 Analysis Plan

Concurrent triangulation method of analysis was used for this study, which involved three analysis phases: (i) quantitative data analysis, (ii) qualitative data analysis and (iii) analysis of integrated data.

Quantitative Data Analysis

During the quantitative analysis phase, first, the selection of indicators had to be completed to reflect the four dimensions of implementation quality. Following this, an analysis was completed to determine schools' implementation group allocation. These two stages of the quantitative analysis process are described briefly below and additional details on this process can be accessed in Paper 2 (Dowling and Barry, 2020a).

Selection of Indicators

Indicators were carefully selected from the Teacher Weekly Reports and Student Review Questionnaire based on their representativeness of one of the four dimensions of implementation (e.g., Dosage, Adherence/Fidelity, Quality of Delivery & Participant Responsiveness) (Durlak, 2016; Durlak and Dupre, 2015; Dane and Schneider, 1998). Indicators that reflected each of the four dimensions were chosen from the teacher and student questionnaires to form an implementation quality index and a scoring system based on these indicators was then created, drawing on the methods used in previous studies (Bast et al., 2016, Dix et al., 2012; Saunders et al., 2006; van Nassau et al., 2016). Reliability tests were run for the indicators for each of the four dimensions and demonstrated good internal consistency (Dowling and Barry, 2020a). Additional details on the indicators can be seen below as well as in Table 3.2)

Table 3.2: Details of Implementation Indicators

Fidelity Measure	Instrument	Indicator	Question	Rating Scale	Scoring
Dosage					
1	Teacher Weekly Report	Delivery of each session	<ul style="list-style-type: none"> Did you deliver this session? 	No=0 Yes=1	<ul style="list-style-type: none"> Summed score across 12 sessions Convert to percent score
2	Student Review Questionnaire	Student attendance for each session	<ul style="list-style-type: none"> Tick all the sessions you remember being present for. 	No=0 Yes=1	<ul style="list-style-type: none"> Summed score across 12 sessions Average score for students within each school Convert to percent score
Adherence					
1	Teacher Weekly Report	Key lesson activities implemented (3 items)	<ul style="list-style-type: none"> Were you able to complete activity 1 in the time? Were you able to complete activity 2 in the time? Did you play the recommended video? 	No=0 Yes=1	<ul style="list-style-type: none"> Summed score for each session Summed score across 12 sessions Convert to percent score
2	Teacher Weekly Report	Teacher rated adherence to each session (1 item)	<ul style="list-style-type: none"> What percentage of the session did you complete? 	0% = 1 100% = 6	<ul style="list-style-type: none"> Average score across 12 sessions Convert to percent score
Quality of Delivery					
1	Student Review Questionnaire	Student ratings of aspects of teacher quality of delivery (6 items)	<p>Please rate how often your teacher did the following during the delivery of MindOut:</p> <ul style="list-style-type: none"> Was confident in their own knowledge and skills around each session. Was enthusiastic (passionate) when delivering the sessions. Made critical or negative remarks about the students during the sessions (Reverse) Showed appreciation when students shared comments and participated Kept students engaged and interested in the session. Seemed well-prepared and organised for the sessions. 	Never = 1 Always = 5	<ul style="list-style-type: none"> Average score for all 6 questions for each student Average score for students within each school Convert to percent score

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2	Student Review Questionnaire	Individual student rating teacher quality of delivery overall (1 item)	<ul style="list-style-type: none"> Please rate from 1 (poor) to 10 (excellent) how well your teacher delivered the MindOut programme. 	Poor = 1 Excellent = 10	<ul style="list-style-type: none"> Average score for students within each school Convert to percent score
Participant Responsiveness					
1	Teacher Weekly Report	Teacher rating of students response to key lesson activities (3 items)	<ul style="list-style-type: none"> How did the students respond to the first activity? How did the students respond to the second activity? How did the students respond to the video(s)? 	Very Poorly=1 Very Well = 5	<ul style="list-style-type: none"> Average score for all 3 questions within each session Average score across 12 sessions Convert to percentage
2	Teacher Weekly Report	Teacher rating of students' interaction with the session (1 item)	<ul style="list-style-type: none"> Did the students show interest in this session? Did the students learn new skills during this session? Did the students engage/participate in the activities and discussions? 	Not at all=1 Very much = 5	<ul style="list-style-type: none"> Average score for all 3 questions within each school across 12 sessions Convert to percentage
3	Student Review Questionnaire	Students' ratings of their interaction with the programme (4 items)	<ul style="list-style-type: none"> The sessions in the programme were relevant for me. The sessions in the programme were useful for helping to deal with situations. The content of the programme sessions was easy to understand. The sessions in the programme were interesting. 	Not at all=1 Very much = 5	<ul style="list-style-type: none"> Average score for all 4 questions for each student Average score for students within each school Convert to percentage
4	Student Review Questionnaire	Students' rating of the programme overall (1 item)	<ul style="list-style-type: none"> How would you rate the MindOut programme overall? 	Poor = 1 Excellent = 10	<ul style="list-style-type: none"> Average score for students within each school Convert to percent score

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Implementation Group Allocation

A reliability analysis was carried out on all four total dimension scores and found a high internal consistency for the items ($\alpha = .86$). The four total dimension scores (dosage, adherence, quality of delivery and participant responsiveness) were averaged for a Total Implementation Quality score.

$$\begin{aligned} &\text{Total Implementation Quality} \\ &= \\ &(\text{Total Dosage} + \text{Total Adherence} + \text{Total Quality of Delivery} \\ &+ \text{Total Participant Responsiveness}) / 4 \end{aligned}$$

Similar methods of combining indicators across dimensions to produce a total index score are found in other studies (Bast et al., 2016; Dix et al., 2012; Saunders et al., 2006; van Nassau et al., 2016). Classroom observations were used to validate the self-report measures by comparing with indicator scores of relevant dimensions to check for compatibility. In order to classify schools into their implementation groupings, the visual binning procedure was employed using SPSS as used by Dix and colleagues (2012). Binning was performed by applying cut-points at the mean and ± 1 standard deviation resulting in four binned categories (1=low, 2=moderately low, 3=moderately high, 4=high). Using this procedure, the distribution of schools across the categories was examined and in view of the small number of schools in certain categories, an allocation into two overall categories of low (1 or 2) and high (3 or 4) was made. This procedure was completed for each of the four dimensions as well as for the total implementation quality score. Further details on this complete process can be found in Paper 2 (Dowling and Barry, 2020a).

Qualitative Data Analysis

Thematic analysis (Braun and Clarke, 2006) was used to analyse the teacher and student data. Transcripts were read several times and meaningful units of text were highlighted, summarised and coded. A subset of transcripts were double coded by an independent coder to check for inter-rater reliability. All relevant data from the Student Review Questionnaires and Participatory Workshops were extracted and coded. All data were

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managed in Microsoft Word. For both the teacher and student data, codes discussing similar ideas or issues were grouped into sub-themes. Following this, sub-themes were further grouped into overarching themes and only at this stage were comparisons between the teacher and student data made.

Integration of Data

Integration of quantitative and qualitative data occurred at an interpretation level using the concurrent triangulation method (Creswell et al., 2003). Each theme identified in the qualitative data was further analysed according to the schools' group allocation, which was determined by the quantitative data. Using the themes to guide the process, the coded data were analysed separately for the high-implementers and the low-implementers and similarities and differences between the two groups were identified. These data were recorded in a matrix to facilitate the comparison of the findings.

3.10 Study Phase 3: Impact of Implementation on Outcomes

(Paper 3 – Dowling and Barry, 2020b –European Journal of Investigation in Health, Psychology and Education)

3.10.1 Aim & Objectives

The overall aim of the third phase of this study was to examine how variability in implementation quality impacted on students' outcomes. To complete this phase of the evaluation, there were two specific guiding objectives:

1. To determine whether or not level of implementation (high/low) based on the total implementation quality score significantly impacts programme outcomes at post-intervention and 12-month follow-up when compared to the control group.
2. To examine the role that each of the four implementation dimensions of; (i) dosage, (ii) adherence (iii) quality of delivery and (iv) participant responsiveness, play in influencing programme outcomes.

3.10.2 Design

The design, measures, and analysis plan of the third phase of the study is very similar to that of the first phase of the study with slight differences. Similar to Phase 1 of the study, this phase also employed a cluster randomised controlled (c-RCT) design to

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account for the clustering of schools. However, while the first phase of the study examined differences between two groups (control vs. intervention) across two time points (baseline to post-intervention), the third phase of the study was conducted with three groups (control vs. high-implementation vs. low-implementation) over three time points (baseline to post-intervention to 12-month follow-up). As before for outcome data, the baseline (T1) measures were collected just prior to programme delivery while post-intervention (T2) measures were collected immediately following delivery (1-2 weeks). The data for the final time point (follow-up) were collected 12 months following delivery of the programme. Further details on the methods for Phase 3 can be found in Paper 3 (Dowling and Barry, 2020b).

3.10.3 Participants

Originally, a total of 32 schools participated in this phase of the study. However, given that one school provided a lack of sufficient implementation data (refer to study phase 2, pg.61), they could not be assigned to an implementation group. Schools' level of implementation allocation was a necessary piece of information in order to carry out the analysis during this phase of the study. Therefore, this intervention school was dropped from the third phase leaving a total of 31 schools (control n=15; intervention n=16) included in this study. Based on the analysis of implementation quality during the second phase of this evaluation, the intervention group was divided into two groups, the high-implementation group (n=8) and the low-implementation group (n=8). At the time of baseline data collection a total of 675 students responded to the questionnaires. These responses decreased at post-intervention (n=497) and 12-month follow-up (n=435).

3.10.4 Analysis Plan

This study was carried out in accordance with the CONSORT 2010 statement (Schulz, Altman and Moher, 2010). The outcome and implementation data for the third phase of the study were analysed using SPSS version 26. The data set was cleaned by running descriptive and frequency outputs for each variable and examining for any existing outliers. Due to the clustered nature of the data and its ability to handle missing data, the linear mixed model was again selected as the best method of analysis for this study. Given that this was a longitudinal study conducted over three time points, a repeated measures LMM was first deemed the most appropriate approach which required

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restructuring the dataset from wide-format to long-format (Landau and Everitt, 2004). While the repeated measures LMM is able to provide information on whether or not there is a noticeable change over time, this type of analysis is unable to detect when exactly this change is seen. Therefore, following the repeated measures analysis, a more in-depth analysis was carried out by running two separate LMM's which examined differences between the three groups at two time points (i) post-intervention and (ii) 12-month follow-up. Within each LMM, the 'treatment group' (high, low, control) was modelled as the fixed effect and the School ID was modelled as the random effect. 'Gender' and 'Baseline Scores' were modelled as covariates. The dependent variables included all outcomes: social emotional skills, mental health and wellbeing and academic performance at post-intervention or 12-month follow-up respectively. The a priori alpha level for this study was set at 0.05 and the Bonferroni correction was applied to adjust for multiple comparisons. In order to examine the role of each of the four individual implementation dimensions on impacting programme outcomes, additional LMM's were conducted. Models for dimensions were only completed for those outcomes which were shown to be significant in the initial Total Implementation Quality LMM analysis.

3.11 Summary

The goal of this chapter was to outline the research methods which were used to fulfil the study aims and objectives. The presentation of the study design, procedure, study participants, data collection, and ethical considerations illustrate how the overall study was conducted and who participated in the study. As this study was conducted in three distinct phases, the (i) aim and objectives, (ii) research design, (iii) participants, and (iv) analysis plan, relevant to each of these phases were explored individually in greater detail.

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RESULTS

4.1 Introduction

In this chapter, the baseline findings will first be discussed followed by the results from each phase of the study as reported in papers 1-3. Additional unpublished findings in relation to the users' experiences and recommendations for improving the implementation of the MindOut programme will be reported. The main findings will be summarised at the end of the chapter.

4.2 Demographics at baseline

A total of 675 students completed the student outcome questionnaire at baseline. Almost equal numbers of males (n=338; 50.1%) and females (n=337; 49.9%) participated in the study at baseline. At baseline, students ranged in age from 15-18 years old (M=15.97, SD=.683) and were in either Transition Year (n=345; 51.1%) or 5th year (n=330; 48.9%). At baseline, half of the students were from urban mixed-gender schools (n=256; 51.5%), one third of students belonged to rural mixed schools (n=168; 33.8%), and 15% of students belonged to either an all-boys (n=24; 4.8%) or all-girls (n=49; 9.9%) urban single-gendered school. Of the 675 students at baseline, 22 students (3.3%) were part of the Travelling community¹. Of the students completing the questionnaire at baseline, 83.6% (n=564) were born in Ireland and 16.4% (n=111) were born outside of Ireland. The most common countries of birth, other than Ireland, included England (n=24), Poland (n=14), Lithuania (n=9), Philippines (n=6) and Romania (n=5).

4.3 Phase 1: Effectiveness Trial

(Paper 1 – Dowling, Simpkin and Barry, 2019 – Journal of Youth and Adolescence)

¹ The Travelling community is an Irish ethnic minority group who face a number of social and health inequalities.

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The results of the first phase of the study will now be explored. This phase of the study aimed to examine whether or not the MindOut programme had a significant effect on students' outcomes between baseline and post-intervention.

4.3.1 Participant Profiles

A comparison of the main characteristics of students at baseline (n=675) and post-intervention (n=497) in the control and intervention groups are outlined in Table 4.1.

Table 4.1: Baseline characteristics by group

		Baseline (N = 675)		Post-intervention (N = 497)	
		Intervention	Control	Intervention	Control
Gender	Male	177 (26.2%)	161 (23.9%)	124 (24.9%)	123 (24.7%)
	Female	153 (22.7%)	184 (27.3%)	122 (24.5%)	128 (25.7%)
Age	15	82 (12.1%)	117 (17.4%)	57 (11.5%)	83 (16.7%)
	16	179 (26.5 %)	199 (29.5%)	132 (26.6%)	150 (30.2%)
	17	60 (8.9%)	28 (4.1%)	49 (9.9%)	19 (3.8%)
	18	9 (1.3%)	1 (0.1%)	6 (1.2%)	1 (0.2%)
School Category	Urban Mixed	198 (29.3%)	144 (21.3%)	141 (28.4%)	115 (23.1%)
	Rural Mixed	95 (14.1%)	130 (19.3%)	76 (15.3%)	92 (18.5%)
	Urban Boys	11 (1.6%)	23 (3.4%)	6 (1.2%)	18 (3.6%)
	Urban Girls	26 (3.9%)	48 (7.1%)	23 (4.6%)	26 (5.2%)
Year Group	Transition Year (TY)	128 (19%)	217 (32.1%)	82 (16.5%)	161 (32.4%)
	5 th Year	202 (29.9%)	128 (19%)	164 (33%)	90 (18.1%)

4.3.1.1 Profile of Participants' Mental Health

The baseline data on students' mental health and wellbeing were analysed to create a profile of the mental health and wellbeing of senior level DEIS post-primary school students' in Ireland. The DASS-21 scale was used to assess the stress, depression and anxiety levels at baseline, while the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) was used to measure students' wellbeing at baseline.

The students in this study who were of disadvantaged status reported less favourable mental health outcomes at baseline when compared to the general population of Irish adolescents, as reported in a large scale national study (Dooley et al., 2019). The Irish

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national study of young people's mental health and wellbeing (MWS, $n=10,459$; Dooley et al., 2019) which also used the DASS-21 scale to assess students' levels of depression and anxiety, found that 60% of secondary school students (12-19 years old) reported normal levels of depression, with 26% in the mild to moderate range and 15% in the severe or extremely severe group. Comparatively, 47% of students in this study ($n=675$) reported normal levels of depression, 32% were in the mild to moderate range and 21% of students scored in the severe to extremely severe group. Similarly, the national study reported on students' levels of anxiety indicating that 51% were in the normal range for anxiety, 27% in the mild to moderate range and 22% in the severe or very severe range. In contrast, the students in this study reported higher levels of anxiety with only 34% scoring in the normal range, 32% in the mild to moderate range and 34% of students scoring in the severe to extremely severe range. These findings are in line with research that identifies anxiety as an area of increasing concern for young people in Ireland (O'Keeffe et al., 2015; McMahon et al., 2017).

Likewise, in comparison to the general population of secondary school students internationally, the participants in this study exhibited slightly poorer wellbeing, with a mean wellbeing score (WEMWBS) of 46%, in comparison to 49% for students ($n=1650$) of similar age (13-16 years old) in the UK (Clarke et al., 2011). In line with the current literature, female students reported poorer mental health and wellbeing at baseline in comparison to males (Dooley et al., 2019).

4.3.1.2 Group Outcome Differences at Baseline

Although this study used randomisation as a method to eliminate bias, statistical tests were conducted to determine whether or not there were group differences at baseline. Employing t-tests, significant differences were detected between the control and intervention groups on four social and emotional scales/subscales: Self-esteem ($t(673) = 3.69, p < .001, d = -0.28$); Emotional Clarity [$t(673) = -2.359, p = .019, d = -0.18$]; Social Support Coping [$t(671) = 2.579, p = .010, d = 0.19$]; and Avoidance Coping [$t(671) = 3.554, p < .001, d = 0.27$]. Differences were also detected between the two groups across all the mental health and wellbeing subscales: Stress ($t(672) = 3.02, p = .003, d = 0.23$); Anxiety [$t(672) = 2.572, p = .010, d = 0.19$]; Depression [$t(671) = 3.615, p < .001, d = 0.27$]; and Wellbeing [$t(661) = 2.665, p = .008, d = -0.21$]. Further details of these analyses can be found in (Appendix D1 – Table 1).

4.3.1.3 Gender Outcome Differences at Baseline

T-tests were also conducted to determine whether or not there were significant gender differences in reported outcomes at baseline. Significant differences were found for eight of the social and emotional skill outcomes, all of the reported mental health and wellbeing outcomes as well as the academic performance outcome. Further details of these analyses can be found in (Appendix D2 – Table 2).

4.3.2 Outcome Analysis

Only data from those students who had completed questionnaires at both baseline and post-intervention (n=497) were included in the analysis of programme impact. This analysis was conducted using a linear mixed model (LMM) to account for clustering of schools. The results of the linear mixed models for all of the outcome variables are shown below in Table 4.2.

4.3.2.1 Social and Emotional Skills

With regard to social and emotional skills, there was evidence to suggest that the intervention decreased levels of suppressing emotions, with students in the intervention group scoring 0.244 points lower at follow-up (95% CI -0.45, -0.041; p=0.035). There was evidence of a significant reduction in avoidance coping in the intervention group. Those students receiving the intervention had a 1.43-point reduction in their avoidance levels (95% CI 0.64, 2.22; p=<0.001). Increased levels of social support coping were also found, with students in the intervention group scoring 0.812 points higher at follow-up (95% CI 0.02, 1.60; p=0.044). There was no evidence for an effect of the intervention on students' other social and emotional skills: self-esteem (p=0.135), emotional intelligence (p=0.076), attention to feelings (p=0.095), emotional clarity (p=0.318), emotional repair (p=.361), cognitive reappraisal (p=0.195), problem-solving coping (p=0.935), social self-efficacy (p=0.865), asserting influence (p=0.306), conflict resolution (p= 0.768) or decision-making (p=0.520).

4.3.2.2 Mental Health and Wellbeing

The results demonstrate that the programme had a significant intervention effect on students' mental health and wellbeing outcomes. The findings show that the intervention significantly decreased levels of both self-reported stress (1.63 decrease 95% CI -2.97, -0.30; p=0.017) and symptoms of depression (1.58 decrease 95% CI -3.01, -0.15; p=0.030). While there was no significant intervention effects for anxiety

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($p=0.159$), there was a significant effect on the intervention on anxiety for females students only (-2.02 decrease 95% CI -5.89, -.078; $p=0.044$). There was no evidence for significant intervention effects on students' self-reported mental wellbeing ($p=0.942$).

4.3.2.3. Academic Performance

No intervention effects were demonstrated for students' attitudes toward school ($p=0.935$) or students' school achievement motivation as rated by teachers ($p=0.819$).

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Table 4.2: Results of linear mixed model analysis for key outcome variables

Scale Name	Scale/Subscales	Group	N	Pre-Mean (SD)	Post-Mean (SD)	Effect	Confidence Interval	P	% change
RSES	Self-esteem	Control	251	27.4 (5.3)	27.5 (5.45)				
		Intervention	246	28.8 (5.4)	29.0 (5.2)	1.48	-0.15, 1.14	.139	0.36%
TMMS	Total Emotional Intelligence	Control	249	68.3 (10.3)	79.3 (11.9)				
		Intervention	244	69.9 (10.0)	82.1 (11.5)	1.78	-0.27, 3.7	.087	16.1%
	Subscale: Attention to Feelings	Control	250	26.2 (4.7)	26 (4.8)				
		Intervention	246	26.4 (4.9)	26.9 (4.7)	1.98	-0.06, 1.75	.067	-0.76%
	Subscale: Emotional Clarity	Control	251	24.8 (5.4)	25.2 (5.5)				
		Intervention	246	25.9 (5.0)	26.3 (5.6)	1.17	-0.39, 1.45	.250	1.61%
Subscale: Emotional Repair	Control	251	28.4 (5.7)	28.2 (5.7)					
	Intervention	246	28.5 (5.7)	28.9 (5.1)	1.05	-0.51, 1.57	.303	1.54%	
CSI	Subscale: Avoidance	Control	250	18.2 (6.2)	18.4 (5.7)				
		Intervention	245	16.5 (5.7)	16.1 (5.2)	-3.35	-2.15, -0.56	<.001**	1.1%
	Subscale: Problem Solving	Control	250	16.4 (5.3)	16.0 (5.0)				
		Intervention	245	16.4 (5.2)	16.1 (5.0)	.97	-0.90, 0.94	.97	-2.42%
	Subscale: Social Support	Control	250	13.6 (5.6)	13.1 (5.2)				
		Intervention	245	12.5 (5.4)	13.3 (5.3)	2.13	0.03, 1.74	.044*	1.10%
SEC-Q	Social Self-efficacy	Control	250	27.1 (6.2)	27.0 (6.3)				
		Intervention	246	27.4 (6.1)	27.4 (6.3)	.394	-0.80, 1.17	.698	-0.37%
ERQ	Subscale: Reappraisal	Control	251	26.3 (8.1)	25.9 (7.4)				
		Intervention	246	26.5 (6.8)	26.5 (6.6)	1.26	-0.06, .29	.210	--
	Subscale: Suppression	Control	251	16.1 (5.5)	15.7 (4.8)				
		Intervention	246	15.4 (5.2)	14.5 (4.3)	-2.2	-.4, -0.02	.033*	-2.48%
								-5.84%	

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AICQ	Subscale: Asserting Influence	Control	251	23.2 (5.8)	23.3 (5.5)				-0.43%
		Intervention	246	23.1 (6.1)	23.6 (5.6)	1.24	-0.04, 0.16	.218	2.16%
	Subscale: Conflict Resolution	Control	251	21.9 (5.6)	22.2 (5.5)				1.37%
		Intervention	246	22.2 (5.6)	22.4 (5.3)	.434	-0.08, 0.13	.665	0.90%
DMS	Decision Making	Control	250	13.6 (3.3)	13.8 (3.4)				1.47%
		Intervention	244	14.0 (3.4)	13.8 (3.3)	-.763	-0.15, 0.07	.457	-1.43%
DASS-21	Stress	Control	250	15.8 (9.6)	15.8 (9.6)				--
		Intervention	245	13.3 (9.3)	12.8 (8.5)	-2.37	-2.94, -0.28	.018*	-3.76%
	Anxiety	Control	250	13.8 (10.2)	13.1 (10.1)				-5.07%
		Intervention	245	11.5 (9.5)	10.5 (9.1)	-1.50	-2.87, 0.46	.148	-8.70%
	Depression	Control	250	13.7 (10.8)	12.9 (10.2)				-5.84%
		Intervention	245	10.4 (9.7)	9.7 (9.1)	-2.18	-3.01, -0.15	.030*	-6.54%
WEMWBS	Wellbeing	Control	250	45.8 (12.3)	47.7 (11.0)				4.15%
		Intervention	244	48.6 (10.7)	49.1 (10.0)	-.183	-1.86, 1.56	.857	1.02%
ATS	Attitudes toward Schools	Control	251	55.9 (10.2)	54.4 (10.4)				-2.68%
		Intervention	246	58 (9.6)	56.6 (10.6)	.231	-0.13, 1.66	.819	-2.41%
SAMRS	School Achievement	Control	243	53.4 (10.6)	54.0 (11.1)				1.1%
		Intervention	295	51.2 (10.9)	51.1 (11.8)	-.220	-3.5, 2.8	.828	-0.2%

^a SD = standard deviation; controlling for pre-test score; ^b * p < .05; ** p < .01 *** p < .001

^c RSES: Rosenberg Self-esteem scale, TMMS = Trait meta-mood Scale, CSI = Coping Strategy Indicator, SEC-Q = Self-Efficacy Questionnaire for Children, ERQ = Emotional Regulation Questionnaire, AICQ=Adolescent Interpersonal Competence Questionnaire, DMS=Decision Making Scale ATS: Attitudes towards School Scale, DASS-21: Depression, Anxiety and Stress Scale, WEMWBS: Warwick Edinburgh Mental Wellbeing Scale, SAMRS: School Achievement Motivation Rating Scale

4.4. Phase 2: Implementation Process Evaluation

(Paper 2 – Dowling and Barry, 2020a – International Journal of Environmental Research and Public Health)

The results of the second phase of the study are outlined in detail below. Phase 2 of the study aimed to explore the variability in implementation quality for schools implementing the MindOut programme and to identify the factors that were likely to contribute to this variability. The results are presented in alignment with the three core objectives of this phase of the study. These objectives relate to the three steps in the concurrent triangulation mixed methods design and are restated for the reader below:

- (i) To assess variability in implementation quality across four dimensions and determine schools' overall level of implementation (high/low) using an implementation quality index (*quantitative*);
- (ii) To identify factors that may have influenced the variability in implementation quality as identified by teachers and students (*qualitative*); and
- (iii) To examine the relationship between schools' level of implementation quality and these reported implementation factors (*integration*).

4.4.1 Demographics

All teachers (n=17; 93% female) who implemented MindOut and students (n=280; 53.6% male) that participated in the programme were asked to complete quantitative and qualitative measures to assess the process of programme implementation during and following the delivery of MindOut. However, as one school did not provide enough data on the implementation of the programme, it was not possible to determine the schools' implementation level grouping and therefore, this school was removed from the quantitative and integration stages of the study. However, the qualitative data from this teacher and students in terms of implementation factors were still included. Therefore, a total of 16 schools (n=16 teachers; n=264 students) were involved in this phase of the study. A majority of schools (63%) chose to deliver the programme with a 5th year group, with the remaining schools delivering the programme to a group of Transition Year (TY) students. The average class size for schools delivering the MindOut programme was 17.06 (SD=5.16; range 8 to 29).

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4.4.2 Quantitative

4.4.2.1 Dimensions

Based on the visual binning procedure for each of the four dimensions, six schools were classified as low-implementers for dosage, seven schools for adherence, nine for quality of delivery and eight for participant responsiveness. More detailed results on these dimensions can be found in Paper 2 (pg. 7).

4.4.2.2 Total Implementation Quality

Based on the visual binning procedure for Total Implementation Quality, eight schools were assigned to the low group (2 low; 6 moderately low) and eight to the high group (6 moderately high; 2 high). The means and ranges for high and low-implementing schools across all dimensions and total Implementation Quality can be viewed below (Table 4.3).

Table 4.3: Descriptive statistics (n, Means and SDs) on implementation dimensions by high and low implementation groups

Implementation Dimensions	High-Implementing Schools			Low-Implementing Schools		
	<i>n</i>	<i>Mean (SD)</i>	<i>Range</i>	<i>n</i>	<i>Mean (SD)</i>	<i>Range</i>
1. Total Dosage	10	93.3% (2.9)	89.1-97.7%	6	74.2% (15.9)	45.8-85%
2. Total Adherence	9	87.3% (8.3)	79.3-100%	7	64.5% (11.0)	43.7-77.2%
3. Total Quality of Delivery	7	86.29% (4.0)	80.0-92.5%	9	67.89% (8.2)	56.5-79.5%
4. Total Participant Responsiveness	8	81.4% (4.6)	76-88.5%	8	68.7% (4.2)	62.3-74.5%
5. Total Implementation Quality	8	85.6% (3.7)	81.0-92%	8	71.6 (8.6)	52.7-78.4%

Notes: ^a Mean = Average of combined indicators converted to a percentage

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The visual binned scores were compared across all four dimensions to determine how frequently each school scored in each group. Four schools ranked high or moderately high in all four dimensions and three schools ranked low or moderately low in all four dimensions. All other schools (N=9) ranked high in some dimensions but low in others. The schools that were identified as high-implementers for Total Implementation Quality based on visual binning, all ranked in the 'high' group for at least three of the four individual dimensions. In comparison, all of the schools identified as low-implementing scored in the 'high' group in two or less dimensions. The visual binning scores for each of the individual dimensions as well as for Total Implementation Quality can be found in Table 4.4 below.

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Table 4.4: Visual binning (VB) scores for schools across dimensions and total implementation quality

<i>School ID</i>	Dosage Total VB score	Adherence Total VB score	Quality of Delivery Total VB score	Participant Responsiveness Total VB score	Total Implementation Quality VB score	Total Implementation Quality Group
#1	3	2	2	1	2	Low
#2	3	3	4	2	3	High
#3	1	1	2	1	1	Low
#4	3	3	1	1	2	Low
#5	1	1	1	1	1	Low
#6	2	2	2	2	2	Low
#7	3	4	3	4	4	High
#8	3	4	3	3	3	High
#9	3	3	3	3	3	High
#10	2	2	1	3	2	Low
#11	2	3	2	2	2	Low
#12	2	3	3	3	3	High
#13	3	3	4	4	4	High
#14	3	2	4	3	3	High
#15	3	2	2	2	2	Low
#16	3	4	2	3	3	High

Notes: ^a VB = Visual Binning Score, ^b Low =1; Moderately Low=2; Moderately High=3; High=4, ^c Total Implementation Quality Group: Low =8; High=8

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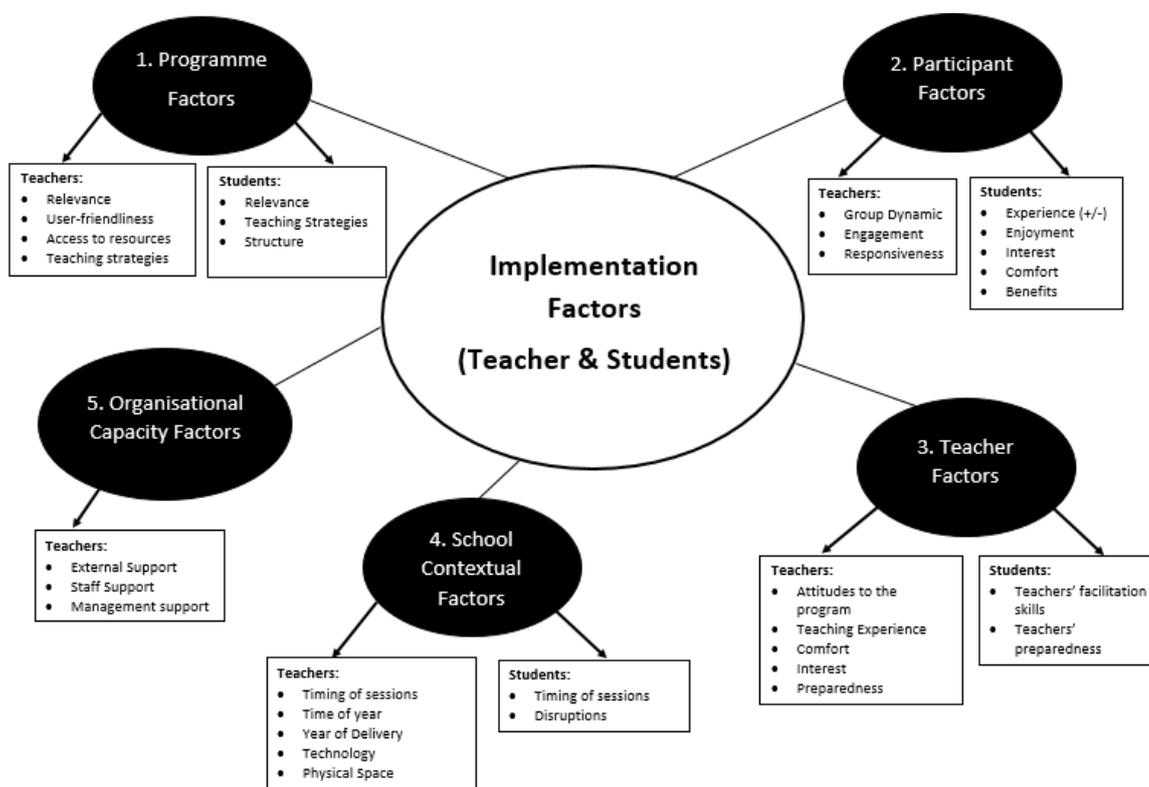
4.4.3 Qualitative

The next results presented reflect the second objective in this phase of the study, which was to identify the factors that may have influenced the implementation quality of MindOut as identified by teachers and students. The data used to determine these results were of qualitative nature and came primarily from three sources: Telephone Interviews, Student Review Questionnaire and Participatory Workshops.

Five themes were identified from the teacher Telephone Interview data: (i) *Programme Factors*; (ii) *Participant Factors*; (iii) *Teacher Factors*; (iv) *School Contextual Factors*; and (v) *Organizational Capacity Factors*. The first four themes were also identified through the Student Review Questionnaire and Participatory Workshop data. The fifth theme was only identified as an influencing factor by teachers.

Programme Factors describe the characteristics of the programme and included factors such as the programme's relevance, materials and resources, user-friendliness, teaching strategies and structure. *Participant Factors* were related to the students' who participated in the programme and included factors such as group dynamic, engagement, responsiveness, and experienced benefits. *Teacher Factors* were related to the characteristics of the implementer and included factors such as teachers' attitudes to the programme, their comfort and interest in the content, their own teaching experience and previous training, facilitation skills and preparedness. *School Contextual Factors* describe characteristics of the school context in which the programme was implemented. These type of factors included the timing of the sessions, the time of year the programme is delivered, year of delivery, peer disengagement, physical space and access to technology. *Organisational Capacity Factors* refer to wider school and community factors which support the delivery of MindOut and included external supports, staff support, and support from management. The themes and sub-themes for both the teacher and student data can be found in Figure 4.1. Additional information which explores these themes/subthemes in more detail can be found in Paper 2 (Appendix A2).

Figure 4.1: Implementation Factors Themes and Sub-themes (Teacher and Student Data)



4.4.4 Integration

The final results presented below reflect the third objective for the second phase of the study. This objective was to examine the implementation factors (*objective 2*) in accordance with the schools' implementation level grouping (*objective 1*) to determine the similarities and differences between the groups in relation to the teacher and student reported implementation factors. Appendix D3 provides a table which outlines the differences and similarities between the two groups in more detail.

4.4.4.1 School Profile

There was a noticeable difference in average class sizes with the high-implementers reporting larger group sizes (M=19.7 SD=5.34) compared to the low-implementers (M=14.5 SD=3.67). Additionally, a majority of the high-implementing group (75%) delivered the programme to 5th years and a majority of the low-implementation group (63%) delivered the programme to TY groups.

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4.4.4.2 High-implementation group

The high-implementation teachers were more likely to speak more positively about the dynamic of their group (e.g., talkative, engaged, cooperative etc.) and were more likely to indicate higher student engagement and positive responses to the programme. These teachers also demonstrated more positive attitudes and acceptance towards the programme. Teachers of the high-implementation group felt supported by management but expresses a desire for increased external support from Health Promotion Officers and agencies to build their SEL skills and support implementation. Students from the high-implementation group were more likely to discuss specific benefits of the programme and demonstrated more positive attitudes towards the programme.

4.4.4.3 Low-implementation group

The low-implementation teachers spoke more negatively about the dynamic of their group (e.g., difficult, high-need, issues, low-emotional literacy etc.) and were more likely to comment on student disengagement, lack of interest and negative responses. Teachers in this group commented on issues with delivering the programme to a TY group (e.g., missing classes, less consistency week-to-week etc.), whereas the high-implementers, a majority (75%) of which delivered the programme to 5th years, did not discuss any similar issues. These teachers also expressed a desire for more backing from school management in supporting the delivery of the programme. Students in the low-implementation group also reported more negative experiences of the programme and tended to speak in more general terms when discussing the perceived benefits of the programme (e.g., ‘helpful’, ‘useful’, ‘learned new things’ etc.). These students also provided negative feedback in relation to their teachers’ facilitation skills and reported experiencing more issues in terms of classroom disruptions and peer disengagement.

4.4.4.4 Similarities

Teachers from both groups reported that the programme dealt with current issues, was relevant and user-friendly. Both high- and low-implementation teachers raised the importance of teachers’ own teaching experience, as well as their comfort, interest and belief in the programme and said that these were all necessary for successful implementation. Teachers in both groups also discussed the importance of introducing the programme early in the year to ensure other competing priorities do not get in the way of delivery. Teachers expressed a need for more support from other staff within

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the school and this was raised by both the high and low-implementation groups. Both groups of teachers agreed that the timing of the sessions (e.g., completing the session in a 35 minute class period) was one of the most difficult challenges faced during implementation. Students from both groups echoed this issue and suggested shortening some of the sessions so they did not feel as rushed. While students in both groups commented on the programme being interesting and relevant there were also students in both groups which found parts of the programme boring.

4.4.5 Additional Findings

The additional findings report on data that were not included in the published papers. Although these findings did not address the key objectives of the study, they are still important to the context of this study and will therefore, be reported in this section. This section of the results reports on both the teachers' and students' experiences of the programme as well as their suggestions for improvement. The results presented here are based on the methods used to assess the process of implementation, which have already been described in the previous chapter, mainly, the measures used include: the Student Review Questionnaire, the Participatory Workshops, the Weekly Reports and the Telephone Interviews.

4.4.5.1 Students' Experiences of the Programme

Students provided both quantitative and qualitative data on their experiences of the implementation of MindOut, which will now be explored. Students were asked to rate their overall experience of the programme on a scale of 1-5 (1 being very poor and 5 being very good). The majority (63.8%) of students rated their overall experience of the programme as either good or very good. Descriptive statistics were run to determine whether or not there were any noticeable differences between low-and high implementation groups' overall experience of the programme. Some 48.7% of students from low-implementation schools rated the programme either good or very good in comparison to 75.2% of students from high-implementation schools. High-implementation groups reported better experiences of the programme in terms of their overall rating in comparison to the low-implementation group. These findings suggest that those students who received a higher quality of programme delivery also found the programme to be more beneficial and reported higher frequencies of practicing SEL skills in comparison to students in schools that had low-quality implementation. During

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the participatory workshops, students were asked to write down the session they enjoyed the most out of the 12 sessions. The top sessions rated by students order were: (i) Session 5: *Support from Others* (ii) Session 6: *Walking in Someone Else's Shoes* and (iii) Session 11: *Happiness and wellbeing*. The lowest rated sessions were: (i) Session 12: *Programme review* (ii) Session 1: *Minding your mental well-being*; and (iii) Session 10: *Problem-solving and decision-making*.

Recommendations & Improvements:

The main recommendations by students included:

- ***Participant Interest/Engagement:*** Students commented that they would like more interactive teaching strategies (e.g., games, videos, group work) included in every session in the programme to keep them more engaged in the lessons. Students also reported that within some sessions, there was a need to make the content (e.g., scenarios) more relevant. Although this was an issue for some students, a majority reported that the programme was relevant. During the development of the scenarios and topics for the programme, young people were consulted to ensure that these were relevant for this age-group and resonated with the realities of their life. However, given that this study was conducted with students from more disadvantaged backgrounds, perhaps the scenarios did not closely relate to their lives. The teacher training has been designed to encourage teachers to use different scenarios or make up their own if they feel their students are unable to relate to the ones provided in the manual.
- ***Timing:*** This was identified by students as a major issue and they expressed that classes were sometimes too rushed. Suggestions from students on how to improve the timing included lengthening the programme so that it was delivered over more class periods or to give more time each week to deliver the session (e.g., more than 35 min class period).
- ***Teacher Delivery:*** Some students identified the quality of teacher delivery as a main issue of concern, stating that their teacher was not engaging enough, prepared for class or enthusiastic about the programme. Some students felt that if they had a different teacher delivering the programme it would have been better. It is clear from this finding that the need for high quality of delivery is not only important for achieving outcomes but for students' enjoyment and overall experience of the programme.

4.4.5.2 Teachers' experiences of the programme

In general, the teachers were very positive about the programme and this was apparent both from the *Weekly Reports* and the telephone interviews. Teachers found the programme to be engaging, age-appropriate and culturally relevant for their students and also acknowledged that the programme was very user-friendly. Teachers reported that they felt that had noticed visible differences to students' self-esteem, support-seeking, ability to manage emotions, relationship skills and empathy. Teachers also acknowledged that they themselves had benefitted from the programme as they gained a better understanding of their students and an awareness of the issues they are facing in their lives. Teachers also said that they felt their own relationships with their students had strengthened as a result of the programme. Teachers rated each of the programme sessions on a scale of 1 to 10 (1 being poor and 10 being excellent) and the total mean score for all the twelve sessions combined was $M=7.8$ ($SD=.62$)

Recommendations & Improvements:

The main recommendations by teachers included:

- **Timing:** Teachers also noted that timing was one of the biggest difficulties with delivering the programme. Many teachers had to deliver the programme within a 35 minute class period. Some teachers had less than 12 weeks to complete the programme which they found difficult. When teachers were asked what could be done to improve this issue of timing many suggested either delivering the programme over double class periods or extending the programme to be delivered over 12+ weeks. Teachers did not want to remove content within the programme as a solution to the timing issue as they felt all the content was valuable. Teachers reported that timetabling was also a major factor and recommended that the MindOut programme be timetabled into the school curriculum at the start of the year so that it is not just 'slotted in' to an available time.
- **Support:** Teachers also discussed that support from management was key in ensuring that the programme could be implemented effectively. Teachers in intervention schools, (TY teachers in particular) said that it was very difficult to keep attendance up week-to-week as TY students faced many interruptions (e.g., work placement, community fundraising, school events etc.), which these teachers found quite difficult to manage. Teachers felt that if school management valued and

recognised the importance of the programme, it would have been easier to ensure students were present for this class.

- **Whole-school:** Teachers indicated that the whole-school strategies were very helpful and were a great resource, however, they explained that due to lack of time it was difficult to communicate this information to all school staff. Teachers felt that as they became more comfortable with the programme materials it would be easier to begin implementing more of the whole-school tips and activities school-wide. They also suggested it might be helpful to email out the tips to other staff and to introduce the programme and whole-schools resources at a staff meeting at the beginning of the academic year.

4.5 Phase 3: Impact of Implementation on Outcomes

(Paper 3 – Dowling and Barry, 2020b –European Journal of Investigation in Health, Psychology and Education)

The results of the third and final phase of the study will now be explored. This phase of the study aimed to determine whether or not variability in implementation quality levels moderates students' outcomes. Specifically, this phase of the study focused on achieving the following two key objectives:

1. To determine whether or not level of implementation (high/low) based on the total implementation quality score significantly impacts programme outcomes at post-intervention or 12-month follow-up when compared to the control group.
2. To examine the role each of the four implementation dimensions of; (i) dosage, (ii) adherence (iii) quality of delivery and (iv) participant responsiveness, play in influencing programme outcomes.

4.5.1 Participants

Based on splitting the intervention group into two groups (high-implementing and low-implementing), which was a result of the second phase of this study, the analysis of this third and final phase was conducted with three groups: (i) high-implementation (ii) low-implementation and (iii) control group. In accordance with the Total Implementation

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Quality scores, eight schools were assigned to the high-implementation group (n=169)² and eight schools allocated to the low-implementation group (n=149)². There were also fifteen schools assigned to the control group (n=345)². The means and SD for each group (high, low and control) at each time point (pre-, post-, 12-month follow-up) based on Total Implementation Quality is presented in Appendix D4.

4.5.2 Repeated Measures LMM for Implementation Quality

Repeated measures LMM were initially run to determine whether there was a significant (Group X Time) effect. This analysis demonstrated that the high-implementation group (but not the low) showed significantly lower levels of stress ($\beta = -2.14$, 95% CI -3.81 to $-.47$, $p = .007$) and depression ($\beta = -2.10$, 95% CI -3.79 to $-.398$, $p = .009$) and significantly higher levels of social support coping ($\beta = .82$, 95% CI $.008$ to 1.84 , $p = .047$) between baseline and 12-month follow-up. For avoidance coping, both the high implementation ($\beta = -1.73$, 95% CI -2.79 to $-.671$, $p < .001$) and the low implementation group ($\beta = -1.26$, 95% CI -2.38 to $-.126$, $p = .023$) demonstrated significantly lower levels when compared to the control group. There were no significant differences detected between the three groups for any of the other outcome measures. The repeated measures LMM is unable to inform when these changes happen, and therefore, it was necessary to run further separate LMM's (i) post-intervention and (ii) follow-up to understand when these changes occurred.

4.5.3 Results of LMM for Implementation Quality Post-Intervention

LMM's were run to compare the three groups across all of the outcome variables. Results of linear mixed model for key outcome variables at post-intervention are shown in Table 4.5.

4.5.3.1 Social emotional skills

Compared to control schools, high levels of implementation quality (but not low levels) were associated with significantly lower levels of avoidance coping ($\beta = -1.53$, 95% CI -2.58 to -0.48 ; $p = .006$) and suppressing emotions reduction ($\beta = -0.95$, 95% CI -1.88 to $-.01$; $p = .049$) and significantly higher levels of social support coping ($\beta = 1.20$, 95% CI $.031$ to 2.09 ; $p = .009$) at post-intervention. Levels of implementation quality were

² Based on number of students (n) at baseline measurement. For numbers at post-intervention and 12-month follow-up, see Table 4 in Appendix D4.

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not significantly associated with any other SEL outcome (all $p > .05$) when comparing the high group to control group. No significant differences were found between the low-implementation and control group for any of the social emotional skill outcomes (all $p > .05$).

4.5.3.2 Mental health and wellbeing

Higher levels of implementation (but not low) were significantly associated with lower levels of stress ($\beta = -2.1$, 95% CI -3.73 to -0.47; $p = .012$) and depression ($\beta = -2.0$, 95% CI -3.73 to -0.03; $p = .025$). Levels of implementation quality were not associated with anxiety or wellbeing outcomes (both $p > .05$). No significant differences were found between the low-implementation and control groups for any of the mental health and wellbeing outcomes (all $p > .05$).

4.5.3.3 Academic outcomes

A significant difference was found between the high-implementation group compared to the low-implementation group for Attitudes towards School with the high-group associated demonstrating better attitudes towards school ($\beta = 3.45$, 95% CI 0.55 to 6.35; $p = .022$). No intervention effects were demonstrated for students' attitudes toward school for the high-or low-implementation groups when compared to the control group ($p > .05$), though the difference between high and control were moderately significant ($p = .053$).

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Table 4.5: Mixed model results of the relationship between the level of implementation quality and outcomes at post-intervention

	Models with the full sample and high-implementation group as reference				Models without high-implementation and with low-implementation group as reference	
	<i>Control</i>		<i>Low</i>		<i>Control</i>	
Dependent Variable	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
Self-esteem	-1.47	.142	-.480	.632	-.834	.405
Total Emotional Intelligence	-1.09	.286	-.021	.984	-1.186	.249
Subscale: Attention to Feelings	-1.56	.132	-.238	.814	-.957	.351
Subscale: Emotional Clarity	-.338	.738	.891	.380	-1.46	.146
Subscale: Emotional Repair	-1.08	.29	-.566	.576	-.37	.713
Subscale: Avoidance ^a	3.03	.006*	.806	.427	1.89	.060
Subscale: Problem Solving	-.477	.638	-.98	.335	.697	.493
Subscale: Social Support	-.264	.009*	-1.92	.056	-.217	.831
Social Self-efficacy	-.56	.58	-.73	.47	.290	.775
Subscale: Reappraisal	-1.76	.078	-1.44	.151	-.058	.954
Subscale: Expressive Suppression ^a	2.06	.049*	1.14	.262	.717	.480
Subscale: Asserting Influence	-1.04	.297	-.181	.856	-.788	.431
Subscale: Conflict Resolution	-.254	.799	-.342	.733	.040	.968
Decision Making	.298	.770	-.949	.354	1.31	.192
Stress ^a	2.10	.035*	1.06	.864	1.07	.707
Anxiety ^a	1.63	.120	.678	.505	.778	.449
Depression ^a	2.25	.025*	1.24	.215	.688	.492
Wellbeing	-.54	.597	-1.40	.177	1.05	.310
Attitudes toward Schools	-2.04	.053	-2.45	.022*	.826	.425

Notes: ^a Reversed scoring outcomes; ^b Group allocation (e.g., high and low) based on Total Implementation Quality score; ^c *p < .05; ** p < .01

4.5.4 Results of LMM for Implementation Quality 12-month Follow-up

LMM's were again run for all of the variables comparing the high implementation group with the low-implementation and control group as well as comparing the low-implementation group to examine differences. Results of LMM for key outcome variables at 12-month follow-up are shown in Table 4.6. Compared to control schools, high-implementation schools (but not low) demonstrated significantly lower avoidance coping at 12-month follow-up (1.91 decrease, 95% CI -3.65 to .162; $p = .033$). No significant differences were found between the three groups for any of the other outcomes (all $p > .05$).

4.5.5 Results of LMM for Individual Implementation Dimensions

Mixed models were run to compare the three groups (high, low, control) according to dimension group level across the variables which demonstrated significance during the initial mixed model analysis. Results of these linear mixed models according to dimensions at post-intervention and 12-month follow-up are reported in Table 4.7.

4.5.5.1 Dosage

Dosage was significantly associated with 2 of the 6 intervention outcomes. Compared to the control group, high-levels of dosage were associated with significantly lower levels of students' Avoidance coping (1.32 decrease, 95% CI -2.30 to -.345; $p = .010$) and Stress (2.0 decrease, 95% CI -3.52 to -.470; $p = .010$). Dosage level for high-implementers was also related to decreased levels of avoidance at 12-month follow-up (2.15 decrease, 95% CI -3.75 to -.555; $p = .010$).

4.5.5.2 Adherence

Levels of Adherence were significantly associated with 2 of the 6 intervention outcomes. Compared to the control group, high levels of Adherence were associated with lower levels of Avoidance coping (1.44 decrease, 95% CI -2.38 to -.491; $p = .005$) and lower levels of Depression (1.60, 95% CI -3.19 to -.004; $p = .049$).

4.5.5.3 Quality of Delivery

Levels of Quality of Delivery were significantly associated with all 6 intervention outcomes at post-intervention. Compared to the control group, high levels of Quality of Delivery were associated with lower levels of avoidance coping (1.53 decrease, 95% CI -2.58 to -.483; $p = .006$), suppressing emotions (0.94 decrease, 95% CI -1.88 to -

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.004; $p=.049$), depression (2.0 decrease, 95% CI -3.73 to -.251; $p=.025$), stress (2.10 decrease, 95% CI -3.73 to -.471) and were associated with higher levels of social support coping (1.20 increase 95% CI .301 to 2.09; $p=.009$). Compared to the low-implementation group, the high level quality of delivery group also demonstrated improved attitudes towards school (3.45 increase, 95% CI .545 to 6.35; $p=.022$). Quality of Delivery levels were also related to decreased levels of avoidance at 12-month follow-up for high-implementers (1.91 decrease, 95% CI -3.65 to -.162; $p=.033$).

4.5.5.4 Participant Responsiveness

Levels of Participant Responsiveness were associated with 4 of the 6 outcomes when compared to the control group. High-quality of delivery schools demonstrated decreases in avoidance (1.51 decrease, 95% CI -2.57 to -.450; $p = .007$), suppressing emotions (1.03 decrease, 95% CI -1.97 to -.091; $p = .033$) and stress (1.94 decrease, 95% CI -3.60 to -.279; $p=.022$) as well as increased social support coping (1.17 increase, 95% CI .261 to 2.08; $p=.012$). Participant Responsiveness levels were also related to decreased levels of avoidance at 12-month follow-up for high-implementers (1.97 decrease, 95% CI -3.73 to -.205; $p = .030$).

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Table 4.6: Mixed model results of the relationship between implementation quality and outcomes at 12-month follow-up

	Models with the full sample and high-implementation group as reference				Models without high-implementation and with low-implementation group as reference	
	<i>Control</i>		<i>Low</i>		<i>Control</i>	
Dependent Variable	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
Self-esteem	-.380	.707	.709	.484	-1.53	.145
Total Emotional Intelligence	.967	.342	1.78	.084	-.552	.581
Subscale: Attention to Feelings	.357	.724	.022	.982	.211	.835
Subscale: Emotional Clarity	.964	.344	1.40	.171	-.862	.389
Subscale: Emotional Repair	1.32	.186	1.80	.072	-.770	.442
Subscale: Avoidance ^a	2.24	.033	.251	.803	1.82	.081
Subscale: Problem Solving	.538	.591	.517	.605	.002	.998
Subscale: Social Support	-.967	.342	-.554	.584	-.300	.767
Social Self-efficacy	1.32	.187	.756	.450	.380	.704
Subscale: Reappraisal	-.844	.399	.058	.954	-.822	.412
Subscale: Expressive Suppression ^a	-.120	.905	.071	.943	-.229	.819
Subscale: Asserting Influence	-.088	.930	.865	.388	-1.00	.318
Subscale: Conflict Resolution	.840	.410	.104	.918	.634	.534
Decision Making	.091	.928	-.754	.458	1.04	.298
Stress ^a	1.73	.098	.551	.586	.867	.396
Anxiety ^a	.874	.390	.257	.799	.457	.652
Depression ^a	1.82	.082	.357	.724	1.40	.177
Wellbeing	-1.46	.157	.648	.523	-1.94	.068
Attitudes toward Schools	.732	.471	.011	.991	.631	.535

Notes: ^a Reversed scoring outcomes; ^b Group allocation (e.g., high and low) based on Total Implementation Quality score; ^c *p < .05; ** p < .01

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Table 4.7: Mixed model results across dimensions with high-implementation group as reference at post-intervention and follow-up

Post-Intervention Variables	Dimensions	Control		Low	
		t	p	t	p
CSI: Avoidance	Dosage	2.80	.010*	.094	.926
	Adherence	3.15	.005**	.714	.481
	Quality of Delivery	3.16	.005**	1.08	.288
	Participant Responsiveness	2.95	.007**	.702	.489
CSI: Social Support	Dosage	-1.82	.084	-.477	.638
	Adherence	-1.48	.155	.359	.723
	Quality of Delivery	-2.91	.004**	-2.35	.019*
	Participant Responsiveness	-2.53	.012*	-1.71	.089
ERQ: Expressive Suppression	Dosage	1.58	.127	.053	.958
	Adherence	1.51	.142	-.157	.876
	Quality of Delivery	2.15	.041*	1.23	.228
	Participant Responsiveness	2.25	.033*	1.40	.171
DASS-21: Stress	Dosage	2.57	.010*	1.09	.277
	Adherence	1.70	.090	-1.04	.300
	Quality of Delivery	2.71	.007**	1.40	.163
	Participant Responsiveness	2.30	.022*	.668	.505
DASS-21: Depression	Dosage	1.63	.105	-.108	.914
	Adherence	1.97	.049*	.639	.523
	Quality of Delivery	2.37	.018*	1.45	.148
	Participant Responsiveness	1.82	.070	.487	.627
Attitudes towards School	Dosage	-.490	.628	-.785	.439
	Adherence	-.146	.885	-.052	.959
	Quality of Delivery	-2.63	.015*	-3.22	.004**
	Participant Responsiveness	-1.14	.265	-1.75	.092

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Follow-up		<i>Control</i>		<i>Low</i>	
Variables	Dimensions	t	<i>p</i>	t	<i>p</i>
CSI: Avoidance	Dosage	2.76	.010*	1.03	.312
	Adherence	1.89	.068	-1.00	.324
	Quality of Delivery	2.88	.009**	-1.2	.242
	Participant Responsiveness	2.28	.030*	.371	.714

Notes: ^a * $p < .05$; ** $p < .01$; ^b Mixed models only completed for outcomes found to be significant in original analysis; ^c CSI = Coping Strategy Indicator, ERQ = Emotional Regulation Questionnaire, DASS-21: Depression, Anxiety and Stress Scale

4.6 Summary of Results

The main findings from this study demonstrate that the MindOut programme, when implemented with high-quality, can be effective in producing positive outcomes for participants. This chapter provided a detailed overview of the results from each of the three phases of this overall study. In the first phase, results demonstrated that the MindOut programme was effective in improving students' social emotional skills and mental health and wellbeing outcomes between baseline and post-intervention.

The second phase of the study evaluated the process of implementation of the MindOut programme. An implementation index of indicators was used to assess implementation quality across the four dimensions and found that variability in implementation quality existed between intervention schools. Schools were categorised based on their implementation quality scores into either the high-implementation (n=8) or low-implementation (n=8) group. Variability within schools across different dimensions of implementation quality was also detected. A number of contextual factors were also identified by both teachers and students that may have impacted on implementation quality. These factors were examined relative to schools' implementation level grouping and a number of differences in reported contextual factors were identified.

The third and final phase of this study assessed the relationship between level of implementation quality and programme outcomes between baseline and post-intervention as well as baseline and 12-month follow-up. While the first phase of the study concluded that the MindOut programme was effective in producing positive outcomes for participants, it did not consider the implications of implementation quality on these findings. After taking into consideration the variability in implementation quality between intervention schools, it became clear that the MindOut programme was only successful in improving outcomes for students in schools that implemented the programme with high quality. The results of this phase of the study also found a lack of sustained outcomes at 12-month follow-up for participants. Finally, this study examined how different dimensions of implementation quality impacted on programme outcomes and found that Quality of Delivery, followed by Participant Responsiveness were the strongest predictors of positive outcomes.

CHAPTER 5

DISCUSSION

5.1 Introduction

The purpose of this study was to: (i) evaluate the immediate impact of the MindOut programme on students' social emotional skills, mental health and wellbeing and academic outcomes; (ii) examine the variability in implementation quality for schools implementing the MindOut programme and to identify influencing factors that were likely to contribute to this variability; and (iii) determine how the level of implementation quality impacts on programme outcomes for student participants.

It is clear from the findings that the MindOut programme can be effective in producing positive outcomes for participants, particularly those students of disadvantaged status. However, it is also apparent that the quality of the programme's implementation plays an important role in its overall effectiveness. The main findings from the study will now be examined, first by examining the significance of the study overall and then bringing together the results from each of the three study phases and discussing these within the context of the existing literature. First, the impact of the programme on students' outcomes will be discussed. Following this, the findings in relation to the process of implementation will be considered, which will include: schools' level of implementation quality, implementation dimensions, factors influencing implementation quality as well as student and teacher feedback of their experiences with the programme and suggestions for improvement. The relationship between implementation quality and programme outcomes will then be discussed. Finally, the strengths and limitations of the study will be explored.

5.2 Significance of Study Overall

The present study reported the short-term and long-term evaluation results of the MindOut programme for students in disadvantaged post-primary schools in Ireland. In line with international research (Durlak et al., 2011; Taylor et al., 2017), this study supports the effectiveness of implementing universal school-based social and emotional learning programmes demonstrating positive programme impacts on students' social

and emotional skills and mental health and wellbeing. However, the study also highlights that the implementation quality of a programme is essential for its success and without it, intended programme effects are likely to be lessened or even non-existent. Therefore, the importance of implementation quality should receive as much recognition and support as the programme itself, when introducing new programmes to school settings. It is also crucial that the monitoring of implementation quality is prioritised in evaluation studies alongside the assessment of programme outcomes. Implementation theories and frameworks (e.g., Greenberg et al., 2005; Domitrovich et al., 2008; Durlak and Dupre, 2008) can be useful tools to guide the implementation process during all phases of implementation including adoption, delivery and sustainability of school-based programmes. This chapter will now explore the results of each of the three phases of the overall study in greater detail, considering these findings within the context of existing literature.

5.3 Effectiveness Study (Phase 1)

This phase of the study evaluated the immediate impact of the MindOut programme on students' social emotional skills, mental health and wellbeing and academic outcomes. This study was completed by employing a c-RCT design and assessing outcomes at baseline and post-intervention.

5.3.1 Programme Need

Previous studies have provided evidence that individuals from disadvantaged backgrounds with lower socioeconomic status (SES) are more at risk of experiencing stressful life events and developing poorer mental health outcomes (Reiss et al., 2019). Although the MindOut programme is a universal programme intended for all senior-level post-primary school students, the current study was conducted with students attending schools of disadvantaged status who were viewed as being more at risk. Schools that have a large number of at-risk students may experience increased problems in implementing programmes with high-quality (Gottfredson and Gottfredson, 2002; Tolan, Gorman-Smith and Henry, 2004), due to reasons such as higher mobility and absenteeism resulting in lower exposure (dosage) to the programme (Millar, 2017; Darmody, Smyth and McCoy, 2008), increased disruptions and classroom behavioural difficulties (Weir et al., 2017; Weir and Archer, 2011) as well as increased staff turnover (Holme et al., 2018). Therefore, if a programme such as MindOut, can be successfully implemented in schools with a high proportion of 'at-risk' students, it is

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likely it can also be effectively implemented with students from other schools in Ireland.

The baseline findings from this study were compared to findings of other studies in Ireland and the UK that used similar measures for assessing the mental health of young people (e.g., DASS-21 and WEMWBS). Compared to findings from the general population of students in Ireland and the UK (Dooley et al., 2019; Clarke et al., 2011), the students within this study reported poorer mental health and wellbeing. The baseline findings also confirmed the current literature around gender differences with female students reporting poorer mental health and wellbeing compared to their male counterparts (Dooley et al., 2019). These findings demonstrate that students from disadvantaged backgrounds present poorer mental health outcomes and are, therefore, recognised as an at-risk group, providing a rationale for engaging these students in school-based SEL programmes such as MindOut.

5.3.2 Programme Effects

The results of this phase of the study demonstrated that the MindOut programme led to positive outcomes for students by improving their social emotional skills, including reduced suppression of emotions, reduced avoidance coping and increased social support coping. The results also found significant improvements for participants in relation to their mental health, with intervention students reporting lower levels of stress, and reduced symptoms of depression as well as anxiety for female participants. These findings are in line with previous research that has demonstrated the number of improvements that SEL programmes can provide for students' social and emotional competence and mental health and wellbeing (Durlak et al., 2011; Taylor et al., 2017; OECD, 2015). Examining the significant outcomes from this study more closely, we can see a number of benefits that arise from the development of these specific skills. For example, lower ratings of emotional suppression have been associated with higher positive affect, life satisfaction, social support as well as lower negative affect and depression (Balzarotti et al., 2010; Gross and John, 2003; Haga, Kraft and Corby, 2009; Nolen-Hoeksema and Aldao, 2011). Higher levels of avoidant coping is often associated with higher levels of depression, social anxiety, misuse of drugs and alcohol and deviant behaviours (Blumenthal et al., 2016; Horwitz, Hill and King, 2011; Markova and Nikitskaya, 2017) and, therefore, reducing this type of coping behaviour is likely to have a positive influence on all of these. On the other hand, social support

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coping has been found to be associated with lower levels of stress and depression and higher self-esteem (Camara Bacigalupe and Padilla, 2017; Lee et al., 2014; Thorsteinsson, Ryan and Sveinbjornsdottir, 2013).

The presence of stress, depression and anxiety during adolescence can have serious negative impacts on a young person's life. These mental health difficulties have been associated with poorer social relationships, poorer academic performance and school drop-out, increased substance misuse, increased delinquent behaviours as well as increased risk of self-harming and suicide (Beesdo, Knappe and Pine, 2009; Birmaher et al., 1996; WHO, 2013). Given that young females are at an increased risk of experiencing anxiety (Bahrami and Yousefi, 2011; Hosseini and Khazali, 2013), it is important to note that SEL programmes can be effective in reducing this risk among the adolescent female population. Therefore, the development of social and emotional skills through SEL programmes such as MindOut, can act as a protective factor not only for mental health problems but also for a wide range of negative health and social outcomes.

The results from this phase of the study also demonstrated a number of non-significant outcomes for participants and it is important to explore the possible reasons for these null effects. The order of MindOut programme sessions was designed to mirror that of CASEL's SEL framework, starting with building self-awareness and self-management skills during the first half of the programme followed by a focus on social-awareness, relationship management and responsible decision-making skills in the latter half. Reflecting on the results, it is clear that the most promising outcomes in this evaluation were related to students' emotional skills, particularly in relation to their ability to express and manage their emotions appropriately. These skills are covered in sessions two to five, while the skills that were not shown to be significant (e.g., social skills, decision-making) were covered from sessions six to thirteen. It is possible that adherence to the programme activities and engagement might have been higher for the first half of the programme compared to the latter, leading to stronger outcomes for these specific skills. A number of teachers reported that they ran out of time to deliver the programme in its entirety and this implementation factor could have impacted on the visibility of these intended outcomes.

An additional possible reason for the presence of null effects could have been due to sensitivity of the measures used. While efforts were made to ensure that the measures

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reflected all five competencies from CASEL's framework, it is possible that the selected measures were not sufficiently sensitive in capturing the specific aspects and skills taught in the MindOut programme. Also, some of the outcome measures selected may have not have been sufficiently sensitive to change over time and therefore, these measures may not have been able to detect differences between time-points. Finally, the MindOut programme is a 13-week curriculum-based programme and while it did demonstrate a number of positive outcomes, it is likely that this programme, similar to other SEL programmes, needs to be extended across years and embedded into a whole-school approach, where skills can be practiced more regularly, in order for more positive outcomes and larger effect sizes to be shown and sustained over time.

For academic performance, no significant positive effects were detected for the control or intervention group in relation to students' self-reported attitudes toward school or teacher-reported school achievement motivation. Although previous research (primarily from the USA), has shown evidence for the effectiveness of SEL programmes in improving students' academic outcomes (e.g., learning, attitudes towards school, educational attainment, school motivation etc.) (Durlak et al., 2011; Zins et al., 2004), this study did not find any significant impact of the intervention on these tested outcomes. Research has highlighted that in addition to classroom-based strategies, positive school climate and whole-school approaches are both key contributors towards improving academic outcomes for students (Greenberg et al., 2017; Jones and Bouffard, 2012; Osher, Dwyer, and Jackson, 2004). While MindOut includes whole-school resources for schools, these strategies were not implemented to a high degree as reported by teachers in the intervention schools. It is likely that classroom-based strategies alone are not enough to impact on academic outcomes for students and that these need to be aligned with whole-school elements that promote a positive school climate in order to see these types of improvements.

In addition to the Attitudes towards School scale and School Achievement Motivation scale used, an effort was also made within this study to assess students' grades through self-report and teacher-report measures. However, the data from these two sources did not correlate with each other, which raised concerns about their validity. Given the poor consistency between these two self-report measures, as well as the lack of access to standardised testing scores within Irish schools, no appropriate measures for academic grades were available.

5.4 Process of Implementation (Phase 2)

This phase of the study set out to assess the variability in implementation quality of schools delivering the MindOut programme and to investigate the factors that most likely contributed to this variability. These aims were achieved through a mixed methods approach assessing quantitative and qualitative data from teachers and students, and integrating these to form a clearer picture of the implementation quality across intervention schools.

5.4.1 Variability in Implementation Quality

The findings from Phase 2 revealed that variability in implementation quality was evident between schools (range 55% - 92%), even when the training and resources the schools received were identical. These findings are in line with other research which have found that interventions are not always implemented as intended and that variability in implementation often exists between sites (Durlak, 1998; Wilson, Lipsey and Derzon, 2003; Durlak and Dupre, 2008). Given that programmes can lose their effectiveness when they are implemented poorly, this is an important finding within the context of the original c-RCT study, which did not account for implementation level differences in its analysis. Therefore, the findings from this phase of the study warranted further investigation into how different levels of implementation quality impacts on programme outcomes (Phase 3).

This study also found evidence of variability within schools, across the different dimensions of implementation quality. Of the 16 intervention schools, seven consistently scored either high or low across all four dimensions, whereas all of the other schools varied, scoring high in certain dimensions and low in others. Currently, there are few programme evaluations which examine implementation quality via multiple dimensions, whilst a majority of studies remain focusing on singular dimensions, primarily dosage or adherence (Domitrovich and Greenberg, 2000; Durlak and Dupre, 2008; Rojas-Andrade and Bahamondes, 2018). However, studies that have assessed implementation quality across several dimensions have indicated that dimensions that often receive less attention (e.g., quality of delivery) could be equally if not more important in the achievement of outcomes (Berkel et al., 2011; Durlak, 2015; Lendrum, Humphrey and Greenberg, 2016; Humphrey, Barlow and Lendrum, 2018; Pettigrew et al., 2015). For example, the evaluation of the keepin' it REAL

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programme (Pettigrew, 2015) found that quality of delivery and participant responsiveness were the strongest predictors of programme outcomes compared to other dimensions. Likewise, an evaluation of the PATHS programme (Humphrey, Barlow and Lendrum, 2018) reported that both quality of delivery and participant responsiveness led to significant improvements for participants, whereas programme reach, fidelity/adherence and dosage were not associated with any outcomes. These differences in dimensions is an important consideration and provide further rationale for assessing implementation quality using multiple dimensions rather than a single dimension solely.

5.4.2 Factors Impacting Implementation Quality

In addition to examining the variability in implementation quality, this second phase of the study also explored influencing factors that affected implementation as identified by both teachers and students. Consistent with previous studies (Durlak and Dupre, 2008; Domitrovich et al., 2008; Humphrey, Barlow and Lendrum, 2018), these findings highlighted a number of factors that contributed to variability in implementation. Clear parallels can be made between the factors identified within this study and those in Greenberg's et al., (2005), Domitrovich's et al., (2008) and Durlak and Dupre's (2008) implementation frameworks.

In terms of *Programme Factors* in the current study, teachers repeatedly made reference to the user-friendliness of the programme, the interactive teaching techniques and the age- and culturally-appropriate content. Successful programme implementation is more likely when the programme materials are visually appealing, user-friendly, age-appropriate, and culturally sensitive (Greenberg et al., 2005; Osher et al, 2016). The design and format of instructor manuals can have a significant impact on the quality of implementation and are most helpful when they provide the theoretical rationale for the programme, explain the theory's connection to the content and teaching strategies, state the programme objectives, and include detailed, well-organised lesson plans (Greenberg et al., 2005). Additionally the use of a range of interactive instructional strategies can improve participants' responsiveness to the programme and in turn the quality of implementation. The most successful sessions in the MindOut programme according to teachers (Session 3: Thoughts, Feelings, Actions; Session 4: Coping with Challenges and Session 5: Support from Others and Session 8: Managing Online

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Behaviours) and the students' favourite sessions (Session 5: Support from Others and Session 6: Walking in Someone Else's Shoes) all incorporated more interactive strategies (e.g., videos, games, role play, group work etc.) in comparison to some of the less favoured sessions. Thus programmes that include a range of interactive strategies are more likely to receive a more positive response from students and are therefore, easier to implement with high quality. These *Programme Factors* relate to quality of materials in the 'planned support system' described by Greenberg et al., (2005) as well as Durlak and Dupre's (2008) 'characteristics of the innovation'.

For *Teacher Factors* in the current study, implementer readiness was identified as an important factor in implementation quality. Implementer readiness includes teachers' knowledge and skills to carry out the intervention, their acceptance of the intervention and attitudes towards the programme and their perceptions on the value of the programme (Greenberg et al., 2005). These types of factors are vital for good quality implementation (Rohrbach, Graham and Hansen, 1993; Elias et al, 2003; Pankratz, Hallfors and Cho, 2002; Parcel et al, 1991; Ringwalt et al, 2003; Rogers, 2003; Beets et al., 2008; Mihalic, Fagan and Argamaso, 2008; McIntosh et al., 2013; Wang et al., 2015). Teachers' self-efficacy and confidence in their own knowledge and skills to deliver the programme are also related factors which impact on the quality of implementation (Kallestad and Olweus, 2003; Rohrbach, Graham and Hansen, 1993). Teachers who lack prior training experience and have lower levels of comfort and efficacy in teaching the programme will likely demonstrate poorer quality implementation compared to teachers who have higher self-efficacy (Domitrovich et al., 2008). A number of teachers in this study expressed the importance of ensuring that a teacher delivering the programme was trained in SPHE and had the knowledge and skills to support the delivery of the programme. They also said that it was vital that a teacher delivering the programme was passionate and interested in mental health promotion and SEL and felt confident in their ability to facilitate these lessons. In this study, there was also an evident relationship between students' rating of their teachers' delivery of the programme and their own enjoyment of the sessions. While some students were quite positive when discussing their teachers' delivery of MindOut, other groups of students pointed out ways their teachers' quality of delivery could have been improved. Being prepared and organised for classes, delivering the sessions in an engaging way and showing enthusiasm are all factors which will increase the quality of

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delivery and therefore improve students' engagement, responsiveness and participation with the programme (Pettigrew et al., 2015). Stronger quality of delivery is therefore, related to the successful implementation of a programme and the achievement of outcomes. The *Teacher Factors* in this study relate to 'implementer readiness' (Greenberg et al., 2005), 'provider characteristics' (Durlak and Dupre, 2008) as well as the 'professional and psychological characteristics' (Domitrovich et al., 2008) identified in the implementation frameworks.

Related to *Participant Factors* in the current study, teachers regarded students' engagement and positive response to the programme as important facilitating factors for quality implementation. There was also an evident link between students' reported experiences of the programme and the level of implementation quality. When participants are actively engaged in programme activities and are able to acknowledge the specific benefits of the programme, their acceptance and attitudes towards the programme is increased and this helps in supporting better quality implementation (Greenberg et al., 2005). Factors such as students' enjoyment and enthusiasm for a programme can have either a direct positive or negative impact on teachers' attitudes towards the programme as well as their willingness and motivation to deliver the programme, factors which are known to facilitate/hinder quality of implementation (McBride, Farrington, and Midford 2002; Pettigrew et al., 2013; Audrey, Holliday, and Campbell, 2008; Domitrovich et al., 2008). These *Participant Factors* can be related to 'participant responsiveness' in the planned intervention identified by Greenberg and colleagues (2005). Additionally, teachers discussed classroom climate and peer relations as factors that can impact on implementation. Factors related to classroom climate and management (e.g., relationships, norms, conflict) can potentially influence both teachers' adoption and implementation of an intervention, as well as students' engagement and programme participation (Low et al., 2014; Evans et al., 2009). Some teachers in this study spoke about difficulties with their students' group dynamic (e.g., difficult, high-need, issues, disruptive), while other teachers were more positive when discussing their students' group dynamic (e.g., high-participation, talkative, engaged, co-operative). Higher levels of issues in the classroom may result in a teacher spending more time on classroom management than on teaching, which could have a negative impact on the classroom environment and can impact on their ability to implement a programme with high quality (Koth, Bradshaw and Leaf, 2008; Kellam et al, 1998;

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Botvin, 2004). A number of studies have demonstrated the importance of participant factors in impacting the classroom climate as well as the effective implementation of programmes (McBride, Farrington, and Midford 2002; Pettigrew et al., 2013; Pearson et al., 2015; Audrey, Holliday, and Campbell, 2008). The *Participant Factors* in the current study relate to ‘classroom-level factors’ (Greenberg et al., 2005) as well as the ‘school-level factors’ (Domitrovich, 2008) in the relevant implementation frameworks.

In terms of the *School Contextual Factors* in this study, timing (35 min sessions), was identified by both teachers and students as one of the biggest practical issues impacting on the quality of implementation. Teachers expressed that at times they felt rushed and that they felt that it impacted on their ability to adhere to all of the activities as well as their quality of delivery of the lessons. Students also voiced that timing was sometimes an issue and that they wished they had more time to complete all of the lessons or discuss more topics in greater depth. When teachers and students were asked to feedback suggestions on improving the timing of the programme they suggested timetabling double-class periods (e.g., 70 min) for MindOut or stretching the programme out to be delivered over a longer length of time (e.g., >12 weeks) as neither group felt that it was appropriate to eliminate any of the valuable content. Both of these suggestions made by the teachers and students relate to the timetabling of the MindOut programme into the curriculum. Therefore, while the timing of the programme (12 x 35 min sessions) was fixed, contextual factors such as administrative support and school leadership could potentially alleviate the timing issues by introducing more room in the timetable to deliver programmes such as MindOut. In order for this to happen though, it is essential that school leaders and administrators recognise the need for, and value the skills taught within the programme in order for programmes like this to be prioritised. Therefore the *School Contextual Factors* in the current study relate to the ‘programme-model’ (Greenberg et al., 2005) and ‘characteristics of the innovation’ (Durlak and Dupre, 2008) as well as contextual factors at the ‘school-level’ (Greenberg et al., 2005; Domitrovich et al., 2008).

For *Organisational Capacity Factors*, many of the teachers discussed the importance and value of the MindOut training in supporting them to deliver the programme. Teachers also spoke about the importance of ongoing support in implementing the programme, however, few teachers spoke specifically about their own experience of this support. Research has shown that high quality teacher training in addition to

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ongoing technical support can increase providers': (i) knowledge of how the programme works and what is necessary to implement the programme effectively; (ii) ability to deal with implementation challenges in a timely manner; and (iii) understanding and acceptance of the intervention (CASEL, 2003, Hallam and Ireson, 2005; Kam, Greenberg and Walls, 2003). Training teachers on a once-off basis and letting them off on their own afterwards is an ineffective way to support high quality implementation (Fixsen et al., 2005). Instead, effective programme implementation requires initial training, which is interactive and engaging and is further supported by ongoing technical assistance and support (Bamberger, Rao and Woolcock, 2010). These *Organisational Capacity Factors* relate to the 'technical support factors' highlighted by Greenberg and colleagues (2005) and the 'prevention support system' defined by Durlak and Dupre, (2008). Additionally, administrative leadership and support as well as positive school climate (e.g., staff support) were expressed by the teachers in this study as impacting on their quality of implementation. These factors can have a significant positive or negative impact on the successful implementation of evidence-based interventions (Gottfredson and Gottfredson, 2002; Gregory, Henry and Schoeny, 2007; Elliott and Mihalic, 2004; Kam, Greenberg and Walls, 2003; Beets et al., 2008). As mentioned above, the issue of timing pressure expressed by the teachers in this study can be relieved by increased support from administration and management. Teachers also discussed the difficulty in implementing the programme when other staff members and management did not value the programme or see the need to make the programme a priority. Teachers discussed the importance of staff awareness about the programme and SEL and felt that this was vital in ensuring higher quality implementation and sustainability of the programme. School leaders are in a position to organise timetables and allocate sufficient administrative support for a new programme to be implemented with high quality (Greenberg et al., 2005). Lack of school leadership, administrative support and staff support can result in teachers' loss of motivation for the programme and in turn poorer implementation quality (Mihalic et al., 2004; Schonert-Reichl, 2017; Kendziora and Osher, 2016). These *Organisational Capacity Factors* relate to 'school-level factors' highlighted by both Greenberg et al., (2005) and Domitrovich et al., (2008) and 'organisational capacity' related to the prevention delivery system as identified by Durlak and Dupre (2008).

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The other ‘district-level’ and ‘community-level’ factors (Greenberg et al., 2005; Durlak and Dupre, 2008) and ‘macro-level factors’ (Domitrovich et al., 2008) identified in the implementation frameworks were not discussed by either the teachers or students in this study. Rather than using the implementation frameworks to guide the interviews and analysis process through a deductive approach, the current study used an inductive thematic approach by asking participants about their experience of the programme more generally, and collating any data which made references to implementation. Therefore, teachers and students were not specifically prompted to discuss contextual factors at different ecological levels such as the school/district/community. Within the context of this study, it is likely that individual-, classroom- and school-level factors were thought to be the most important implementation factors for teachers and students, however, if participants had been specifically asked about wider-level factors perhaps we might have obtained further data on these factors at different ecological levels.

5.4.3 Differences in Factors between High and Low-Implementation Groups

During the second phase of the study, the quantitative and qualitative data were integrated and examined together to determine whether there were differences in how groups reported on implementation factors. The analysis found a number of differences between the groups, mainly for *Participant Factors*, *Teacher Factor* and *Organisational Capacity Factors*. The *Programme Factors* and *School Contextual Factors* highlighted by both groups were quite similar.

For *Participant Factors*, the schools in the high-implementation group were more likely to have larger class sizes in comparison to the low-implementation group, which contradicts previous findings indicating that increased class sizes lead to decreases in quality implementation (Botvin, 2004; Caria et al., 2013). It is possible that schools with smaller class sizes may have had pre-selected a group of higher-need students to deliver the programme to, which could have affected the implementation quality (e.g., more disruptions, lower attendance, lower engagement, more complex behavioural issues etc.). Poorer classroom behaviours, misconduct, peer conflict and classroom management have all been identified as predictors of weaker implementation (Botvin, 2004; Caria et al., 2013; Mihalic, Fagan and Argamaso, 2008). The MindOut programme could also be easier to implement with larger class sizes due to the interactive nature of the activities which require a certain number of students to work effectively. Additionally for *Participant Factors*, the high- and low-implementation

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groups differed in the year group they selected to deliver the programme with. Although all schools were given the choice to deliver the programme to either a TY class or 5th year class, a larger number of low-implementing schools selected the former whereas a majority of high implementation schools selected the latter. The low-implementation group commented on difficulties they had faced delivering the programme to TY students due to class interruptions, lack of structure and poor attendance, while the high-implementation group did not make reference to these types of issues. Teachers in high-implementation schools were also more likely to make positive statements about their student group dynamic and their students' engagement whereas low-implementers commented more negatively about these aspects. Based on these findings, the importance of participant factors for successful implementation is apparent. Schools deciding to implement this type of programme need to consider the characteristics of their participants and group when planning delivery. Additionally, schools should consider a group who can participate in the programme consecutively on a weekly basis. Interruptions in implementation lead to disjointed programmes that are likely to have lower participant-engagement and reduce their overall effectiveness.

In terms of *Teacher Factors*, teachers of higher-implementing schools demonstrated more positive attitudes towards the programme compared to low-implementers. The implementers' perceptions and attitudes towards the programme including, acceptance of the intervention, compatibility with the schools' values and mission as well as perceived value, usefulness and effectiveness are all factors that lead to stronger implementation quality (Domitrovich et al., 2008). Therefore, it is not surprising that the teachers of high-implementing schools were more positive when discussing the programme and its benefits. Additionally, students from low-implementing schools commented on their teachers' poor delivery of the programme, whereas the high-implementing students did not. When a teacher is perceived as lacking in areas of quality of delivery (e.g., enthusiasm, engaging, control, preparation etc.) it is likely to have an impact on how students respond and engage with the programme and thus, the overall quality of implementation.

A final key difference between the two groups was in relation to Organisational Cfactors'. While both groups expressed the need for more support from other teachers and staff members, the low-implementers were more likely to say they wanted more

support from management. This finding highlights the importance of top-down support from school management for enhancing the quality delivery of SEL programmes and this should be a key consideration of stakeholders before any SEL programme is introduced into a school.

5.5 Impact of Implementation on Outcomes (Phase 3)

The purpose of Phase 3 was to determine whether the level of implementation quality based on the total index score significantly impacted on programme outcomes for students at post-intervention and/or 12-month follow-up. In the first phase of the study, the results demonstrated significant improvements in a number of social emotional skills and mental health outcomes between pre- and post-intervention for intervention students (Dowling, Simpkin and Barry, 2019). However, this outcome study did not take into account the varying levels of implementation quality of intervention schools, which is essential for understanding the programme's effectiveness (Durlak, 2016). Given that implementation was not considered in the original study, the third phase of the study explored the relationship between implementation quality and outcomes.

5.5.1 Implementation Quality on Outcomes

5.5.1.1 Immediate

The findings from this phase of the study demonstrated that all outcomes that were found to be significant in the original c-RCT study (social support coping, avoidance coping, suppressing emotions, depression and stress) were only significant for those schools in the high-implementation group, but not the low-implementation group at post-intervention. These findings are not surprising, given that there has been extensive research which evidences the relationship between implementation quality and outcomes (Durlak et al., 2016; Durlak and Dupre, 2008; Fixsen et al., 2005). When implementation quality is high, it is likely to positively enhance programme outcomes, however when implementation quality is poor, it can reduce the intended outcomes or even result in null effects (Dusenbury et al., 2005; Durlak, 2016; Durlak and Dupre, 2008). In this study, we can see that while the high-implementation group received a number of benefits from the programme, the low-implementation group did not show any significant improvements and therefore, demonstrated similar outcomes to the control group who did not engage with programme at all. Therefore, this study

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highlights the key role implementation quality plays in a programme's success and suggests that strong evidence-based programmes are not enough on their own to produce intended outcomes. In order to understand the true effectiveness of a programme, the quality of implementation needs to be considered (Kelly and Perkins, 2012; Fixsen et al., 2005; Meyers, Durlak and Wandersman, 2012; Moir, 2018). For example, if a majority of schools had implemented MindOut with poor quality resulting in little to no programme effects, and implementation quality had not been monitored, the programme would have been deemed ineffective. When in reality, the reason for this lack of positive outcomes was likely due to the programme's poor quality of implementation. By monitoring implementation, the risk of misinterpreting results like this is reduced and researchers can gain a better understanding of the conditions under which a programme succeeds and/or fails so that efforts can be made to maximise quality of implementation and outcomes in the future (Durlak, 2016; Dane and Schneider, 1998; Domitrovich and Greenberg, 2000). Not only do the findings from this study demonstrate the importance of measuring implementation, they also highlight the importance of providing support to improve the quality of programme implementation. Although a programme may be theoretically sound, this does not ensure positive outcomes if the programme is not implemented to high quality (Durlak, 2016; Moir, 2018). Investing money, time, energy and resources on programmes which are not being implemented with a high quality is wasteful and disadvantageous for students, teachers and the education system (Durlak, 2016). Therefore, it is important that stakeholders commit to carrying out and supporting high-quality implementation of programmes to ensure these investments are worthwhile and not wasted due to poor implementation (Durlak, 2016).

5.5.1.2 Long-term

In addition to assessing the immediate outcomes of the programme at post-intervention, the analysis also examined the long-term effects of the programme 12-months post-intervention. The findings from this analysis revealed that only one of the outcomes measures (avoidance coping) was sustained for the high-implementation group at 12-month follow-up. While the MindOut programme had an immediate impact on students' social and emotional skills and mental health outcomes, the programme was not able to produce long-term sustainability of these outcomes.

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Possible reasons for this lack of effect at 12-month follow-up will now be discussed. First, it is possible that the outcomes were not sustained at 12-month follow-up due to the timing of follow-up data collection, which took place during the spring semester the year following implementation. Many students participating in the MindOut study would have been sitting their final year 'Leaving Certificate' exams a few months after the time of the follow-up data collection. The pressures of education and the Leaving Certificate exams in Ireland, are known to put added stress on adolescents and cause burnout (Dooley et al., 2019; Banks, McCoy and Smyth, 2018). Given that the majority of high-implementation school students (75%), in comparison to low-implementation schools (37%) and control schools (36%), would have been in the Leaving Certificate year at the time of the 12-month follow-up, it is possible that these students' reported outcomes could have been negatively affected by this pressure. Secondly, given that MindOut is primarily a curriculum-based programme, it is possible that its lack of integration at a whole-school level could have impacted its ability to sustain longer term outcomes. The research literature suggests that embedding SEL strategies into the daily practices of schools, across years and at a whole-school level is likely to produce the best and most sustained outcomes for participants (Jones and Bouffard, 2012; Wilson, Lipsey and Derzon, 2003; Barry et al., 2019; Wear and Nine, 2011; Ttofi and Farrington, 2011; Adi et al., 2007). In order to enhance the probability of social and emotional skills being sustained in the long-term, they need to be intentionally taught, practiced and reinforced on an ongoing basis (Barry et al., 2019; Elias, 2010; Greenberg et al., 2017; Zins and Elias, 2007; Kendziora and Yoder, 2016). By integrating strategies at a whole-school level (e.g., (i) curriculum; (ii) ethos and environment; and (iii) family and community) more opportunities can be created for students to learn and acquire these skills, increasing their likelihood of developing and sustaining positive outcomes. The consideration, assessment and reporting of long-term outcomes and sustainability of a programme should be prioritised in evaluation studies. When studies fail to measure this, it is impossible to conclude whether or not the benefits of the programme can be sustained long-term which could result in a loss of outcomes for participants. By evaluating the long-term effects of the programme, opportunities are created to produce strategies which can enhance the sustainability of the programme and its intended outcomes.

5.5.2 Implementation Quality Dimensions on Programme Outcomes

The final phase of this study also investigated the relationship between individual dimensions of implementation quality on outcomes. The findings demonstrated that of the four dimensions assessed, Quality of Delivery had a significant impact on all of the six outcomes tested. Participant Responsiveness was the second most influential dimension, significantly impacting 4 out of 6 of the outcomes. Both Adherence and Dosage had a significant impact on 2 of the 6 outcomes at post-intervention. These findings show that while all four dimensions studied are significant in influencing at least some of the outcomes, Quality of Delivery followed by Participant Responsiveness were found to be the most influential dimensions in this study. Research published to date that has assessed the impact of implementation quality on outcomes has focused primarily on particular aspects of implementation (e.g., Adherence and/or Dosage) at the expense of others (e.g., Quality of Delivery or Participant Responsiveness (Durlak and Dupre, 2008; Mihalic, Fagan and Argamaso, 2008; Breitenstein et al., 2010; Humphrey, Barlow and Lendrum, 2018). However, of those studies that have assessed multiple dimensions of implementation quality, they report that dimensions such as Quality of Delivery and Participant Responsiveness are just as important, if not more, than dimensions such as Dosage and Adherence which are more frequently cited in the literature (Rojas-Andrade and Bahamondes, 2018; Pettigrew et al., 2013; Humphrey, Barlow and Lendrum, 2018; Low et al., 2014). Therefore, while Dosage and Adherence are essential parts of implementation quality and need to be upheld, the other dimensions should be given just as much attention. If this study had not assessed implementation quality using a composite score of all four dimensions, and instead used measures of Dosage or Adherence only, the results would have presented a different picture. Additionally, if teachers successfully deliver the entire programme and activities but fail to complete this with a high quality of delivery (e.g., preparedness, engaging, enthusiastic etc.) then it is likely that not all of the intended positive outcomes for students will be achieved. Efforts should be made to ensure there is support for schools and teachers to deliver the programme with high quality and that strategies are put in place to enhance all dimensions of implementation quality, but especially Quality of Delivery and Participant Responsiveness.

5.6 Strengths and Limitations

In considering the findings of the present study, it is important not only to discuss the strengths of the study but to also acknowledge and discuss the study's limitations. In this section, first an overview of the study strengths in relation to the design, sample and measures is provided, followed by an exploration of the study limitations.

5.6.1 Strengths

Design

- This study employed a cluster randomised controlled trial (c-RCT) design to evaluate the effectiveness of the MindOut programme. Robust programme evaluation designs produce more reliable data and reduce the likelihood of bias. As in the current study, school-based evaluation studies should employ robust designs and account for both school- and classroom-level clustering where relevant to ensure results are not inflated due to clustered effects.
- In addition to evaluating outcomes, this study also conducted a process evaluation to investigate the process of implementation and its level of quality. While many programme evaluations report on outcomes, fewer report on details of the process of implementation. Without understanding the conditions under which the programme was implemented, it is impossible to conclude what contributed the effectiveness of a programme. Therefore, in order to strengthen programme evaluations, study designs should include both outcome and process objectives.
- An additional strength of this study in relation to its design is that the study was conducted over three time-points: baseline, post-intervention and 12-month follow-up. While many SEL evaluations show that these programmes are effective, this evidence is mainly representative of short-term studies and therefore information on sustainability of long-term outcomes is limited. Including a long-term follow-up in the design of this study allows for further investigation into the longevity and sustainability of outcomes.

Sample

- This study was conducted with older adolescents, of disadvantaged status, within a European and Irish context. There is a lack of current evidence on the effectiveness of SEL programmes with these specific groups. Therefore, this study fills a gap by

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evaluating the effects of SEL programmes with a population which is underrepresented in the current SEL literature.

Measures

- This study used a wide range of scales with good psychometric properties to assess students' social and emotional skills, mental health and wellbeing and academic outcomes. These measures were carefully selected to reflect both the programme content and the underlying theoretical CASEL framework.
- This study employed a mixed methods approach in assessing implementation quality using both quantitative and qualitative methods. Mixed methods approaches are favourable as they have the potential to balance out the strengths and weaknesses of both approaches, increase the credibility and trustworthiness of findings and help to better understand the process of implementation and the influence of contextual factors (Creswell and Plano Clark, 2011; Bamberger, Rao and Woolcock, 2010).
- In assessing implementation, this study used a wide range of different measures (e.g., student/teacher questionnaires, interviews, classroom observations, participatory workshops) which were retrieved from multiple informants (e.g., students, teachers, researchers). Accessing data on implementation through multi-method and multi-informants provides a richer understanding of the whole implementation process and increases the reliability of the data.
- In addition, this study evaluated implementation across several dimensions which permits a deeper understanding of the individual role each of the dimensions has in relation to outcomes. It also allows for a more representative assessment of implementation quality by including multiple indicators rather than only one.
- This study also provides a rich narrative on influencing factors that may be contributing to the variability in implementation quality between schools. More specifically, this study highlights the implementation factors that are more likely to be associated with high- and low-implementing schools which is useful knowledge for understanding and strengthening implementation quality.

5.6.2 Limitations

Sample Size

- Given the relatively small sample size at the cluster level (n=32), it is possible that there was not sufficient power to detect cross-level group interactions. Additionally, there was a loss of participants between baseline (n=675), post-intervention (n=497) and 12-month follow-up (n=435). This attrition can lead to a reduction in statistical power and limits the generalisability of the results.

Self-Report Data

- In this study, both outcome and process data were assessed primarily through self-report data, which poses a risk of participant response bias and can lead to overestimations of implementation practices (Martinez, Lewis and Weiner, 2014). Though self-report data has its limitations, due to time and resource constraints, it was deemed the most feasible method for this study. To deal with the likelihood of overestimating implementation in the self-report measures used in the current study, data from teachers and students were used to create a combined average for implementation quality. It is recommended that implementation is captured through observational data to increase reliability of data and reduce issues with response bias (Humphrey et al., 2016). Although classroom observations were conducted during this study, these were only conducted with a sub-sample of schools (n=6) and therefore, could only be used to validate the self-report implementation data. If given the chance to carry out this study again, and having the resources to do so, classroom observations would be conducted with all implementation schools and not just with a sub-sample of schools in an effort to strengthen the reliability of these data. This could either be done in person or if feasible, sessions could be video recorded and researcher observations could be made from these recordings. Again, due to the lack of time and resources within the context of the current study, this was not possible.

Developer Involvement

- An additional limitation in this study is that it was led by one of the developers of the MindOut programme. Developer involvement in evaluation studies can potentially lead to inflation of outcome effect sizes compared to what might be

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expected during ‘real world’ implementation of a programme. This inflation is often a result of bias, higher levels of implementation quality or a combination of both of these factors (Eisner, 2009). This may cause future issues with dissemination and sustainability of the programme when trying to replicate or roll out on a wider scale without the developer’s involvement (Wigelsworth et al., 2016). In order to control for this bias in the analysis, several steps were taken. For example, all schools were given a random identifying number and the information that linked the schools to their random number was placed in a sealed envelope in an effort to conceal group allocation from all researchers involved in the study. Randomisation was then conducted by a third party external statistician who randomly allocated schools to one of two groups through a random computer-generated number programme. For the qualitative data, multiple coders were used to reduce researcher bias and ensure the trustworthiness of these data.

Measures

- The implementation indicators used in this study did not have established psychometric properties as these indicators specifically assessed elements relevant to the MindOut programme. Furthermore, it was not possible to assess all five aspects of implementation quality as there were no suitable indicators to represent ‘programme differentiation’. Accessing implementation measures with good psychometric properties has been identified as a challenge in implementation research (Ogden and Fixsen, 2014; Schoenwald and Garland, 2013; Humphrey, Barlow and Lendrum, 2018), mainly due to that fact that most implementation measures are designed to assess the characteristics of the specific intervention in mind (Humphrey et al., 2016). The reliability and validity of implementation measures used should be an important methodological consideration in evaluation studies. If repeating this study, an effort would be made to select implementation measures on an a priori basis which have strong psychometric properties and are representative of all five dimensions of implementation quality (Dane and Schneider, 1998).
- A further limitation in relation to the measures in this study is that the overall length of the student outcome questionnaire may have contributed to respondent fatigue. As the student outcome questionnaire was composed of a number of different scales to assess multiple areas of social emotional wellbeing and mental health, it is

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possible that the length of the questionnaire could have resulted in higher respondent fatigue, impacting on the participants' motivation and attention levels due to tiredness. When respondent fatigue is high, participants are more likely to provide less meaningful or truthful answers, which can lead to measurement errors as well as poorer quality data (Whelan, 2008; Ben-Nun, 2008). It may also lead to lower rates of survey completion, which can result in sampling biases (Cook, Heath, & Thompson, 2000). In order to reduce the chance of respondent fatigue both content-related and design-orientated factors can be targeted. For content-related factors, reducing the length and complexity of the questionnaire by removing scales can reduce fatigue. Additionally, in terms of the questionnaire design, factors such as the layout, formatting and visual design can all impact this. For example, randomising the response order of questions can help to keep participants engaged between time-points, while reducing question overcrowding on pages and presenting questions in stronger formats can lead to lower fatigue and better engagement. In this study, steps were taken to ensure the design of the questionnaire promoted engagement, however, in order to reduce the possibility of respondent fatigue, outcome measures should be carefully selected to only ask the essential questions so that respondents aren't over-fatigued. Also, between time-points it would be useful to randomise the response order of questions so that participants do not lose interest and remain engaged.

- A further limitation in relation to measures was the lack of appropriate measures for assessing participants' academic outcomes. Though an effort was made to try and assess students' academic performance through self-reported grades, due to the lack of correlation between the student and teacher self-report measures, as well as the absence of standardised test scores in Ireland, this was not possible. Failure to appropriately assess students' grades limits this study's ability to determine the potential benefits of a SEL programme on Irish students' educational outcomes, which is likely to be a key factor in schools' uptake of these types of programmes. Given the strong evidence base, particularly in the USA around SEL and academic outcomes (e.g., learning, educational attainment, classroom behaviour etc.) (Zins et al., 2004; Payton et al., 2008; Durlak et al., 2011; Taylor et al., 2017), there is a strong need for this relationship to be assessed with older adolescents outside of the US context, including in this case in Ireland. Therefore if repeating this study,

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stronger consideration would need to be given towards incorporating reliable measures for students' academic outcomes.

- A final limitation of this study related to the measures is that not all the factors identified in the extant implementation models were addressed explicitly during the data collection and therefore, aspects of the wider ecological factors were not fully explored in the study. We know that these wider ecological factors impact on implementation (Greenberg et al., 2005; Domitrovich et al., 2008; Durlak and Dupre, 2008), however, given that participants were not asked about these broader level factors specifically, the study was unable to provide insight into participants' views on these. If given the chance to repeat this study, school-based implementation frameworks (e.g., Greenberg et al., 2005; Domitrovich et al., 2008; Durlak and Dupre, 2008 etc.) would be used more systematically to inform and direct the process evaluation.

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CONCLUSION

In the final section of this thesis, the implications of the findings and recommendations for research, practice and policy will be considered. This will be followed by the overall conclusions from the study.

6.1 Implications and Recommendations for Future Research

The findings from this study raise our attention to a number of important implications and recommendations for future research in the area of mental health promotion and SEL which are discussed below.

1. Need for SEL research to include process evaluations.

It is recommended that future programme evaluations ensure that both intervention outcomes and the process of implementation are assessed. While outcome data is important for understanding the effectiveness of the programme, only the true effectiveness of the programme can be determined when the process of implementation, and the conditions under which the programme was delivered, has been considered. Few evaluations include detailed information on the quality of programme implementation which limits our understanding of the implementation processes necessary for effective implementation of SEL programmes. This knowledge is critical for strengthening the effective adoption, replication and sustainability of effective interventions and practices. When assessing the process of implementation, mixed methods approaches which employ both quantitative and qualitative methods are considered the strongest. While quantitative data can determine if variability in implementation exists and help define a group's implementation level, the qualitative data are needed to understand 'why' this variability exists by examining the implementation factors that impact on implementation quality. The identification of these factors can increase knowledge and understanding of what may hinder or facilitate implementation quality so that practical strategies can be put in place to either minimise or maximise these factors for schools. Therefore, in order to expand our awareness of programme effectiveness, researchers are encouraged to conduct programme

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evaluations which assess not only intervention outcomes, but the process of implementation through mixed methods approaches as well.

2. Need for implementation to be measured through multiple methods, multiple informants and multiple dimensions.

It is important that future research assessing programme implementation incorporates multiple methods (e.g., questionnaires, interviews, focus groups, observations etc.) through multiple informants (e.g., implementers, programme-users, researchers etc.) to ensure all data are captured and a range of perspectives are considered and to increase the validity and reliability of the data (Elliott, 2004). In addition to the multiple methods and multiple-informants, future studies are challenged to integrate multiple dimensions of implementation quality rather than employing any single dimension (e.g., dosage or adherence) alone. Assessing implementation through multiple dimensions allows for a more accurate interpretation of implementation quality and may reveal important implications about how to improve this, and programme outcomes in the future.

3. Need for SEL research to be carried out with underrepresented populations.

Future evaluation studies in the field of school-based mental health promotion and SEL need to ensure that all groups are accurately represented in the research. Though the literature and evidence base for SEL research is growing, there are still populations that are underrepresented (e.g., older adolescents, European context, disadvantaged etc.) and, therefore, the evidence on the effectiveness of SEL programmes with these populations is not as clear. Furthermore, there is a need to better understand the transferability of programmes to more targeted populations. For instance, in the case of MindOut, which is a generic universal programme designed for all adolescents in Ireland, it is possible that the content within the programme might not reflect the specific needs or issues of more vulnerable groups of young people. Therefore, it would be useful to further test the sensitivity of this intervention with specific disadvantaged groups to determine the relevance and appropriateness of content and language for particular population groups. Perhaps the MindOut programme could show even stronger effects if the programme could be tailored to reflect the lives and needs of these more targeted populations. Other universal programmes and programme evaluation studies should take into consideration the transferability of these programmes to different populations of young people (e.g., cultures, age groups, risk-levels etc.) and

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the implications this might have for the success of SEL programmes (Wiglesworth et al., 2016). Implementing programmes with different population groups may require at least some adaptation and tailoring of material to fit the needs, values and expectations of those groups in order to produce best outcomes. Therefore, it is clear that more research with underrepresented groups is warranted, to not only understand the effectiveness of SEL programmes with these groups but also how to optimize their effective delivery and transferability across different populations.

4. Need for SEL research to assess long-term outcomes.

Although there is evidence that SEL programmes can be effective in producing long-term outcomes for participants (Taylor et al., 2017), most programme evaluation studies have not included assessments of long-term follow-up and continue to only measure immediate programme effects (Durlak et al., 2015; McCormick et al., 2015). In this study, there was little evidence of long-term outcomes being sustained at 12-month follow-up. While there are a few possible reasons for this, which have been noted in the discussion, there is a need for more research to investigate what contributes to this lack of sustained outcomes. Therefore, long-term follow-up evaluations are strongly recommended in order to expand our knowledge and understanding of how to make programmes effects last.

5. Need for standardised measures for assessing implementation quality.

There is a need for future research to focus on the development and application of standardised instruments that will enhance the measurement of implementation processes (Ogden and Fixsen, 2014; Humphrey et al., 2016; Geenhalgh et al., 2004). Currently there are few standardised measures with strong psychometric properties for assessing implementation quality (Schoenwald and Garland, 2014). Given that school-based interventions are so diverse, designing valid measures which can adequately assess the unique characteristics of a programme while also allowing for comparisons between these will be a challenge (Bickman, 2009; Humphrey et al., 2016; Humphrey, Barlow and Lendrum, 2018; Lendrum and Humphrey, 2012). While it is unlikely that standardised measures will be developed which incorporate all aspects of implementation and can be applied to all school-based programmes (Durlak and Dupre, 2008), there is a need for more refined measures of implementation quality which are both valid and reliable. Therefore, it is recommended that future school-based SEL research focuses on developing and applying more standardised measures of

implementation quality to allow for stronger conclusions regarding the implementation of school-based programmes to be made.

6.2 Implications and Recommendations for Practice & Policy

The findings from this study also reveal a number of important implications for practice and policy which will now be considered. Schools are dynamic and complex systems characterised by a number of multi-level factors which can impact on the implementation quality of interventions both positively or negatively. The findings from this study supports previous research by highlighting influential factors operating at different levels including: the programme itself, the implementer, the participants, the implementing organisation as well as the wider community context (Chen 1998; Greenberg et al., 2005; Domitrovich et al., 2008; Durlak and Dupre, 2008). There is a need for practice and policy to address these factors during all stages of implementation (e.g., planning, adoption, delivery and sustainability) to not only ensure better quality implementation but to maximise programme outcomes as well.

1. Need to adopt strong SEL programmes.

There are a number of programme characteristics which contributes to the success of school-based interventions, including that the programme is evidence-based (Clarke et al., 2019; Barry), adopts a social competence approach (Greenberg, Domitrovich and Bumbarger, 2001; Weare and Nind, 2011), uses interactive teaching strategies (Clarke et al., 2015) and follows SAFE practices (Durlak et al., 2011). In terms of the successful implementation of school-based programmes, programmes which are user-friendly, use a standardised manual and have pre-prepared materials (e.g., handouts, videos etc.) are likely to make programme implementation easier (Payne et al., 2006; Gottfredson and Gottfredson, 2002; Chiodo and Kolpin, 2018). It is also crucial that the programme is underpinned by a strong theoretical basis and logic model which enhances the implementation quality and the potential of the programme. Another key factor to the success of a programme is that it is tailored to, and reflects the specific needs of a target population. Ensuring programmes adequately meet the needs of target audiences and are developmentally appropriate, culturally relevant and are compatible with the goals and existing priorities of the school setting are all key contributing factors to the successful implementation of a programme and the development of outcomes (Osher et al., 2016; Domitrovich et al., 2008; Darling-Hammond et al., 2019; Datnow et al., 2002; Kallestad and Olweus, 2003). Therefore, when choosing a programme to be

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adopted and implemented, schools should ensure that the selected programme exhibits as many of these characteristics of successful programmes as possible.

2. Need for strategies to enhance participant factors.

This study highlighted how participant factors can impact on implementation quality. Contrary to other studies, which have found that programmes are more easily implemented with small groups of students (Botvin, 2004; Caria et al., 2013), this study found the opposite, suggesting that programmes were implemented best with larger class sizes. A possible reason for this which has been previously discussed, is that larger groups were more conducive to the interactive nature of the sessions (e.g., group work, games/activities etc.). Another potential reason that smaller class sizes could have demonstrated weaker implementation might have been due to teachers pre-selecting groups of students demonstrating higher-needs. If this were the case, then it is possible that a group of higher-need students could present increased issues in the classroom which could impact the classroom climate (e.g., increased disruptions, lower participation, conflict etc.) and in turn implementation quality. The study also highlighted issues in implementing the programme with TY students (more interruptions, lack of structure and poorer attendance etc.) when compared to 5th year students. The findings from this study demonstrate the importance for programme developers to be explicit and clear in their guidance for selecting groups to deliver the programme to. Schools deciding to implement this type of programme need to consider the characteristics of their participants and group when planning delivery. Additionally, schools should consider a group who can participate in the programme consecutively on a weekly basis. Interruptions in implementation lead to disjointed programmes that are likely to have lower participant-engagement and reduce their overall effectiveness.

Student engagement is another participant factor which can directly impact the quality of implementation. While schools might not have the power to control how engaged students are with a programme, there are a number of things they can do to try and increase this. Related to programme itself, it is important that schools select a programme with content that is meaningful to students and which they are able to relate to themselves. Additionally the use of interactive teaching strategies can also contribute to student engagement. Therefore, schools should look to adopt programmes which their students can engage well with. Furthermore, this study demonstrated that students were most engaged when their teacher demonstrated higher levels of Quality of

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Delivery. Therefore, in order to keep students engaged and interested, teachers should be prepared for classes, enthusiastic about the content of the programme and supportive of students SEL skill development.

3. Need for strategies which address factors related to the implementer.

In relation to the implementer, there are a number of important factors which should be considered prior to the introduction and delivery of SEL programmes in schools. Implementer readiness is a key contributor to the successful implementation of interventions and should therefore be considered by schools when selecting staff to deliver these types of programmes. Teachers who demonstrate implementer readiness (e.g., knowledge and skills; acceptance of intervention; experience, positive attitudes; perceived value; self-efficacy) are more likely to implement a programme with high quality (Greenberg et al., 2005). Therefore schools intending on introducing SEL programmes to their settings should spend time considering teachers which possess these qualities of implementer readiness.

This does not mean that teachers are expected to be experts in the area of SEL but they should demonstrate an interest in the area, a willingness to develop and expand their knowledge and skills, confidence in their ability to deliver these strategies and have a sense of belief that these programmes are needed and can work. Good quality programme training for teachers is also required for effective implementation. Teachers should leave this training with more knowledge and understanding for SEL (e.g., theory, evidence, programme design etc.), increased skills for effectively delivering the strategies in the programme and more confidence in their ability to deliver these strategies in their classrooms and schools successfully.

This study found that out of the four implementation dimensions, Quality of Delivery was the single most influential dimension on outcomes. Quality of Delivery relates to 'how well' the implementer delivers the programme (Durlak and Dupre, 2008; Dusenbury et al., 2003). Therefore, in order to ensure increased levels of Quality of Delivery and thus better outcomes, teachers need to be supported before and during delivery through structured training, comprehensive programme materials and ongoing implementation support.

4. Need for strategies to increase organisational support.

While teachers delivering the programme may be the core change agent within the classroom, they require organisational support to sustain the quality of implementation of a programme. Planning for a new intervention should involve collaboration with a range of relevant stakeholders in the school and community to better understand what is required and what support is needed for a new programme to be successful. In terms of organisational support, a variety of contextual factors such as school leadership, management and administration, school climate, school-readiness and staff buy-in have been shown to influence the quality of programme implementation (Greenberg, Domitrovich and Bumbarger, 2001; Durlak and DuPre, 2008; Bumbarger et al., 2010). It is essential that schools considering delivering MindOut or other similar SEL programmes are supported by school management as this largely influences the readiness of the school to implement these programmes. Management and administration have the power to ensure there is adequate time and space within the curriculum to support the delivery of these programmes through timetabling. School leaders and management can also support quality implementation by providing access to more resources, providing opportunities and dedicated time to teachers for professional development and staff training and raising school-wide awareness of SEL. Management are also in a position to influence staffing arrangements (e.g., training multiple teachers on a programme, programme champions etc.) which enables greater support for teachers' delivering the programme and addresses the issue of programme sustainability that may arise due to staff-turnover. Given that school management and administrators have such a strong influence on implementation, involving them in the planning of a new programme is likely to increase its quality of implementation (Barrett, Bradshaw and Lewis-Palmer, 2008).

Though organisational support from the school is vital, it is not enough on its own for effective implementation. Teachers should not be expected to implement evidence-based programmes without ongoing implementation support, coaching, technical assistance and monitoring for quality assurance (Mihalic, Fagan, Argamaso, 2008; Chiodo and Kolpin, 2018). The specific aims of this support and technical assistance is to maintain teachers' motivation and commitment, strengthen their skills and help them in dealing with any issues that arise during implementation (Durlak and Dupre, 2008). Thus before the delivery of any programme, it is important that programme developers,

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schools and community stakeholders consider what ongoing support and technical assistance will be readily available to schools to strengthen the implementation quality of a programme.

5. Need for government and policy support.

There is also a need for government and national policies to support mental health promotion and SEL in schools and to provide clear guidance and expectations for schools regarding the implementation of these programmes. Within the context of this study, there are a number of Irish policy documents which clearly acknowledge the importance of schools as a setting for promoting mental health and wellbeing. Irish schools also have the SPHE curriculum which provides a supportive context for the adoption, delivery and sustainability of these types of programmes. Therefore, in order for a programme to be successfully implemented, especially long-term, national plans and policies need to support the effective implementation of school-based mental health promotion strategies. Additionally, there is a need for governments to provide adequate funds to support the development of implementation structures including training and quality assurance systems so that initial programme investments are worthwhile and are not wasted due to poor quality implementation.

6. Need for SEL strategies to be embedded into whole-school approaches.

The final recommendation for this study relates to the need to embed SEL programmes and strategies at a whole-school level in order to produce increased and sustained outcomes. International literature suggests that while classroom-based programmes can lead to positive outcomes, when delivered on their own, they are not sufficient to produce sustained long-term outcomes (Jones and Bouffard, 2012; Weare and Nind, 2011; Adi et al., 2007; Wells et al., 2003). The importance of aligning whole-school approaches with classroom-based strategies is not a novel idea and its importance has been endorsed in a number of studies (Jones and Bouffard, 2012; Oberle et al., 2016; Zins et al., 2004). Practitioners and key stakeholders are encouraged to consider embedding SEL practices into a whole-school approach, with curriculum-based programmes being a key feature of this strategy. Embedding SEL strategies into the ethos and environment of the school as well as linking to students' lives outside of school (e.g., family and community) provides extended opportunities for students to practice and develop these skills which will in turn create better outcomes that are longer lasting (Jones and Bouffard, 2012; Weare and Nind, 2011; Adi et al., 2007;

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Wells et al., 2003; Oberle et al., 2016). This needs to be a key consideration for both programme developers and practitioners working in relevant fields. Further education and support is needed to better equip schools with the knowledge and skills they need to provide SEL at a whole-school level. Support from national governmental bodies to increase the awareness, attitudes and skills of all staff (e.g., all teachers, administration, principals, counsellors) towards SEL is also recommended.

6.3 Overall Conclusions

This study sought to examine the implementation of an evidence-based SEL programme in disadvantaged post-primary schools in Ireland. The findings from this study demonstrate that MindOut is a promising programme which, when implemented with high-quality can have a number of positive effects on students' outcomes. The results from this study highlight the important role that schools can play in the promotion of students' positive mental health and SEL. Particularly, this study demonstrates that SEL programmes can be successfully implemented with vulnerable groups, who often have greater needs and present a number of additional implementation challenges.

Additionally, the findings in this study revealed that programme effects were only visible when implementation quality was high, demonstrating the power of implementation and the need to consistently monitor its quality alongside programme outcomes. This study also identified a number of multi-level contextual factors which may contribute in influencing implementation quality. In order to increase the likelihood of best outcomes for participants, strategies need target these contextual factors in order to support higher quality implementation and in turn, better outcomes.

Though promising short-term findings were detected for participants, there was weaker evidence for long-term outcomes. It is recommended the curriculum-based programmes, such as MindOut are used in combination with whole-school strategies which aim to enhance the ethos and environment of the school. Integrating strategies at a whole-school level creates increased opportunities for skill reinforcement which is likely to enhance the development and sustainability positive outcomes.

This study contributes to strengthening the evidence-base and advancing knowledge for school-based mental health promotion and SEL. The findings from this study provide a series of important implications in terms of not only whether or not SEL programmes

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work, but also what contributes to their overall effectiveness and what is required in order for programmes to be successfully replicated and sustained in the future.

REFERENCES

- Adi, Y., Killoran, A., Janmohamed, K., & Stewart-Brown, S. (2007). Systematic review of the effectiveness of interventions to promote mental wellbeing in children in primary education: Report 1: Universal Approaches Non-violence related outcomes. In *Database of Abstracts of Reviews of Effects (DARE): Quality-assessed Reviews*. York, UK: Centre for Reviews and Dissemination.
- Allodi, M. W. (2010). The meaning of social climate of learning environments: Some reasons why we do not care enough about it. *Learning Environments Research*, 13(2), 89-104. doi:10.1007/s10984-010-9072-9
- Amirkhan, J. H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology*, 59(6), 1066-1074. doi:10.1037/0022-3514.59.5.1066
- Anderson, C. S. (1999). *Attitudes Toward School Scale*. University of Minnesota, Minneapolis, MN
- Audrey, S., Holliday, J., & Campbell, R. (2008). Commitment and compatibility: Teachers' perspectives on the implementation of an effective school-based, peer-led smoking intervention. *Health Education Journal*, 67(2), 74-90. doi:10.1177/0017896908089387
- Bahrami, F., & Yousefi, N. (2011). Females are more anxious than males: a metacognitive perspective. *Iranian journal of psychiatry and behavioral sciences*, 5(2), 83-90.
- Bamberger, M., Rao, V., & Woolcock, M. (2010). *Using mixed methods in monitoring and evaluation : experiences from international development (English)*. Policy Research working paper ; no. WPS 5245. World Bank Group: Washington, DC
- Banks, J., McCoy, S., & Smyth, E. (2018). *Senior cycle review: Analysis of discussions in schools on the purpose of senior cycle education in Ireland*. Economic and Social Research Institute and Department of Sociology, Trinity College, Dublin.

REFERENCES

- Barry, M. M., Clarke, A. M., & Dowling, K. (2017). Promoting social and emotional well-being in schools. *Health Education, 117*(5), 434-451. doi:10.1108/HE-11-2016-0057
- Barry, M. M., Clarke, A. M., Jenkins, R., & Patel, V. (2013). A systematic review of the effectiveness of mental health promotion interventions for young people in low and middle income countries. *BMC Public Health, 13*(1), 835. doi:10.1186/1471-2458-13-835
- Barry, M. M., Clarke, A.M., Petersen, I. & Jenkins, R. . (2019). *Implementing Mental Health Promotion 2nd Edition*. Springer Nature Switzerland AG: Springer International Publishing.
- Barry, M. M., Domitrovich, C., & Lara, M. A. (2005). The implementation of mental health promotion programmes. *Promotion & Education, 12*(2_suppl), 30-36. doi:10.1177/10253823050120020105x
- Barry, M. M., & Friedli, L. (2008). *The influence of social, demographic and physical factors on positive mental health in children , adults and older people*. Retrieved from https://aran.library.nuigalway.ie/bitstream/handle/10379/2684/03%202008_rep foresight_review.pdf?sequence=1&isAllowed=y (accessed on 07 May 2020)
- Barry, M. M., & Jenkins, R. (2007). *Implementing Mental Health Promotion*: Churchill Livingstone, Edinburgh; New York.
- Bast, L. S., Due, P., Bendtsen, P., Ringgard, L., Wohllebe, L., Damsgaard, M. T., . . . Andersen, A. (2016). High impact of implementation on school-based smoking prevention: the X:IT study—a cluster-randomized smoking prevention trial. *Implementation Science, 11*(1), 125. doi:10.1186/s13012-016-0490-7
- Beesdo, K., Knappe, S., & Pine, D. S. (2009). Anxiety and anxiety disorders in children and adolescents: developmental issues and implications for DSM-V. *The Psychiatric clinics of North America, 32*(3), 483-524. doi:10.1016/j.psc.2009.06.002

REFERENCES

- Beets, M. W., Flay, B. R., Vuchinich, S., Acock, A. C., Li, K. K., & Allred, C. (2008). School climate and teachers' beliefs and attitudes associated with implementation of the positive action program: a diffusion of innovations model. *Prev Sci*, 9(4), 264-275. doi:10.1007/s11121-008-0100-2
- Belfield, C., Bowden, B., Klapp, A., Levin, H., Shand, R., & Zander, S. (2015). *The economic value of social and emotional learning*. Center for Benefit-Cost Studies in Education, Columbia University. Retrieved from <https://www.casel.org/wp-content/uploads/2016/09/SEL-Revised.pdf>
- Ben-Nun, P. (2008) Respondent fatigue. *Encyclopedia of Survey Research Methods*. 2:742–743. doi: <http://dx.doi.org/10.4135/9781412963947.n480>
- Berkel, C., Mauricio, A. M., Schoenfelder, E., & Sandler, I. N. (2011). Putting the pieces together: an integrated model of program implementation. *Prev Sci*, 12(1), 23-33. doi:10.1007/s11121-010-0186-1
- Birmaher, B., Ryan, N. D., Williamson, D. E., Brent, D. A., Kaufman, J., Dahl, R. E., . . . Nelson, B. (1996). Childhood and adolescent depression: a review of the past 10 years. Part I. *J Am Acad Child Adolesc Psychiatry*, 35(11), 1427-1439. doi:10.1097/00004583-199611000-00011
- Blumenthal, H., Ham, L. S., Cloutier, R. M., Bacon, A. K., & Douglas, M. E. (2016). Social anxiety, disengagement coping, and alcohol-use behaviors among adolescents. *Anxiety, stress, and coping*, 29(4), 432-446. doi:10.1080/10615806.2015.1058366
- Botvin, G. J. (2004). Advancing prevention science and practice: challenges, critical issues, and future directions. *Prev Sci*, 5(1), 69-72. doi:10.1023/b:prev.0000013984.83251.8b
- Boustani, M. M., Frazier, S. L., Becker, K. D., Bechor, M., Dinizulu, S. M., Hedemann, E. R., . . . Pasalich, D. S. (2015). Common elements of adolescent prevention programs: minimizing burden while maximizing reach. *Adm Policy Ment Health*, 42(2), 209-219. doi:10.1007/s10488-014-0541-9

REFERENCES

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi:10.1191/1478088706qp063oa
- Breitenstein, S. M., Gross, D., Garvey, C., Hill, C., Fogg, L., & Resnick, B. (2010). Implementation fidelity in community-based interventions. *Research in nursing & health, 33*(2), 164-173. doi:10.1002/nur.20373
- Bronfenbrenner, U. (1979). *The Ecology of Human Development*: Harvard University Press.
- Bruhn, A. L., Hirsch, S. E., & Lloyd, J. W. (2015). Treatment integrity in school-wide programs: a review of the literature (1993-2012). *J Prim Prev, 36*(5), 335-349. doi:10.1007/s10935-015-0400-9
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative Research, 6*(1), 97-113. doi:10.1177/1468794106058877
- Buckley, L., & Sheehan, M. (2009). A process evaluation of an injury prevention school-based programme for adolescents. *Health education research, 24*(3), 507-519. doi:10.1093/her/cyn049
- Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development, 61*(4), 1101-1111.
- Byrne, M. (2005). *The development and evaluation of a mental health promotion program for post-primary schools*. National University of Ireland Galway, Galway Ireland.
- Byrne, M., Barry, M., & Sheridan, A. (2004). Implementation of a school-based mental health promotion programme in Ireland. *The International Journal of Mental Health Promotion,, 6*(2), 17-25.
- Byrne, M., Barry, M. M., Nic Gabhainn, S., & Newell, J. (2005). The development and evaluation of a mental health promotion programme for post-primary schools in Ireland. In B. B. Jenson & S. Clift (Eds.), *The Health Promoting School: International Advances in Theory, Evaluation and Practice* (pp. 383-404). Copenhagen: Danish University of Education Press.

REFERENCES

- Byrne, M., Barry, M. M., Nic Gabhainn, S., & Newell, J. (2005). The development and evaluation of a mental health promotion programme for post-primary schools in Ireland. In B. B. C. Jensen, S. (Ed.), *The Health Promoting School: International Advances in Theory, Evaluation and Practice* (pp. 383-408.). Canterbury Christ Church University College and the Danish University of Education.
- Camara, M., Bacigalupe, G., & Padilla, P. (2017). The role of social support in adolescents: Are you helping me or stressing me out? *International Journal of Adolescence and Youth*, 22(2), 123-136. doi:10.1080/02673843.2013.875480
- Cannon M, Coughlan H, Clarke M, M, H., & I, K. (2013). *The Mental Health of Young People in Ireland: a report of the Psychiatric Epidemiology Research across the Lifespan (PERL) Group*. Royal College of Surgeons in Ireland: Dublin, Ireland.
- Caria, M. P., Faggiano, F., Bellocco, R., Galanti, M. R., & the, E. U. D. S. G. (2013). Classroom characteristics and implementation of a substance use prevention curriculum in European countries. *European Journal of Public Health*, 23(6), 1088-1093. doi:10.1093/eurpub/cks191
- Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science*, 2(1), 40. doi:10.1186/1748-5908-2-40
- CASEL. (2005). *Safe and Sound: An Educational Leader's Guide to Evidence-Based Social and Emotional Learning (SEL) Programs*. Chicago: Collaborative for Academic, Social, and Emotional Learning. Retrieved from <https://casel.org/wp-content/uploads/2016/01/PDF-16-safe-and-sound.pdf>
- CASEL. (2015). *CASEL Guide: Effective Social and Emotional Learning Programs - Middle and Highschool Edition*. Chicago: Collaborative for Academic, Social, and Emotional Learning. Retrieved from <http://secondaryguide.casel.org/casel-secondary-guide.pdf>

REFERENCES

- CASEL. (2017). *Key implementation insights from the Collaborating District Initiative*. Chicago: Collaborative for Academic, Social, and Emotional Learning. Retrieved from <https://www.casel.org/wp-content/uploads/2017/06/CDI-Insights-Report-May.pdf>
- Catalano, R. F., Berglund, M. L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, J. D. (2002). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *Prevention & Treatment, 5*(1), doi:10.1037/1522-3736.5.1.515a
- Cater, M., Arnold, M., Bouillion-Diaz, L., Heck, K., Mead, J., Spears, B., & Mulroy, M. (2010). *Decision-Making Scale. Youth Engagement, Attitudes, and Knowledge (YEAKE) Survey*. Policy Studies Associates: Washington, DC.
- Chen, H.-T. (1990). *Theory-driven evaluations*. Sage Publications Inc.
- Chen, H. T. (1998). Theory-driven evaluations. *Advances in Educational Productivity, 7*, 15–34.
- Chen, H. T., & Rossi, P. H. (1992). *Using theory to improve program and policy evaluations*. Greenwood Publishing Group.
- Chiu, L.-H. (1997). Development and validation of the school achievement motivation rating scale. *Educational and Psychological Measurement, 57*(2), 292-305. doi:10.1177/0013164497057002008
- Churchill, G. A., & Peter, J. P. (1984). Research design effects on the reliability of rating scales: A meta-analysis. *Journal of Marketing Research, 21*(4), 360-375. doi:10.2307/3151463
- Clarke, A., Friede, T., Putz, R., Ashdown, J., Martin, S., Blake, A., . . . Stewart-Brown, S. (2011). Warwick-Edinburgh Mental Well-being Scale (WEMWBS): Validated for teenage school students in England and Scotland. A mixed methods assessment. *BMC Public Health, 11*(1), 487. doi:10.1186/1471-2458-11-487

REFERENCES

- Clarke, A., Morreale, S., Field, C., Hussein, Y., & Barry, M. (2015). *What works in enhancing social and emotional skills development during childhood and adolescence? A review of the evidence on the effectiveness of school-based and out-of-school programmes in the UK*. W H O Collaborating Centre for Health Promotion Research, National University of Ireland Galway. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/411492/What_works_in_enhancing_social_and_emotional_skills_development_during_childhood_and_adolescence.pdf
- Clarke, A. M. (2011). *An evaluation of Zippy's friends, an emotional wellbeing programme for children in primary schools*. National University of Ireland Galway
- Clarke, A. M., Sixsmith, J., & Barry, M. M. (2014). Evaluating the implementation of an emotional wellbeing programme for primary school children using participatory approaches. *Health Education Journal*, 74(5), 578-593. doi:10.1177/0017896914553133
- Cook, C., Heath, F., & Thompson, R. (2000). A Meta-Analysis of Response Rates in Web-or Internet-Based Surveys. *Educational & Psychological Measurement*, 60(6), 821–836. doi: 10.1177/00131640021970934
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98-104. doi:10.1037/0021-9010.78.1.98
- Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research*: SAGE Publications.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. In A. Tashakkori, & Teddlie, C. (Ed.), *Handbook of Mixed Methods in Social and Behavioral Research* (pp. 209–240). Thousand Oaks, CA: Sage.

REFERENCES

- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297-334. doi:10.1007/BF02310555
- Da Silva, H. A., Passos, M. H. P. D., Oliveira, V. M. A. d., Palmeira, A. C., Pitangui, A. C. R., & Araújo, R. C. d. (2016). Short version of the Depression Anxiety Stress Scale-21: is it valid for Brazilian adolescents? *Einstein (Sao Paulo, Brazil)*, *14*(4), 486-493. doi:10.1590/S1679-45082016AO3732
- Dane, A. V., & Schneider, B. H. (1998). Program integrity in primary and early secondary prevention: Are implementation effects out of control? . *Clinical psychology review*, *18*(1), 23-45. doi:https://doi.org/10.1016/S0272-7358(97)00043-3
- Dariotis, J., Bumbarger, B., Duncan, L., & Greenberg, M. (2008). How do implementation efforts relate to program adherence? Examining the role of organizational, implementer, and program factors. *Journal of Community Psychology*, *36*(6), 744–760. doi.org/10.1002/jcop.20255
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97-140. doi:10.1080/10888691.2018.1537791
- Darmody, M., Smyth, E., & McCoy, S. (2008). Acting up or opting out? Truancy in Irish secondary schools. *Educational Review*, *60*(4), 359-373. doi:10.1080/00131910802393399
- Datnow, A., Hubbard, L., & Mehan, H. (2002). *Extending educational reform: From one school to many*: London: Routledge/Falmer Press.
- DCYA. (2014). *Better outcomes brighter futures: The national policy framework for children & young people 2014 - 2020*. Department of Child and Youth Affairs: Dublin, Ireland.
- Demidenko, E. (2013). *Mixed Models: Theory and Applications with R*: John Wiley & Sons, Incorporated.

REFERENCES

- DES. (2017). *Report on the review of DEIS*. Department of Education and Skills, Social Inclusion Unit: Dublin, Ireland. Retrieved from <https://www.education.ie/en/Schools-Colleges/Services/DEIS-Delivering-Equality-of-Opportunity-in-Schools-/DEIS-Review-Report.pdf>
- DES. (2018). *Wellbeing Policy Statement and Framework for Practice 2018–2023*. Department of Education and Skills: Dublin, Ireland. Retrieved from <https://www.education.ie/en/Publications/Policy-Reports/wellbeing-policy-statement-and-framework-for-practice-2018%E2%80%932023.pdf>
- DES, HSE, & DoH. (2013). *Well-Being in Post-Primary Schools; Guidelines for Mental Health Promotion and Suicide Prevention*. Department of Education and Skills/Health Service Executive/Department of Health: Dublin, Ireland: Retrieved from <https://www.education.ie/en/Schools-Colleges/Information/Resources-Guidance/Well-Being-in-Post-Primary-Schools-Guidelines-for-Mental-Health-Promotion-and-Suicide-Prevention-2013.pdf>
- Dingle, G. A., Hodges, J., & Kunde, A. (2016). Tuned in emotion regulation program using music listening: Effectiveness for adolescents in educational settings. *Frontiers in Psychology*, 7(859). doi:10.3389/fpsyg.2016.00859
- Dix, K. L., Slee, P. T., Lawson, M. J., & Keeves, J. P. (2012). Implementation quality of whole-school mental health promotion and students' academic performance. *Child and adolescent mental health*, 17(1), 45-51. doi:10.1111/j.1475-3588.2011.00608.x
- DoH. (2013) *A Framework for Improved Health and Wellbeing 2013 – 2025*. Department of Health: Dublin, Ireland: Retrieved from <https://www.hse.ie/eng/services/publications/corporate/hienglish.pdf>
- DoH. (2015) *Connecting for Life: Ireland's National Strategy to Reduce Suicide 2015-2020*. Department of Health: Dublin, Ireland. Retrieved from <https://www.healthpromotion.ie/hp-files/docs/HME00945.pdf>

REFERENCES

- Domitrovich, C. E., Bradshaw, C. P., Poduska, J. M., Hoagwood, K., Buckley, J. A., Olin, S., . . . Ialongo, N. S. (2008). Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Advances in school mental health promotion, 1*(3), 6-28. doi:10.1080/1754730x.2008.9715730
- Domitrovich, C. E., Durlak, J. A., Staley, K. c., & Weissberg, R. P. (2017). Social-emotional competence: An essential factor for promoting positive adjustment and reducing risk in school children. *Child Development, 88*(2), 408-416. doi: 10.1111/cdev.12739
- Domitrovich, C. E., Gest, S. D., Jones, D., Gill, S., & Sanford Derosie, R. M. (2010). Implementation quality: Lessons learned in the context of the head start REDI trial. *Early childhood research quarterly, 25*(3), 284-298. doi:10.1016/j.ecresq.2010.04.001
- Domitrovich, C. E., & Greenberg, M. T. (2000). The study of implementation: Current findings from effective programs that prevent mental disorders in school-aged children. *Journal of Educational & Psychological Consultation, 11*(2), 193-221. doi:10.1207/S1532768XJEPC1102_04
- Dooley, B., & Fitzgerald, A. (2012). *My World Survey: National Study of Youth Mental Health in Ireland*. Headstrong and UCD School of Psychology: Dublin, Ireland. Retrieved from <https://www.ucd.ie/t4cms/MyWorldSurvey.pdf>
- Dooley, B., O'Connor, C., Fitzgerald, A., & O'Reilly, A. (2019). *My World Survey 2: The National Study of Youth Mental Health in Ireland*. UCD School of Psychology and Jigsaw National Centre for Youth Mental Health: Dublin, Ireland. Retrieved from http://www.myworldsurvey.ie/content/docs/My_World_Survey_2.pdf
- Dowling, K. & Barry, M. M. (2020). The effects of implementation quality of a school-based social and emotional well-being program on students' outcomes. *European Journal of Investigation in Health, Psychology and Education, 10*(2). doi:10.3390/ejihpe10020044

REFERENCES

- Dowling, K. & Barry, M. M. (2020). Evaluating the implementation quality of a social and emotional learning program: A mixed methods approach. *International Journal of Environmental Research and Public Health*, *17* (9) 3249. doi: 10.3390/ijerph17093249.
- Dowling, K., Clarke, A. M., & Barry, M. M. (2016). *The re-development of the mindout programme: Promoting social and emotional wellbeing in post-primary schools*. WHO Collaborating Centre for Health Promotion Research, National University of Ireland Galway: Galway, Ireland.
- Dowling, K., Simpkin, A. J., & Barry, M. M. (2019). A cluster randomized-controlled trial of the mindout social and emotional learning program for disadvantaged post-primary school students. *J Youth Adolesc*, *48*(7), 1245-1263. doi:10.1007/s10964-019-00987-3
- DuBois, D. L., Holloway, B. E., Valentine, J. C., & Cooper, H. (2002). Effectiveness of mentoring programs for youth: A meta-analytic review. *American Journal of Community Psychology*, *30*(2), 157-197. doi:10.1023/A:1014628810714
- Durlak, J. A. (1995). *School-based prevention programs for children and adolescents*. Sage Publications, Inc. doi:10.4135/9781483327396.
- Durlak, J. A. (1998). Common risk and protective factors in successful prevention programs. *American Journal of Orthopsychiatry*, *68*(4), 512-520. doi:10.1037/h0080360
- Durlak, J. A. (2015). What everyone should know about implementation. . In . A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (pp. 395–405). New York, NY: Guilford.
- Durlak, J. A. (2016). Programme implementation in social and emotional learning: basic issues and research findings. *Cambridge Journal of Education*, *46*(3), 333-345. doi:10.1080/0305764X.2016.1142504

REFERENCES

- Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: a review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Community Psychol*, *41*(3-4), 327-350.
doi:10.1007/s10464-008-9165-0
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: a meta-analysis of school-based universal interventions. *Child Dev*, *82*(1), 405-432. doi:10.1111/j.1467-8624.2010.01564.x
- Durlak, J. A., & Wells, A. M. (1997). Primary Prevention Mental Health Programs for Children and Adolescents: A Meta-Analytic Review. *American Journal of Community Psychology*, *25*(2), 115-152. doi:10.1023/A:1024654026646
- Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: implications for drug abuse prevention in school settings. *Health education research*, *18*(2), 237-256.
doi:10.1093/her/18.2.237
- Dusenbury, L., Brannigan, R., Hansen, W. B., Walsh, J., & Falco, M. (2005). Quality of implementation: developing measures crucial to understanding the diffusion of preventive interventions. *Health education research*, *20*(3), 308-313.
doi:10.1093/her/cyg134
- Eisner, M. (2009). No effects in independent prevention trials: can we reject the cynical view? *Journal of experimental Criminology*, *5*(2), 163-183.
doi:10.1007/s11292-009-9071-y
- Elias, M. (2010). *Sustainability of Social-Emotional Learning and related programs: Lessons from a field study*. Rutgers, The State University of New Jersey, USA. Retrieved from <https://core.ac.uk/download/pdf/46603589.pdf>
- Elias, M. J., & Weissberg, R. P. (2000). Primary Prevention: Educational Approaches to Enhance Social and Emotional Learning. *Journal of School Health*, *70*(5), 186-190. doi:10.1111/j.1746-1561.2000.tb06470.x

REFERENCES

- Elias, M. J., Zins, J. E., Graczyk, P., & Weissberg, R. P. (2003). Implementation, sustainability, and scaling up of socialemotional and academic innovations in public schools. *School Psychology Review, 32*(3), 303-319.
- Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., . . . Shriver, T. P. (1997). Promoting social and emotional learning: Guidelines for educators: Alexandria, VA: ASCD.
- Elliott, J. (2004). Multimethod approaches in educational research. *International Journal of Disability, Development and Education, 51*(2), 135-149.
doi:10.1080/10349120410001687364
- Elliott, D. S., & Mihalic, S. (2004). Issues in disseminating and replicating effective prevention programs. *Prevention Science, 5*(1), 47-53.
doi:10.1023/B:PREV.0000013981.28071.52
- Ellis, L. A. (2004). Peers helping peers: The effectiveness of a peer support program in enhancing self-concept and other desirable outcomes. Doctoral Thesis. University of Western Sydney, Australia.
- Epstein, J. A., Griffin, K. W., & Botvin, G. J. (2002). Positive impact of competence skills and psychological wellness in protecting inner-city adolescents from alcohol use. *Prev Sci, 3*(2), 95-104. doi:10.1023/a:1015479216401
- European Union (2016). *EU Youth Report 2015*. Luxembourg, European Union.
Retrieved from https://ec.europa.eu/assets/eac/youth/library/reports/youth-report-2015_en.pdf
- Evans, I. M., Harvey, S. T., Buckley, L., & Yan, E. (2009). Differentiating classroom climate concepts: Academic, management, and emotional environments. *Kōtuitui: New Zealand Journal of Social Sciences Online, 4*(2), 131-146.
doi:10.1080/1177083X.2009.9522449
- Fernandez-Berrocal, P., Extremera, N., & Ramos, N. (2004). Validity and reliability of the Spanish modified version of the Trait Meta-Mood Scale. *Psychological Reports, 94*(3), 751-755. doi:10.2466/pr0.94.3.751-755

REFERENCES

- Field, A. (2009). *Discovering Statistics Using SPSS*: SAGE Publications.
- Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. National Implementation Research Network, Louis de la Parte Florida Mental Health Institute, University of South Florida
- Flaspohler, P., Duffy, J., Wandersman, A., Stillman, L., & Maras, M. A. (2008). Unpacking prevention capacity: an intersection of research-to-practice models and community-centered models. *Am J Community Psychol*, *41*(3-4), 182-196. doi:10.1007/s10464-008-9162-3
- Friedli, L., & Parsonage, M. (2007). Building an economic case for mental health promotion: part I. *Journal of Public Mental Health*, *6*(3), 14-23. doi:10.1108/17465729200700017
- Garaigordobil, M., & Peña-Sarrionandia, A. (2015). Effects of an emotional intelligence program in variables related to the prevention of violence. *Frontiers in Psychology*, *6*. doi: 10.3389/fpsyg.2015.00743
- Goldberg, S. B., Tucker, R. P., Greene, P. A., Davidson, R. J., Wampold, B. E., Kearney, D. J., & Simpson, T. L. (2018). Mindfulness-based interventions for psychiatric disorders: A systematic review and meta-analysis. *Clinical psychology review*, *59*, 52-60. doi:10.1016/j.cpr.2017.10.011
- Gottfredson, D. C., & Gottfredson, G. D. (2002). Quality of school-based prevention programs: Results from a national survey. *Journal of Research in Crime and Delinquency*, *39*(1), 3-35. doi:10.1177/002242780203900101
- Gottfredson, G., Nese, J., Nebbergall, A., & Shaw, F. (2008). *Alternative measures of implementation in an experimental study of elementary school social skills instruction*. Paper presented at the 16th annual meeting of the Society for Prevention Research, San Francisco, CA.

REFERENCES

- Greenberg, M. T. (2010). School-based prevention: current status and future challenges. *Effective Education, 2*(1), 27-52. doi:10.1080/19415531003616862
- Greenberg, M. T., Domitrovich, C., & Bumbarger, B. (2001). The prevention of mental disorders in school-aged children: *Current state of the field Prevention & Treatment, 4*(1). doi: 10.1037/1522-3736.4.1.41a
- Greenberg, M. T., Domitrovich, C. E., Graczyk, P. A., & Zins, J. E. (2005). *The Study of Implementation in School-Based Preventive Interventions: Theory, Research, and Practice (Volume 3)*. U.S. Department of Health and Human Services Substance Abuse and Mental Health Services Administration Center for Mental Health Services: Rockville, MD
- Greenberg, M. T., Domitrovich, C. E., Weissberg, R. P., & Durlak, J. A. (2017). *Social and Emotional Learning as a Public Health Approach to Education*. In *Social Emotional Learning*. Princeton University, NJ: Princeton-Brookings.
- Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*(6-7), 466-474. doi:10.1037/0003-066X.58.6-7.466
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*(3), 255-274. doi:10.2307/1163620
- Gregory, A., Henry, D. B., & Schoeny, M. E. (2007). School climate and implementation of a preventive intervention. *American Journal of Community Psychology, 40*(3-4), 250-260. doi:10.1007/s10464-007-9142-z
- Gresham, F. M., Gansle, K. A., Noell, G. H., Cohen, S., & et al. (1993). Treatment integrity of school-based behavioral intervention studies: 1980–1990. *School Psychology Review, 22*(2), 254-272. doi: 10.1007/BF03391724
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362. doi: 10.1037/0022-3514.85.2.348

REFERENCES

- Guerra, N. G., & Bradshaw, C. P. (2008). Linking the prevention of problem behaviors and positive youth development: core competencies for positive youth development and risk prevention. *New Dir Child Adolesc Dev*, 2008(122), 1-17. doi:10.1002/cd.225
- Haga, S. M., Kraft, P., & Corby, E.-K. (2009). Emotion Regulation: Antecedents and Well-Being Outcomes of Cognitive Reappraisal and Expressive Suppression in Cross-Cultural Samples. *Journal of Happiness Studies*, 10(3), 271-291. doi:10.1007/s10902-007-9080-3
- Hagermoser Sanetti, L. M., & Fallon, L. M. (2011). Treatment integrity assessment: How estimates of adherence, quality, and exposure influence interpretation of implementation. *Journal of Educational and Psychological Consultation*, 21(3), 209-232. doi:10.1080/10474412.2011.595163
- Hallam, S., & Ireson, J. (2005). Secondary school teachers' pedagogic practices when teaching mixed and structured ability classes. *Research Papers in Education*, 20(1), 3-24. doi:10.1080/0267152052000341318
- Hamilton, L. S., Doss, C. J., & Steiner, E. D. (2019). *Support for social and emotional learning is widespread: Principals and teachers give insight into how they value, address, and measure it, and which supports they need*. Santa Monica, CA: RAND Corporation
- Humphrey, N., Barlow, A., & Lendrum, A. (2018). Quality matters: Implementation moderates student outcomes in the PATHS curriculum. *Prevention Science*, 19(2), 197-208. doi:10.1007/s11121-017-0802-4
- Humphrey, N., Barlow, A., & Lendrum, A. (2018). Quality matters: Implementation moderates student outcomes in the PATHS curriculum. *Prevention Science*, 19(2), 197-208. doi:10.1007/s11121-017-0802-4
- Hariton, E., & Locascio, J. J. (2018). Randomised controlled trials - the gold standard for effectiveness research: Study design: randomised controlled trials. *BJOG : an international journal of obstetrics and gynaecology*, 125(13), 1716-1716. doi:10.1111/1471-0528.15199

REFERENCES

- Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 312(5782), 1900.
doi:10.1126/science.1128898
- Henefer, J., & Rodgers, A. (2013). *'FRIENDS for Life': a School-based Positive Mental Health Programme: Research Project Overview and Findings*. Dublin: National Behaviour Support Service
- Herman, H., & Jané-Llopis, E. (2005). Mental health promotion in public health. *Promotion & Education*, 12(2_suppl), 42-47.
doi:10.1177/10253823050120020107
- Holme, J. J., Jabbar, H., Germain, E., & Dinning, J. (2017). Rethinking Teacher Turnover: Longitudinal Measures of Instability in Schools. *Educational Researcher*, 47(1), 62-75. doi:10.3102/0013189X17735813
- Horwitz, A. G., Hill, R. M., & King, C. A. (2011). Specific coping behaviors in relation to adolescent depression and suicidal ideation. *Journal of adolescence*, 34(5), 1077-1085. doi: 10.1016/j.adolescence.2010.10.004
- Hosseini, L., & Khazali, H. (2013). Comparing the level of anxiety in male & female school students. *Procedia-social and behavioral sciences*, 84, 41-46. doi: 10.1016/j.sbspro.2013.06.506
- HSE. (2013). *Schools for Health in Ireland: Framework for Developing a Health Promoting School (Post-Primary)*. Health Service Executive: Dublin, Ireland. Retrieved from <https://www.healthpromotion.ie/hp-files/docs/HPM00839.pdf> (accessed on May 07 2020)
- Humphrey, N., Barlow, A., & Lendrum, A. (2018). Quality matters: Implementation moderates student outcomes in the PATHS curriculum. *Prevention Science*, 19(2), 197-208. doi:10.1007/s11121-017-0802-4

REFERENCES

- Humphrey, N., Lendrum, A., Ashworth, E., Frearson, K., Buck, R., & Kerr, K. (2016). Implementation and process evaluation (IPE) for interventions in education settings: A synthesis of the literature. Education Endowment Foundation: London, UK. Retrieved from https://educationendowmentfoundation.org.uk/public/files/Evaluation/Setting_up_an_Evaluation/IPE_Handbook.pdf (accessed on May 21 2020)
- JA-MH-WB, & EU. (2016). *European Framework for Action on Mental Health and Wellbeing*. Joint Action Mental Health and Wellbeing and European Union, Brussels, BE. Retrieved from https://ec.europa.eu/research/participants/data/ref/h2020/other/guides_for_applicants/h2020-SC1-BHC-22-2019-framework-for-action_en.pdf (accessed on June 15 2020)
- Jané-Llopis, E., Barry, M., Hosman, C., & Patel, V. (2005). Mental health promotion works: a review. *Promotion & Education, 12*(2_suppl), 9-25. doi:10.1177/10253823050120020103x
- Jennings, P. A., Frank, J. L., Snowberg, K. E., Coccia, M. A., & Greenberg, M. T. (2013). Improving classroom learning environments by Cultivating Awareness and Resilience in Education (CARE): Results of a randomized controlled trial. *School Psychology Quarterly, 28*(4), 374-390. doi:10.1037/spq0000035
- Jones, D. E., Greenberg, M., & Crowley, M. (2015). Early Social-Emotional Functioning and Public Health: The Relationship Between Kindergarten Social Competence and Future Wellness. *American Journal of Public Health, 105*(11), 2283-2290. doi:10.2105/AJPH.2015.302630
- Jones, S. M., & Bouffard, S. M. (2012). Social and emotional learning in schools: From programs to strategies and commentaries. *Social Policy Report, 26*(4), 1-33. doi:10.1002/j.2379-3988.2012.tb00073.x
- Kallestad, J. H., & Olweus, D. (2003). Predicting teachers' and schools' implementation of the olweus bullying prevention program: A multilevel study. *Prevention & Treatment, 6*(1), No Pagination Specified-No Pagination Specified. doi:10.1037/1522-3736.6.1.621a

REFERENCES

- Kam, C.-M., Greenberg, M. T., & Walls, C. T. (2003). Examining the role of implementation quality in school-based prevention using the PATHS curriculum. *Prevention Science, 4*(1), 55-63. doi:10.1023/A:1021786811186
- Kang, H. (2013). The prevention and handling of the missing data. *Korean journal of anesthesiology, 64*(5), 402-406. doi:10.4097/kjae.2013.64.5.402
- Kellam, S. G., Ling, X., Merisca, R., Brown, H. C., & Ialongo, N. (1998). The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology, 10*, 165–185. doi: 10.1017/s0954579498001564
- Kelly, B., & Perkins, D. F. (2012). *Handbook of Implementation Science for Psychology in Education: Cambridge Handbooks in Psychology*.
- Kenziora, K., & Osher, D. (2016). Promoting Children’s and Adolescents’ Social and Emotional Development: District Adaptations of a Theory of Action. *Journal of Clinical Child & Adolescent Psychology, 45*(6), 797-811. doi:10.1080/15374416.2016.1197834
- Kenziora, K., & Yoder, N. (2016). *When Districts Support and Integrate Social and Emotional Learning (SEL) Findings From an Ongoing Evaluation of Districtwide Implementation of SEL*. Washington, DC: American Institutes for Research: Retrieved from <https://casel.org/wp-content/uploads/2017/04/When-Districts-Support-SEL-Brief.pdf> (accessed on May 07 2020)
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry, 62*(6), 593-602. doi: 10.1001/archpsyc.62.6.593
- Keyes, C. (2013). *Promoting and protecting positive mental health: Early and often throughout the lifespan*. In C. L. M. Keyes (Ed.), *Mental Well-Being: International Contributions to the Study of Positive Mental Health* (pp. 3-28). Dordrecht: Springer Netherlands.

REFERENCES

- Keyes, C. L. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *J Consult Clin Psychol*, *73*(3), 539-548. doi:10.1037/0022-006x.73.3.539
- Keyes, C. L. (2007). Promoting and protecting mental health as flourishing: a complementary strategy for improving national mental health. *Am Psychol*, *62*(2), 95-108. doi:10.1037/0003-066x.62.2.95
- Kickbusch, I. (2012). 21st century determinants of health and wellbeing: a new challenge for health promotion. *Global Health Promotion*, *19*(3), 5-7. doi:10.1177/1757975912454783
- Kiely, E., Leahy-Warren, P., & Weathers, E. (2014). *Health inequalities and young people in Ireland: A review of the literature*. Dublin, Ireland: National Youth Council of Ireland: Retrieved from <http://www.mhfi.org/NYCI2015.pdf> (accessed on May 02 2020)
- Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder: developmental follow-back of a prospective-longitudinal cohort. *Arch Gen Psychiatry*, *60*(7), 709-717. doi:10.1001/archpsyc.60.7.709
- Kline, P. (2000). *Handbook of Psychological Testing*. London: Routledge.
- Knapp, M., McDaid, D., & Parsonage, M. (2011). *Mental Health Promotion and Prevention: The Economic Case*. Department of Health: London, UK. Retrieved from [http://eprints.lse.ac.uk/39300/1/Mental_health_promotion_and_mental_illness_prevention\(author\).pdf](http://eprints.lse.ac.uk/39300/1/Mental_health_promotion_and_mental_illness_prevention(author).pdf) (accessed on June 25 2020)
- Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Educational Psychology*, *100*(1), 96-104. doi:10.1037/0022-0663.100.1.96

REFERENCES

- Kremer, K. P., Flower, A., Huang, J., & Vaughn, M. G. (2016). Behavior problems and children's academic achievement: A test of growth-curve models with gender and racial differences. *Children and youth services review*, *67*, 95-104. doi:10.1016/j.chilyouth.2016.06.003
- Krueger, C., & Tian, L. (2004). A comparison of the general linear mixed model and repeated measures ANOVA using a dataset with multiple missing data points. *Biological Research For Nursing*, *6*(2), 151-157. doi:10.1177/1099800404267682
- Kuosmanen, T., Fleming, T. M., Newell, J., & Barry, M. M. (2017). A pilot evaluation of the SPARX-R gaming intervention for preventing depression and improving wellbeing among adolescents in alternative education. *Internet Interventions*, *8*, 40-47. doi:10.1016/j.invent.2017.03.004
- Kuyken, W., Weare, K., Ukoumunne, O. C., Vicary, R., Motton, N., Burnett, R., . . . Huppert, F. (2013). Effectiveness of the Mindfulness in Schools Programme: non-randomised controlled feasibility study. *British Journal of Psychiatry*, *203*(2), 126-131. doi:10.1192/bjp.bp.113.126649
- Landau, S., & Everitt, B. S. (2004). *A Handbook of Statistical Analyses using SPSS*. Chapman & Hall/CRC Press: FL, USA.
- Langford, R., Bonell, C., Komro, K., Murphy, S., Magnus, D., Waters, E., . . . Campbell, R. (2017). The health promoting schools framework: Known unknowns and an agenda for future research. *Health Educ Behav*, *44*(3), 463-475. doi:10.1177/1090198116673800
- Lee, C., Dickson, D. A., Conley, C. S., & Holmbeck, G. N. (2014). A closer look at self-esteem, perceived social support, and coping strategy: a prospective study of depressive symptomatology across the transition to college. *Journal of Social and Clinical Psychology*, *33*(6), 560-585. doi: [10.1521/jscp.2014.33.6.560](https://doi.org/10.1521/jscp.2014.33.6.560)
- Lendrum, A., & Humphrey, N. (2012). The importance of studying the implementation of interventions in school settings. *Oxford Review of Education*, *38*(5), 635-652. doi:10.1080/03054985.2012.734800

REFERENCES

- Lendrum, A., Humphrey, N., & Greenberg, M. (2016). Implementing for success in school based mental health promotion: The role of quality in resolving the tension between fidelity and adaptation. In R. H. Shute & P. T. Slee (Eds.), *Mental health and wellbeing through schools: The way forward* (pp. 53-63): Taylor and Francis Inc.
- Lipsey, M. W. (1998). Can rehabilitative programs reduce the recidivism of juvenile offenders? An inquiry into the effectiveness of practical programs. *Virginia Journal of Social Policy & the Law*, 6, 611–641.
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales 2nd. Ed.* Sydney: Psychology Foundation.
- Low, S., Van Ryzin, M. J., Brown, E. C., Smith, B. H., & Haggerty, K. P. (2014). Engagement matters: lessons from assessing classroom implementation of steps to respect: a bullying prevention program over a one-year period. *Prev Sci*, 15(2), 165-176. doi:10.1007/s11121-012-0359-1
- Low, S., Van Ryzin, M. J., Brown, E. C., Smith, B. H., & Haggerty, K. P. (2014). Engagement matters: lessons from assessing classroom implementation of steps to respect: a bullying prevention program over a one-year period. *Prev Sci*, 15(2), 165-176. doi:10.1007/s11121-012-0359-1
- Markova, S., & Nikitskaya, E. (2017). Coping strategies of adolescents with deviant behaviour. *International Journal of Adolescence and Youth*, 22(1), 36-46. doi:10.1080/02673843.2013.868363
- Martinez, R. G., Lewis, C. C., & Weiner, B. J. (2014). Instrumentation issues in implementation science. *Implementation Science*, 9(1), 118. doi:10.1186/s13012-014-0118-8
- McBride, N., Farrington, F., & Midford, R. (2002). Implementing a school drug education programme: Reflections on fidelity. *International Journal of Health Promotion and Education*, 40(2), 40-50. doi:10.1080/14635240.2002.10806196

REFERENCES

- McCrohan, K. (2015). *A Consultation with Young People on the MindOut Programme*. Unpublished Master's dissertation. National University of Ireland Galway: Galway, Ireland.
- McIntosh, K., Predy, L. K., Upreti, G., Hume, A. E., Turri, M. G., & Mathews, S. (2013). Perceptions of contextual features related to implementation and sustainability of school-wide positive behavior support. *Journal of Positive Behavior Interventions, 16*(1), 31-43. doi:10.1177/1098300712470723
- McIntyre, L. L., Gresham, F. M., DiGennaro, F. D., & Reed, D. D. (2007). Treatment integrity of school-based interventions with children in the journal of applied behavior analysis 1991-2005. *Journal of applied behavior analysis, 40*(4), 659-672. doi:10.1901/jaba.2007.659-672
- McMahon, E. M., O'Regan, G., Corcoran, P., Arensman, E., Cannon, M., Williamson, E., & Keeley, H. (2017). *Young Lives in Ireland: a school-based study of mental health and suicide prevention*. National Suicide Research Foundation: Cork, Ireland. Retrieved from <https://nsrf.ie/wp-content/uploads/reports/NSRF%20SEYLE%20Report.pdf> (accessed on 07 May 2020).
- McNeil, B., Reeder, N., & Rich, J. (2012). *A framework of outcomes for young people*. The Young Foundation: London, UK. Retrieved from <https://youngfoundation.org/wp-content/uploads/2012/10/Framework-of-outcomes-for-young-people-July-2012.pdf> (accessed on 21 June 2020).
- Metz, A. J., Blase, K., & Bowie, L. (2007). *Implementing evidence-based practices: six "drivers" of success (Research-to-Results brief)*. Child Trends: Washington, DC. Retrieved from http://www.incredibleyears.com/wp-content/uploads/Child-Trends_6-Success-Drivers_10-07.pdf (accessed on 07 May 2020).
- Meyers, D. C., Durlak, J. A., & Wandersman, A. (2012). The quality implementation framework: A synthesis of critical steps in the implementation process. *American Journal of Community Psychology, 50*(3), 462-480. doi:10.1007/s10464-012-9522-x

REFERENCES

- Mihalic, S., Irwin, K., Fagan, A., Ballard, D., & Elliott, D. (2004). *Successful Program Implementation: Lessons From Blueprints*. U.S. Department of Justice Office of Justice Programs: Washington, DC. Retrieved from <https://www.ncjrs.gov/pdffiles1/ojjdp/204273.pdf>
- Mihalic, S. F., Fagan, A. A., & Argamaso, S. (2008). Implementing the LifeSkills Training drug prevention program: factors related to implementation fidelity. *Implement Sci*, 3, 5. doi:10.1186/1748-5908-3-5
- Millar, D. (2017). *School Attendance Data from Primary and Post-Primary Schools 2016/2017*. Dublin, Ireland: TUSLA Child and Family Agency. Retrieved from https://www.tusla.ie/uploads/content/AAR_16-17.pdf
- Mincemoyer, C., & Perkins, D. F. (2003). Assessing decision making skills of youth. *The Forum for Family & Consumer Issues*, 8(1).
- Moir, T. (2018). Why is implementation science important for intervention design and evaluation within educational settings? *Frontiers in Education*, 3(61). doi:10.3389/educ.2018.00061
- Montgomery, E. (2011). Trauma, exile and mental health in young refugees. *Acta Psychiatrica Scandinavica*, 124(s440), 1-46. doi:10.1111/j.1600-0447.2011.01740.x
- Muris, P. (2001). A brief questionnaire for measuring self-efficacy in youths. *Journal of Psychopathology and Behavioral Assessment*, 23, 145-149. doi: [10.1023/A:1010961119608](https://doi.org/10.1023/A:1010961119608)
- Murphy, K. R., & Davidshofer, C. O. (1988). *Psychological testing: Principles and applications*. Englewood Cliffs, N.J: Prentice-Hall.
- NCCA (2011). *Social, Personal and Health Education curriculum framework: Senior cycle*. National Council for Curriculum and Assessment: Dublin, Ireland. Retrieved from https://www.curriculumonline.ie/getmedia/007175e5-7bb7-44c0-86cb-ba7cd54be53a/SCSEC_SPHE_Framework_English.pdf (accessed on 07 May 2020).

REFERENCES

- NCCA. (2017). *Junior Cycle Wellbeing Guidelines* National Council for Curriculum and Assessment: Dublin, Ireland. Retrieved from https://ncca.ie/media/2487/wellbeingguidelines_forjunior_cycle.pdf
- Nic Gabhainn, S., O'Higgins, S., & Barry, M. (2010). The implementation of social, personal and health education in Irish schools. *Health Education, 110*(6), 452-470. doi:10.1108/09654281011087260
- Nilsen, P. (2015). Making sense of implementation theories, models and frameworks. *Implementation Science, 10*(1), 53. doi:10.1186/s13012-015-0242-0
- Nolen-Hoeksema, S., & Aldao, A. (2011). Gender and age differences in emotion regulation strategies and their relationship to depressive symptoms. *Personality and Individual Differences, 51*(6), 704–708. doi:10.1016/j.paid.2011.06.012
- Nunnally, J. C. (1978). *Psychometric theory: 2nd Edition*. McGraw-Hill, New York.
- O'Keeffe, L., O'Reilly, A., O'Brien, G., Buckley, R., & Illback, R. (2015). Description and outcome evaluation of Jigsaw: an emergent Irish mental health early intervention programme for young people. *Ir J Psychol Med, 32*(1), 71-77. doi:10.1017/ipm.2014.86
- O'Reilly, M., Svirydenka, N., Adams, S., & Dogra, N. (2018). Review of mental health promotion interventions in schools. *Social Psychiatry and Psychiatric Epidemiology, 53*(7), 647-662. doi:10.1007/s00127-018-1530-1
- Oberle, E., Domitrovich, C. E., Meyers, D. C., & Weissberg, R. P. (2016). Establishing systemic social and emotional learning approaches in schools: a framework for schoolwide implementation. *Cambridge Journal of Education, 46*(3), 277-297. doi:10.1080/0305764X.2015.1125450
- Oberle, E., & Schonert-Reichl, K. A. (2017). Social and Emotional Learning: Recent Research and Practical Strategies for Promoting Children's Social and Emotional Competence in Schools. In J. L. Matson (Ed.), *Handbook of Social Behavior and Skills in Children* (pp. 175-197). Cham: Springer International Publishing.

REFERENCES

- OECD. (2015). *Social and Emotional Skills Well-being, connectedness and success*. OECD:Paris, France. Retrieved from [https://www.oecd.org/education/school/UPDATED%20Social%20and%20Emotional%20Skills%20-%20Well-being,%20connectedness%20and%20success.pdf%20\(website\).pdf](https://www.oecd.org/education/school/UPDATED%20Social%20and%20Emotional%20Skills%20-%20Well-being,%20connectedness%20and%20success.pdf%20(website).pdf) (accessed on 07 May 2020).
- OECD. (2016). *Society at a Glance 2016: A Spotlight on Youth: How does Ireland compare?* OECD: Retrieved from <http://www.oecd.org/ireland/sag2016-ireland.pdf> ([accessed on May 05 2020](#))
- OECD. (2020). *Youth not in employment, education or training (NEET)* (indicator). OECD. Retrieved from <https://doi.org/10.1787/72d1033a-en> (accessed on 07 May 2020).
- Ogden, T., & Fixsen, D. L. (2014). Implementation science: A brief overview and a look ahead. *Zeitschrift für Psychologie*, 222(1), 4-11. doi:10.1027/2151-2604/a000160
- Opoku-Asare, N. A. A., Takyi, H., & Owusu-Mensah, M. (2015). Conflict prevalence in primary school and how it is understood to affect teaching and learning in Ghana. *SAGE Open*, 5(3), 2158244015592935. doi:10.1177/2158244015592935
- Osher, D., Dwyer, K. P., & Jackson, S. (2004). *Safe, supportive and successful schools step by step*: Sopris West Educational Services Longmont, CO.
- Osher, D., Kidron, Y., Brackett, M., Dymnicki, A., Jones, S., & Weissberg, R. P. (2016). Advancing the Science and Practice of Social and Emotional Learning: Looking Back and Moving Forward. *Review of Research in Education*, 40(1), 644-681. doi:10.3102/0091732X16673595
- Pankratz, M., Hallfors, D., & Cho, H. (2002). Measuring perceptions of innovation adoption: the diffusion of a federal drug prevention policy. *Health education research*, 17(3), 315-326. doi:10.1093/her/17.3.315

REFERENCES

- Parcel, G. S., Ross, J. G., Lavin, A. T., Portnoy, B., Nelson, G. D., & Winters, F. (1991). Enhancing implementation of the teenage health teaching modules. *J Sch Health, 61*(1), 35-38. doi:10.1111/j.1746-1561.1991.tb07857.x
- Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: a global public-health challenge. *Lancet, 369*(9569), 1302-1313. doi:10.1016/s0140-6736(07)60368-7
- Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008). *The positive impact of social and emotional learning for kindergartento eighth-grade students: Findings from three scientific reviews*. Collaborative for Academic, Social, and Emotional Learning. Chicago, IL. Retrieved from <https://www.casel.org/wp-content/uploads/2016/08/PDF-4-the-positive-impact-of-social-and-emotional-learning-for-kindergarten-to-eighth-grade-students-executive-summary.pdf> (accessed on 07 June 2020).
- Pearson, M., Chilton, R., Wyatt, K., Abraham, C., Ford, T., Woods, H. B., & Anderson, R. (2015). Implementing health promotion programmes in schools: a realist systematic review of research and experience in the United Kingdom. *Implementation Science, 10*(1), 149. doi:10.1186/s13012-015-0338-6
- Pedrosa, I., Suárez-Álvarez, J., Lozano, L. M., Muñoz, J., & García-Cueto, E. (2014). Assessing perceived emotional intelligence in adolescents: New validity evidence of Trait Meta-Mood Scale–24. *Journal of Psychoeducational Assessment, 32*(8), 737-746. doi:10.1177/0734282914539238
- Pettigrew, J., Graham, J. W., Miller-Day, M., Hecht, M. L., Krieger, J. L., & Shin, Y. J. (2015). Adherence and delivery: implementation quality and program outcomes for the seventh-grade keepin' it REAL program. *Prevention science : the official journal of the Society for Prevention Research, 16*(1), 90-99. doi:10.1007/s11121-014-0459-1

REFERENCES

- Pettigrew, J., Miller-Day, M., Shin, Y., Hecht, M. L., Krieger, J. L., & Graham, J. W. (2013). Describing teacher–student interactions: A qualitative assessment of teacher implementation of the 7th grade keepin' it REAL substance use intervention. *American Journal of Community Psychology, 51*(1-2), 43-56. doi:10.1007/s10464-012-9539-1
- Pettigrew, J., Miller-Day, M., Shin, Y., Hecht, M. L., Krieger, J. L., & Graham, J. W. (2013). Describing teacher–student interactions: A qualitative assessment of teacher implementation of the 7th grade keepin' it REAL substance use intervention. *American Journal of Community Psychology, 51*(1-2), 43-56. doi:10.1007/s10464-012-9539-1
- Power, T. J., Blom-Hoffman, J., Clarke, A. T., Riley-Tillman, T. C., Kelleher, C., & Manz, P. H. (2005). Reconceptualizing intervention integrity: A partnership-based framework for linking research with practice. *Psychology in the Schools, 42*(5), 495-507. doi:10.1002/pits.20087
- Reiss, F., Meyrose, A.-K., Otto, C., Lampert, T., Klasen, F., & Ravens-Sieberer, U. (2019). Socioeconomic status, stressful life situations and mental health problems in children and adolescents: Results of the German BELLA cohort-study. *PloS one, 14*(3), e0213700-e0213700. doi:10.1371/journal.pone.0213700
- Rimm-Kaufman, S. E., Curby, T. W., Grimm, K. J., Nathanson, L., & Brock, L. L. (2009). The contribution of children's self-regulation and classroom quality to children's adaptive behaviors in the kindergarten classroom. *Dev Psychol, 45*(4), 958-972. doi:10.1037/a0015861
- Ringeisen, H., Henderson, K., & Hoagwood, K. (2003). Context matters: Schools and the "research to practice gap" in children's mental health. *School Psychology Review, 32*(2), 153-168.
- Ringwalt, C. L., Ennett, S., Johnson, R., Rohrbach, L. A., Simons-Rudolph, A., Vincus, A., & Thorne, J. (2003). Factors associated with fidelity to substance use prevention curriculum guides in the nation's middle schools. *Health Educ Behav, 30*(3), 375-391. doi:10.1177/1090198103030003010

REFERENCES

- Ringwalt, C. L., Ennett, S., Vincus, A., Thorne, J., Rohrbach, L. A., & Simons-Rudolph, A. (2002). The prevalence of effective substance use prevention curricula in U.S. middle schools. *Prev Sci*, 3(4), 257-265.
doi:10.1023/a:1020872424136
- Roeser, R. W., Eccles, J. S., & Sameroff, A. J. (2000). School as a context of early adolescents' academic and social-emotional development: A summary of research findings. *The Elementary School Journal*, 100(5), 443-471. doi: doi.org/10.1086/499650
- Rogers, E. M. (2003). *Diffusion of Innovations, 5th Edition*: Free Press.
- Rohrbach, L. A., Graham, J. W., & Hansen, W. B. (1993). Diffusion of a school-based substance abuse prevention program: predictors of program implementation. *Prev Med*, 22(2), 237-260. doi:10.1006/pmed.1993.1020
- Rojas-Andrade, R., & Bahamondes, L. L. (2019). Is implementation fidelity important? A systematic review on school-based mental health programs. *Contemporary School Psychology*, 23(4), 339-350. doi:10.1007/s40688-018-0175-0
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Roth, P. L. (1994). Missing data: a conceptual review for applied psychologists. *Personnel Psychology*, 47(3), 537-560. doi:10.1111/j.1744-6570.1994.tb01736.x
- Salguero, J. M., Fernandez-Berrocal, P., Balluerka, N., & Aritzeta, A. (2010). Measuring perceived emotional intelligence in the adolescent population: Psychometric properties of the Trait Meta-Mood Scale. *Social Behavior and Personality: An international journal*, 38(9), 1197-1210.
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the trait meta- mood scale. . In J. Pennebaker (Ed.), *Emotion, Disclosure, and Health* (pp. 125–154). American Psychological Association: Washington, DC

REFERENCES

- Saunders, R. P., Ward, D., Felton, G. M., Dowda, M., & Pate, R. R. (2006). Examining the link between program implementation and behavior outcomes in the lifestyle education for activity program (LEAP). *Eval Program Plann*, 29(4), 352-364. doi:10.1016/j.evalprogplan.2006.08.006
- Schoenwald, S. K., & Garland, A. F. (2013). A review of treatment adherence measurement methods. *Psychological assessment*, 25(1), 146-156. doi:10.1037/a0029715
- Schoenwald, S. K., & Hoagwood, K. (2001). Effectiveness, transportability, and dissemination of interventions: what matters when? *Psychiatr Serv*, 52(9), 1190-1197. doi:10.1176/appi.ps.52.9.1190
- Schonert-Reichl, K. A. (2017). Social and Emotional Learning and Teachers. *The Future of Children* 27(1), 137-155. doi:10.1353/foc.2017.0007
- Schulz, K. F., Altman, D. G., & Moher, D. (2010). CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. *BMJ*, 340, c332. doi:10.1136/bmj.c332
- Shandley, K., Austin, D., Klein, B., & Kyrios, M. (2010). An evaluation of 'Reach Out Central': an online gaming program for supporting the mental health of young people. *Health education research*, 25(4), 563-574. doi:10.1093/her/cyq002
- Sklad, M., Diekstra, R., Ritter, M. D., Ben, J., & Gravesteyn, C. (2012). Effectiveness of school-based universal social, emotional, and behavioral programs: Do they enhance students' development in the area of skill, behavior, and adjustment? *Psychology in the Schools*, 49(9), 892-909. doi:10.1002/pits.21641
- Smith, J. D., Schneider, B. H., Smith, P. K., & Ananiadou, K. (2004). The effectiveness of whole-school antibullying programs: A synthesis of evaluation research. *School Psychology Review*, 33(4), 547-560.

REFERENCES

- Spoth, R., Trudeau, L., Shin, C., Ralston, E., Redmond, C., Greenberg, M., & Feinberg, M. (2013). Longitudinal effects of universal preventive intervention on prescription drug misuse: three randomized controlled trials with late adolescents and young adults. *American Journal of Public Health, 103*(4), 665-672. doi:10.2105/AJPH.2012.301209
- Steenbergen, M. R., & Jones, B. S. (2002). Modeling Multilevel Data Structures. *American Journal of Political Science, 46*(1), 218-237. doi:10.2307/3088424
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Dev, 88*(4), 1156-1171. doi:10.1111/cdev.12864
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., . . . Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes, 5*(1), 63. doi:10.1186/1477-7525-5-63
- Thomson, S., Figueras, J., Evetovits, T., Jowett, M., Mladovsky, P., Maresso, A., . . . Kluge, H. (2014). *Policy summary 12: Economic crisis, health systems and health in europe: Impact and implications for policy*. WHO Regional Office for Europe and European Observatory in Health Systems and Policies: Copenhagen, Denmark. Retrieved from https://www.euro.who.int/__data/assets/pdf_file/0008/257579/Economic-crisis-health-systems-Europe-impact-implications-policy.pdf?ua=1 (accessed on 21 June 2020)
- Thorsteinsson, E. B., Ryan, S. M., & Sveinbjornsdottir, S. (2013). The mediating effects of social support and coping on the stress-depression relationship in rural and urban adolescents. *Open Journal of Depression, 2*(01), 1. doi: 10.4236/ojd.2013.21001
- Tolan, P., Gorman-Smith, D., & Henry, D. (2004). Supporting families in a high-risk setting: proximal effects of the SAFEChildren preventive intervention. *J Consult Clin Psychol, 72*(5), 855-869. doi:10.1037/0022-006x.72.5.855

REFERENCES

- Ttofi, M. M., & Farrington, D. P. (2011). Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *Journal of experimental Criminology*, 7(1), 27-56. doi:10.1007/s11292-010-9109-1
- Tully, P. J., Zajac, I. T., & Venning, A. J. (2009). The structure of anxiety and depression in a normative sample of younger and older Australian adolescents. *J Abnorm Child Psychol*, 37(5), 717-726. doi:10.1007/s10802-009-9306-4
- UNICEF. (2017). *Building the Future: Children and the Sustainable Development Goals in Rich Countries - Innocenti Report Card 14*. UNICEF Office of Research, Innocenti, Florence. Retrieved from https://www.unicef-irc.org/publications/pdf/RC14_eng.pdf (accessed 07 May 2020)
- United Nations (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. United Nations. Retrieved from https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed on 14 May 2020).
- van Nassau, F., Singh, A. S., Hoekstra, T., van Mechelen, W., Brug, J., & Chinapaw, M. J. M. (2016). Implemented or not implemented? Process evaluation of the school-based obesity prevention program DOiT and associations with program effectiveness. *Health education research*, 31(2), 220-233. doi:10.1093/her/cyw007
- Wainwright, P. E., Leatherdale, S. T., & Dubin, J. A. (2007). Advantages of mixed effects models over traditional ANOVA models in developmental studies: a worked example in a mouse model of fetal alcohol syndrome. *Dev Psychobiol*, 49(7), 664-674. doi:10.1002/dev.20245
- Wang, B., Stanton, B., Deveaux, L., Poitier, M., Lunn, S., Koci, V., . . . Rolle, G. (2015). Factors influencing implementation dose and fidelity thereof and related student outcomes of an evidence-based national HIV prevention program. *Implementation Science*, 10(1), 44. doi:10.1186/s13012-015-0236-y
- Weare, K. (2000). *Promoting Mental, Emotional, and Social Health: A Whole-School Approach*. Routledge: London and New York.

REFERENCES

- Weare, K., & Nind, M. (2011). Mental health promotion and problem prevention in schools: what does the evidence say? *Health Promot Int, 26 Suppl 1*, i29-69. doi:10.1093/heapro/dar075
- Weir, S., & Archer, P. (2011). *A report on the first phase of the evaluation of DEIS: Report to the Department of Education and Skills*. Educational Research Centre: Dublin, Ireland. Retrieved from http://www.erc.ie/documents/deis_p1_main.pdf
- Weir, S., Kavanagh, L., Kelleher, C., & Moran, E. (2017). *Addressing Educational Disadvantage - A Review of Evidence From the International Literature and of Strategy in Ireland: An Update Since 2005*. Dublin, Ireland: Educational Research Centre: Retrieved from <http://www.erc.ie/wp-content/uploads/2018/01/Addressing-Educational-Disadvantage-2017.pdf> ([accessed on May 05 2020](#))
- Weissberg, R. P., Durlak, J. A., Domitrovich, C. E., & Gullotta, T. P. (2015). Social and emotional learning: Past, present, and future. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice*. (pp. 3-19): The Guilford Press.
- Wells, J., Barlow, J., & Stewart-Brown, S. (2003). A systematic review of universal approaches to mental health promotion in schools. *Health Education, 103*(4), 197-220. doi:10.1108/09654280310485546
- World Health Organization (1986). *Ottawa Charter for health promotion*. Geneva: World Health Organization.
- World Health Organization (1997). *The Jakarta Declaration on Leading Health Promotion into the 21st Century*. Geneva: World Health Organization.
- World Health Organization (2001). *The World Health Report 2001: Mental Health: New understanding, new hope*. Geneva: World Health Organization.
- World Health Organization (2004). *Promoting Mental Health: concepts, emerging evidence, practice. Summary Report*. Geneva: World Health Organization.
- World Health Organization (2013). *Mental Health Action Plan 2013-2020-2030*. Geneva: World Health Organization.

REFERENCES

- World Health Organization & Calouste Gulbenkian Foundation (2014). *Social determinants of mental health*. Geneva: World Health Organization. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/112828/9789241506809_eng.pdf?sequence=1 (accessed on 05 May 2020)
- Wigelsworth, M., Lendrum, A., Oldfield, J., Scott, A., ten Bokkel, I., Tate, K., & Emery, C. (2016). The impact of trial stage, developer involvement and international transferability on universal social and emotional learning programme outcomes: a meta-analysis. *Cambridge Journal of Education*, 46(3), 347-376. doi:10.1080/0305764X.2016.1195791
- Wilson, S. J., & Lipsey, M. W. (2000). Wilderness challenge programs for delinquent youth: a meta-analysis of outcome evaluations. *Evaluation and Program Planning*, 23(1), 1-12. doi:[https://doi.org/10.1016/S0149-7189\(99\)00040-3](https://doi.org/10.1016/S0149-7189(99)00040-3)
- Wilson, S. J., Lipsey, M. W., & Derzon, J. H. (2003). The effects of school-based intervention programs on aggressive behavior: a meta-analysis. *J Consult Clin Psychol*, 71(1), 136-149. doi: 10.1037/0022-006X.71.1.136
- Zins, J. E., & Elias, M. J. (2007). Social and emotional learning: Promoting the development of all students *Journal of Educational & Psychological Consultation*, 17(2-3), 233–255. doi: 10.1080/10474410701413152
- Zins, J. E., Weissberg, R. P., Wang, M. C., & Walberg, H. J. E. (2004). *Building Academic Success on Social and Emotional Learning—What Does the Research Say?* New York: Teachers College Press.

**APPENDIX A:
PUBLISHED PAPERS**

Appendix A1:

Paper 1

A Cluster Randomized-Controlled Trial of the Mindout Social and Emotional Learning Program for Disadvantaged Post-Primary School Students

Dowling, K, Simpkin, A.J & Barry, M. M. (2019)

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A Cluster Randomized-Controlled Trial of the MindOut Social and Emotional Learning Program for Disadvantaged Post-Primary School Students

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Abstract

School-based social and emotional learning programs aim to provide students with the skills they need to deal with life challenges, thereby enhancing their social and emotional wellbeing, academic outcomes, and reducing their risk of mental health difficulties. While there is a robust evidence base on the effectiveness of these programs originating from the US, there is a relative paucity of research on how these programs impact young people in other county contexts, especially for older adolescents and those at higher risk. This study sets out to address this research gap by evaluating the effectiveness of a social emotional learning program designed for older adolescents in Ireland, the MindOut program. MindOut is a universal school-based social and emotional learning program designed for older adolescents in Ireland which was developed based on a common elements approach underpinned by CASEL's framework. Employing a cluster randomized-controlled trial, data on social and emotional skills, academic performance and mental health outcomes were collected from students ($n = 497$; 51.1% female) ages 15–18 years in 32 disadvantaged schools. There were significant improvements in intervention students' social and emotional skills including, reduced suppression of emotions ($p = 0.035$), use of more positive coping strategies [reduced avoidance coping $p < 0.001$] and increased social support coping ($p = 0.044$). Improvements in mental health and wellbeing were also found with significantly reduced levels of stress ($p = 0.017$) and depressive symptoms ($p = 0.030$) as well as reduced anxiety scores for females students ($p = 0.044$). These short-term evaluation findings support the positive impact of school-based social and emotional learning programs, such as MindOut, when designed to be both age and culturally appropriate and delivered to older adolescents in disadvantaged schools.

Keywords Social and emotional Learning · Mental wellbeing · Adolescence · Schools · Randomized-controlled trial

Introduction

The importance of promoting children and adolescents' social and emotional wellbeing as a mental health promotion strategy has received increasing attention in recent years (OECD 2015; Weare and Nind 2011; WHO 2013). The school is an important setting for promoting social and emotional wellbeing, given its ability to reach a wide range

of adolescents, including those most at-risk and who are less likely to access support and services when needed (Greenberg 2010; Oberle and Schonert-Reichl 2017). In many countries, schools fulfil their responsibility to support the wellbeing of students through the delivery of social and emotional learning programs, which help foster the development of youth's social and emotional skills such as managing emotions, coping skills, empathy etc. (Elias et al. 2001; Greenberg et al. 2003; Gresham and Elliot 2008). Several reviews and meta-analyses have provided strong evidence for the effectiveness of school-based social and emotional learning programs, endorsing their positive outcomes for youth, including increased social emotional skills, improved mental health, increased academic outcomes and the reduction of negative health and social behaviors such as substance misuse, bullying, aggression and risk-taking behaviors (Barry et al. 2017; Clarke et al.

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2015; Durlak et al. 2011; Institute of Medicine Report IOM 2009; Oberle and Schonert-Reichl 2017; OECD 2015; Sklad et al. 2012; Taylor et al. 2017; Weare and Nind 2011).

Although the empirical evidence on school-based social and emotional learning interventions has grown considerably, a science-to-practice gap remains, which results in significant challenges in translating these evidence-based programs into mainstream education (Barry et al. 2017; Jones and Bouffard 2012; Rotheram-Borus et al. 2012). Currently, the majority of social and emotional learning program developments and robust evaluations originate from the USA, and their transferability to other cultural and social contexts remains unclear (Durlak et al. 2011; Humphrey et al. 2016; Weare and Nind 2011). For example, one of the largest meta-analyses to date on school-based social and emotional learning programs by Durlak et al. (2011) examined 213 universal programs, however, only 27 (13%) of these programs were implemented and evaluated outside of the USA, and even fewer than that were developed and evaluated in Europe. There has been a lack of program development and high-quality evaluations conducted within the European context, which has been highlighted in other extant reviews (Clarke et al. 2015; Sklad et al. 2012; Taylor et al. 2017; Wigelsworth et al. 2016). When “exporting” evidence-based programs to countries outside of their origin they are likely to produce weaker outcomes. A review completed by Wigelsworth and colleagues (2016) found that studies conducted within the country of intervention development are likely to demonstrate larger effect sizes than those adopted outside the country of origin for reasons such as inadequate infrastructure and cultural adaptability (Elliott and Mihalic 2004; Kumpfer et al. 2002; Spoth et al. 2004).

In addition, there also appears to be a gap with regard to program development and evaluation for older adolescents, especially those who are most vulnerable. The majority of current programs and evaluations are focussed on youth in primary and lower secondary schools and there is a lack of program development and robust studies for older adolescents (>14 years old) (January et al. 2011; Clarke et al. 2015; Durlak et al. 2011; Wigelsworth et al. 2016). This is supported in a review by Taylor et al. (2017), which reported that 38% of the programmes reviewed were delivered with primary students (5–11 years) and a further 45% were delivered with middle school students (11–14 years). Only 11 (13%) programs in this review were delivered to adolescents of high-school level (14–18 years).

The years between early adolescence and adulthood is a critical transition period for youth that can have a significant impact on their mental health and wellbeing. These transformative adolescent years are characterized by many biological changes (e.g., pubertal maturation) and psychosocial developments such as identity formation, increased

experience of intense emotions, increased conflict with parents and desire for independence, increased sensation seeking, heightened experimentation and risk-taking behaviors, initiation of romantic relationships, and increased pressure to be accepted by peers (Curtis 2015; Steinberg 2015; Patel et al. 2007; Yeager 2017). It is also a time when youth can be exposed to a number of challenges and stressors such as social and academic pressures, body-image issues, bullying, financial pressures etc., (Romeo 2013). These developmental changes and vulnerabilities to new psychosocial stressors put this specific group of emerging adults at a heightened risk for the development of psychological, social and health difficulties that can have lasting effects during adulthood (Dopheide 2013; Yeager 2017). Research has shown that school-based interventions such as social and emotional learning programs that promote youth’s social and emotional skill development can be effective in helping them deal with stressors, thus improving their wellbeing and reducing their risk of developing mental health difficulties (Clarke et al. 2015; Durlak et al. 2011; Taylor et al. 2017). Although early intervention for mental health difficulties is and should remain a priority, the promotion of social and emotional skill development and wellbeing should continue throughout a young person’s life, especially at a time when individuals’ exposure to new stressors increases and their ability to cope with these becomes more difficult due to the developmental changes they are experiencing (Yeager 2017).

In Europe, mental health difficulties affect approximately 20% of the adolescent population and youth who face social and economic deprivation are identified as being at an increased risk (Reiss 2013; WHO 2015). Findings from Ireland’s national survey on youth mental health, My World Survey (Dooley and Fitzgerald 2012), indicate that a majority of mental health problems among young Irish people emerge in early adolescence and peak in late teens. One in five young Irish people (11–15 years) report experiencing two or more psychological symptoms (e.g., feeling low, irritability, nervousness, sleep difficulties etc.) more than once a week (UNICEF 2017). International studies have indicated that almost 75% of all serious mental health difficulties first become evident between the ages of 15 and 25 years old (Hickie 2004; Kessler et al. 2005; Kim-Cohen et al. 2003), suggesting that the reporting of psychological symptoms is likely to increase in the later adolescent years. Ireland is ranked well above the European average as the fourth highest country for adolescent (15–19 years) suicide across the 31 OECD and EU countries, and is the highest rated European country of female youth suicides (UNICEF 2017). The economic crisis in Ireland and other European countries has led to increased challenges for the younger generation, including rising youth unemployment, migration and school-drop out (European Union 2016),

placing youth facing this type of disadvantage at an increased risk of developing mental health difficulties, self-harming and death by suicide (Dooley and Fitzgerald 2012; NYCI 2014; OECD 2015). Ireland also had the highest rate of youth unemployment and disability benefit receipt and one in five young Irish people are not in education, employment or training (NEETs), which places them at greater risk of developing mental health difficulties (OECD 2018).

The developmental differences between childhood and late adolescence mean that youth's mental health needs are likely to vary significantly and, therefore, there is a need for more rigorous development, implementation and evaluation of social and emotional learning programs which reflect the needs of older adolescents (Curtis 2015; Heckman and Kautz 2014; Yeager 2017). More work in this area is needed, particularly within the European context where few robust studies on the effectiveness of these programs has been cited (Clarke et al. 2015; Sklad et al. 2012; Taylor et al. 2017; Wigelsworth et al. 2016). There is also a scarcity of research which investigates the impact of these types of programs on priority groups (e.g., disadvantaged youth) that are not only at a greater risk of developing mental health difficulties but are also less likely to develop their social and emotional skills outside of the school setting (Elias et al. 1997; Yeo and Graham 2015).

This study aims to address these aforementioned gaps by adding to the evidence on the efficacy of social and emotional learning programs among the older adolescent population of disadvantaged students within the Irish context. Employing a robust research design, this study explores whether a program delivered within the country of origin can contribute to promoting the social and emotional wellbeing of older adolescents.

In developing school-based interventions to meet the needs of the older adolescent population, it is clearly important to build on existing theoretical frameworks and evidence-informed strategies that can provide an integrated foundation for social emotional learning development within the context of existing schools policies and practices. Responding to the increasing use of discrete packaged school-based programs, Rotheram-Borus et al. (2012) called for the development of disruptive innovations that draw on what has been learned from evidence-based interventions in order to reach a wider audience, with greater impact, and at a lower cost. Research in youth mental health treatment and prevention has identified common strategies of successful evidence-based interventions and mapped these onto what is referred to as a "common elements framework" (Boustani et al. 2015; Chorpita and Daleiden 2009). This approach highlights the most potent core practices of successful evidence-based interventions and enables a more systematic approach to new program design and development. Studies

have shown that employing a common elements approach to child and adolescent mental health treatment can improve outcomes when compared to usual care and standard evidence-based treatment (Chorpita et al. 2013; Weisz et al. 2012). Boustani et al. (2015) have also applied this approach to evidence-based youth prevention programs identifying both the core practice elements (e.g., communication skills, problem solving, cognitive coping etc.) and instructional elements employed by the facilitator (e.g., modelling, role play etc.). These studies show how a common elements framework, through identifying the most essential components of evidence-based interventions that exhibit potential for greatest impact, can be applied to strengthen program development and delivery. Barry et al. (2017) considered how adopting a common elements approach to social and emotional learning intervention development could lead to innovative approaches that extend the reach of existing social emotional learning interventions.

This article reports on the evaluation of a social and emotional learning program, underpinned by a common elements framework, that was designed for older adolescents in post-primary schools in Ireland. The context and rationale for the development of the MindOut intervention is briefly described and this article reports on the findings from the first phase of a comprehensive evaluation of the program for students attending disadvantaged post-primary schools.

Background to the MindOut Program

The MindOut program is a universal school-based program designed to be delivered by teachers to promote the social and emotional wellbeing of youth aged 15–18 years in post-primary schools. This program was first developed in 2004, with support from the national Health Service Executive, and has been successfully implemented through the Social Personal and Health Education (SPHE) curriculum, in post-primary schools across Ireland. Social Personal and Health Education is a mandatory health education curriculum in Irish schools that aims to support the wellbeing and personal skill development of students so that they are better equipped to make informed decisions about their health, personal lives, and social development (NCCA 2011; Nic Gabhainn et al. 2010). While initial evaluations of the MindOut program showed a number of positive effects for students (Byrne et al. 2004, 2005; Byrne 2005), teachers, students and other stakeholders requested the program be updated to be more relevant to the lives of young Irish people today and to reflect the most recent developments in research, policy and practice both internationally and within Ireland.

The revision of the MindOut program involved a thorough process that was informed by three principal sources; (i) a review of existing resources based on a common

elements approach (ii) consultation with program users (e.g., teachers and youth) and (iii) consultation with a National Working Group representing key national stakeholder organizations. In reviewing existing resources, relevant evidence-based programs were examined through a common elements framework similar to the work done by Boustani et al. (2015). While a systematic coding process was not employed, a number of common practice and instructional elements were identified through a mapping process. The common practice elements that were present in all of the youth programs examined included: recognizing and managing emotions, managing thoughts, positive thinking and coping skills. The most common instructional elements employed in the reviewed programs included: collaborative learning, group discussion, reflection, games and use of scenarios and worksheets. The MindOut program is underpinned by the Collaborative for Academic Social and Emotional Learning (CASEL) theoretical framework for social and emotional learning (CASEL 2015) and the most potent common practice and instructional elements identified during the mapping process were aligned with CASEL's five core competencies and embedded into the program.

Additionally, the development of the revised program involved consultations with youth and teachers in an effort to identify program user needs and ensure that these needs were met within the updated program (Barry et al. 2017; Dowling et al. 2016; McCrohan 2015). Interviews with teachers and participatory workshops with students who had participated in the original program were conducted to ascertain their feedback on core elements (e.g., content, instructional strategies, language etc.), priority issues for inclusion, and to ensure that the program was age and culturally relevant for older Irish adolescents. A secondary consultation was conducted with a small group of youth recruited through a national youth organization who assisted in drafting age-appropriate, real-life scenarios based on the priority issues previously defined by students. At a later stage in the development process, this group also contributed in reviewing and providing feedback on each of the revised program sessions.

Throughout the development process, a National Working Group, which included key stakeholders from education, health promotion, educational psychology and mental health services, were consulted to ascertain their recommendations for strengthening the program and its potential outcomes. Further details on the development process can be found in relevant documents (Barry et al. 2017; Dowling et al. 2016). The revised program, which was written in consultation with youth and the National Working Group, was piloted with five post-primary schools to assess the feasibility of its implementation in schools (see Dowling et al. 2016 report for further details). Feedback from the

pilot phase was then used to make further adaptations to the program.

Program Description

The revised MindOut program (Dowling et al. 2017) consists of 13 weekly sessions, which are intended to be delivered by teachers within the Social Personal Health Education (SPHE) curriculum for 15–18 year old students. The content of the program is based on CASEL's five core competencies for social and emotional learning i.e., self-awareness, self-management, social awareness, relationship management and responsible decision making (CASEL 2015). The program is comprised of a teacher manual, with structured activities and resource materials which promote the development of these social and emotional competencies. The program employs interactive teaching strategies (e.g., collaborative learning, structured games, scenarios, videos etc.) to engage students in a number of skill-building activities such as: identifying and managing emotions, coping with challenges, overcoming negative thinking, communication, empathy, relationship skills etc. Additionally, the program promotes whole-school approaches by providing staff with a menu of strategies for promoting social and emotional development at a wider school level (e.g., practice-at-home activities; teacher reflection; whole-school activities; whole-school tips for staff and for engaging students, parents and the community etc.). These whole-school resources, in combination with the MindOut curriculum, aim to support students' wellbeing not only at the classroom level but at the wider school level. The program logic model can be seen in Fig. 1 and a summary of the program content can be seen in Table 4 of the appendix. In view of the substantive revisions made, it was deemed necessary to determine if the new program would lead to positive outcomes for youth, especially for those from disadvantaged communities.

Current Study

The present study evaluates the revised MindOut program in disadvantaged post-primary schools in Ireland. The specific aims of the overall study are: to assess the immediate and longer-term impact of the revised MindOut program on the participants' social and emotional skills development, overall mental health and wellbeing and academic performance; and to examine the process of implementation in order to determine the conditions needed to achieve successful outcomes in the school setting. Employing a cluster randomized controlled trial design, the current study reports specifically on the immediate impact of the MindOut program on students' social emotional

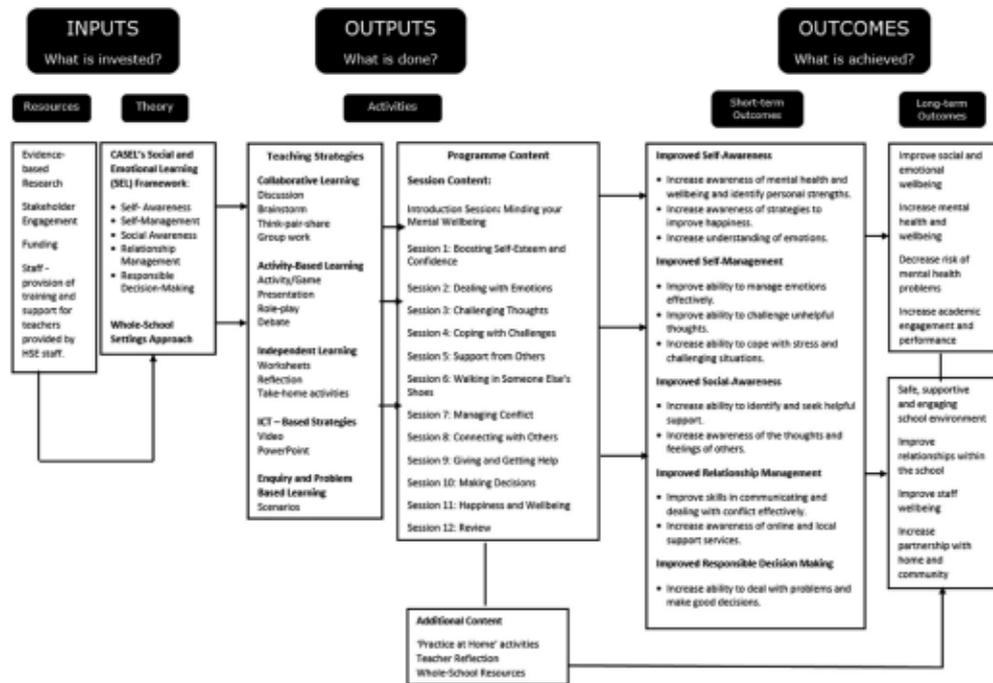


Fig. 1 MindOut program logic model

skills, mental health and wellbeing and academic outcomes when delivered to disadvantaged post-primary students. Unlike other evidence-based social and emotional learning programs delivered in Ireland, the MindOut program was especially designed to meet the needs of older Irish adolescents and this was achieved through the extensive consultations conducted with the adolescents themselves, and the key stakeholders that work with them, during the program development process. This process sought to address the issue of cultural transferability that arises when programs are being delivered that have been developed and evaluated elsewhere. The MindOut program also employed a common elements framework approach to its development. This novel process has been used in youth mental health treatment and prevention studies, but this study will determine whether or not this type of approach can be successfully utilized in social and emotional learning program development. The evaluation also addresses a gap in the evidence by assessing the effect of social and emotional learning programs with older adolescents, an age that is often overlooked in terms of programing and evaluation studies, particularly in Ireland, due to the strong weight given to earlier intervention. Finally, this study focuses on

evaluating the program with a vulnerable group of youth, in order to gain more knowledge on the impact of social and emotional learning programs on disadvantaged students' outcomes.

Methods

Study Design

This study employed a cluster randomized controlled design with schools as the unit of randomization. Baseline (T1) measures were taken approximately one to two weeks before program implementation within each school and post-intervention (T2) measures were collected immediately following program implementation (13 weeks).

Participants

Eligibility criteria

In order to qualify for selection, the schools and students needed to meet a number of eligibility criteria, which

included; (i) holding the designated disadvantage status (DEIS) by the Department of Education & Skills (ii) providing education at a post-primary level; and (iii) English-speaking (i.e., not Irish only speaking schools “Gael Scoileanna”). Delivering Equality of Opportunity in Disadvantaged Schools (DEIS) address the educational needs of children and youth from disadvantaged communities, from pre-school through second-level education. Schools are given disadvantaged status if 70% of the students are classified as educationally disadvantaged by the Department of Education and Skills. A total of 185 schools met these criteria. Students attending the participating schools who were in 4th/Transition Year (15–17 years) or 5th year (16–18 years) at baseline were the target population. Transition Year is a one-year optional program which acts as a bridge between the Junior Certificate program (3rd year; 13–15 yrs.), where learning happens in a highly-structured environment; and the Leaving Certificate program (6th year; 16–18 yrs.), where students are required to take greater responsibility for their own learning and decision making. Transition Year is designed to give students space to learn, mature and develop without the presence of exam pressures (Department of Education and Skills 2018). Only full-time students (i.e., not exchange or short-term visiting students) were considered for inclusion in this evaluation.

Sample size

To determine the sample size needed for this study similar intervention studies using comparable measures were consulted, which indicated a likely effect size of 0.29 and an anticipated intra-class correlation (ICC) of 0.02 based on depression scores (Kuyken et al. 2013). Assuming a non-participation rate of 10%, an average class size of 20 pupils and the aforementioned data, a sample size calculation was conducted using Winpepi COMPARE2 statistical software program. This power calculation resulted in a suggested sample size of 600 students from 30 schools (15 control; 15 intervention). In order to account for any dropouts at a school (cluster) level, schools were oversampled. Therefore, for the purpose of this study, 34 schools (17 control; 17 intervention) were recruited.

Recruitment and Randomization

Randomization was conducted at a cluster (school) level as the intervention was intended to be implemented with groups (classes) rather than individual students. Cluster randomization accounts for the nested nature of the data and helps avoid potential contamination bias. A list of all

post-primary DEIS schools in the Republic of Ireland (ROI) was accessed from the Department of Education (<https://www.education.ie/en/>) and schools that did not meet the eligibility criteria were excluded from this list. Prior to randomization, schools were stratified based on school categorization (e.g., urban mixed, rural mixed, urban girls and urban boys) to ensure the gender and geographical location of participants in each treatment group were closely balanced. An independent statistician used a computerized random number generator to randomly select 34 schools from the list of 185 eligible schools. DEIS schools were recruited in order of their appearance on the randomized list. Principals of selected schools were contacted by the researchers regarding participation in this study and schools who declined to participate were replaced by contacting the subsequent school on the list. Once all 34 school principals had given consent, the independent statistician randomized the schools into either the i) control ($N = 17$) or ii) intervention ($N = 17$) arm. Schools were then contacted and informed of the group to which they were assigned. Following group allocation, two schools within the control group dropped out of this study leaving 32 schools (15 control; 17 intervention) participating at baseline. All parents of participating students received an information sheet describing the intervention and the nature of this study. Parents were also given an opt-out consent form which they were asked to return to the school if they did not want their son or daughter to participate in this study. On the day of data collection, students were given the option to participate in the study and were asked to complete the consent form provided to them. It was not possible for staff and students to be blinded to the study group allocation. The process of recruitment can be seen in Fig. 2.

Teacher Training

All teachers from intervention schools attended a one-day comprehensive training session, delivered by a Health Promotion Officer (HPO) from the Health and Wellbeing Division of the national Health Service Executive (HSE), prior to beginning program delivery. This training prepared teachers by introducing them to the program content, materials and teaching strategies while also providing them with techniques for supporting their students' needs. Teachers of intervention schools were asked to implement the program in the context of the Social Personal Health Education curriculum as faithfully as possible over a thirteen week period. Teachers of control schools were advised to implement the Social Personal Health Education curriculum as they



Fig. 2 CONSORT diagram of recruitment of schools and students

normally would, which includes a component on emotional wellbeing.

Measures

A review of measures was completed to select the most appropriate outcome measures for this study and the final selection was based on a number of criteria including: age-appropriateness, length, cost, psychometric properties and sensitivity to change. All measures were piloted with a group of Irish students to identify any problematic questions and to ensure that the questions were culturally appropriate for Irish adolescents.

Demographic Variables

Participants were asked to report on their gender, age, year, nationality and parent demographics (education and employment).

Student Outcome Measures

Social emotional skills

Self-esteem Self-esteem was measured using the Rosenberg Self-esteem Scale (Rosenberg 1965), a 10-item scale that was originally designed for use with high-school students. Items are answered on a four-point Likert scale. The

scale showed high internal consistency ($\alpha = 0.87$) in the current study.

Emotional regulation The Emotional Regulation Questionnaire (Gross and John 2003) is a 10-item scale which was used to assess respondents' (i) cognitive reappraisal and (ii) expressive suppression. This scale has been used in a number of studies with adolescents 10–18 years old (Dingle et al. 2016; Jennings et al. 2013; Kuosmanen et al. 2017). Respondents are asked to rate how much they agree or disagree with items on a 7-point Likert scale. Good internal reliability was found for the subscale cognitive reappraisal ($\alpha = 0.85$), however, the subscale expressive suppression ($\alpha = 0.67$) fell under the required threshold of 0.70 in the current study.

Emotional intelligence Emotional Intelligence was measured by the Trait Meta-Mood Scale (TMMS), which was originally developed by Salovey et al. (1995) as a 48-item scale used to measure people's ability to manage and regulate their moods and emotions. The TMMS-24 was adapted in Spain (Fernández-Berrocal et al. 2004) and validated for use with youth (Garaigordobil and Pena-Sarrionandia 2015; Pedrosa et al. 2014; Salguero et al. 2010). The scale has three subscales: attention to feelings, emotional clarity and emotional repair and items are scored on a five point Likert scale. Acceptable internal consistencies were found for the subscales emotional clarity ($\alpha = 0.70$) and emotional repair ($\alpha = 0.80$) but the reliability of the subscale attention to feelings ($\alpha = 0.66$) was below the 0.70 threshold.

Coping skills Coping skills were measured using the Coping Strategy Indicator (CSI-15; Ellis 2004), a 15-item short form of the original 33 item scale (Amirkhan 1990), which evaluates three types of coping strategies (Subscales: Problem Solving, Avoidance, Social Support). This scale has been successfully used in a number of studies with adolescents ranging from 11–25 years in Ireland and internationally (Dooley and Fitzgerald 2012; Kuosmanen et al. 2017; Shandley et al. 2010). The subscale measures displayed adequate to high internal consistencies (problem solving, $\alpha = 0.83$; avoidance, $\alpha = 0.76$; social support, $\alpha = 0.91$).

Social self-efficacy The Self-Efficacy Questionnaire (SEQ-C; Muris 2001) is a 24 item scale designed for youth aged 13–18 and is comprised of three main subscales: academic self-efficacy, emotional self-efficacy and social self-efficacy. Only the latter was utilized in this study. The social self-efficacy scale is an 8-item subscale that measures respondents' self-assessment of their ability to navigate

through social situations and engage successfully with others. Each of the items are scored on a five-point Likert scale. The scale showed good internal consistency ($\alpha = 0.77$) in the current study.

Asserting influence and conflict resolution Asserting influence and conflict resolution was assessed using the Adolescent Interpersonal Competence Questionnaire (AICQ; Buhrmester 1990), which is composed of five subscales: initiating relationships, providing emotional support, self-disclosure, asserting influence and conflict resolution. Only the two latter subscales were used for the purpose of this study, each of which contains 8-items. Respondents are given a number of brief interpersonal situations and rate on a 5-point scale their level of competence and ease in handling these situations. The subscale measures displayed high internal consistencies (asserting influence, $\alpha = 0.85$; conflict resolution, $\alpha = 0.81$) in this study.

Decision making Decision making was measured using the Making Decisions in Everyday Life Scale (Mincemoyer and Perkins 2003), which includes 20 items and assesses adolescent participants' use of skills during the decision-making process. This scale was adapted (Cater et al. 2010) to a short form, which is composed of five items. Respondents are asked to rate how often they engage in certain actions of the decision making process on a four point Likert scale. The scale showed good internal consistency ($\alpha = 0.79$) in the current study.

Mental Health and Wellbeing

Mental health The Depression Anxiety Stress Scale (DASS-21; Lovibond and Lovibond 1995) is a 21-item self-report scale designed to measure levels of symptoms related to three subscales: depression, anxiety and stress. Though this scale was originally developed for adults, it has been validated and used in a number of studies with adolescents within Ireland and internationally (Da Silva et al. 2016; Dooley and Fitzgerald 2012; Tully et al. 2009). Each of the three subscales is composed of 7 scale items. High internal consistencies were shown for all three subscales (stress, $\alpha = 0.85$; anxiety, $\alpha = 0.84$; depression, $\alpha = 0.90$).

Mental wellbeing The positive mental health and wellbeing of respondents was assessed using the 14-item Warwick Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al. 2007). This scale was originally designed for use with adult populations, however, the scale has also been validated with adolescents (Clarke et al. 2011). The minimum score is 14 and the maximum score is 70 with higher scores indicating higher levels of mental wellbeing. The

WEMWBS demonstrated high internal consistency (Cronbach $\alpha = 0.91$) in this study.

Academic Outcomes

Attitudes toward school The Attitudes Towards School scale (Anderson 1999) was used to measure students' (12–17 years) attitudes toward their school environment (e.g., teachers, homework, grades and learning) and their feelings toward school. A higher score on this a 15-item scale indicates a more positive attitude toward school. The scale showed high internal consistency ($\alpha = 0.87$) in the current study.

School achievement motivation The School Achievement Motivation Rating Scale (SAMRS; Chiu 1997) was also employed to assess students' academic motivation. This 15-item scale is designed for use by teachers to rate the achievement motivation demonstrated by their students (5–18 years) in the classroom. Achievement motivation includes the students' desire to do well, ability to overcome challenges, maintain a high standard of work and surpass others. Teachers rate students on a five-point scale. The SAMRS demonstrated high internal consistency ($\alpha = 0.92$) in this study.

An effort was also made to measure students' academic performance through both self-reported and teacher-reported grades. However, due to the absence of standardized test scores, the data provided by both students and teachers were deemed insufficient and are therefore, not reported in this article.

Analysis

Intention to treat (ITT) analysis was employed in this study utilizing all available data. In accordance with the CONSORT 2010 statement (Schulz et al. 2010), all randomized students that were present both at pre-and post-assessment ($n = 497$) were analyzed in the groups they were originally randomized to, irrespective of their characteristics and how much or how little of the intervention they actually received (Hill 1961). Baseline differences between males and females were examined through independent sample t-tests to determine whether or not the model would need to control for gender. Intervention effects were analyzed using a linear mixed model (LMM) framework due to the clustered nature of the data. Mixed models have a number of advantages in comparison to standard linear regression models including the ability to handle missing data points and account for the fact that data points are likely not independent of each other. In other words, students within the same school/class are likely to report more similarly to each other than students from different schools (Demidenko 2013; Krueger and Tian 2004; Wainwright et al. 2007). For

Table 1 Baseline characteristics by group

	Baseline <i>N</i> = 675		Post-intervention <i>N</i> = 497	
	Intervention	Control	Intervention	Control
Gender				
Male	177 (26.2%)	161 (23.8%)	124 (25%)	123 (24.7%)
Female	153 (22.7%)	184 (27.3%)	122 (24.5%)	128 (25.8%)
Age				
15	82 (12.2%)	117 (17.4%)	57 (11.5%)	83 (16.7%)
16	179 (26.5%)	199 (29.5%)	132 (26.5%)	150 (30.2%)
17	60 (8.9%)	28 (4.1%)	49 (9.9%)	19 (3.8%)
18	9 (1.3%)	1 (0.1%)	6 (1.2%)	1 (0.2%)
School category				
Urban mixed	198 (29.3%)	144 (21.3%)	141 (28.4%)	115 (23.1%)
Rural mixed	95 (14.1%)	130 (19.3%)	76 (15.3%)	92 (18.5%)
Urban boys	11 (1.6%)	23 (3.4%)	6 (1.2%)	18 (3.6%)
Urban girls	26 (3.9%)	48 (7.1%)	23 (4.6%)	26 (5.2%)
Year group				
Transition year (TY)	128 (19%)	217 (32.1%)	82 (16.5%)	161 (32.4%)
5th year	202 (29.9%)	128 (19%)	164 (33%)	90 (18.1%)

each outcome, treatment allocation group (intervention vs. control) was modelled as a fixed effect and School ID was modelled as a random intercept term to allow the between- and within-school variability to be modelled separately. This random intercept alleviates the issue of inflated standard errors, which would occur in a simple regression model (Steenbergen and Jones 2002). Post-test scores acted as the dependent variable while pre-test scores and gender were controlled for by being modelled as covariates. The a priori alpha level set for this study was 0.05. All statistical analyses were completed using SPSS (version 25). The findings from this study are reported in compliance with the CONSORT 2010 statement for cluster randomized trials.

Results

Participants

In total, 675 participants from 32 schools completed the baseline assessment (intervention $n = 330$; control $n = 345$). At post-intervention, a total of 497 students from 32 schools remained in this study (intervention $n = 246$; control $n = 251$). A comparison of the demographic characteristics at baseline and post-intervention of participants in the two groups in terms of gender, year group and school category are outlined in Table 1. Almost equal numbers of males (50.1%) and females took part in this study overall. Students ranged in age from 15 to 18 years old at baseline ($M = 15.87$, $SD = .69$) (Males $M = 15.85$, $SD = .719$; Females $M = 15.88$, $SD = .66$). Reasons for dropout at an individual level was largely related to individual students being absent on the day of follow-up data collection.

Baseline Analysis

Profile of participants' mental health

Of the total sample at baseline, 57% of adolescents were classified as having normal levels of stress, 35% normal anxiety levels and 48% normal symptoms of depression, based on DASS-21 scores. Males were more likely to be classified in the normal range for all three categories in comparison to females. Overall, the students in this study, who were identified as disadvantaged, reported less favorable mental health and wellbeing outcomes at baseline when compared to the general population of adolescents as reported in a large-scale national study; mean DASS-21 depression score of 12.06 in comparison to 8.3; mean DASS-21 anxiety score of 12.7 compared to 7; mean DASS-21 stress score of 14.5 compared to 9.9 in a national sample of 16–17 year old Irish students ($n = 6085$; Dooley and Fitzgerald 2012). The mean WEMWBS score of 47.2 in the present study compares to 48.8 in 13–16 year old students in the UK ($n = 1650$; Clarke et al. 2011). In line with the above studies and current literature, female students reported poorer mental health and wellbeing at baseline in comparison to males (Dooley and Fitzgerald 2012).

T-tests were employed to assess gender differences on the main outcome variables at baseline. Males scored higher than females on the following scales: Self-Esteem, Total Emotional Intelligence (TMMS), Emotional Clarity (TMMS), Problem-Solving Coping (CSI), and Asserting Influence (AICQ). Females scored higher than males on: Attention to Feelings (TMMS), Avoidance Coping (CSI) and Social Support Coping (CSI). For academic outcomes, males scored significantly higher than females on the

Table 2 Results of t-test for gender differences at baseline

	Male			Female			t-test		Mean diff	df
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	95% CI for Mean Diff			
Self-esteem	29.50	4.98	338	26.38	5.30	337	2.4, 3.9	3.12***	673	
Emotional intelligence	69.58	9.77	338	67.32	10.15	337	.75, 3.8	2.26*	673	
Attention to feelings	25.79	4.84	338	26.72	4.58	337	-1.6, -.22	-0.93*	673	
Emotional clarity	33.8	26.50	338	23.79	5.12	337	1.9, 3.4	2.70***	673	
Emotional repair	33.8	28.26	338	27.69	5.87	337	-.30, 1.4	0.57	671	
Avoidance coping	16.39	5.57	336	18.59	6.43	337	-3.1, -1.3	-2.2***	671	
Problem-solving coping	16.52	5.27	336	15.57	5.20	337	.16, 1.7	0.95*	672	
Social support coping	11.48	4.93	336	14.26	5.68	337	-3.6, -2.0	-2.8***	671	
Reappraisal	4.38	1.21	337	4.32	1.29	337	-.14, .24	0.05	672	
Suppression of emotions	4.03	1.30	337	3.87	1.35	337	-.04, .36	0.16	672	
Asserting Influence	3.43	.73	337	3.25	.91	337	.06, .31	1.81**	672	
Conflict resolution	3.17	.78	337	3.08	.79	337	-.03, .21	0.09	672	
Decision-making	2.74	.65	337	2.79	.67	337	-.15, .05	-0.05	672	
Attitudes towards school	3.66	.67	337	3.87	.66	337	-.32, -.12	-0.22***	672	
Stress	12.47	9.05	337	16.93	9.59	337	-5.9, -3.0	-4.46***	672	
Anxiety	10.90	8.63	337	14.69	10.85	337	-5.3, -2.3	-3.79***	672	
Depression	10.80	9.84	337	13.77	11.09	337	-4.6, -1.4	-2.97***	672	
Wellbeing	49.12	10.78	333	44.42	11.80	337	3.0, 6.4	4.70***	668	

* $p < .05$; ** $p < .01$; *** $p < .001$ *M* mean, *SD* standard deviation

Attitudes Towards School scale. Males scored higher than females on the Mental Wellbeing scale, whereas females scored higher than males on stress, anxiety and depressive symptoms (DASS-21). The results of the t-test can be found in Table 2.

Outcome Analysis

Results of linear mixed model for key outcome variables are shown in Table 3.

Social emotional skills

With regard to social and emotional skills, there was little evidence for an effect of the intervention on students' self-esteem ($p = 0.135$). There was no evidence for an effect of the intervention on emotional intelligence ($p = 0.076$), attention to feelings ($p = 0.095$), emotional clarity ($p = 0.318$) or emotional repair ($p = .361$). There was evidence to suggest that the intervention decreased levels of suppressing emotions, with students in the intervention group scoring 0.244 points lower at follow-up (95% CI -0.45, -0.041; $p = 0.035$). No intervention effects were detected for cognitive reappraisal ($p = 0.195$). There was evidence for a significant reduction in avoidance coping in the intervention

group. Those youth receiving the intervention had a 1.43-point reduction in their avoidance levels (95% CI 0.64, 2.22; $p < 0.001$). Increased levels of social support coping were also found, with students in the intervention group scoring 0.812 points higher at follow-up (95% CI 0.02, 1.60; $p = 0.044$). There was no evidence for an intervention effect on problem-solving coping ($p = 0.935$) or on students' social self-efficacy ($p = 0.865$). Likewise, there was no evidence for an intervention effect on students' interpersonal skills for both asserting influence ($p = 0.306$) and conflict resolution ($p = 0.768$). Students' decision-making skills also showed no significant program effect ($p = 0.520$).

Mental health and wellbeing

The findings show that the intervention significantly decreased levels of both self-reported stress (1.63 decrease 95% CI -2.97, -0.30; $p = 0.017$) and symptoms of depression (1.58 decrease 95% CI -3.01, -0.15; $p = 0.030$). No evidence for intervention effects were detected for anxiety ($p = 0.159$) however, there was a significant effect on the intervention on anxiety for females students (-2.02 decrease 95% CI -5.89, -.078; $p = 0.044$). There was no evidence for significant intervention effects on students' self-reported mental wellbeing ($p = 0.942$).

Table 3 Results of linear mixed model analyses for key outcome variables

Scale Name	Scale/Subscales	Group	N	Pre-mean (SD)	Post-Mean (SD)	Effect	Confidence interval	P	% change
RSES	Self-esteem	Control	251	27.4 (5.3)	27.5 (5.45)	1.48	-0.15, 1.14	.139	0.36%
		Intervention	246	28.8 (5.4)	29.0 (5.2)				0.69%
TMMS	Total emotional intelligence	Control	249	68.3 (10.3)	79.3 (11.9)	1.78	-0.27, 3.7	.087	16.1%
		Intervention	244	69.9 (10.0)	82.1 (11.5)				17.4%
	Subscale: attention to feelings	Control	250	26.2 (4.7)	26 (4.8)	1.98	-0.06, 1.75	.067	-0.76%
		Intervention	246	26.4 (4.9)	26.9 (4.7)				1.89%
	Subscale: emotional clarity	Control	251	24.8 (5.4)	25.2 (5.5)	1.17	-0.39, 1.45	.250	1.61%
		Intervention	246	25.9 (5.0)	26.3 (5.6)				1.54%
Subscale: emotional repair	Control	251	28.4 (5.7)	28.2 (5.7)	1.05	-0.51, 1.57	.303	-0.70%	
	Intervention	246	28.5 (5.7)	28.9 (5.1)				1.40%	
CSI	Subscale: avoidance	Control	250	18.2 (6.2)	18.4 (5.7)	-3.35	-2.15, -0.56	<.001**	1.1%
		Intervention	245	16.5 (5.7)	16.1 (5.2)				-2.42%
	Subscale: problem solving	Control	250	16.4 (5.3)	16.0 (5.0)	.97	-0.90, 0.94	.97	1.10%
		Intervention	245	16.4 (5.2)	16.1 (5.0)				-1.83%
	Subscale: social support	Control	250	13.6 (5.6)	13.1 (5.2)	2.13	0.03, 1.74	.044*	-3.68%
		Intervention	245	12.5 (5.4)	13.3 (5.3)				6.4%
SEC-Q	Social self-efficacy	Control	250	27.1 (6.2)	27.0 (6.3)	.394	-0.80, 1.17	.698	-0.37%
ERQ	Subscale: reappraisal	Control	251	26.3 (8.1)	25.9 (7.4)	1.26	-0.06, .29	.210	-1.52%
		Intervention	246	26.5 (6.8)	26.5 (6.6)				-
Subscale: suppression	Control	251	16.1 (5.5)	15.7 (4.8)	-2.2	-4, -0.02	.033*	-2.48%	
	Intervention	246	15.4 (5.2)	14.5 (4.3)				-5.84%	
AICQ	Subscale: asserting influence	Control	251	23.2 (5.8)	23.3 (5.5)	1.24	-0.04, 0.16	.218	-0.43%
		Intervention	246	23.1 (6.1)	23.6 (5.6)				2.16%
	Subscale: conflict resolution	Control	251	21.9 (5.6)	22.2 (5.5)	.434	-0.08, 0.13	.665	1.37%
		Intervention	246	22.2 (5.6)	22.4 (5.3)				0.90%
DMS	Decision making	Control	250	13.6 (3.3)	13.8 (3.4)	-.763	-0.15, 0.07	.457	1.47%
Intervention		244	14.0 (3.4)	13.8 (3.3)				-1.43%	
	DASS-21	Stress	Control	250	15.8 (9.6)	15.8 (9.6)	-2.37	-2.94, -0.28	.018*
Intervention			245	13.3 (9.3)	12.8 (8.5)				-3.76%
Anxiety	Control	250	13.8 (10.2)	13.1 (10.1)	-1.50	-2.87, 0.46	.148	-5.07%	
	Intervention	245	11.5 (9.5)	10.5 (9.1)				-8.70%	
Depression	Control	250	13.7 (10.8)	12.9 (10.2)	-2.18	-3.01, -0.15	.030*	-5.84%	
	Intervention	245	10.4 (9.7)	9.7 (9.1)				-6.54%	
WEMWBS	Wellbeing	Control	250	45.8 (12.3)	47.7 (11.0)	-.183	-1.86, 1.56	.857	4.15%
		Intervention	244	48.6 (10.7)	49.1 (10.0)				1.02%
ATS	Attitudes toward schools	Control	251	55.9 (10.2)	54.4 (10.4)	.231	-0.13, 1.66	.819	-2.68%
		Intervention	246	58 (9.6)	56.6 (10.6)				-2.41%
SAMRS	School achievement	Control	243	53.4 (10.6)	54.0 (11.1)	-.220	-3.5, 2.8	.828	1.1%
		Intervention	295	51.2 (10.9)	51.1 (11.8)				-0.2%

RSES Rosenberg Self-Esteem Scale, TMMS Trait Meta-Mood Scale, CSI Coping Strategy Indicator, SEC-Q Self-Efficacy Questionnaire for Children, ERQ Emotional Regulation Questionnaire, AICQ Adolescent Interpersonal Competence Questionnaire, DMS Decision Making Scale, DASS-21 Depression, Anxiety and Stress Scale, WEMWBS Warwick Edinburgh Mental Wellbeing Scale, ATS Attitudes towards School Scale, SAMRS School Achievement Motivation Rating Scale

* $p < .05$; ** $p < .01$; *** $p < .001$

SD standard deviation; controlling for pre-test score

Academic outcomes

No intervention effects were demonstrated for students' attitudes toward school ($p = 0.935$). There also was no evidence for significant intervention effects on students' school achievement motivation as rated by teachers ($p = 0.828$).

Discussion

Research has shown that school-based interventions that promote youth's social and emotional skill development can be effective in improving their mental health and wellbeing and reducing their risk of developing mental health difficulties (Clarke et al. 2015; Durlak et al. 2011; Taylor et al.

2017). While there is strong evidence internationally for the effectiveness of school-based social and emotional learning programs, the evidence on the impact of these programs with older adolescents outside of the US context, especially those who are more vulnerable, remains unclear. This study set out to address these gaps in the evidence by conducting a cluster randomized controlled trial to assess the effects of a social and emotional learning program on disadvantaged adolescents (15–18 years) in Irish post-primary schools.

The results indicate that the MindOut social and emotional learning program positively impacted on both students' social and emotional skills as well as their mental health and wellbeing outcomes. These are promising findings that are in line with other large-scale randomized controlled trials evaluating social and emotional learning programs such as Positive Action (Lewis et al. 2016; Snyder et al. 2010), Friends (Stallard et al. 2014) and Stress Management Intervention (Keogh et al. 2006), which have been shown to improve youth's overall wellbeing, academic outcomes and mental health outcomes. The findings from this study are particularly interesting given that this is one of the first cluster randomized controlled trials evaluating a social and emotional learning program developed for, and implemented with older adolescents within an Irish context. The results of this study demonstrate that the MindOut social and emotional learning program led to positive outcomes for youth by improving their social emotional skills, including reduced suppression of emotions, reduced avoidance coping and increased social support coping. Lower ratings of emotion suppression have previously been shown to be associated with higher positive affect, life satisfaction, social support as well as lower negative affect and depression (Balzarotti et al. 2010; Gross and John 2003; Haga et al. 2009; Nolen-Hoeksema and Aldao 2011). Previous research on the influence of different types of coping mechanisms on wellbeing has shown that higher levels of avoidant coping are more commonly associated with higher levels of depression, social anxiety, misuse of drugs and alcohol and deviant behaviors (Blumenthal et al. 2016; Horwitz et al. 2011; Markova and Nikitskaya 2017). Avoidant coping is also noted as a risk factor for both anxiety and depression (Seiffge-Krenke and Klessinger 2000). In contrast, higher levels of social support coping are related to lower levels of stress and depression and higher self-esteem (Camara et al. 2017; Lee et al. 2014; Thorsteinsson et al. 2013).

It is important to explore the plausible explanations for the differences in significant and non-significant outcome effects. Within the MindOut program, sessions 2 and 3 focus on emotional coping skills such as emotional awareness, emotional regulation and overcoming negative thinking. Sessions 4 and 5 also address coping skills and encourage active coping strategies rather than avoidant as

well as identifying supports. Therefore, the improvements displayed by the intervention students in emotional regulation, emotional suppression, avoidance coping and social support coping can be reasonably attributed to the content within the MindOut sessions. MindOut appears to have a greater impact on students' emotional skills in comparison to their social skills. One possible reason for this could be that emotional skills were explored in the first five sessions of the program, when engagement and adherence to the implementation of the program lessons are likely to have been higher. The sessions which explored social skills occurred in the second half of the program: sessions 6, 7, and 9. A number of schools ($n = 3$) reported that they ran out of time to deliver some or all of these sessions, which could have impacted on outcomes. The impact of levels of program implementation on student outcomes will be examined in detail in the next phase of this evaluation. However, it is also possible that the MindOut program was not effective in improving social skill outcomes for students. It will be of interest to examine the sustainability of these findings during the planned 12 month follow-up study.

The results of this study also demonstrate that the MindOut program was successful in reducing participants' levels of reported stress, and symptoms of depression, as well as anxiety for female participants. The improvements in students' emotional suppression could be directly linked to the decrease in depression scores, and likewise stress scores may have decreased as a result of students' improved coping skills (e.g., reduction in avoidant coping and increased social support coping) as outlined earlier. Given that young females are at an increased risk of experiencing anxiety (Bahrami and Yousefi 2011; Hosseini and Khazali 2013), it is important to note that social and emotional learning programs can be effective in reducing this risk among the adolescent female population.

The presence of stress, depression and anxiety during adolescence can have serious negative impacts on a young person's life. These mental health difficulties have been associated with poorer social relationships, poorer academic performance and school drop-out, increased substance misuse, increased delinquent behaviors as well as increased risk of self-harming and suicide (Beesdo et al. 2009; Birmaher et al. 1996; WHO 2013). Therefore, the development of social and emotional skills through social and emotional learning programs such as MindOut can act as a protective factor not only for mental health problems but also for a wide range of negative health and social outcomes.

In relation to academic performance, there were no significant positive effects detected for either groups in terms of students' self-reported attitudes toward school or teacher-reported school achievement motivation. Although previous research has shown evidence for the effectiveness of social

and emotional learning programs in improving academic outcomes (Durlak et al. 2011; Zins et al. 2004), this study did not find any significant impact of the intervention on these outcomes. Previous research has signaled the importance of whole-school approaches and positive school climate in partnership with classroom-based programs in improving academic outcomes for students (Greenberg et al. 2017; Jones and Bouffard 2012; Osher et al. 2004). While MindOut includes whole-school resources for schools, these strategies were not implemented to a high degree as reported by teachers in the intervention schools. It is plausible that classroom based-strategies alone are not enough to impact on academic outcomes for students and that these need to be aligned with whole school elements that promote a positive school climate in order to see these types of improvements. Future research should investigate this further by monitoring the implementation of whole-school strategies alongside a classroom-based social and emotional learning program to determine what key ingredients are needed for improving academic outcomes for adolescents.

The present study reported the short-term evaluation results of the MindOut program for students in disadvantaged post-primary schools within the Irish context. In line with international research (Durlak et al. 2011; Taylor et al. 2017), this study supports the effectiveness of implementing universal school-based social and emotional learning programs demonstrating positive program impacts on students' social and emotional skills and mental health and wellbeing. In contrast with other research studies, which suggest that social and emotional learning programs are not effective when delivered to older adolescents (Yeager 2017; Heckman and Kautz 2014), this study shows that these programs can show improvements for this population. There are two plausible reasons why this has not been found before. Firstly, there is a lack of high-quality evaluations of social and emotional learning programs conducted with this older age group, and therefore, it is impossible to conclude their effectiveness from the limited studies available. Second, the majority of programs that are evaluated with this age group, are adapted versions of programs developed for children and younger adolescents and therefore, the content may not be tailored to the needs of this older group, making it less relevant and therefore, less effective (Yeager 2017). The baseline findings indicate that students from disadvantaged backgrounds have lower levels of mental health and wellbeing and, therefore, demonstrate an increased need to engage with school-based social and emotional learning programs such as MindOut. The findings also provide preliminary support for the use of a common elements framework in developing universal social and emotional learning programs for standard delivery within the senior cycle of post-primary school,

especially in the context of disadvantaged schools. The fact that MindOut was developed specifically for older adolescents, based on a common elements framework and with direct input from youth and teachers, could have contributed to the students' engagement with the program and its overall impact.

The next phase of the evaluation of the MindOut program will examine program implementation and longer-term program outcomes in further detail. The present findings do, however, indicate that school-based social and emotional learning programs such as MindOut can have positive benefits for vulnerable adolescents in Ireland. This study also demonstrates how intervention development, based on sound underlying program theory, the adoption of a common elements approach, and stakeholder consultation can provide a feasible and usable set of evidence-based strategies that can be successfully embedded into the Social Personal and Health Education (SPHE) curriculum in Ireland. In designing programs for older adolescents, researchers and practitioners therefore, need to consider how they will ensure that programs are both age and culturally-appropriate for their target group and tailored to their specific needs.

Future Directions for Research and Practice

The findings from this study suggest that social and emotional learning programs such as MindOut can create positive outcomes for disadvantaged post-primary students. There is a need for more research internationally to examine the impact of social and emotional learning programs both with more vulnerable disadvantaged groups as well as older adolescents, two populations which are underrepresented in social and emotional learning research. There is also a need for more robust studies which assess the effectiveness of social and emotional learning programs developed within the European context. The initial outcomes from the present study suggest positive findings, however, the long-term impact will also need to be determined at 12 months follow-up. Further research could contribute to advancing the application of the common elements approach to social and emotional learning interventions, including employing a more systematic coding process to identify common elements and determining their wider application in intervention development and implementation. Finally, there is also a need for research to explore levels of implementation quality and the potential impact this can have on achieving successful program outcomes. The next stage of this evaluation study will examine implementation fidelity across the intervention schools and explore its relationship with achieving positive outcomes for students.

From a practice point of view, the findings from this study suggest that social and emotional learning programs,

when specifically developed and tailored for target populations, can be successfully embedded into the post-primary school curriculum. Ensuring programs adequately meet the needs of target audiences and are both age and culturally relevant could be two key contributing factors to the success of program outcomes. This is an important consideration for both future developers of social and emotional learning programs and schools intending to embed these programs into their curriculum. The program appeared to show the greatest impact on emotional individual-centered outcomes (e.g., emotional suppression, coping skills, stress, depression etc.) and less of an impact on social outcomes (e.g., social self-efficacy, interpersonal skills etc.) or academic outcomes. It is possible that curriculum-based social and emotional learning programs are effective in improving person-centered emotional outcomes, but improving social and academic outcomes may require the inclusion of positive whole school strategies as well. The importance of aligning whole-school approaches with classroom-based strategies is not a novel idea and its importance has been endorsed in a number of studies (Jones and Bouffard 2012; Oberle and Schonert-Reichl 2017; Zins et al. 2004). While this study has shown that classroom-based social and emotional learning programs can be delivered successfully within the school curriculum for older students, schools could be encouraged to also implement whole school practices to ensure that students' skills are being supported through a positive school climate and environment.

The years between early adolescence and adulthood is a highly vulnerable but transformative period in a young person's life, especially in relation to their mental health and wellbeing. The findings from this study indicate that school-based social and emotional learning programs can be a useful strategy for improving the wellbeing of older adolescents and reducing the risk of mental health difficulties or other problem behaviors. This is an important realization that should be considered by those working in the area of adolescence either through research, policy or practice.

Strengths and Limitations

The current study has a number of positive features which contribute to the strength of its findings. It is one of the first large-scale c-RCT studies in Ireland to evaluate the social and emotional wellbeing of high-risk adolescents. The robust design, including the clustered data, intention-to-treat and mixed model analysis is also a strength of this study, as is the range of validated outcome measures, which were carefully selected to reflect the program content and underlying theoretical social and emotional learning framework.

While there are several strengths in the research design of this study, it also has several limitations which should be

considered. One major limitation to this study is that all the data were collected through self-report measures and therefore, there is a risk of participant response bias. An additional limitation is that the evaluation study was led by the intervention developers, which can potentially lead to inflated treatment effects due to bias, higher quality implementation or both of these factors (Eisner 2009). A further limitation of this study is that the outcomes were attained immediately after the intervention had ended. Evidence suggests that the effects of many interventions diminish over time and therefore, it will be important to determine if the program effects will endure post-intervention. To assess this, a one-year follow-up study will investigate the longer-term effects of the program on students' outcomes.

Conclusion

During the adolescent years, youth experience a number of developmental changes and are exposed to a number of new day-to-day stressors. The ability of youth to cope with these psychosocial stressors can have a significant impact on their mental health and wellbeing. School-based mental health promotion interventions such as social and emotional learning programs aim to enhance adolescents' social and emotional skills, which act as protective factors for promoting positive wellbeing and reducing the onset of mental health difficulties and health risk behaviors. While there is strong evidence to support the effectiveness of these programs in schools, the majority of findings are limited to studies conducted with children and younger adolescents (<14 years) and originate mainly from the USA. Employing a rigorous c-RCT design, this study aimed to investigate whether or not a social and emotional learning program, which was designed for older adolescents and evaluated within the country of origin, could produce positive outcomes for participants. The findings suggest that the Mind-Out program was successful in producing positive outcomes for students, including improvements in their social and emotional skill development and their mental health. These findings are important to the area of adolescence as they suggest that implementing school-based social and emotional wellbeing programs, such as MindOut, can provide older adolescents with the skills they need to enhance their ability to cope with life, overcome stressful situations, thus reducing their risk of developing psychological difficulties and improving their mental health and wellbeing.

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Table 4 Summary of program content

Session Title	Session Goal
Introduction session: Minding your Mental Wellbeing	To introduce the MindOut program and to explore ideas around mental health and wellbeing.
Session 1: Boosting Self-Esteem and Confidence	To help students build skills to increase their self-esteem and confidence.
Session 2: Dealing with Emotions	To recognize and explore a range of emotions and learn how to manage these effectively.
Session 3: Challenging Thoughts	Understand the connection between thoughts, feelings and actions and learn how to challenge unhelpful thoughts.
Session 4: Coping with Challenges	To identify a range of helpful coping strategies that can be used to deal with stressful situations.
Session 5: Support from Others	To increase awareness of supports and recognize the differences between helpful and unhelpful sources of support.
Session 6: Walking in Someone Else's Shoes	To help students increase their awareness of the thoughts and feelings of others and to show compassion.
Session 7: Managing Conflict	To encourage students to practice skills for communicating successfully with others and manage conflict effectively.
Session 8: Connecting with Others	To encourage students to think about their relationships and how they can make successful connections with others.
Session 9: Giving and Getting Help	To discuss how to overcome barriers to help-seeking and to help students learn how to be there for others.
Session 10: Making Decisions	To introduce students to a three-step problem-solving approach and encourage them to use this to make informed responsible decisions.
Session 11: Happiness and Wellbeing	To explore practical strategies for happiness.
Session 12: Review	To encourage students to reflect upon the range of skills they developed throughout the course of the program.

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Authors' Contributions K.D. and M.M.B. conceived the design and coordination of the study. K.D. contributed to the data collection and input, statistical analysis and drafting the manuscript; M.M.B. provided supervision at all stages of the study including data collection, data interpretation and drafting the manuscript; AS contributed to the statistical analyses and interpretation of the data. All authors read, revised and approved the final manuscript.

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Data Sharing and Declaration This manuscript's data will not be deposited.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval The study received ethical approval from the National University of Ireland Galway Research Ethics Committee (ref: 16-Jul-01). All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Written informed consent was obtained from all individual participant included in the study and passive parental consent from all participants was also sought.

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Appendix

Table 4

References

Amirkhan, J. H. (1990). A factor analytically derived measure of coping: the coping strategy indicator. *Journal Personality and Social Psychology*, 59(5), 1066–1074. <https://doi.org/10.1037/0022-3514.59.5.1066>.

Anderson, S. A. (1999). *Attitudes Toward School Scale*. Center for Applied Research, University of Connecticut, School of Family Studies.

Bahrani, F., & Yousefi, N. (2011). Females are more anxious than males: a metacognitive perspective. *Iranian Journal Psychiatry and Behavioral Science*, 5(2), 83–90.

Balzarotti, S., John, O. P., & Gross, J. J. (2010). An Italian adaptation of the emotion regulation questionnaire. *European Journal of*

- Psychological Assessment*, 26(1), 61–67. <https://doi.org/10.1027/1015-5759/a000009>.
- Barry, M. M., Clarke, A. M., & Dowling, K. (2017). Promoting social and emotional well-being in schools. *Health Education*, 117(5), 434–451. <https://doi.org/10.1108/HE-11-2016-0057>.
- Beesdo, K., Knappe, S., & Pine, D. S. (2009). Anxiety and anxiety disorders in children and adolescents: developmental issues and implications for DSM-V. *Psychiatric Clinics of North America*, 32(3), 483–524. <https://doi.org/10.1016/j.psc.2009.06.002>.
- Birmaher, B., Ryan, N. D., Williamson, D. E., Brent, D. A., Kaufman, J., Dahl, R. E., & Nelson, B. (1996). Childhood and adolescent depression: a review of the past 10 years. Part I. *Journal of the American Academy of Child Adolescent Psychiatry*, 35(11), 1427–1439. <https://doi.org/10.1097/00004583-199611000-00011>.
- Blumenthal, H., Ham, L. S., Cloutier, R. M., Bacon, A. K., & Douglas, M. E. (2016). Social anxiety, disengagement coping, and alcohol-use behaviors among adolescents. *Anxiety Stress Coping*, 29(4), 432–446. <https://doi.org/10.1080/10615806.2015.1058366>.
- Boustani, M. M., Frazier, S. L., Becker, K. D., Bechor, M., Dinizulu, S. M., Hedemann, E. R., & Patalich, D. S. (2015). Common elements of adolescent prevention programs: minimizing burden while maximizing reach. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(2), 209–219. <https://doi.org/10.1007/s10488-014-0541-9>.
- Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Dev*, 61(4), 1101–1111.
- Byrne, M. (2005). *The development and evaluation of a mental health promotion program for post-primary schools*. Doctor of Philosophy Thesis, National University of Ireland Galway, Galway, Ireland.
- Byrne, M., Barry, M., & Sheridan, A. (2004). Implementation of a school-based mental health promotion programme in Ireland. *The International Journal of Mental Health Promotion*, 6(2), 17–25.
- Byrne, M., Barry, M. M., Nic Gabhainn, S., & Newell, J. (2005). The development and evaluation of a mental health promotion program for post-primary schools in Ireland. In B. B. Jensen & S. Clift (Eds.), *The Health Promoting School: International Advances in Theory, Evaluation and Practice* (pp. 383–408). Copenhagen: Danish University of Education Press.
- Camara, M., Bacigalupe, G., & Padilla, P. (2017). The role of social support in adolescents: are you helping me or stressing me out? *International Journal of Adolescence and Youth*, 22(2), 123–136. <https://doi.org/10.1080/02673843.2013.875480>.
- Cater, M., Arnold, M., Bouillion-Diaz, L., Heck, K., Mead, J., Spears, B., & Mulroy, M. (2010). *Decision-Making Scale*. Washington, DC: Youth Engagement, Attitudes, and Knowledge (YEA-K) Survey.
- Chiu, L. H. (1997). Development and validation of the school achievement motivation rating scale. *Educational and Psychological Measurement*, 57(2), 292–305. <https://doi.org/10.1177/0013164497057002008>.
- Chorpita, B. F., & Daleiden, E. L. (2009). Mapping evidence-based treatments for children and adolescents: application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting Clinical Psychology*, 77(3), 566–579. <https://doi.org/10.1037/a0014565>.
- Chorpita, B. F., Weisz, J. R., Daleiden, E. L., Schoenwald, S. K., Plankas, L. A., Miranda, J., Higa-McMillan, C. K., Nakamura, B. J., Ausin, A. A., Borntager, C. F., Ward, A., Wells, K. C., & Gibbons, R. D. (2013). Long-term outcomes for the Child STEPs randomized effectiveness trial: a comparison of modular and standard treatment designs with usual care. *Journal of Consulting and Clinical Psychology*, 81(6), 999–1009. <https://doi.org/10.1037/a0034200>.
- Clarke, A., Friede, T., Putz, R., Ashdown, J., Martin, S., Blake, A., & Stewart-Brown, S. (2011). Warwick-Edinburgh Mental Well-being Scale (WEMWBS): Validated for teenage school students in England and Scotland. A mixed methods assessment. *BMC Public Health*, 11, 487.
- Clarke, A., Morreale, S., Field, C. A., Hussein, Y., & Barry, M. (2015). *What works in enhancing social and emotional skills development during childhood and adolescence? A review of the evidence on the effectiveness of school-based and out-of-school programmes in the UK*. A report produced by the World Health Organization Collaborating Centre for Health Promotion Research, National University of Ireland Galway, Galway, Ireland.
- Collaborative for Academic, Social and Emotional Learning. (2015). *CASEL Guide: Effective Social and Emotional Learning Programs*. Chicago: Middle and high school edition.
- Curtis, A. C. C. (2015). Defining adolescence. *Journal of Adolescent and Family Health*, 7(2), 1–39.
- Da Silva, H. A., dos Passos, M. H. P., de Oliveira, V. M. A., Palmeira, A. C., Pitangui, A. C. R., & de Araújo, R. C. (2016). Short version of the Depression Anxiety Stress Scale-21: is it valid for Brazilian adolescents? *Einstein*, 14(4), 486–493.
- Demidenko, E. (2013). *Mixed Models: Theory and Applications with R* (2nd ed). Hoboken: Wiley.
- Department of Education and Skills (2018). Transition year. <https://www.education.ie/en/Schools-Colleges/Information/Curriculum-and-Syllabus/Transition-Year-/Transition-Year.html>.
- Dingle, G. A., Hodges, J., & Kunde, A. (2016). Tuned In emotion regulation program using musiclistening: effectiveness for adolescents in educational settings. *Frontiers Psychology*, 7, 859. <https://doi.org/10.3389/fpsyg.2016.00859>.
- Dooley, B. A., & Fitzgerald, A. (2012). *My World Survey: National Study of Youth Mental Health in Ireland: Headstrong and UCD School of Psychology. Headstrong-The National Centre for Youth Mental Health*. Dublin: UCD School of Psychology.
- Dopheide, J. (2013). Recognizing and referring at-risk youth. *Mental Health Clinician*, 2(11), 353–361.
- Dowling, K., Clarke, A. M., & Barry, M. M. (2016). *The Re-development of the MindOut Program: Promoting Social and Emotional Wellbeing in Post-Primary Schools*. A report produced by the Health Promotion Research Centre, National University of Ireland Galway, Galway Ireland.
- Dowling, K., Ryan, J., Clarke, A. M., Sheridan, A., & Barry, M. M. (2017). *MindOut Teacher Manual 2.0-Promoting Social and Emotional Wellbeing: A senior cycle program for post-primary schools* (2nd ed). Ireland: Health Promotion Research Centre, National University of Ireland Galway and the Health Service Executive.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: a meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432. <https://doi.org/10.1111/j.1467-8624.2010.01564.x>.
- Eisner, M. (2009). No effects in independent prevention trials: can we reject the cynical view? *Journal of Experimental Criminology*, 5, 163–18.
- Elias, M. J., Lantieri, L., Patti, J., Shriver, T. P., Walberg, H., Weissberg, R. P., & Zins, J. E. (2001). No new wars needed. *Reclaiming Children and Youth*, 10(1), 29–32.
- Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., & Shriver, T. P. (1997). *Promoting Social and Emotional Learning: Guidelines for Educators*. Alexandria: Association of Supervision and Curriculum Development.
- Elliott, D. S., & Mihalic, S. (2004). Issues in disseminating and replicating effective prevention programs. *Prevention Science*, 5(1), 47–53.
- Ellis, L. A. (2004). *Peers Helping Peers: The Effectiveness of a Peer Support Program in Enhancing Self-concept and Other Desirable Outcomes*. Doctorate Thesis. University of Western Sydney, School of Psychology. Sydney, Australia.

- European Union (2016). *EU Youth Report 2015*. European Union, Luxembourg.
- Fernandez-Berrocal, P., Extremera, N., & Ramos, N. (2004). Validity and reliability of the Spanish modified version of the Trait Meta-Mood Scale. *Psychology Report, 94*(3), 751–755. <https://doi.org/10.2466/pr0.94.3.751-755>.
- Garaigordobil, M., & Pena-Sarrionandia, A. (2015). Effects of an emotional intelligence program in variables related to the prevention of violence. *Frontiers in Psychology, 6*, 743. <https://doi.org/10.3389/fpsyg.2015.00743>.
- Greenberg, M. T. (2010). School-based prevention: current status and future challenges. *Effective Education, 2*(1), 27–52. <https://doi.org/10.1080/19415531003616862>.
- Greenberg, M. T., Domitrovich, C., Weissberg, R., & Durlak, J. (2017). Social and emotional learning as a public health approach to education. *Future Child, 27*(1), 13–32.
- Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*(6–7), 466–474.
- Gresham, F. M., & Elliott S. N. (2008). *Social skills improvement system: Rating scales*. Pearson Assessments, Bloomington, MN.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348–362.
- Haga, S., Kraft, P., & Corby, E.-K. (2009). Emotion regulation: Antecedents and well-being outcomes of cognitive reappraisal and expressive suppression in cross-cultural samples. *Journal of Happiness Studies, 10*(3), 271–291.
- Heckman, J. J., & Kautz, T. (2014). Fostering and measuring skills: Interventions that improve character and cognition. In J. J. Heckman, J. E. Humphries & T. Kautz (Eds.), *The Myth of Achievement Tests: The GED and the Role of Character in American Life* (pp. 341–430). Chicago: University of Chicago Press.
- Hickie, I. (2004). Can we reduce the burden of depression? The Australian experience with beyondblue: the national depression initiative. *Australas Psychiatry, 12*, 38–46. <https://doi.org/10.1080/j.1039-8562.2004.02097.x-2>.
- Hill, A. B. (1961). *Principles of Medical Statistics*. New York: Oxford University Press.
- Horwitz, A. G., Hill, R. M., & King, C. A. (2011). Specific coping behaviors in relation to adolescent depression and suicidal ideation. *Journal of Adolescence, 34*(5), 1077–1085. <https://doi.org/10.1016/j.adolescence.2010.10.004>.
- Hosseini, L., & Khazali, H. (2013). Comparing The level of anxiety in male & female school students. *Procedia - Social and Behavioral Sciences, 84*, 41–46.
- Humphrey, N., Barlow, A., Wigelsworth, M., Lendrum, A., Pert, K., Joyce, C., & Turner, A. (2016). A cluster randomized controlled trial of the promoting alternative thinking strategies (PATHS) curriculum. *Journal of School Psychology, 58*, 73–89. <https://doi.org/10.1016/j.jsp.2016.07.002>.
- Institute of Medicine Report (IOM). (2009). *Preventing Mental, Emotional, and Behavioral Disorders among Young People: Progress and Possibilities*. Washington, DC: National Academies Press.
- January, A. M., Casey, R. J., & Paulson, D. (2011). A meta-analysis of classroom-wide interventions to build social skills: do they work? *School Psychology Review, 40*(2), 242–256.
- Jennings, P. A., Frank, J. L., Snowberg, K. E., Coccia, M. A., & Greenberg, M. T. (2013). Improving classroom learning environments by cultivating awareness and resilience in education (CARE): results of a randomized controlled trial. *School Psychology Quarterly, 28*(4), 374–390. <https://doi.org/10.1037/spq0000035>.
- Jones, S. M., & Bouffard, S. M. (2012). Social and emotional learning in schools: from programs to strategies: social policy report. *Society for Research in Child Development, 26*(4), 3–22.
- Keogh, E., Bond, F. W., & Flaxman, P. E. (2006). Improving academic performance and mental health through a stress management intervention: outcomes and mediators of change. *Behaviour Research Therapy, 44*(3), 339–357. <https://doi.org/10.1016/j.brat.2005.03.002>.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General, 62*(6), 593–602. <https://doi.org/10.1001/archpsyc.62.6.593>.
- Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder: developmental follow-back of a prospective-longitudinal cohort. *Archives of General, 60*(7), 709–717. <https://doi.org/10.1001/archpsyc.60.7.709>.
- Krueger, C., & Tian, L. (2004). A comparison of the general linear mixed model and repeated measures ANOVA using a dataset with multiple missing data points. *Biological Research Nursing, 6*(2), 151–157. <https://doi.org/10.1177/1099800404267682>.
- Kumpfer, K. L., Alvarado, R., Smith, P., & Bellamy, N. (2002). Cultural sensitivity and adaptation in family-based prevention interventions. *Prevention Science, 3*(3), 241–246.
- Kuosmanen, T., Fleming, T. M., Newell, J., & Barry, M. M. (2017). A pilot evaluation of the SPARX-R gaming intervention for preventing depression and improving wellbeing among adolescents in alternative education. *Internet Interventions, 8*, 40–47. <https://doi.org/10.1016/j.invent.2017.03.004>.
- Kuyken, W., Weare, K., Ukoumunne, O. C., Vicary, R., Motton, N., Burnett, R., & Huppert, F. (2013). Effectiveness of the Mindfulness in Schools Programme: non-randomised controlled feasibility study. *British Journal of Psychiatry, 203*(2), 126–131. <https://doi.org/10.1192/bjp.bp.113.126649>.
- Lee, C., Dickson, D., Conley, C., & Holmbeck, G. (2014). A closer look at self-esteem, perceived social support, and coping strategy: a prospective study of depressive symptomatology across the transition to college. *Journal of Social and Clinical Psychology, 33*(6), 560–585.
- Lewis, K. M., Vuchinich, S., Ji, P., DuBois, D. L., Acock, A., Bavarian, N., & Flay, B. R. (2016). Effects of the positive action program on indicators of positive youth development among urban youth. *Applied Developmental Science, 20*(1), 16–28. <https://doi.org/10.1080/10888691.2015.1039123>.
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd edn). Sydney: Psychology Foundation.
- Markova, S., & Nikitskaya, E. (2017). Coping strategies of adolescents with deviant behaviour. *International Journal of Adolescence and Youth, 22*(1), 36–46. <https://doi.org/10.1080/02673843.2013.868363>.
- McCrohan, K. (2015). *A consultation with young people on the MindOut programme*. Unpublished Master's Dissertation in Health Promotion, National University of Ireland Galway, Galway, Ireland.
- Mincemoyer, C., & Perkins, D. F. (2003). Assessing decision making skills of youth. *The Forum for Family and Consumer Issues, 8*(2), 1–12.
- Muris, P. (2001). A brief questionnaire for measuring self-efficacy in youths. *Journal of Psychopathology and Behav Assessment, 23*, 145.
- NCCA. (2011). *Social, Personal and Health Education curriculum framework: Senior cycle*. Dublin: National Council for Curriculum and Assessment.

- Nic Gabhainn, S., O'Higgins, S., & Barry, M. (2010). The implementation of social, personal and health education in Irish schools. *Health Education, 110*(6), 452–470.
- Nolen-Hoeksema, S., & Aldao, A. (2011). Gender and age differences in emotion regulation strategies and their relationship to depressive symptoms. *Personality Individual Differences, 51*, 704–708.
- NYCL (2014). Health inequalities and young people in Ireland: a review of the literature. Dublin: National Youth Council of Ireland.
- Oberle, E., & Schonert-Reichl, K. (2017). Social and Emotional Learning: Recent Research and Practical Strategies for Promoting Children's Social and Emotional Competence in Schools. In J. L. Matson (Ed.), *Handbook of Social Behavior and Skills in Children* (175–197). Cham, Switzerland.
- OECD. (2015). *Skills for Social Progress: The power of social and emotional skills*. Paris: OECD Skills Studies, OECD Publishing.
- OECD. (2018). *Youth not in employment, education or training (NEET)* (indicator). <https://doi.org/10.1787/72d1033a-en> (Accessed on 22 November 2018).
- Osher, D., Dwyer, K., & Jackson, S. (2004). *Safe, Supportive, and Successful Schools: Step by Step*. Longmont: Sopris West.
- Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: a global public-health challenge. *Lancet, 369* (9569), 1302–1313. [https://doi.org/10.1016/S0140-6736\(07\)60368-7](https://doi.org/10.1016/S0140-6736(07)60368-7).
- Pedrosa, I., Suárez-Álvarez, J., Lozano, L. M., Muñoz, J., & García-Cueto, E. (2014). Assessing perceived emotional intelligence in adolescents: New validity evidence of Trait Meta-Mood Scale–24. *Journal of Psychoeducational Assessment, 32*(8), 737–746. <https://doi.org/10.1177/0734282914539238>.
- Reiss, F. (2013). Socioeconomic inequalities and mental health problems in children and adolescents: a systematic review. *Soc Sci Med, 90*, 24–31. <https://doi.org/10.1016/j.socscimed.2013.04.026>.
- Romeo, R. D. (2013). The teenage brain: The stress response and the adolescent brain. *Current Directions in Psychological Science, 22* (2), 140–145.
- Rosenberg, M. (1965). *Society and the Adolescent Self-Image*. New Jersey: Princeton University Press.
- Rotheram-Borus, M. J., Swendeman, D., & Chorpita, B. F. (2012). Disruptive innovations for designing and diffusing evidence-based interventions. *American Psychologist, 67*(6), 463–476. <https://doi.org/10.1037/a0028180>.
- Salguero, J. M., Fernández-Berrocá, P., Balluerka, N., & Aritzeta, A. (2010). Measuring perceived emotional intelligence in adolescent population: Psychometric properties of the Trait Meta Mood Scale. *Social Behavior and Personality: An International Journal, 38*, 1197–1210.
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the trait meta- mood scale. In J. Pennebaker (Ed.), *Emotion, Disclosure, and Health* (pp. 125–154). Washington, DC: American Psychological Association.
- Schulz, K. F., Altman, D. G., & Moher, D. (2010). CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials. *BMJ, 340*, 332.
- Seiffge-Krenke, I., & Klessinger, N. (2000). Long-term effects of avoidant coping on adolescents' depressive symptoms. *Journal of Youth and Adolescence, 29*(6), 617–630.
- Shandley, K., Austin, D., Klein, B., & Kyrios, M. (2010). An evaluation of 'Reach Out Central': an online gaming program for supporting the mental health of young people. *Health Education Research, 25*(4), 563–574. <https://doi.org/10.1093/her/cyq002>.
- Sklad, M., Diekstra, R., Ritter, M. D., Ben, J., & Gravezsteijn, C. (2012). Effectiveness of school-based universal social, emotional, and behavioral programs: do they enhance students' development in the area of skill, behavior, and adjustment? *Psychology in the Schools, 49*(9), 892–909. <https://doi.org/10.1002/pits.21641>.
- Snyder, F., Flay, B., Vuchinich, S., Acock, A., Washburn, I., Beets, M., & Li, K.-K. (2010). Impact of a social-emotional and character development program on school-level indicators of academic achievement, absenteeism, and disciplinary outcomes: a matched-pair, cluster randomized, controlled trial. *Journal of Research on Educational Effectiveness, 3*(1), 26–55. <https://doi.org/10.1080/19345740903353436>.
- Spoth, R., Greenberg, M., Bierman, K., & Redmond, C. (2004). PROSPER community–university partnership model for public education systems: capacity-building for evidence-based, competence-building prevention. *Prevention Science, 5*(1), 31–39. <https://doi.org/10.1023/B:PREV.0000013979.52796.8b>.
- Stallard, P., Skryabina, E., Taylor, G., Phillips, R., Daniels, H., Anderson, R., & Simpson, N. (2014). Classroom-based cognitive behaviour therapy (FRIENDS): a cluster randomised controlled trial to prevent anxiety in children through education in schools (PACES). *Lancet Psychiatry, 1*(3), 185–192. [https://doi.org/10.1016/s2215-0366\(14\)70244-5](https://doi.org/10.1016/s2215-0366(14)70244-5).
- Steenbergen, M. R., & Jones, B. S. (2002). Modeling multilevel data structures. *American Journal of Political Science, 46*, 218–237.
- Steinberg, L. (2015). How to improve the health of American adolescents. *Perspectives on Psychological Science, 10*(6), 711–715. <https://doi.org/10.1177/1745691615598510>.
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: a meta-analysis of follow-up effects. *Child Development, 88*(4), 1156–1171. <https://doi.org/10.1111/cdev.12864>.
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. *Health Qual Life Outcomes, 5*, 63. <https://doi.org/10.1186/1477-7525-5-63>.
- Thorsteinsson, E., Ryan, S., & Sveinbjornsdottir, S. (2013). The mediating effects of social support and coping on the stress-depression relationship in rural and urban adolescents. *Open Journal of Depression, 2*, 1–6.
- Tully, P. J., Zajac, I. T., & Venning, A. J. (2009). The structure of anxiety and depression in a normative sample of younger and older Australian adolescents. *Journal of Abnormal Child Psychology, 37* (5), 717–726. <https://doi.org/10.1007/s10802-009-9306-4>.
- UNICEF (2017). Building the Future: Children and the Sustainable Development Goals in Rich Countries, Innocenti Report Card 14, UNICEF Office of Research–Innocenti, Florence.
- Wainwright, P. E., Leatherdale, S. T., & Dubin, J. A. (2007). Advantages of mixed effects models over traditional ANOVA models in developmental studies: a worked example in a mouse model of fetal alcohol syndrome. *Developmental Psychobiology, 49*(7), 664–674. <https://doi.org/10.1002/dev.20245>.
- Weare, K., & Nind, M. (2011). Mental health promotion and problem prevention in schools: what does the evidence say? *Health Promotion International, 26*(1), 29–69. <https://doi.org/10.1093/heapro/dar075>.
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., Bearman, S. K., & Gibbons, R. D. (2012). Testing standard and modular designs for psychotherapy treating depression, anxiety, and conduct problems in youth: a randomized effectiveness trial. *Archives of General Psychiatry, 69*(3), 274–282. <https://doi.org/10.1001/archgenpsychiatry.2011.147>.
- WHO. (2013). *Mental Health Action Plan 2013–2020*. Geneva: World Health Organization.
- WHO. (2015). *European Mental Health Action Plan 2013–2020*. Copenhagen, Denmark: World Health Organisation Regional Office for Europe.
- Wigelsworth, M., Lendrum, A., Oldfield, J., Scott, A., ten Bokkel, I., Tate, K., & Emery, C. (2016). The impact of trial stage, developer involvement and international transferability on universal social

- and emotional learning programme outcomes: a meta-analysis. *Cambridge Journal of Education*, 46(3), 347–376. <https://doi.org/10.1080/0305764X.2016.1195791>.
- Yeager, D. (2017). Social and emotional learning programs for adolescents. *Future Child*, 27(1), 73–94.
- Yeo, A., & Graham, J. (2015). *A deep dive into social and emotional learning: What do the views of those involved tell us about the challenges for policy-makers*. London: Early Intervention Foundation.
- Zins, J. E., Weissberg, R. P., Wang, M. C., & Walberg, H. J. (2004). *Building Academic Success On Social And Emotional Learning: What Does The Research Say?* New York: Teachers College Press.
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Appendix A2:

Paper 2

Evaluating the Implementation Quality of a Social and Emotional Learning Program: A Mixed Methods Approach

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Article

Evaluating the Implementation Quality of a Social and Emotional Learning Program: A Mixed Methods Approach

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Abstract: School-based social and emotional learning (SEL) programs have been shown to be effective in producing positive outcomes for adolescents. However, variability in implementation quality can have a negative impact on these program effects. The aim of this current study is to examine the variability in implementation quality for schools implementing the MindOut program and to identify factors that were likely to contribute to this variability. Employing a mixed methods approach, quantitative and qualitative implementation data were collected from teachers ($n = 16$) and students ($n = 280$) who participated in the MindOut program. Quantitative indicators were used to score schools' implementation quality across four dimensions (dosage, adherence/fidelity, quality of delivery and participant responsiveness), and these were averaged to determine overall level of implementation (high/low). Qualitative data identified factors that contributed to implementation quality, and factors were then analyzed in accordance with the schools' implementation level grouping. Findings indicated that variability in implementation quality existed both between and within schools. A total of eight schools were assigned as high implementers and another eight as low implementers. Influencing factors were categorized into five themes: (i) program factors, (ii) participant factors, (iii) teacher factors, (iv) school contextual factors, and (v) organizational capacity factors. Several differences between high and low implementers were found in relation to these influencing factors. The findings contribute to the evidence on implementation quality in schools by advancing knowledge on measuring implementation quality across multiple dimensions and informants successfully. These findings can also inform practitioners of the main influencing factors in schools so that strategies can be developed to optimize implementation quality in the future.

Keywords: social and emotional learning; school-based programs; implementation quality; mixed methods; adolescence; mental health and well-being

1. Introduction

Well-designed evidence-based social and emotional learning (SEL) programs in schools have been shown to be effective in promoting positive outcomes for students [1–4]. However, variability and fragmentation in implementation quality can lead to inconsistencies in outcome achievement, especially when evidence-based programs are scaled up and delivered outside of controlled research conditions [5–8]. Research demonstrates that the assessment of implementation quality or rather how well the program delivered aligns with what was intended by developers [9] is essential for determining the validity and overall success of a program [5,6]. In order to accurately interpret the effectiveness of a program, it is necessary to understand how implementation quality varies between sites by answering questions on how much, how well and which aspects of the program were delivered.

Systematic monitoring of implementation quality can also help us understand what factors might lead to this variability so that strategies can be developed to optimize the quality of intervention delivery in the future [6,10,11].

As awareness of the importance of evaluating implementation quality increases, we also observe a rise in studies reporting on these type of data [3,4,12]. However, review studies that have assessed explicitly the extent of reporting on implementation quality have found that while many studies report monitoring implementation, there are few studies that actually measure and report a quantifiable index of implementation quality [13–15]. Thus, a gap remains in adequately assessing the level and extent of variation in implementation quality. In order to assess implementation quality sufficiently, Dane and Schneider [16] recommended the use of a multi-dimensional framework composed of five core dimensions: dosage—quantity of program delivered; fidelity/adherence—how many core components were delivered as prescribed; quality of delivery—how well the facilitator delivers the program; participant responsiveness—how participants respond to or are engaged with an intervention and program differentiation—how unique the program characteristics are compared to other programs. Despite the recognition that multiple dimensions of implementation quality should be used in implementation research, a majority of studies still focus primarily on a singular dimension, most commonly dosage or fidelity/ adherence [6,17]. However, those studies which have assessed other dimensions (e.g., quality of delivery, participant responsiveness, etc.) have found that they could be equally if not more important in influencing program outcomes [17–19]. As a way to measure implementation across multiple dimensions, some studies have adopted an approach that employs an a priori index of indicators to calculate a cumulative total implementation index score [20–23]. For example, the Australian KidsMatter program evaluation combined three dimensions of implementation quality (dosage, adherence/fidelity and quality of delivery) to create a total index score and used this score to categorize schools into high- and low-implementation groups. Groups were then compared in relation to outcomes [21]. Based on the total implementation index score, the findings demonstrated that students in high-implementation schools had significantly greater improvements in SEL skills as well as higher academic outcomes similar to six additional months of schooling. Few other SEL studies however have employed this approach [17].

While quantitative data on implementation quality can help determine variability in implementation levels and how this relates to outcome attainment, these type of data are not able to answer why this variability might exist. Qualitative evaluations of implementation answer the “why” by allowing researchers to identify the factors that may contribute to implementation variability. Durlak and Dupre [6] developed an ecological framework to identify five categories for successful implementation (e.g., community level factors, provider characteristics, characteristics of the innovation, organizational capacity factors and factors related to the prevention support system). Similarly, Domitrovich and colleagues [10] presented a multi-level framework of factors that impact on implementation quality in schools at three levels (i) individual-level (e.g., professional characteristics, teacher self-efficacy, perceptions and attitudes towards the program, etc.) (ii) school-level (e.g., resources, school culture and climate, school characteristics, etc.) and (iii) macro-level (e.g., policies, leadership and human capital and university-community partnerships, etc.). The identification and management of these factors is important for better quality implementation.

It is clear that both quantitative and qualitative methods of evaluating implementation are important in implementation research. While a number of studies have assessed implementation using one of these methods, fewer studies have included data on both and even fewer examples of these data being integrated have been reported [24]. Mixed methods designs are favorable in evaluation research because they combine the strengths and balance out the weaknesses, of both quantitative and qualitative research [25]. While quantitative findings may be able to tell us statistically how implementation varies and to what extent this effects outcomes, qualitative data can provide information on why that variability is happening. By integrating the data, factors which are more likely to influence variability in implementation quality can be determined.

Current Study

This study is part of a larger c-RCT study of the MindOut program in post-primary schools in Ireland, which involves three distinct phases. Underpinned by CASEL's competency framework [26], MindOut is a universal school-based program designed to be delivered by teachers through the SPHE curriculum (Social Personal and Health Education (SPHE) is a mandatory health education curriculum in Irish schools that supports the wellbeing and personal skill development of students [27]) to promote the social and emotional wellbeing of students aged 15–18 years. Additional information on the program and its development can be found in the relevant literature [2,28]. Findings from the c-RCT trial (phase 1) have already been published [29] and revealed significant intervention effects on students' emotional skills (e.g., coping skills, emotional regulation) and mental health (e.g., reduced stress and depression scores) but found null results in relation to students' social skills, mental well-being and academic performance outcomes. While the study did show positive findings, it did not account for differences and variability in implementation quality between schools. This information is vital in linking the intervention to the outcomes and determining the program's validity. Therefore, the aim of this present study (phase 2) is to use a mixed methods approach by employing an implementation quality index to examine the variability in implementation quality for schools implementing the MindOut program and to identify factors that were likely to contribute to this variability through qualitative feedback from participants. The three objectives of this study relate to the three phases of the mixed methods approach:

- To assess variability in implementation quality across four dimensions and determine schools' overall level of implementation (high/low) using an implementation quality index (quantitative);
- To identify factors that may have influenced the variability in implementation quality as identified by teachers and students (qualitative);
- To examine the relationship between schools' level of implementation quality and these reported implementation factors (integration).

2. Materials and Methods

2.1. Study Context and Design

The original c-RCT study [29] involved 32 schools and 497 students (15–18 years). Participating schools were randomly selected throughout the Republic of Ireland based on criteria that they held the designated disadvantage status (DEIS) by the Department of Education and Skills. Teachers allocated to the intervention group participated in a 1-day training session and were provided with all of the relevant teaching materials to deliver the program. Teachers ($n = 17$; 93% female) who implemented MindOut and students ($n = 280$; 53.6% male) that participated in the program were asked to complete quantitative and qualitative measures to assess the process of program implementation during and following the delivery of MindOut.

This study employed a mixed-methods design analyzing the quantitative and qualitative data independently first, then merging and comparing these data through concurrent triangulation method to enhance the validity and credibility of the findings [30]. In this study, quantitative data indicators were used to determine schools' quality of implementation across four key implementation dimensions: (i) dosage, (ii) adherence, (iii) quality of delivery, and (iv) participant responsiveness. Following this exercise, the dimension scores were combined to produce a total implementation quality index score, which determined schools' allocation to either high- or low-implementing groups. The total index score, as employed in previous studies [20–23], considers all dimensions of implementation quality as equally important and therefore is able to provide a combined score for each school that is inclusive of all these dimensions.

The qualitative data were used to identify key factors that may have impacted implementation as identified by both teachers and students. Finally, the integration phase of the study allowed for

a deeper exploration of the qualitative data in accordance with the schools' implementation group allocation to determine if the two groups differed in their reporting of influencing factors.

2.2. Measures

All of the process measures were developed specifically for this study to best capture the details of the MindOut program. The teacher and student quantitative measures were piloted prior to the study. Brief descriptions of the quantitative and qualitative measures employed in this study are provided below, and full details are available from the authors on request.

2.2.1. Quantitative Measures:

Teacher Weekly Reports: Teachers in the intervention group were asked to complete weekly questionnaires online following delivery of each of the 12 sessions that included questions on the implementation of the program (e.g., adherence to program content, suitability of the content, student engagement with the session, etc.) The questions from this measure that were used to form the implementation index indicators are outlined in Table S1.

Student Review Questionnaire: At the end of program delivery, students from the intervention schools completed a written questionnaire reporting on their experiences of the program (e.g., attendance for specific sessions, teacher's quality of delivery, their own response/engagement to the program, etc.) Once again, the selected questions from the Student Review Questionnaire that were used to form the implementation index indicators are described in Table S1.

Classroom Observations: Classroom observations were conducted by the research team with a random sub-sample of schools during the first and second half of the program ($n = 6$; 35%). Schools were ranked in random order using Microsoft Excel and the first six schools were visited. Observations were guided by questions on adherence to core components, adaptation, quality of delivery and participant responsiveness. Two researchers visited schools on the same day and completed questionnaires independently followed by a consultation whereby a final score for each item was agreed. Inter-rater reliability for items achieved 83% agreement. As it was not feasible, due to timing and resources, to conduct classroom observations in all intervention schools, this measure was used as a validation tool of the implementation indicators.

Implementation Quality Indicators: Indicators were carefully selected from the Teacher Weekly Reports and Student Review Questionnaire based on their representativeness of one of the four dimensions of implementation [5,6,16]. In this study, "Dosage" refers to the amount of MindOut sessions that were delivered; "Adherence/Fidelity" refers to the extent the program was delivered as intended; "Quality of delivery" refers to how well the teachers delivered the program; and "Participant responsiveness" reflects how students engaged with the program. Indicators that reflected each of the four dimensions were chosen from the teacher and student questionnaires to form an implementation quality index and a scoring system based on these indicators was then created, drawing on the methods used in previous studies [20–23]. Some of the indicators used single item questions, whereas others were an average score from a number of related questions. Additional details on the indicators can be seen below as well as in Table S1: Details of Implementation Indicators.

Dosage: Dosage was measured through 2 indicators. Dosage 1 was measured by asking teachers if they completed the session (yes = 1, no = 0), and this was summed across the 12 sessions. Dosage 2 was measured by asking students to tick (yes = 1; no = 0) if they recalled being present for each of the 12 sessions. Scores were summed across the 12 sessions and students' scores were averaged within each school. On average, students reported attending 80% of lessons across the 16 schools (range = 41%–95%). Correlations between the two dosage indicators showed that there was a significant relationship between both $r = 0.56$, $p < 0.05$.

Adherence: Adherence was measured through 2 indicators from teachers. Adherence 1 was adherence to the key lesson dimensions for each of the 12 sessions based on the Weekly Report data. Different sessions included a different number of items depending on the number of activities (2–4 items;

yes = 1, no = 0). The items across all 12 sessions were summed to give a total score. Adherence 2 was measured through a single item, which asked teachers to rate what percentage of each session was delivered (0 = 0%, 6 = 100%). Scores were summed across the twelve sessions and a total mean score was calculated. Correlations were run between the two adherence indicators and demonstrated a significant positive relationship between both ($r = 0.81$, $p < 0.01$).

Quality of Delivery: Quality of delivery was measured through 2 indicators. Quality of Delivery 1 assessed students' rating of their teachers' delivery of the program (six items, 1 = "never" 5 = "always") (e.g., "How often did your teacher show confidence of their own knowledge and skills around each session"). A reliability analysis was conducted which demonstrated a high internal consistency between the six items ($\alpha = 0.93$). A mean score of the combined items was calculated for each student first, and then these scores were combined for an average school score. Quality of Delivery 2 was a single item asking students to give an overall rating of their teachers' delivery of the program (1 = "poor", 10 = "excellent"). Students' individual scores were averaged for each school to give a mean overall rating. Both of the Quality of Delivery indicators were shown to be highly correlated with each other ($r = 0.88$, $p < 0.01$).

Participant Responsiveness: Participant Responsiveness was measured using 4 indicators. Participant Responsiveness 1 was measured based on teachers' ratings of students' responses to the activities within each session. An average score was calculated for each individual session, and following this, a total mean score was calculated across all 12 sessions for each school. Participant Responsiveness 2 measured teachers' perceptions of students' interaction with each of the 12 sessions based on their interest, skills learned and engagement (3 items; 1 = not at all, 5 = very much) (e.g., "Did the students learn new skills during this session?"). A reliability test was run between the 3 items, which demonstrated that the three items showed high internal consistency ($\alpha = 0.98$). An average score for each of the three items was calculated first, and a total mean score was then calculated across the 12 sessions. Participant Responsiveness 3 measured students' response to the program across a number of areas (4 items, 1 = "strongly disagree" 5 = "strongly agree") (e.g., "The sessions in the program were relevant for me"). A reliability test was run between the 4 items, which demonstrated that the three items showed high internal consistency ($\alpha = 0.88$). A mean score for each of the four items was calculated for each student, and then, a mean score was calculated by averaging the student scores within each school. Participant Responsiveness 4 used one item to assess students' overall rating of the program (1 = "very poor" 10 = "excellent"). Students' individual scores were averaged for each school to give an overall mean. A reliability test was run between the four participant responsiveness indicators and showed an acceptable internal consistency ($\alpha = 0.73$).

2.2.2. Qualitative Measures:

Telephone Interview: Within 2 weeks of completing the program, teachers ($n = 17$) were contacted by the researcher via telephone and were asked a series of semi-structured interview questions in relation to their overall experience of implementing the program (e.g. what worked well, challenges, student response, future implementation/sustainability, etc.).

Student Participatory-based Workshops: Participatory-based workshops were conducted with a random sub-sample of schools ($n = 5$). These schools were selected from the randomized list used for the classroom observations, and the next 5 schools on the list (#7-11) were contacted for these workshops. The workshops were based on the methodology used in other studies [31,32] and included interactive student-centered approaches including voting games, group work, and post-its exploring students' views on their experience of the MindOut program (e.g., what they liked, what they did not like, what improvements could be made, etc.).

Student Review Questionnaire: The Student Review Questionnaire also contained open-ended questions that gathered qualitative information on the students' program experience (e.g., "What aspects of the MindOut program do you think worked best?" and "What suggestions do you have for improving the MindOut program?").

2.3. Analysis

2.3.1. Quantitative Analysis

All of the indicator scores were aggregated at the school level and then converted into a percent score, which allowed for the indicator scores within each dimension to be averaged for a total dimension score. A similar process has been carried out in other implementation studies [33,34]. Internal reliability checks and correlations were run between indicators within the same dimension. A reliability analysis was also carried out on all four total dimension scores and found a high internal consistency for the items ($\alpha = 0.86$). The four total dimension scores (dosage, adherence, quality of delivery and participant responsiveness) were averaged for a Total Implementation Quality score.

$$\text{Total Implementation Quality} = \frac{(\text{Total Dosage} + \text{Total Adherence} + \text{Total Quality of Delivery} + \text{Total Participant Responsiveness})}{4}$$

There was no weighting of items, therefore, all dimensions contributed equally to the total implementation quality score. Similar methods of combining indicators across dimensions to produce a total index score are found in other studies [20–23]. Classroom observations were used to validate the self-report measures by comparing with indicator scores of relevant dimensions to check for compatibility. In order to classify schools into their implementation groupings, the visual binning procedure was employed using SPSS as used by Dix and colleagues [21]. Binning was performed by applying cut-points at the mean and ± 1 standard deviation, resulting in four binned categories (1 = low, 2 = moderately low, 3 = moderately high, 4 = high). Based on these binned scores, schools were allocated to their implementation level group. Using this procedure, the distribution of schools across the categories was examined, and in view of the small number of schools in certain categories, an allocation into two overall categories of high and low was made. Schools that received a binned score of “1 or 2” were considered low implementers and those that received a score of “3 or 4” were deemed high implementers. The visual binning procedure was completed for each of the four dimensions as well as for the total implementation quality score.

2.3.2. Qualitative Analysis

All teacher telephone interviews were audio-recorded and transcribed verbatim via a transcription service. Thematic analysis [35] was used to analyze the teacher and student data. Transcripts were read several times, and meaningful units of text were highlighted, summarized and coded. A subset of transcripts was double coded by an independent coder to check for inter-rater reliability. All relevant data from the student measures were extracted and coded. All data were managed in Microsoft Word. For both the teacher and student data, codes discussing similar ideas or issues were grouped into sub-themes. Following this, sub-themes were further grouped into overarching themes and comparisons between the teacher and student data were made.

2.3.3. Integration

Integration of quantitative and qualitative data occurred at an interpretation level using the concurrent triangulation method [30]. Each theme identified in the qualitative data was further analyzed according to the schools' group allocation, which was determined by the quantitative data. Using the themes to guide the process, the data were analyzed, and similarities and differences between the two groups were identified and recorded in a matrix to facilitate the comparison of the findings.

3. Results

3.1. Quantitative

3.1.1. Demographics

A total of 16 schools ($n = 280$ students) were included in this study. (One school completed less than 50% of the Teacher Weekly Reports and, therefore, could not be included in the analysis or assigned to an implementation group.) A majority of schools (63%) chose to deliver the program with a 5th year group instead of a Transition Year (TY) class. (Transition Year (TY) is a one-year optional program that exists between the Junior Certificate program (3rd year; 13–15 yrs.) and the Leaving Certificate program (6th year; 16–18yrs). Transition Year is a less structured year which gives students more space to learn, mature and develop without the presence of exam pressures [36].) The average class size for participating schools was 17.06 ($SD = 5.16$; range = 8–29).

3.1.2. Dose

Twelve of the sixteen schools implemented the MindOut program in its entirety. Of the four schools that did not complete the program, two delivered less than 60% of the program. Students reported attending 80% of lessons on average across the 16 schools (range = 41%–95%). Based on the visual binning procedure, six schools were classified as low implementers for dosage.

3.1.3. Adherence

On average, teachers reported delivering 71% of the key activities and adhered to 82% of the sessions. Seven schools were identified as low implementers for adherence using the visual binning procedure. Classroom observation scores from the specific sessions the researchers observed were used to validate the teachers' self-report measures from the same session. Based on the total number of delivered activities on the day, all six schools received a classroom delivery score that was within 10% of the teachers' adherence score based on their reporting of delivered activities.

3.1.4. Quality of Delivery

The average rating given by students for teachers' quality of delivery was 76% (range = 57%–93%). Eight schools were identified as high implementers for quality of delivery based on visual binning. Once again, classroom observations scores were used to check validity of the self-report data. All six schools that participated in classroom observations had classroom observation scores that were within 10% of the total quality of delivery score. Given that classroom observation scores for quality of delivery were based on one session only and indicator score reflected quality of delivery over the course of the program, slight differences in these scores could be expected.

3.1.5. Participant Responsiveness

Based on teacher reports, an average rating of students' interaction with the sessions was calculated across the 12 sessions for each school, and the mean score across all schools was 77% (range = 59%–95%). A total of 75% of students rated the program at 7 or above on a 10-point scale. In accordance with the visual binning procedure, eight schools were identified as high implementers. Classroom observations scores were used to check for reliability. All six schools that participated in classroom observations had total participant response scores that were within 10% of the classroom observation scores. Again, as classroom observation scores for participant responsiveness were based on a single session only whereas the indicator scores were based on the entire program, it is likely that there would be slight differences between the scores.

The means and ranges for schools across all dimensions can be found below (Table 1). The visual binned scores were compared across all four dimensions to determine how frequently each school scored in each group. Three schools ranked high or moderately high in all four dimensions, and two

schools ranked low or moderately low in all four dimensions. All other schools (n = 11) ranked high in some dimensions but low in others (see Table S2: Visual Binning Scores for schools across dimensions and total implementation quality).

Table 1. Means and ranges of schools' total dimension scores.

Dimension	Mean	Range
Total Dosage	86%	46%–98%
Total Adherence	77%	44%–100%
Total Quality of Delivery	76%	57%–93%
Total Participant Responsiveness	75%	62%–89%
Total Implementation Quality	79%	53%–92%

3.1.6. Total Implementation Quality

Based on the visual binning procedure for Total Implementation Quality, two schools were in the low group (1), six in moderately-low (2), six in moderately-high (3) and two in the high group (4). After combining the low/moderately low schools into one group (low implementation) and the high/moderately high schools into the other group (high implementation), eight schools were assigned to both of these groups. The schools that were identified as high implementers for Total Implementation Quality all ranked in the “high” group for at least three of the four dimensions. In comparison, all of the schools identified as low implementing scored in the “high” group in two or less dimensions. The visual binning scores for each of the individual dimensions as well as for Total Implementation Quality can be found in Table S2: Visual Binning Scores for schools across dimensions and total implementation quality.

3.2. Qualitative

Five themes were identified from the teacher Telephone Interview data: (i) Program factors, (ii) Participant factors, (iii) Teacher factors, (iv) School contextual factors and (v) Organizational capacity factors. The first four themes were also identified through the Student Review Questionnaire and Participatory Workshop data. The fifth theme was only identified as an influencing factor by teachers. The themes and sub-themes for both the teacher and student data can be found in Figure 1.

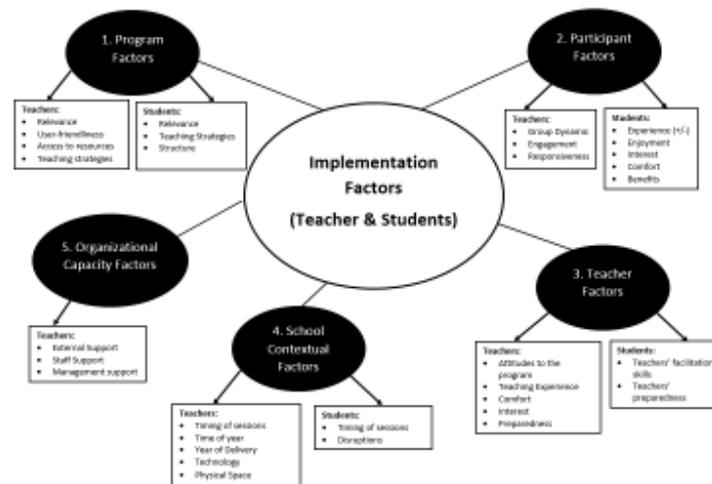


Figure 1. Implementation factors and themes: Teacher and student data.

3.2.1. Program Factors

Program factors included the program's relevance, accessible resources, user-friendliness and teaching strategies. Most teachers felt that the program was age-appropriate for senior students, "I think the fact that all of the content was aimed at that age group, and it was relevant to them. I feel that it went down a treat" with a few teachers suggesting some sessions might suit a younger group. Teachers also felt that the content within the program was culturally relevant for Irish students and thought the lessons were current and timely, "There are so many good practices in here and it's also culturally ... you know it's pitched in the right way for the Irish culture." There was a general consensus from teachers that the resources included useful material that was well laid out and easy to access. Program factors discussed by students included relevance, variety of teaching strategies and the program structure. A majority of students felt that the program was relevant for their age and generation, but a few students could not relate to the content. Students commented on the teaching strategies and said they preferred the interactive teaching strategies, group work and videos, "it was a good way of learning about mental health and made it interesting by using videos and activities so it wasn't as boring and fully theory".

3.2.2. Participant Factors

Participant factors identified by teachers included group dynamic as well as students' engagement and response to the program. In relation to group dynamic, some teachers felt that the program was easy to implement because of their group, "I suppose I was very lucky with the particular group I had. They were very willing to be involved." Other teachers felt the group dynamic negatively affected implementation "Their resilience would be very low ... they would be weaker students so they wouldn't necessarily have the vocabulary to ... or the confidence to discuss emotional issues." There were mixed reports on students' responsiveness and engagement in the program with some teachers saying their students responded well and others saying the students were disengaged and uninterested. Participant factors discussed by students included their reported experiences of the program, experienced benefits of the program, as well as their enjoyment and interest with the sessions. The majority of students had positive things to say, "it is excellent for all people", but a few students had negative feelings towards the program, "I didn't enjoy it or think it was worthwhile". A majority of students commented on how the program benefitted them, stating that it was helpful and providing examples of specific skills they had developed. In terms of enjoyment and interest with the program, again, the results were mixed with many students finding the program enjoyable and interesting and others commenting that parts were boring.

3.2.3. Teacher Factors

Teacher factors included teachers' attitudes to the program, their comfort and interest in the content, their preparedness for the lesson as well as their own teaching experience and previous training. In general, teachers were positive towards the program commenting that it was enjoyable to deliver and that the content was valuable. Many teachers stated the importance of being trained in SPHE before delivering MindOut and being comfortable and interested in the content of the program, "It's important that the teacher ... is interested or passionate about this whole area of mental health because then they'll be more confident in delivering it and hopefully then the students can take more from it then." Teacher factors for students were related to teachers' facilitation skills and preparedness. Some students felt their teacher delivered the program poorly and should have been better prepared, "my teacher wasn't engaging with us properly and didn't have some things ready for the class".

3.2.4. School Contextual Factors

School contextual factors described by teachers included the timing of the sessions, the time of year the program is delivered, year of delivery, physical space and technology. Many teachers commented

on issues with the timing of the program in regard to completing the sessions during the 35 min class period. These teachers commented on how this impacted the delivery such as cutting activities from the session, inability to complete activities well and failing to complete sessions altogether, "... and while I did get them done they weren't done you know as well as they should have been". Teachers also highlighted the importance of starting the program early in the academic year as they get busier and less likely to find time to deliver as the year progresses. There were mixed opinions on which year group was best suited to receive the program. Some schools favored TY due to the lack of exam pressures and more provision to implement, while other teachers felt that TY was too busy and students were more likely to be absent compared to 5th year, "... a lot of the time there were people missing because it's TY and they are busy doing all sorts of different things in the school." School contextual factors mentioned by students included the lack of time for the sessions and classroom disruptions. Some students stated that they felt program sessions were rushed, "we were very rushed for time making it slightly stressful". A few students discussed how their peers' disengagement (e.g., messing, lack of attention, etc.) interfered with completing the sessions on time.

3.2.5. Organizational Capacity Factors

Organizational capacity factors included external support, staff support, and support from management. Teachers felt that support from other staff in terms of awareness and helping to deliver the program would be important for sustainability of the program. Some teachers were concerned that other staff members and management did not value the program, "I do think it would have been easier if management had given me that little bit more support ... I just didn't have it." In terms of external support, teachers expressed that they would like to receive updates from Health Promotion Officers in terms of relevant material and would benefit from meeting with other teachers delivering the program to learn from their experiences and feel more supported. Students did not refer to any factors for this theme.

3.3. Integration

3.3.1. School Profile

In comparing the demographic data between the two groups, there was a noticeable difference in average class sizes with the high implementers reporting larger group sizes ($M = 19.7$ $SD = 5.34$) compared to the low implementers ($M = 14.5$ $SD = 3.67$). In terms of year of delivery, a majority of the high-implementing group (75%) delivered the program to 5th years and a majority of the low-implementation group (63%) delivered the program to TY groups.

The themes from the qualitative data were further analyzed in accordance with school implementation level grouping to highlight the differences and similarities between the two groups. Further details of this analysis can be found in Table S3: Similarities and differences between high- and low-implementing groups (teacher and student data).

3.3.2. High-Implementation Group

A number of factors were identified in the data from the high-implementation schools which were unique to this group. In terms of the participant characteristics, the high-implementation group tended to speak more positively about the dynamic of their group (e.g., talkative, engaged, cooperative, etc.) and were more likely to indicate higher student engagement and positive responses to the program. For student data, high implementers were more likely to discuss benefits of the program by providing examples of specific SEL skills they had developed. Whilst there were mixed views for both groups in terms of levels of interest in the program, in general, the high-implementation students made more positive comments. For teacher characteristics, high-implementing teachers demonstrated more positive attitudes when discussing their experience of the program. For organizational factors,

high-implementing schools reported a need for more external support from Health Promotion Officers and agencies to continue to build their skills around SEL and mental health.

3.3.3. Low-Implementation Group

Likewise, a number of specific factors concerning the low-implementation schools also emerged from the data. For participant characteristics, the teachers in the low-implementation group spoke more negatively about the dynamic of their group (e.g., difficult, high-need, issues, low-emotional literacy, etc.) and were more likely to comment on student disengagement, lack of interest and negative responses. Similarly, the students in the low-implementation group reported more negative experiences of the program and tended to speak in more general terms when discussing the perceived benefits of the program (e.g., “helpful”, “useful”, “learned new things”, etc.). In terms of teacher characteristics, students in the low-implementation group reported negative comments about their teachers’ facilitation skills, whereas the high-implementation students did not make any reference to this. In relation to school contextual factors, the low-implementation group commented on issues with delivering the program to a TY group (e.g., missing classes, less consistency week-to-week, etc.), whereas the high implementers, a majority (75%) of which delivered the program to 5th years, did not discuss any similar issues. Students in the low-implementation group reported experiencing more issues with classroom disruptions and peer disengagement. Finally, in terms of the organizational capacity factors, the low-implementation teachers group expressed their desire for more support from school management for delivering the program.

3.3.4. Similarities

There were no differences between the two groups for “Program factors” based on teacher feedback. Both groups reported that the program dealt with current issues, was relevant and user-friendly. For teacher characteristics, both groups suggested that the teachers’ own teaching experience, as well as their comfort and interest in the program, were essential for implementation. In relation to “School contextual factors”, both groups expressed the importance of introducing the program early in the year and having it completed before the spring term. Both groups agreed that the timing of the sessions (e.g., completing the session in a 35-minute class period) was one of the most difficult challenges faced during implementation. Students of both groups reported finding the program long and suggested shortening some of the sessions. For “Organizational capacity factors”, teachers in both groups reported that they would have liked more support from other staff within the school.

4. Discussion

This study set out to assess the variability in implementation quality of schools delivering the MindOut program and to investigate the factors that most likely contributed to this variability, particularly in relation to schools’ implementation level. These aims were achieved through a mixed methods approach assessing quantitative and qualitative data from teachers and students and integrating these to form a clearer picture of implementation quality in schools. A major finding from this analysis was that variability in implementation quality existed both between and within schools, which is in line with other research [21–23]. In particular, the findings from this study show that there was considerable variability in implementation quality between schools, even when the training and resources they received were identical. While some schools rated rather high in implementation quality, other schools, delivering the same program, scored relatively low (range 55%–92%). Given that programs can lose their effectiveness when they are implemented poorly, this is an important finding within the context of the original c-RCT study, which did not account for implementation level differences. The other interesting finding from this study is that variability in implementation also occurred within schools. Noticeable inconsistencies were found within schools in relation to implementation quality across different dimensions (e.g., dosage, fidelity/adherence, quality of delivery, participant responsiveness). Of the 16 schools in this study, seven consistently scored either

high ($n = 4$) or low ($n = 3$) across all four dimensions. All other schools varied, scoring high in certain dimensions and low in others. This finding justifies the importance of measuring implementation quality across several dimensions, as no single dimension is reflective of implementation quality as a whole. Lastly, when comparing the results of the teacher and student data within each dimension, these data were not correlated. This suggests that data from teachers and students provide different perspectives on important aspects of implementation. Therefore, there is a need to gather data on implementation from multiple informants to ensure all stakeholders' perspectives are considered.

This study also examined factors that affected implementation as identified by both teachers and students. While the sample included a range of mixed gender schools, the majority of the teachers involved were female. It is therefore unclear to what extent these findings on teachers' perspectives would also apply to male teachers. Consistent with the findings of previous studies [6,10,11], our analysis revealed a range of factors that contribute to variability in implementation. Clear links can be made between the factors within this study and those identified in Durlak and Dupre's [6] and Domitrovich's et al. [10] models. "Community-level" [6] and "macro-level factors" [10] were not however identified within the teacher or student data in this study. In the current study, participants were asked about their experiences of the program more generally, and an inductive thematic approach was used, whereas in other studies, the frameworks described above [6,10] have been used to guide the interviews and analysis process through a deductive approach. Therefore, within the context of this study, it is likely that individual- and school-level factors were thought to be most important for implementation. In this study, participant factors (e.g., group dynamic, engagement, responsiveness, etc.) were considered by both teachers and students as important factors for implementation. Though these factors are not specifically referenced in the frameworks discussed above, a few studies have acknowledged the importance of participant-type factors on implementation such as participants' engagement, attitudes and motivation [37–40]. These participant-type factors not only can have either a direct positive or negative impact on teachers' willingness and motivation to deliver the program well but can also be key contributors to the overall implementation quality of the program [37,38,40,41].

A unique aspect of the present study is that it also examined whether or not high- and low-implementation groups differed in their reporting of implementation factors. The analysis found that schools in the high-implementation group were more likely to have larger class sizes in comparison to the low-implementation group, which contradicts previous studies indicating that increased class sizes lead to decreases in quality implementation [42,43]. It is possible that schools with smaller class sizes may have pre-selected a group of higher-need students to which deliver the program that could have affected the implementation quality (e.g., more disruptions, lower attendance, lower engagement, more complex behavioral issues, etc.). Poorer classroom behaviors, misconduct, peer conflict and classroom management have all been identified as predictors of weaker implementation [10,42–44]. It is also possible that the MindOut program is easier to implement with larger class sizes due to the interactive nature of the activities, which require a certain number of students to work effectively. The groups also differed in terms of the year group they selected to deliver the program. Although all schools were given the choice to deliver the program to either a 7Y class or 5th year class, a larger number of low-implementing schools selected the former whereas a majority of high implementation schools selected the latter. The low implementers commented on difficulties they had faced delivering the program to 7Y students due to class interruptions, lack of structure and poor attendance; the high implementers, however, did not reference these types of issues. Teachers in high-implementation schools were also more likely to make positive statements about their group dynamic and their students' engagement whereas low implementers commented more negatively about these aspects. Based on these findings, the importance of group characteristics for successful implementation is apparent. Schools deciding to implement this type of program need to consider the characteristics of their group in planning delivery. Like other SEL programs, MindOut is a universal program intended to be delivered to all students in the classroom ranging in needs and abilities. Additionally, schools should consider a group who can participate in the program consecutively on a weekly basis. Interruptions in

implementation lead to disjointed programs that are likely to have lower participant-engagement and reduce their overall effectiveness.

In terms of “Teacher factors”, teachers of higher-implementing schools demonstrated more positive attitudes towards the program compared to low implementers. Perceived value of the program, acceptance of the intervention and its perceived effectiveness are all factors that lead to stronger implementation [10]. Therefore, it is not surprising teachers of high-implementing schools were more positive when discussing the program and its benefits. Additionally, students of low-implementing schools commented on their teachers’ poor facilitation skills where students in the high-implementing group did not. Poor facilitation skills can be directly linked to the dimension “quality of delivery”. Further, when a facilitator lacks in areas of quality of delivery (e.g., enthusiasm, engaging, control, preparation, etc.), it is likely to have an impact on how students respond to the program (participant response) and thus the overall quality of implementation. A final key difference between the two groups was in terms of “organizational factors”. While both groups expressed the need for more support from other teachers and staff members, the low implementers were more likely to say they wanted more support from management. This is an important finding as it highlights the need for interventions like MindOut to be a priority and supported by management to ensure stronger implementation quality. One common issue raised by both the high- and the low-implementation groups was the pressure of timing when delivering the sessions. Teachers and students expressed that sometimes sessions felt rushed or there was not enough time in the class period to get through all aspects of the session with quality delivery. Teachers and students were asked how this could be improved, and the main suggestions included lengthening the program to be delivered over more weeks, working with management to timetable the program into double-class periods and reducing some of the content. Based on this feedback, modifications were made to the final program. In order to ensure high-quality implementation and sustainability of school-based programs, it is vital that the timing of the program and sessions be considered carefully.

4.1. Strengths and Limitations

This study employed a mixed-methods design using the strengths of both quantitative and qualitative research. Unlike a majority of implementation studies that focus primarily on data from program implementers only, this study assessed implementation based on feedback from both teachers and students. While feedback from the implementer is important, students provide a different perspective and additional data, particularly in relation to the quality of delivery and participant responsiveness. A major limitation of this study is that implementation was assessed primarily using self-report data, which is often criticized for being biased and over-estimating implementation practices [45]. Though self-report data has its limitations, due to time and resource constraints, it was deemed the most feasible method for this study. To deal with the likelihood of overestimating implementation in the self-report measures, we used data from teachers and students to create a combined average for implementation quality. We also used observer data to validate the self-report measures. Another limitation of this study is that the implementation indicators used were not validated, as these were developed specifically to assess implementation directly related to the MindOut program. However, the study could have been strengthened by using implementation measures with well-established psychometric properties.

4.2. Implications and Future Directions

This study demonstrated that variability in implementation existed both between schools as well as within schools, across different dimensions. This highlights the need for researchers to systematically assess implementation quality in evaluation studies to ensure benefits of a program are not lost due to poor implementation. This finding also provides a rationale for evaluating implementation across several dimensions given that so much variability can be seen within schools. Future research assessing how implementation variability influences outcome achievement will be important within

the context of this program evaluation. The next phase of this study (phase 3) will explore this, by assessing how variability in implementation quality impacts on students' outcomes. This study also provided a rich narrative on what factors may be contributing to the variability in implementation quality between schools. More specifically, these data highlight the factors that are more likely to be associated with high- and low-implementing schools. These findings are especially important for program developers and practitioners as it allows them to embed strategies into the planning and delivery stages of implementation (e.g., school-readiness, management buy-in, training, ongoing support for delivery, etc.) in an effort to optimize quality of implementation, which will lead to better outcomes for participants.

5. Conclusions

This study demonstrated an effective way of assessing implementation quality of a school-based program by scoring schools on a range of indicators and combining these scores to produce a total implementation score for each school. Based on the total implementation quality score, eight schools were identified as high implementers, and another eight were low implementers. Not all schools scored consistently high or low across all four dimensions. This finding highlights that variability in implementation quality not only existed between schools but within schools as well. This study also identified the factors that are likely to contribute to the variability in implementation quality as defined by teachers and students. Finally, this study was able to determine if certain factors were more likely to modify implementation quality when comparing high- and low-implementation groups. These findings contribute to the evidence on implementation quality in schools by advancing knowledge on measuring and assessing implementation quality across multiple dimensions successfully. The findings also help to inform practitioners of the factors that impact implementation variability so that strategies can be developed to mitigate this variance in the future. The findings from this study will help to inform the next stage of the study, which will examine how variable levels of implementation quality relate to program outcomes.

Supplementary Materials: The following are available online at <http://www.mdpi.com/1660-4601/17/9/3249/s1>. Table S1: Details of Implementation Indicators, Table S2: Visual binning (VB) scores for schools across dimensions and total implementation quality, Table S3: Similarities and differences between high- and low-implementing groups (Teacher and Student data).

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Compliance with Ethical Standards: Written informed consent was obtained from all individual participants included in the study, and passive parental consent from all student participants was also sought. All procedures performed in the study were in accordance with the ethical standards of the National University of Ireland Galway Research Ethics Committee (ref: 16-Jul-01) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

References

1. Barry, M.M.; Clarke, A.M.; Petersen, I.; Jenkins, R. *Implementing Mental Health Promotion*; Springer: Cham, Switzerland, 2019.
2. Margaret, M.B.; Aleisha, M.C.; Dowling, K. Promoting social and emotional well-being in schools. *Health Educ.* **2017**, *117*, 434–451.

3. Durlak, J.A.; Weissberg, R.P.; Dymnicki, A.B.; Taylor, R.D.; Schellinger, K.B. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Dev.* **2011**, *82*, 405–432. [\[CrossRef\]](#)
4. Taylor, R.D.; Oberle, E.; Durlak, J.A.; Weissberg, R.P. Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Dev.* **2017**, *88*, 1156–1171. [\[CrossRef\]](#) [\[PubMed\]](#)
5. Durlak, J.A. Program implementation in social and emotional learning: Basic issues and research findings. *Camb. J. Educ.* **2016**, *46*, 333–345. [\[CrossRef\]](#)
6. Durlak, J.A.; DuPre, E.P. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am. J. Commun. Psychol.* **2008**, *41*, 327–350. [\[CrossRef\]](#) [\[PubMed\]](#)
7. Spoth, R.; Trudeau, L.; Shin, C.; Ralston, E.; Redmond, C.; Greenberg, M.; Feinberg, M. Longitudinal effects of universal preventive intervention on prescription drug misuse: Three randomized controlled trials with late adolescents and young adults. *Am. J. Public Health* **2013**, *103*, 665–672. [\[CrossRef\]](#) [\[PubMed\]](#)
8. Lendrum, A.; Humphrey, N. The importance of studying the implementation of interventions in school settings. *Oxf. Rev. Educ.* **2012**, *38*, 635–652. [\[CrossRef\]](#)
9. Carroll, C.; Patterson, M.; Wood, S.; Booth, A.; Rick, J.; Balain, S. A conceptual framework for implementation fidelity. *Implement. Sci.* **2007**, *2*, 40. [\[CrossRef\]](#) [\[PubMed\]](#)
10. Domitrovich, C.E.; Bradshaw, C.P.; Poduska, J.M.; Hoagwood, K.; Buckley, J.A.; Olin, S.; Romanelli, L.H.; Leaf, P.J.; Greenberg, M.T.; Jalongo, N.S. Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Adv. Sch. Ment. Health Promot.* **2008**, *1*, 6–28. [\[CrossRef\]](#) [\[PubMed\]](#)
11. Humphrey, N.; Barlow, A.; Lendrum, A. Quality matters: Implementation moderates student outcomes in the PATHS curriculum. *Prev. Sci.* **2018**, *19*, 197–208. [\[CrossRef\]](#)
12. Wigelsworth, M.; Lendrum, A.; Oldfield, J.; Scott, A.; ten Bokkel, I.; Tate, K.; Emery, C. The impact of trial stage, developer involvement and international transferability on universal social and emotional learning program outcomes: A meta-analysis. *Camb. J. Educ.* **2016**, *46*, 347–376. [\[CrossRef\]](#)
13. Bruhn, A.L.; Hirsch, S.E.; Lloyd, J.W. Treatment integrity in school-wide programs: A review of the literature (1993–2012). *J. Prim. Prev.* **2015**, *36*, 335–349. [\[CrossRef\]](#) [\[PubMed\]](#)
14. Sanetti, L.M.H.; Fallon, L.M. Treatment integrity assessment: How estimates of adherence, quality, and exposure influence interpretation of implementation. *J. Educ. Psychol. Consult.* **2011**, *21*, 209–232. [\[CrossRef\]](#)
15. McIntyre, L.L.; Gresham, E.M.; DiGennaro, F.D.; Reed, D.D. Treatment integrity of school-based interventions with children in the journal of applied behavior analysis 1991–2005. *J. Appl. Behav. Anal.* **2007**, *40*, 659–672. [\[CrossRef\]](#) [\[PubMed\]](#)
16. Dane, A.V.; Schneider, B.H. Program Integrity in primary and early secondary prevention: Are implementation effects out of control? *Clin. Psychol. Rev.* **1998**, *18*, 23–45. [\[CrossRef\]](#)
17. Rojas-Andrade, R.; Bahamondes, L.L. Is implementation fidelity important? a systematic review on school-based mental health programs. *Contemp. Sch. Psychol.* **2019**, *23*, 339–350. [\[CrossRef\]](#)
18. Durlak, J.A. What everyone should know about implementation. In *Handbook of Social and Emotional Learning: Research and Practice* J.A.; Durlak, C.E.D., Weissberg, R.P., Gullotta, T.P., Eds.; Guilford: New York, NY, USA, 2015; pp. 395–405.
19. Dusenbury, L.; Brannigan, R.; Hansen, W.B.; Walsh, J.; Falco, M. Quality of implementation: Developing measures crucial to understanding the diffusion of preventive interventions. *Health Educ. Res.* **2005**, *20*, 308–313. [\[CrossRef\]](#) [\[PubMed\]](#)
20. Bast, L.S.; Due, P.; Bendtsen, P.; Ringgard, L.; Wohlebe, L.; Damsgaard, M.T.; Grønbaek, M.; Ersboll, A.K.; Andersen, A. High impact of implementation on school-based smoking prevention: The X.IT study—A cluster-randomized smoking prevention trial. *Implement. Sci.* **2016**, *11*, 125. [\[CrossRef\]](#)
21. Dix, K.L.; Slee, P.T.; Lawson, M.J.; Keeses, J.P. Implementation quality of whole-school mental health promotion and students' academic performance. *Child Adolesc. Ment. Health* **2012**, *17*, 45–51. [\[CrossRef\]](#) [\[PubMed\]](#)
22. Saunders, R.P.; Ward, D.; Felton, G.M.; Dowda, M.; Pate, R.R. Examining the link between program implementation and behavior outcomes in the lifestyle education for activity program (LEAP). *Eval. Program Plan.* **2006**, *29*, 352–364. [\[CrossRef\]](#) [\[PubMed\]](#)

23. van Nassau, E.; Singh, A.S.; Hoekstra, T.; van Mechelen, W.; Brug, J.; Chinapaw, M.J.M. Implemented or not implemented? Process evaluation of the school-based obesity prevention program DOiT and associations with program effectiveness. *Health Educ. Res.* **2016**, *31*, 220–233. [\[CrossRef\]](#)
24. Herlitz, L.; MacIntyre, H.; Osborn, T.; Bonell, C. The sustainability of public health interventions in schools: A systematic review. *Implement. Sci.* **2020**, *15*, 4. [\[CrossRef\]](#)
25. Bryman, A. Integrating quantitative and qualitative research: How is it done? *Qual. Res.* **2006**, *6*, 97–113. [\[CrossRef\]](#)
26. CASEL CASEL. *Guide: Effective Social and Emotional Learning Programs—Middle and Highschool Edition*; Collaborative for Academic, Social, and Emotional Learning: Chicago, IL, USA, 2015.
27. NCCA Social. *Personal and Health Education Curriculum Framework: Senior Cycle*; National Council for Curriculum and Assessment: Dublin, Ireland, 2011.
28. Dowling, K.; Clarke, A.M.; Barry, M.M. *The re-Development of the MindOut Programme: Promoting Social and Emotional Wellbeing in Post-Primary Schools*; WHO Collaborating Centre for Health Promotion Research, National University of Ireland Galway: Galway, Ireland, 2016.
29. Dowling, K.; Simpkin, A.J.; Barry, M.M. A cluster randomized-controlled trial of the Mindout social and emotional learning program for disadvantaged post-primary school students. *J. Youth Adolesc.* **2019**, *48*, 1245–1263. [\[CrossRef\]](#) [\[PubMed\]](#)
30. Creswell, J.W.; Plano Clark, V.L.; Gutmann, M.L.; Hanson, W.E. Advanced mixed methods research designs. In *Handbook of Mixed Methods in Social and Behavioral Research*; Tashakkori, A., Teddlie, C., Eds.; Sage: Thousand Oaks, CA, USA, 2003; pp. 209–240.
31. Byrne, M.; Barry, M.M.; NicGabhainn, S.; Newell, J. The development and evaluation of a mental health promotion programme for post-primary schools in Ireland. In *The Health Promoting School: International Advances in Theory, Evaluation and Practice*; Jensen, B.B.C.S., Ed.; Canterbury Christ Church University College and the Danish University of Education: Canterbury, UK, 2005; pp. 383–408.
32. Clarke, A.M.; Sixsmith, J.; Barry, M.M. Evaluating the implementation of an emotional wellbeing programme for primary school children using participatory approaches. *Health Educ. J.* **2015**, *74*, 578–593. [\[CrossRef\]](#)
33. Gray, H.L.; Contento, I.R.; Koch, P.A. Linking implementation process to intervention outcomes in a middle school obesity prevention curriculum, 'Choice, Control and Change'. *Health Educ. Res.* **2015**, *30*, 248–261. [\[CrossRef\]](#) [\[PubMed\]](#)
34. Trigwell, J.; McGee, C.E.; Murphy, R.C.; Porcellato, L.A.; Ussher, M.; Garnham-Lee, K.; Knowles, Z.R.; Fowweather, L. Process evaluation of a sport-for-health intervention to prevent smoking amongst primary school children: SmokeFree Sports. *BMC Public Health* **2015**, *15*, 347. [\[CrossRef\]](#) [\[PubMed\]](#)
35. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [\[CrossRef\]](#)
36. *DES Transition Year: Exploring the Student Experience*; Department of Education and Skills; Irish Second-Level Students' Union: Dublin, Ireland, 2014.
37. McBride, N.; Farrington, F.; Midford, R. Implementing a school drug education program: Reflections on fidelity. *Int. J. Health Promot. Educ.* **2002**, *40*, 40–50. [\[CrossRef\]](#)
38. Pettigrew, J.; Miller-Day, M.; Shin, Y.; Hecht, M.L.; Krieger, J.L.; Graham, J.W. Describing teacher–student interactions: A qualitative assessment of teacher implementation of the 7th grade keepin' it REAL substance use intervention. *Am. J. Commun. Psychol.* **2013**, *51*, 43–56. [\[CrossRef\]](#) [\[PubMed\]](#)
39. Pearson, M.; Chilton, R.; Wyatt, K.; Abraham, C.; Ford, T.; Woods, H.B.; Anderson, R. Implementing health promotion programmes in schools: A realist systematic review of research and experience in the United Kingdom. *Implement. Sci.* **2015**, *10*, 149. [\[CrossRef\]](#) [\[PubMed\]](#)
40. Audrey, S.; Holliday, J.; Campbell, R. Commitment and compatibility: Teachers' perspectives on the implementation of an effective school-based, peer-led smoking intervention. *Health Educ. J.* **2008**, *67*, 74–90. [\[CrossRef\]](#)
41. Nic Gabhainn, S.; Barry, M.M.; O'Higgins, S.; Galvin, M.; Kennedy, C. *The Implementation of SPHE at Post-Primary School Level: A Case Study Approach*; Department of Education and Science: Dublin, Ireland, 2007.
42. Botvin, G.J. Advancing prevention science and practice: Challenges, critical issues, and future directions. *Prev. Sci.* **2004**, *5*, 69–72. [\[CrossRef\]](#) [\[PubMed\]](#)
43. Caria, M.P.; Faggiano, F.; Bellocco, R.; Galanti, M.R.; the, E.U.D.S.G. Classroom characteristics and implementation of a substance use prevention curriculum in European countries. *Eur. J. Public Health* **2013**, *23*, 1088–1093. [\[CrossRef\]](#) [\[PubMed\]](#)

44. Mihalic, S.F.; Fagan, A.A.; Argamaso, S. Implementing the LifeSkills Training drug prevention program: Factors related to implementation fidelity. *Implement. Sci.* **2008**, *3*, 5. [[CrossRef](#)]
45. Martinez, R.G.; Lewis, C.C.; Weiner, B.J. Instrumentation issues in implementation science. *Implement. Sci.* **2014**, *9*, 118. [[CrossRef](#)]



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Appendix A3:

Paper 3

The Effects of Implementation Quality of a School-Based Social and Emotional Well-Being Program on Students' Outcomes

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Article

The Effects of Implementation Quality of a School-Based Social and Emotional Well-Being Program on Students' Outcomes

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Abstract: School-based social and emotional learning (SEL) programs can be effective in producing positive outcomes for students. However, when the implementation quality is poor, these programs often lose their effectiveness and fail to produce the expected positive outcomes. The current study evaluates a school-based SEL program for 15-18-year-olds in Ireland by determining the impact of implementation quality on program outcomes. The study also examines the effects on outcomes of different implementation dimensions including Dosage, Adherence, Quality of Delivery, and Participant Responsiveness. Employing a cluster randomized controlled trial design, this study collected student outcome data ($n = 675$) from 32 disadvantaged schools across three time points (pre-, post-, 12-month follow-up) and compared these data across three treatment groups (high-implementation, low-implementation, and control). Linear mixed models (LMM) were used to determine the relationships between the implementation data and student outcome data longitudinally. The findings revealed that the positive effects of the program were only observed with the high-, but not the low-implementation group (reduced suppression of emotions ($p = 0.049$); reduced avoidance coping ($p = 0.006$); increased social support coping ($p = 0.009$); reduced levels of stress ($p = 0.035$) and depressive symptoms ($p = 0.025$). The comparison of implementation dimensions revealed that only Quality of Delivery had a significant effect on all of the tested outcomes. This study highlights the importance of high-quality implementation in producing positive outcomes and supports the need to evaluate implementation using multiple dimensions.

Keywords: social and emotional learning; school-based programs; implementation quality; randomized controlled trial; mental health and well-being

1. Introduction

Elias and colleagues [1] describe social and emotional learning (SEL) as “the process of acquiring and effectively applying the knowledge, attitudes and skills necessary to understand and manage emotions, set and achieve positive goals, appreciate the perspective of others, establish and maintain positive relationships, make responsible decisions and handle interpersonal situations constructively.” SEL has often been used as an umbrella term covering a wide range of programs and approaches and defined in several ways [2,3]. Within this study, the definition of SEL is driven by CASEL’s (Collaborative for Social and Emotional Learning) competency framework [4], and the program encapsulates the five core competencies identified within this framework: self-awareness, self-management, social awareness, relationship management, and responsible decision-making.

School-based social and emotional learning (SEL) programs have gained recognition for their ability to improve young people’s mental health and well-being through the development of social

and emotional skills [5–8]. However, inconsistent and variable implementation of these programs can result in diminished or null effects for participants [9–12]. While there have been a number of reviews demonstrating the relationship between implementation quality and program outcomes [5,9,13,14], evaluation studies continue to prioritize the measurement of outcomes over implementation, and very few studies observe the direct relationship between the two [5,15–19]. By ignoring implementation and the conditions under which a program is delivered, it is impossible to determine what led to a program's success or, alternatively, what caused it to fail. The absence of information on implementation could be detrimental to the future success and sustainability of SEL programs. Therefore, given that there is strong evidence demonstrating the relationship between program implementation and outcome attainment, it is essential that the systematic monitoring and evaluation of implementation is embedded as a core aspect of all program evaluation studies [9,10,19].

1.1. Measuring Implementation Quality

Implementation quality refers to how well a program has been delivered as intended [20,21]. Many researchers recognize that implementation quality is a multidimensional construct and, therefore, should be measured as such [9,10,19,22,23]. In some studies [24,25], "fidelity" has been conceptualized as the superordinate construct used to describe the overall pattern of implementation activity. However, in other studies, like the current one, fidelity is conceptualized in procedural terms (e.g., how closely the sequence of activities align with what was intended) and is included as a subordinate indicator alongside the other dimensions, with implementation quality seen as the superordinate construct [10,19,26]. In measuring implementation quality, Dane and Schneider [15] suggested that implementation is reflective of five core dimensions: dosage (e.g., quantity of program delivered); fidelity/adherence (e.g., how many core components were delivered as prescribed); quality of delivery (e.g., how well the facilitator delivers the program); participant responsiveness (e.g., how participants respond to or are engaged with an intervention); and program differentiation (e.g., how unique the program characteristics are compared to other programs). Although it is recognized that implementation quality consists of multiple dimensions, it is clear from the literature that more attention has been given to certain dimensions (e.g., dosage and fidelity/adherence) over others [10,27,28]. For example, in Durlak and Dupre's [10] review of programs assessing implementation quality, they reported that 63% of the studies assessed fidelity/adherence and 49% assessed dosage, while only 10 out of the 59 studies (17%) assessed a different dimension (e.g., program reach, adaptation, or quality of delivery). A similar pattern was observed in a review by Rojas-Andrade and Bahamondes [14], which included 31 school mental health programs and found that 77% reported on fidelity/adherence, 58% on dosage, 26% on quality of delivery, and 19% on participant responsiveness. Additionally, this review found that only three studies (10%) combined dimensions to produce a total implementation composite score.

While fewer studies have examined dimensions such as quality of delivery and participant responsiveness, those that did have found that they might be equally, if not more, important for achieving program outcomes compared to dimensions such as adherence and dosage that are typically represented [9,23]. For example, in Rojas-Andrade and Bahamondes' [14] review, they found that adherence was only weakly associated with outcome variables, whereas both quality of delivery and participant receptiveness were strongly associated with outcome achievement. Additional studies have found similar results. The Steps to Respect bullying prevention program evaluation, which was conducted in 33 primary schools in California, USA, found that adherence was not significantly associated with any of the outcomes, whereas higher levels of student engagement were related to a number of positive outcomes [29]. Another study evaluated the Keepin' it REAL drug prevention program with 25 primary schools in Ohio, USA by observing two dimensions of implementation: adherence and delivery (combined score of teacher engagement, student engagement, and quality of delivery). The findings revealed that delivery significantly influenced substance use and norms, whereas adherence significantly predicted norms but only marginally predicted substance use [22]. Furthermore, a study of the PATHS program [26] conducted in 23 primary schools in Manchester,

UK evaluated implementation quality across five dimensions: dosage, fidelity/adherence, quality of delivery, participant responsiveness, and reach. The authors found that, while higher implementation for quality of delivery and participant responsiveness resulted in lower externalizing behaviors, higher levels of program reach and fidelity were not associated with any of the outcomes. Most surprising, perhaps, was that higher levels of dosage were associated with significantly lower ratings of students' prosocial behavior and social-emotional skills [26]. In explaining this finding, the study authors suggested a number of potential reasons, including that: (i) schools with high levels of dosage may have achieved this at the expense of other critical aspects of implementation (e.g., quality); (ii) schools with lower functioning classes and higher needs were more likely to deliver PATHS more frequently; and (iii) schools that delivered more lessons of the PATHS program spent less time on other effective approaches (e.g., targeted programs). The above studies all establish the importance of including multiple dimensions of implementation measurement. In order to advance knowledge and improve practice, as well as build on the evidence for implementation science, there needs to be a greater focus on employing multiple dimensions of implementation in order to determine the role they play in outcome achievement.

Although implementation dimensions are conceptually distinct, they are interrelated in terms of delivery. For example, a school may have high dosage but also low quality of delivery, and examining the effects of these dimensions in isolation would make it impossible to determine their joint impact on outcomes. Therefore, the implementation dimensions should be seen as interrelated but conceptually distinct indicators; therefore, it is necessary to determine the combined effect of these dimensions in order to fully understand the overall implementation quality. In an effort to measure implementation quality including multiple dimensions, previous studies have adopted an approach that uses an *a priori* index of indicators to calculate a cumulative total implementation index score [30]. For example, the KidsMatter program evaluation in Australia combined three dimensions of implementation quality (dosage, adherence/fidelity, and quality of delivery) to create a total index score that categorized schools into high- and low-implementation groups and assessed group allocation in relation to outcomes [30]. This method allows for the assessment of total implementation quality while also taking into account data from the multiple implementation dimensions.

1.2. Current Study

This study is part of a larger cluster-randomized controlled trial of the MindOut program in post-primary schools across Ireland that involved three distinct phases. Underpinned by CASEL's competency framework [4,31], MindOut is a universal school-based program designed to be delivered by teachers through the SPHE curriculum (Social Personal and Health Education (SPHE) is a mandatory health education curriculum in Irish schools that supports the well-being and personal skill development of students) to promote the social and emotional well-being of post-primary students aged 15–18 years. This 13-session program is delivered through a structured manual with accompanying resource materials (e.g., worksheets, PowerPoint presentations, etc.) and uses interactive teaching strategies to engage students in skill-building activities. Additional information on the program and its development can be found in the relevant literature [6,32–34].

A c-RCT outcomes evaluation (Phase 1) of MindOut in designated disadvantaged schools has already been published [34] and revealed that the program had significantly positive intervention effects on students' emotional skills (e.g., coping skills, emotional regulation) and mental health (stress and depression), but found no significant impact on students' social skills, mental well-being, and academic performance. Although the original study demonstrated positive findings, it did not account for differences and variability in the implementation quality of intervention schools.

Following the c-RCT, a mixed-methods study (Phase 2) was conducted [35] in an effort to determine implementation quality and its variability across the original intervention schools. Intervention schools ($n = 16$), were assessed on their implementation quality across four dimensions individually (Dosage, Adherence, Quality of Delivery, and Participant Responsiveness) and a composite score was used

to determine a total implementation quality score (high vs. low) for each school. This study found that there was variability in the total implementation quality between schools, with scores ranging from 55% to 92% ($M = 79\%$). Based on the total implementation score, eight schools were allocated to the high-implementation group and eight schools to the low-implementation group. The study also discovered that variability occurred within schools and across different dimensions. Of the 16 schools in this study, seven consistently scored either high ($n = 5$) or low ($n = 2$) across all four implementation dimensions, while all other schools varied, scoring high in certain dimensions and low in others. These findings highlighted the need to assess not only the relationship between total implementation quality and outcomes, but also to determine how individual dimensions moderate outcomes differently. Within the second phase of the study, a number of implementation factors (e.g., teacher factors, program factors, organizational factors, etc.) were identified by teachers and students; these are discussed in the context of relevant implementation models [10,17].

Given that the results on the outcomes of this trial have already been determined [34] and the levels of implementation quality for intervention schools have been identified [35], further investigation is required to assess the relationships between these concepts. Therefore, the aim of the current study (phase 3) is to combine the data from the previous studies (phases 1 and 2) to examine how variability in implementation moderates students' outcomes.

Specifically, this study has two main objectives:

1. To determine whether or not the level of implementation (high/low), based on the total implementation quality score, significantly impacts program outcomes at post-intervention and 12-month follow-up when compared to the control group.
2. To examine the role that each of the four implementation dimensions of (i) Dosage, (ii) Adherence, (iii) Quality of Delivery, and (iv) Participant Responsiveness play in influencing program outcomes.

2. Materials and Methods

2.1. Design

A cluster randomized controlled trial design was utilized for this study with three treatment groups (high-implementation, low-implementation, and control). Outcome data were assessed at baseline (winter 2016), post-intervention (spring 2017) and 12-month follow-up (spring 2018) via surveys. Implementation data were collected from intervention schools during and immediately following program delivery.

2.2. Participants

Schools were randomly selected throughout the Republic of Ireland based on the criteria that they were recognized as disadvantaged (DEIS) by the Department of Education and Skills. A total of 32 schools participated in the evaluation study and these schools were randomly assigned to either the intervention ($n = 17$) or control ($n = 15$) group. All teachers in the intervention group participated in a one-day interactive training workshop, during which they received all of the training materials. This study involved students who were in 4th/Transition Year (15–17 years) or 5th year (16–18 years) at baseline. (Transition Year (TY) is a one-year optional program that exists between the Junior Certificate program (3rd year; 13–15 yrs.) and the Leaving Certificate program (6th year; 16–18yrs). Transition Year is a less structured year which gives students more space to learn, mature and develop without the presence of exam pressures). A total of 675 students responded to the questionnaires during baseline assessment. Further details on the demographic profile the sample can be found in earlier publications [27,28]. Response rates decreased at post-intervention ($n = 497$) and 12-month follow-up ($n = 435$) due to students' absenteeism on the day of data collection or students having moved to a different school since the previous data collection.

2.3. Ethical Standards

Written informed consent was obtained from all individual participants included in the study and passive parental consent from all student participants was also sought. All procedures performed in the study were in accordance with the ethical standards of the National University of Ireland Galway Research Ethics Committee (ref: 16-Jul-01) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

2.4. Measures

2.4.1. Outcome Measures

A questionnaire was used to assess students' social and emotional skills, mental health and well-being and academic outcomes through a number of scales, which are described below. Further detailed information on these scales (e.g., psychometric properties, scoring, example items, etc.) were reported in a previous paper by the authors [34].

Social Emotional Skills

- The Rosenberg Self-esteem Scale [36] was a 10-item scale that was originally designed for use with high school students to measure self-esteem.
- The Trait Meta-Mood Scale-24 (TMMS-24) [37], an adapted version of the original TMMS [38], was used to measure people's ability to manage and regulate their moods and emotions (subscales: attention to feelings, emotional clarity, and emotional repair).
- The Coping Strategy Indicator (CSI-15) [39], a 15-item short form of the original 33-item scale [40], which evaluates three types of coping strategies (Subscales: Avoidance, Problem Solving, and Social Support).
- The Self-Efficacy Questionnaire (SEQ-C) [41] is a 24-item scale comprised of three main subscales (subscales: academic self-efficacy, emotional self-efficacy, and social self-efficacy); however, only the latter was utilized in this study.
- The Emotional Regulation Questionnaire (ERQ) [42] is a 10-item scale that was used to assess respondents' (i) cognitive reappraisal and (ii) expressive suppression.
- The Adolescent Interpersonal Competence Questionnaire (AICQ) [43] assesses young people's interpersonal skills and is composed of five subscales each with eight items (Subscales: initiating relationships, providing emotional support, self-disclosure, asserting influence, and conflict resolution). Only the two latter subscales were used for the purpose of this study.
- The Making Decisions in Everyday Life Scale five-item short form [44], an adapted version of the original scale [45], which assesses young people's decision-making skills.

Mental Health and Well-being

- The Depression Anxiety Stress Scale (DASS-21) [46] is a 21-item self-report scale designed to measure levels of symptoms of poor mental health in relation to three subscales (depression, anxiety, and stress).
- The Warwick Edinburgh Mental Well-being Scale (WEMWBS) [47] is a 14-item scale used to assess the mental well-being of respondents.

Academic Outcomes

- The Attitudes towards School scale [48] measures students' attitudes and feelings towards their school environment (e.g., teachers, homework, grades, and learning).

An effort was also made to measure students' academic performance through both self-reported and teacher-reported grades; however, these data did not correlate, giving rise to concerns about their validity. Due to the absence of standardized test scores, the data provided by both students and teachers were deemed insufficient and were, therefore, not included in the analysis.

2.4.2. Implementation

Implementation was measured using indicators, which were taken from two primary measures (i) Teacher Weekly Reports and (ii) a Student Review Questionnaire. Classroom observations with a subsample of schools ($n = 6$) were also undertaken and these were used to validate the self-reported measures by comparing the indicator scores across the relevant dimensions. The Teacher Weekly Reports were completed online by teachers each week following the delivery of each session. These questionnaires were designed to assess the implementation of each session from the teachers' perspective (e.g., adherence to program content, suitability of the content for students, students' engagement with the session, and an overall rating of the session). The Student Review Questionnaire was completed by intervention students at post-intervention. This questionnaire was designed to examine the implementation of the program from the students' perspectives (e.g., attendance of specific sessions; their teacher's Quality of Delivery of the program; their own response to the program; their overall rating of the program). Using these two implementation measures, a number of indicators were selected based on their representativeness of one of the four dimensions of implementation quality (e.g., Dosage, Adherence, Quality of Delivery, and Participant Responsiveness). Each indicator was scored separately, and these scores were then averaged within each dimension and converted to a percentage to produce an overall dimensional score (e.g., Total Dosage score, etc.). A reliability analysis was also carried out on the four dimension scores (Dosage, Adherence, Quality of Delivery, and Participant Responsiveness) and a high internal consistency was found ($\alpha = 0.86$). Correlations were also completed between the four total dimension scores (Table 1). The four total dimension scores (%) were then averaged to produce an overall Total Implementation Quality score.

$$\begin{aligned} \text{Total Implementation Quality} = \\ (\text{Total Dosage} + \text{Total Adherence} + \text{Total Quality of Delivery} \\ + \text{Total Participant Responsiveness})/4. \end{aligned} \quad (1)$$

Table 1. Descriptive statistics (n , Means, and SDs) on implementation dimensions, by high- and low-implementation groups.

Implementation Dimensions	High-Implementing Schools			Low-Implementing Schools		
	n	Mean (SD)	Range	n	Mean (SD)	Range
Total Dosage	10	93.3% (2.9)	89.1–97.7%	6	74.2% (15.9)	45.8–85%
Total Adherence	9	87.3% (8.3)	79.3–100%	7	64.5% (11.0)	43.7–77.2%
Total Quality of Delivery	7	86.3% (4.0)	80.0–92.5%	9	67.9% (8.2)	56.5–79.5%
Total Participant Responsiveness	8	81.4% (4.6)	76–88.5%	8	68.7% (4.2)	62.3–74.5%
Total Implementation Quality	8	85.6% (3.9)	81.0–92.0%	8	71.6 (8.3)	52.7–78.4%

Notes: Mean = Average of combined indicators converted to a percentage; Correlations: Dosage/Adherence $r = 0.78$, $p = 0.000$; Dosage/Quality of Delivery $r = 0.46$, $p = 0.073$; Dosage/Participant Responsiveness $r = 0.59$, $p = 0.017$; Adherence/Quality of Delivery $r = 0.21$, $p = 0.43$; Adherence/Participant Responsiveness $r = 0.62$, $p = 0.011$; Quality of Delivery/Participant Responsiveness $r = 0.55$, $p = 0.026$.

This method of combining indicators across implementation dimensions to produce a total index score is based on similar methods used in previous studies [30,49,50]. To determine whether a school was high-implementing or low-implementing, the visual binning procedure in SPSS was performed by applying cutoffs at the mean and ± 1 standard deviation level, which resulted in two identifiable groups (high/low). Dix and colleagues [30] carried out a similar statistical procedure when determining the implementation quality of the KidsMatter program in Australia. This process was completed with schools' Total Implementation Quality score as well as for each of the four individual total dimension scores. Additional information on the selected indicators, the scoring process, and the visual binning procedure can be found elsewhere [35]. Descriptive statistics are used in Table 1 to show differences between schools in the high- and low-implementation groups across the four dimensions and for Total Implementation Quality.

2.5. Statistical Analysis

All statistical analyses were completed using SPSS Statistical Software Package, IBM (version 26). Prior to analysis, the implementation data were linked to the student outcome data by school. Due to the clustered nature of the data, linear mixed models (LMM) were used to determine the linear relationships between the implementation data and student outcome data longitudinally. The combined Total Implementation Quality score was first used to determine how the implementation affected outcomes over time using a repeated measures LMM. In order to carry out this analysis, the dataset required restructuring into a long format prior to this analysis [51]. Given that there were identifiable differences between the scores at the baseline [34], the repeated-measures LMM needed to control for these differences [51]. The LMM included "School" and "Student ID" as the random effects, while "Time" was inputted as the repeated effect.

While the repeated-measures LMM is useful in providing information on whether or not there was a change over time, this type of analysis does not explicitly detect when this change occurs. Therefore, following this initial analysis, a more in-depth analysis was carried out to examine the differences between the three groups at the two time points: (i) post-intervention and (ii) 12-month follow-up separately, controlling for the pre-test scores.

For the LMM's at post-intervention and 12-month follow-up, "Treatment Group" (high, low, control), based on the Total Implementation Quality score, was modeled as a fixed effect, while "School" was modeled as the random effect. "Gender" and "Baseline Scores" were modeled as covariates. The dependent variables included all student outcomes: social emotional skills, mental health, well-being, and academic performance at post-intervention and/or 12-month follow-up. The Bonferroni correction was applied to adjust for multiple comparisons and the a priori alpha level set for this study was 0.05.

In order to assess the relationships between the implementation dimensions and outcomes, LMMs were also carried out for each of the four individual dimensions. In these models, everything remained the same except for the fixed effect, which was replaced with the "Treatment Group" variable reflective of each dimension. For example, when assessing the relationship between dosage and the outcome variables, "Dosage Treatment Group" (high, low, control) was modeled as the fixed effect. These models were only run for those outcomes that were shown to be significant in the initial LMM analysis. The findings from this study are reported in compliance with the CONSORT 2010 statement for cluster randomized trials.

3. Results

3.1. Participants

Within this study, the analysis was carried out with three groups: (i) high-implementation, (ii) low-implementation, and (iii) control. Based on Total Implementation Quality, there were eight schools assigned to the high-implementation group ($n = 169$) and eight schools allocated to the low-implementation group ($n = 143$). The mean outcome scores for each group (high, low, and control) at each time point (pre-, post-, 12-month follow-up), based on Total Implementation Quality, are presented in Table 2. There were also 15 schools assigned to the control group ($n = 345$). Reported number of students (n) are based on baseline measurements. For numbers at post-intervention and 12-month follow-up, see Table 2.

3.2. Post-Intervention

Mixed models were run on the relationship between the level of implementation quality and outcomes at post-intervention and the results can be found in Table 3. The findings of the linear mixed model for each of outcome variables at post-intervention, comparing the high-implementation group with both the low-implementation and control group, as well as the low-implementation group with the control group, are now presented.

APPENDICES

Table 2. Mean outcome scores for high-implementation, low-implementation, and control groups at pre-, post-, and 12-month follow-up.

		High-Implementation M (SD)			Low-Implementation M (SD)			Control M (SD)		
		Pre- N = 169	Post- n = 125	Follow-up n = 116	Pre- N = 149	Post- N = 106	Follow-up n = 77	Pre N = 345	Post N = 251	Follow-up n = 220
RSES	Self-esteem	28.60 (5.2)	29.19 (5.3)	27.56 (5.5)	29.24 (5.0)	29.25 (5.2)	28.62 (5.0)	27.20 (5.5)	27.49 (5.4)	26.96 (5.2)
	Total Emotional Intelligence	69.15 (10.0)	81.78 (11.7)	77.88 (10.8)	69.41 (9.6)	81.96 (10.5)	79.93 (9.4)	67.83 (10.1)	79.27 (11.6)	79.04 (10.2)
TMMS	Subscale: Attention to Feelings	26.4 (4.8)	26.9 (5.0)	26.0 (5.0)	26.2 (4.8)	26.7 (3.9)	26.0 (4.1)	26.2 (4.6)	25.9 (4.8)	26.4 (4.9)
	Subscale: Emotional Clarity	25.7 (4.7)	26.1 (5.9)	24.6 (5.1)	25.9 (4.9)	26.7 (5.0)	25.9 (4.4)	24.7 (5.4)	25.2 (5.5)	25.1 (5.1)
	Subscale: Emotional Repair	28.0 (6.0)	29.1 (5.1)	27.0 (5.1)	28.2 (5.6)	28.6 (5.2)	28.3 (5.2)	27.9 (5.7)	28.2 (5.7)	27.7 (5.0)
	Subscale: Avoidance	16.7 (6.0)	15.8 (4.9)	16.6 (5.5)	16.5 (5.8)	16.6 (5.5)	17.0 (6.1)	18.3 (6.2)	18.4 (5.7)	19.2 (5.7)
CSI	Subscale: Problem-Solving	16.2 (5.2)	16.5 (5.1)	15.4 (4.7)	16.1 (5.0)	15.7 (5.0)	15.7 (4.7)	16.1 (5.3)	16.0 (5.0)	15.7 (5.1)
	Subscale: Social Support	12.05 (5.0)	13.7 (5.2)	13.4 (4.4)	12.6 (5.5)	12.7 (5.4)	13.3 (4.5)	13.4 (5.7)	13.1 (5.2)	13.4 (5.2)
SEC-Q	Social Self-efficacy	26.8 (6.2)	27.5 (6.6)	6.2 (6.0)	27.7 (6.1)	27.4 (6.1)	27.2 (6.2)	27.0 (6.0)	27.0 (6.3)	27.0 (6.3)

Notes: Group allocation (e.g., high and low) based on Total Implementation Quality score; M = mean; SD = standard deviation; RSES = Rosenberg Self-esteem scale, TMMS = Trait meta-mood Scale, CSI = Coping Strategy Indicator, SEC-Q = Self-Efficacy Questionnaire for Children, ERQ = Emotional Regulation Questionnaire, AICQ = Adolescent Interpersonal Competence Questionnaire, DMS = Decision-Making Scale ATS: Attitudes towards School Scale, DASS-21: Depression, Anxiety and Stress Scale, WEMWBS: Warwick Edinburgh Mental Well-being Scale.

Table 3. Mixed model results of the relationship between the level of implementation quality and outcomes at post-intervention.

Dependent Variable	Models with the Full Sample and High-Implementation Group as Reference				Models Without High-Implementation and With Low-Implementation Group as Reference	
	Control		Low		Control	
	t	p	t	p	t	p
Self-esteem	-1.47	0.142	-0.480	0.632	-0.834	0.405
Total Emotional Intelligence	-1.09	0.286	-0.021	0.984	-1.186	0.249
Subscale: Attention to Feelings	-1.56	0.132	-0.238	0.814	-0.957	0.351
Subscale: Emotional Clarity	-0.338	0.738	0.891	0.380	-1.46	0.146
Subscale: Emotional Repair	-1.08	0.29	-0.566	0.576	-0.37	0.713
Subscale: Avoidance ^a	3.03	0.006**	0.806	0.427	1.89	0.060
Subscale: Problem Solving	-0.477	0.638	-0.98	0.335	0.697	0.493
Subscale: Social Support	-0.264	0.009**	-1.92	0.056	-0.217	0.831
Social Self-efficacy	-0.56	0.58	-0.73	0.47	0.290	0.775
Subscale: Reappraisal	-1.76	0.078	-1.44	0.151	-0.058	0.954
Subscale: Expressive Suppression ^a	2.06	0.049*	1.14	0.262	0.717	0.480
Subscale: Asserting Influence	-1.04	0.297	-0.181	0.856	-0.788	0.431
Subscale: Conflict Resolution	-0.254	0.799	-0.342	0.733	0.040	0.968
Decision-Making	0.298	0.770	-0.949	0.354	1.31	0.192
Stress ^a	2.10	0.035*	1.06	0.864	1.07	0.707
Anxiety ^a	1.63	0.120	0.678	0.505	0.778	0.449
Depression ^a	2.25	0.025*	1.24	0.215	0.688	0.492
Well-being	-0.54	0.597	-1.40	0.177	1.05	0.310
Attitudes toward School	-2.04	0.053	-2.45	0.022*	0.826	0.425

Notes: p < 0.05; ** p < 0.01; ^a Reversed scoring outcomes; Group allocation (e.g., high and low) based on Total Implementation Quality score.

3.2.1. Social Emotional Skills

Compared to control schools, high levels of implementation quality (but not low levels) were associated with significantly lower levels of avoidance coping ($\beta = -1.53$, 95% CI -2.58 to -0.48 ; $p = 0.006$), reduced expressive suppression ($\beta = -0.95$, 95% CI -1.88 to -0.01 ; $p = 0.049$), and significantly higher levels of social support coping ($\beta = 1.20$, 95% CI 0.031 to 2.09 ; $p = 0.009$) at post-intervention. Levels of implementation quality were not significantly associated with any other SEL outcome (all $p > 0.05$) when comparing the high-implementation group to control group. No significant differences were found between the low-implementation and control group for any of the social emotional skill outcomes (all $p > 0.05$).

3.2.2. Mental Health and Well-being

Higher levels of implementation (but not low) were significantly associated with lower levels of stress ($\beta = -2.1$, 95% CI -3.73 to -0.47 ; $p = 0.012$) and depression ($\beta = -2.0$, 95% CI -3.73 to -0.03 ; $p = 0.025$). Levels of implementation quality were not associated with anxiety or well-being outcomes (both $p > 0.05$). No significant differences were found between the low-implementation and control groups for any of the mental health and well-being outcomes (all $p > 0.05$).

3.2.3. Academic Outcomes

A significant difference was found between the high-implementation group compared to the low-implementation group for Attitudes towards School, with the high-implementation group demonstrating more positive attitudes towards school ($\beta = 3.45$, 95% CI 0.55 to 6.35 ; $p = 0.022$). No intervention effects were demonstrated for students' attitudes toward school for the high- or low-implementation groups when compared to the control group ($p > 0.05$), though the difference between the high-implementation and control groups approached significance ($p = 0.053$).

3.3. Twelve-Month Follow-up

Mixed models were again run for all of the variables, comparing the high-implementation group with both the low-implementation and control group and the low-implementation group with the control group. The results of the linear mixed model for key outcome variables at 12-month follow-up are shown in Table 4. Compared to control schools, high-implementation schools demonstrated significantly lower avoidance coping at 12-month follow-up (1.91 decrease, 95% CI -3.65 to 0.162 ; $p = 0.033$). No significant differences were found between the three groups for any of the other outcomes (all $p > 0.05$).

3.4. Implementation Dimensions

Mixed models were run to compare the three groups (high, low, control) according to dimension group level across the variables that demonstrated significance during the initial mixed model analysis. Therefore, mixed models were run for: (i) Avoidance coping, (ii) Social Support coping, (iii) Expressive Suppression, (iv) Stress, (v) Depression, (vi) Attitudes towards School at post-intervention, and (vii) Avoidance coping at 12-month follow-up. Results of these LMMs according to dimensions at post-intervention and 12-month follow-up are reported in Table 5.

Table 4. Mixed model results of the relationship between the level of implementation quality and outcomes at 12-month follow-up.

Dependent Variable	Models With the Full Sample and High-Implementation Group as Reference				Models Without High-Implementation and With Low-Implementation Group as Reference			
	Control		Low		Control		Low	
	t	*p	t	p	t	p	t	**p
Self-esteem	-0.380	0.707	0.709	0.484	-1.53	0.145	-1.53	0.145
Total Emotional Intelligence	0.967	0.342	1.78	0.084	-0.552	0.581	-0.552	0.581
Subscale: Attention to Feelings	0.357	0.724	0.022	0.982	0.211	0.835	0.211	0.835
Subscale: Emotional Clarity	0.964	0.344	1.40	0.171	-0.862	0.389	-0.862	0.389
Subscale: Emotional Repair	1.32	0.186	1.80	0.072	-0.770	0.442	-0.770	0.442
Subscale: Avoidance ^a	2.24	0.033	0.251	0.803	1.82	0.081	1.82	0.081
Subscale: Problem Solving	0.538	0.591	0.517	0.605	0.002	0.998	0.002	0.998
Subscale: Social Support	-0.967	0.342	-0.554	0.584	-0.300	0.767	-0.300	0.767
Social Self-efficacy	1.32	0.187	0.756	0.450	0.380	0.704	0.380	0.704
Subscale: Reappraisal	-0.844	0.399	0.058	0.954	-0.822	0.412	-0.822	0.412
Subscale: Expressive Suppression ^a	-0.120	0.905	0.071	0.943	-0.229	0.819	-0.229	0.819
Subscale: Asserting Influence	-0.088	0.930	0.865	0.388	-1.00	0.318	-1.00	0.318
Subscale: Conflict Resolution	0.840	0.410	0.104	0.918	0.634	0.534	0.634	0.534
Decision-Making	0.091	0.928	-0.754	0.458	1.04	0.298	1.04	0.298
Stress ^a	1.73	0.098	0.551	0.586	0.867	0.396	0.867	0.396
Anxiety ^a	0.874	0.390	0.257	0.799	0.457	0.652	0.457	0.652
Depression ^a	1.82	0.082	0.357	0.724	1.40	0.177	1.40	0.177
Well-being	-1.46	0.157	0.648	0.523	-1.94	0.068	-1.94	0.068
Attitudes toward School	0.732	0.471	0.011	0.991	0.631	0.535	0.631	0.535

Notes: * p < 0.05; ** p < 0.01; ^a Reversed scoring outcomes; Group allocation (e.g., high and low) based on Total Implementation Quality score.

Table 5. Mixed model results across dimensions with high-implementation group as reference at post-intervention and follow-up.

Variables	Control			Low		
	t	*p	t	t	**p	**p
CSE: Avoidance	Dosage	2.80	0.010*	0.094		0.926
	Adherence	3.15	0.005**	0.714		0.481
	Quality of Delivery	3.16	0.005**	1.08		0.288
CSE: Social Support	Participant Responsiveness	2.95	0.007**	0.702		0.489
	Dosage	-1.82	0.084	-0.477		0.638
	Adherence	-1.48	0.155	0.359		0.723
ERQ: Expressive Suppression	Quality of Delivery	-2.91	0.004**	-2.35		0.019*
	Participant Responsiveness	-2.53	0.012*	-1.71		0.089
	Dosage	1.58	0.127	0.053		0.958
DASS-21: Stress	Adherence	1.51	0.142	-0.157		0.876
	Quality of Delivery	2.15	0.041*	1.23		0.228
	Participant Responsiveness	2.25	0.033*	1.40		0.171
DASS-21: Depression	Dosage	2.57	0.010*	1.09		0.277
	Adherence	1.70	0.090	-1.04		0.300
	Quality of Delivery	2.71	0.007**	1.40		0.163
Attitudes towards School	Participant Responsiveness	2.30	0.022*	0.668		0.505
	Dosage	1.63	0.105	-0.108		0.914
	Adherence	1.97	0.049*	0.639		0.523
Follow-up Variables	Quality of Delivery	2.37	0.018*	1.45		0.148
	Participant Responsiveness	1.82	0.070	0.487		0.627
	Dosage	-0.490	0.628	-0.785		0.439
CSE: Avoidance	Adherence	-0.146	0.885	-0.052		0.959
	Quality of Delivery	-2.63	0.015*	-3.22		0.004**
	Participant Responsiveness	-1.14	0.265	-1.75		0.092

Notes * $p < 0.05$; ** $p < 0.01$; Mixed models only completed for outcomes found to be significant in original analysis; CSE = Coping Strategy Indicator, ERQ = Emotional Regulation Questionnaire, DASS-21: Depression, Anxiety, and Stress Scale.

3.4.1. Dosage

For Dosage at post-intervention, there were 10 schools in the high-implementation group and six in the low-implementation group. Dosage was significantly associated with two of the six intervention outcomes. Compared to the control group, a high dosage was associated with significantly lower levels of students' Avoidance coping (1.32 decrease, 95% CI -2.30 to -0.345 ; $p = 0.010$) and Stress (2.0 decrease, 95% CI -3.52 to -0.470 ; $p = 0.010$). The dosage level for high-implementation schools was also related to decreased levels of avoidance at 12-month follow-up (2.15 decrease, 95% CI -3.75 to -0.555 ; $p = 0.010$). Levels of dosage were not associated with any other intervention outcomes (all $p > 0.05$).

3.4.2. Adherence

For Adherence, there were nine schools in the high-implementation group and seven in the low-implementation group. Levels of Adherence were significantly associated with two of the six intervention outcomes. Compared to the control group, high levels of Adherence were associated with lower levels of Avoidance coping (1.44 decrease, 95% CI -2.38 to -0.491 ; $p = 0.005$) and lower levels of Depression (1.60, 95% CI -3.19 to -0.004 ; $p = 0.049$). Levels of Adherence were not associated with any other intervention outcome (all $p > 0.05$).

3.4.3. Quality of Delivery

For Quality of Delivery, there were seven schools in the high-implementation group and nine in the low-implementation group. Levels of Quality of Delivery were significantly associated with all six intervention outcomes at post-intervention. Compared to the control group, high levels of Quality of Delivery were associated with lower levels of; avoidance coping (1.63 decrease, 95% CI -2.7 to 0.56 ; $p = 0.005$), suppressing emotions (1.0 decrease, 95% CI -1.97 to -0.041 ; $p = 0.041$), depression (2.15 decrease, 95% CI -3.93 to -0.36 ; $p = 0.018$), and stress (2.3 decrease, 95% CI -3.9 to -0.63 ; $p = 0.007$), and were associated with higher levels of social support coping (1.3 increase 95% CI 0.438 to 2.26 ; $p = 0.004$) and attitudes towards school (3.1 increase, 95% CI 0.65 to 5.54 ; $p = 0.015$). Compared to the low-implementation group, the high level Quality of Delivery group also demonstrated improved social support coping (1.28 increase, 95% CI 0.21 to 2.35 ; $p = 0.019$) and attitudes towards school (4.32 increase, 95% CI 1.55 to 7.08 ; $p = 0.004$). Quality of Delivery levels were also related to decreased levels of avoidance at 12-month follow-up for high-implementation schools (1.93 decrease, 95% CI -3.32 to -0.529 ; $p = 0.009$).

3.4.4. Participant Responsiveness

For Participant Responsiveness, there were eight schools in the high-implementation group and eight in the low-implementation group. Higher levels of Participant Responsiveness were associated with four of the six outcomes when compared to the control group. Schools with higher levels of Participant Responsiveness demonstrated decreases in avoidance (1.51 decrease, 95% CI -2.57 to -0.450 ; $p = 0.007$), suppressing emotions (1.03 decrease, 95% CI -1.97 to -0.091 ; $p = 0.033$) and stress (1.94 decrease, 95% CI -3.60 to -0.279 ; $p = 0.022$) as well as increased social support coping (1.17 increase, 95% CI 0.261 to 2.08 ; $p = 0.012$). Participant Responsiveness levels were also related to decreased levels of avoidance at 12-month follow-up for high-implementation schools (1.97 decrease, 95% CI -3.73 to -0.205 ; $p = 0.030$).

4. Discussion

The core aim of this study was to determine whether the level of implementation quality based on the Total Implementation Quality score of schools had a significant impact on program outcomes for students at post-intervention and/or 12-month follow-up. In the original MindOut c-RCT study, intervention students were found to have demonstrated significant improvements in a number of social

emotional skills and mental health outcomes between pre- and post-intervention [34]. However, this outcome study did not take into account the varying levels of implementation quality of intervention schools, which is essential for understanding the program's effectiveness [9]. Taking implementation quality into consideration, and assigning intervention schools to two separate groups (high- and low-implementation) dependent on their Total Implementation Quality score, the findings show that all outcomes that were found to be significant in the original study (social support coping, avoidance coping, suppressing emotions, depression, and stress) were only significant for those schools in the high-implementation group at post-intervention. Therefore, while the MindOut program was effective in producing positive outcomes for participants, this was only the case in schools that delivered the program to a high standard. Moreover, while the original study did not detect any significance between the control and intervention groups for Attitudes towards School, this study found that the high-implementation group scored significantly higher than both the low-implementation and control group for this outcome. Thus, after considering implementation, we can conclude that when MindOut is implemented as intended, the program can be successful in producing positive outcomes for participants. However, when the MindOut program is not implemented with high quality, the intended effects of the program are lost. These findings are in line with other studies on program implementation [9,10].

In order to understand the true effectiveness of a program, the quality of implementation needs to be considered [20,21,52,53]. If a majority of schools had implemented MindOut with poor quality, resulting in few or no positive outcomes, and the implementation quality had not been monitored, it would have been concluded that the program was ineffective, when in fact the lack of positive outcomes would likely be a result of poor implementation. By monitoring implementation, the risk of misinterpreting results like this is reduced and a better understanding of the conditions under which a program succeeds and/or fail can also be gleaned so that efforts can be made to maximize the quality of implementation and outcomes in the future [9,15,16].

Not only do the findings from this study demonstrate the importance of measuring implementation; they also highlight the importance of supporting the high-quality implementation of programs. Though a program may be theoretically sound, this does not ensure positive outcomes if the program is not implemented to a high standard [9,53]. Spending money, time, energy, and resources on programs that are not being implemented to a high standard is wasteful and disadvantageous for students, teachers and the education system [9]. Therefore, it is important that stakeholders commit to carrying out and supporting high-quality implementation of programs to ensure that these investments are worthwhile [5,9].

A further finding from this study was that only one of the outcomes measured (e.g., avoidance coping) was sustained at 12-month follow-up for the high-implementation group. While the MindOut program had an immediate impact on students' social and emotional skills and mental health outcomes, the program was not able to produce long-term outcomes. Possible reasons for this drop-off effect will now be considered within the context of our study. Firstly, it is possible that the outcomes were not sustained at 12-month follow-up due to the timing of follow-up data collection, which took place during the spring semester of the year following implementation. Many students participating in the MindOut study would have been sitting their final-year 'Leaving Certificate' exams a few months after the time of the follow-up data collection. The pressures of education and the Leaving Certificate exams in Ireland are known to put added stress on adolescents and cause burnout [54,55]. Given that the majority of high-implementation school students (75%), in comparison to low-implementation schools (37%) and control schools (36%), would have been in the Leaving Certificate year at the time of the 12-month follow-up, it is possible that these students' reported outcomes could have been negatively affected by this pressure. Secondly, given that MindOut is primarily a curriculum-based program, it is possible that its lack of integration at a whole-school level could have impacted its ability to sustain longer-term outcomes. The literature on the most effective strategies for school-based mental health promotion suggests that embedding SEL strategies into the daily practices of schools,

across years and at a whole-school level, is likely to produce the best and most sustained outcomes for participants [2,13,32,56–58]. In order to enhance the probability of social and emotional skills being sustained in the long-term, they need to be intentionally taught, practiced, and reinforced on an ongoing basis [32,59–62]. By integrating strategies at a whole-school level (e.g., (i) curriculum; (ii) ethos and environment; and (iii) family and community) more opportunities can be created for students to learn and acquire these skills, increasing their likelihood of developing and sustaining positive outcomes.

An additional aspect of this study was to investigate whether or not individual dimensions of implementation quality influenced outcomes differently. Findings demonstrated that of the four dimensions assessed, Quality of Delivery had a significant impact on all of the six outcomes tested. Participant Responsiveness was the second most influential dimension, significantly impacting four out of six of the outcomes. Both Adherence and Dosage levels had a significant impact on two of the six dimensions at post-intervention. These findings show that, while all four dimensions studied play some role in the achievement of positive outcomes for participants, Quality of Delivery followed by Participant Responsiveness were the most influential dimensions. Given that a majority of previous studies assessing the impact of implementation quality on outcomes have used Adherence and/or Dosage as the primary implementation reference measurements, this finding is quite interesting [10,27,28]. Essentially, this finding reinforces previous studies that have examined implementation quality across multiple dimensions and have found that Quality of Delivery and Participant Responsiveness are just as important as Dosage and Adherence [14,22,26,29]. This indicates that, while Dosage and Adherence are essential parts of implementation quality and need to be upheld, the other dimensions should be given just as much attention. If this study had not assessed implementation quality using a composite score of all four dimensions, and instead used measures of Dosage or Adherence only, the findings would have told a different story. Likewise, if teachers deliver an entire program but fail in terms of Quality of Delivery (e.g., not prepared, engaging, enthusiastic, etc.), then it is likely that positive outcomes will not be achieved for students.

Given that Quality of Delivery and Participant Responsiveness have a strong influence on program outcomes, a greater focus should be placed on these aspects of implementation by strengthening the environment in which SEL programs are taught. The school climate has been identified as an important factor in the successful implementation of programs [63,64]. For example, positive student-teacher relationships have been shown to enhance their motivation, involvement, and participation in class [65–67], increasing students' exposure to the program and the positive outcomes it is associated with. In this study, high-implementation schools demonstrated more positive attitudes towards school compared to both the low-implementation and control groups. It is possible that high-implementation students were exposed to a better school climate, which led to the development of stronger outcomes. Therefore, in introducing SEL programs into schools, teacher training and school implementation support should not only focus on the program itself, but also on the strategies needed for improving the school climate.

4.1. Implications for Research and Practice

The findings from this study can be used to inform the fields of research, practice, and policy. In terms of research, the study highlights the need for implementation measurement to be a key component of evaluation studies alongside the measurement of outcomes. It is essential that researchers take into consideration not only what is implemented but how it is implemented in order to fully understand what leads to a program's effectiveness. It is also recommended that, when assessing implementation quality, researchers include measures of multiple dimensions to better understand their individual role in relation to outcomes and to get a more accurate and representative assessment of overall levels of implementation. In line with the recommendations of Dane and Schneider [15] and others [68], when measuring the implementation quality, multiple methods and multiple informants should be used and, where feasible, observational data should be included [26,69].

The study also indicates the need for researchers to engage in evaluation studies that can assess long-term program outcomes in addition to immediate outcomes. A majority of SEL program evaluations do not include long-term follow-up data and, therefore, it is difficult to determine whether the MindOut program is comparable to other SEL programs in terms of the long-term sustainability of outcomes.

In terms of practice and policy, these findings signify the importance of implementing programs to a high standard and ensuring that suitable strategies, resources, and policies are in place to support quality implementation. Failing to carry out and support high-quality implementation will likely diminish outcomes for participants, resulting in wasted time, money, and resources for all involved [5]. The study also suggests that curriculum-based programs may not be sufficient when determining how to achieve the best and most sustainable outcomes. Practitioners and key stakeholders are encouraged to consider embedding SEL practices into a whole-school approach, with curriculum-based programs being a key feature of this strategy. Embedding SEL strategies into the ethos and environment of the school, as well as linking to students' lives outside of school (e.g., family and community), provides extended opportunities for students to practice and develop these skills, which will in turn create better outcomes that are longer-lasting. Given that Quality of Delivery and Participant Responsiveness were the most influential dimensions on outcomes, teacher training and support should focus on strategies for strengthening these aspects.

4.2. Strengths and Limitations

The current study has several notable strengths that contribute to the value of the findings. This study employed a rigorous design, incorporating both outcome and process data for students in disadvantaged schools and carrying out a 3×3 (time \times group) c-RCT. This study also included data on participants at 12 months post-intervention. By collecting long-term data, this study was able to determine the sustainability of outcomes for participants, which many other studies fail to do. A further strength of this study was the comprehensive measurement of implementation quality, which included multiple dimensions. A number of previous studies that have assessed implementation quality have limited their assessment to one or two dimensions. This study employed measures for four dimensions of implementation, allowing for a more inclusive and accurate interpretation of implementation quality. While there are several strengths in the research design of this study, it also has several limitations, which should be considered. The implementation indicators used in this study did not have established psychometric properties, but instead were based on implementation data that were collected from multiple sources (teachers and students). Furthermore, it was not possible to assess all five aspects of implementation quality as there were no suitable indicators for program differentiation. If given the chance to repeat this study, it would be preferable if measures of implementation were selected based on good psychometric properties and across all five dimensions of implementation quality [15]. Another limitation to this study is that all the data (outcome and process) were collected through self-reported measures, which poses a risk of participant response bias. It is recommended that implementation is captured through observational data over multiple occasions to increase reliability and reduce issues with response bias [69]. Although observational data were collected from schools in order to assess implementation quality, due to lack of time and resources, it was only possible to collect these data from a subsample of the schools ($n = 6$). Therefore, while these data could not be used within the main evaluation of implementation quality, they were used to validate the self-reported and teacher-reported data across the dimensions. Additional details on this process can be found in a previous study [35].

A final limitation of this study was the measure of academic outcomes, which was limited to the Attitudes towards School Scale. As reported under *Measures* in this paper, efforts were made to assess students' grades through self-reported measures; however, due to concerns regarding their validity, and the lack of access to standardized testing scores within Irish schools, no appropriate measures of grades were available.

5. Conclusions

The current study contributes to the growing literature on the relationship between implementation quality and outcomes for school-based SEL programs. While well-developed, evidence-based programs are vital to the success of SEL initiatives, without the support of high-quality implementation it is unlikely that these programs will produce the promising outcomes expected [9–11]. The findings from this study support previous research demonstrating that positive program effects for participants are achieved only when there is high-quality implementation. Additionally, the study findings highlight the importance of measuring implementation quality across multiple dimensions of implementation and suggest that the dimensions of Quality of Delivery and Participant Responsiveness are equally important, if not more important, for achieving outcomes in school-based SEL programs. These findings add to the growing body of implementation research as they demonstrate the importance of the relationship between implementation quality and program outcomes and how this can be measured, while also contributing to the evidence base and an improved understanding of this relationship. These findings also have implications for future program delivery, highlighting the importance of ensuring strategies, resources, and policies are in place that support high-quality implementation in order for positive outcomes to be achieved.

Author Contributions: Conceptualization, K.D. and M.M.B.; Formal analysis, K.D.; Methodology, K.D. and M.M.B.; Project administration, K.D. and M.M.B.; Supervision M.M.B.; Writing—original draft, K.D.; Writing—review and editing, K.D. and M.M.B. All authors have read and agreed to the published version of the manuscript.

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References

1. Elias, M.J.; Zins, J.E.; Weissberg, R.P.; Frey, K.S.; Greenberg, M.T.; Haynes, N.M.; Kessler, R.; Schwab-Stone, M.E.; Shriver, T.P. *Promoting Social and Emotional Learning: Guidelines for Educators*; ASCD: Alexandria, VA, USA, 1997.
2. Jones, S.M.; Bouffard, S.M. Social and emotional learning in schools: From programs to strategies and commentaries. *Soc. Policy Rep.* **2012**, *26*, 1–33. [CrossRef]
3. Jones, S.M.; Zaslou, M.; Darling-Churchill, K.E.; Halle, T.G. Assessing early childhood social and emotional development: Key conceptual and measurement issues. *J. Appl. Dev. Psychol.* **2016**, *45*, 42–48. [CrossRef]
4. CASEL. *Safe and Sound: An Educational Leader's Guide to Evidence-Based Social and Emotional Learning Programs*; Collaborative for Academic, Social, and Emotional Learning: Chicago, IL, USA, 2005.
5. Durlak, J.A.; Weissberg, R.P.; Dymnicki, A.B.; Taylor, R.D.; Schellinger, K.B. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Dev.* **2011**, *82*, 405–432. [CrossRef] [PubMed]
6. Barry Margaret, M.; Clarke Aleisha, M.; Dowling, K. Promoting social and emotional well-being in schools. *Health Educ.* **2017**, *117*, 434–451. [CrossRef]
7. Wigelsworth, M.; Lendrum, A.; Oldfield, J.; Scott, A.; ten Bokkel, L.; Tate, K.; Emery, C. The impact of trial stage, developer involvement and international transferability on universal social and emotional learning programme outcomes: A meta-analysis. *Camb. J. Educ.* **2016**, *46*, 347–376. [CrossRef]
8. Taylor, R.D.; Oberle, E.; Durlak, J.A.; Weissberg, R.P. Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Dev.* **2017**, *88*, 1156–1171. [CrossRef]
9. Durlak, J.A. Programme implementation in social and emotional learning: Basic issues and research findings. *Camb. J. Educ.* **2016**, *46*, 333–345. [CrossRef]

10. Durlak, J.A.; DuPre, E.P. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am. J. Community Psychol.* **2008**, *41*, 327–350. [CrossRef]
11. Greenberg, M.T. School-based prevention: Current status and future challenges. *Eff. Educ.* **2010**, *2*, 27–52. [CrossRef]
12. Spoth, R.; Trudeau, L.; Shin, C.; Ralston, E.; Redmond, C.; Greenberg, M.; Feinberg, M. Longitudinal effects of universal preventive intervention on prescription drug misuse: Three randomized controlled trials with late adolescents and young adults. *Am. J. Public Health* **2013**, *103*, 665–672. [CrossRef]
13. Wilson, S.J.; Lipsey, M.W.; Derzon, J.H. The effects of school-based intervention programs on aggressive behavior: A meta-analysis. *J. Consult. Clin. Psychol.* **2003**, *71*, 136–149. [CrossRef] [PubMed]
14. Rojas-Andrade, R.; Bahamondes, L.L. Is implementation fidelity important? A systematic review on school-based mental health programs. *Contemp. Sch. Psychol.* **2019**, *23*, 339–350. [CrossRef]
15. Dane, A.V.; Schneider, B.H. Program integrity in primary and early secondary prevention: Are implementation effects out of control? *Clin. Psychol. Rev.* **1998**, *18*, 23–45. [CrossRef]
16. Domitrovich, C.E.; Greenberg, M.T. The study of implementation: Current findings from effective programs that prevent mental disorders in school-aged children. *J. Educ. Psychol. Consult.* **2000**, *11*, 193–221. [CrossRef]
17. Domitrovich, C.E.; Bradshaw, C.P.; Poduska, J.M.; Hoagwood, K.; Buckley, J.A.; Olin, S.; Romanelli, L.H.; Leaf, P.J.; Greenberg, M.T.; Jalongo, N.S. Maximizing the implementation quality of evidence-based preventive interventions in schools: A conceptual framework. *Adv. Sch. Ment. Health Promot.* **2008**, *1*, 6–28. [CrossRef]
18. Lendrum, A.; Humphrey, N. The importance of studying the implementation of interventions in school settings. *Oxf. Rev. Educ.* **2012**, *38*, 635–652. [CrossRef]
19. Berkel, C.; Mauricio, A.M.; Schoenfelder, E.; Sandler, I.N. Putting the pieces together: An integrated model of program implementation. *Prev. Sci.* **2011**, *12*, 23–33. [CrossRef]
20. Kelly, B.P. *Handbook of Implementation Science for Psychology in Education*; Cambridge Handbooks in Psychology; Cambridge University Press: Cambridge, UK, 2012.
21. Fixsen, D.L.; Naoom, S.F.; Blase, K.A.; Friedman, R.M. *Implementation Research: A Synthesis of the Literature*; University of South Florida, Louis de la Parte Florida Mental Health Institute, The National Implementation Research Network: Tampa, FL, USA, 2005.
22. Pettigrew, J.; Miller-Day, M.; Shin, Y.; Hecht, M.L.; Krieger, J.L.; Graham, J.W. Describing teacher–student interactions: A qualitative assessment of teacher implementation of the 7th grade keepin’ it real substance use intervention. *Am. J. Community Psychol.* **2013**, *51*, 43–56. [CrossRef]
23. Dusenbury, L.; Brannigan, R.; Hansen, W.B.; Walsh, J.; Falco, M. Quality of implementation: Developing measures crucial to understanding the diffusion of preventive interventions. *Health Educ. Res.* **2005**, *20*, 308–313. [CrossRef]
24. Carroll, C.; Patterson, M.; Wood, S.; Booth, A.; Rick, J.; Balain, S. A conceptual framework for implementation fidelity. *Implement. Sci.* **2007**, *2*, 40. [CrossRef]
25. Elliott, D.S.; Mihalic, S. Issues in disseminating and replicating effective prevention programs. *Prev. Sci.* **2004**, *5*, 47–53. [CrossRef]
26. Humphrey, N.; Barlow, A.; Lendrum, A. Quality matters: Implementation moderates student outcomes in the PATHS curriculum. *Prev. Sci.* **2018**, *19*, 197–208. [CrossRef] [PubMed]
27. Mihalic, S.F.; Fagan, A.A.; Argamaso, S. Implementing the LifeSkills Training drug prevention program: Factors related to implementation fidelity. *Implement. Sci.* **2008**, *3*, 5. [CrossRef] [PubMed]
28. Breitenstein, S.M.; Gross, D.; Garvey, C.; Hill, C.; Fogg, L.; Resnick, B. Implementation fidelity in community-based interventions. *Res. Nurs. Health* **2010**, *33*, 164–173. [CrossRef]
29. Low, S.; Van Ryzin, M.J.; Brown, E.C.; Smith, B.H.; Haggerty, K.P. Engagement matters: Lessons from assessing classroom implementation of steps to respect: A bullying prevention program over a one-year period. *Prev. Sci.* **2014**, *15*, 165–176. [CrossRef]
30. Dix, K.L.; Slee, P.T.; Lawson, M.J.; Keesee, J.P. Implementation quality of whole-school mental health promotion and students’ academic performance. *Child Adolesc. Ment. Health* **2012**, *17*, 45–51. [CrossRef]
31. CASEL. *CASEL Guide: Effective Social and Emotional Learning Programs—Middle and Highschool Edition*; Collaborative for Academic, Social, and Emotional Learning: Chicago, IL, USA, 2015.
32. Barry, M.M.; Clarke, A.M.; Petersen, I.; Jenkins, R. *Implementing Mental Health Promotion*; Springer International Publishing, Springer Nature: Basel, Switzerland, 2019.

33. Dowling, K.; Clarke, A.M.; Barry, M.M. *The Re-Development of the Mindout Programme: Promoting Social and Emotional Wellbeing in Post-Primary Schools*; WHO Collaborating Centre for Health Promotion Research, National University of Ireland Galway: Galway, Ireland, 2016.
34. Dowling, K.; Simpkin, A.J.; Barry, M.M. A cluster randomized-controlled trial of the mindout social and emotional learning program for disadvantaged post-primary school students. *J. Youth Adolesc.* **2019**, *48*, 1245–1263. [[CrossRef](#)]
35. Dowling, K.; Barry, M.M. Evaluating the implementation quality of a social and emotional learning program: A mixed methods approach. *Int. J. Environ. Res. Public Health* **2020**, *17*, 3249. [[CrossRef](#)]
36. Rosenberg, M. *Society and the Adolescent Self-Image*; Princeton University Press: Princeton, NJ, USA, 1965.
37. Fernandez-Berrocal, P.; Extremera, N.; Ramos, N. Validity and reliability of the Spanish modified version of the Trait Meta-Mood Scale. *Psychol. Rep.* **2004**, *94*, 751–755. [[CrossRef](#)]
38. Salovey, P.; Mayer, J.D.; Goldman, S.L.; Turvey, C.; Palfai, T.P. Emotional attention, clarity, and repair: Exploring emotional intelligence using the trait meta-mood scale. In *Emotion, Disclosure, and Health*; Pennebaker, J., Ed.; American Psychological Association: Washington, DC, USA, 1995; pp. 125–154.
39. Ellis, L.A. Peers Helping Peers: The Effectiveness of a Peer Support Program in Enhancing Self-Concept and Other Desirable Outcomes. Ph.D. Thesis, University of Western Sydney, Sydney, Australia, 2004.
40. Amirkhan, J.H. A factor analytically derived measure of coping: The Coping Strategy Indicator. *J. Personal. Soc. Psychol.* **1990**, *59*, 1066–1074. [[CrossRef](#)]
41. Muris, P. A brief questionnaire for measuring self-efficacy in youths. *J. Psychopathol. Behav. Assess.* **2001**, *23*, 145–149. [[CrossRef](#)]
42. Gross, J.J.; John, O.P. Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *J. Personal. Soc. Psychol.* **2003**, *85*, 348–362. [[CrossRef](#)] [[PubMed](#)]
43. Buhrmester, D. Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Dev.* **1990**, *61*, 1101–1111. [[CrossRef](#)] [[PubMed](#)]
44. Cater, M.; Arnold, M.; Bouillion-Diaz, L.; Heck, K.; Mead, J.; Spears, B.; Mulroy, M. *Decision-Making Scale. Youth Engagement, Attitudes, and Knowledge (YEAK) Survey*; Policy Studies Associates: Washington, DC, USA, 2010.
45. Mince-moyer, C.; Perkins, D.F. Assessing decision making skills of youth. *Forum Fam. Consum. Issues* **2003**, *8*, 1–9.
46. Lovibond, S.H.; Lovibond, P.F. *Manual for the Depression Anxiety Stress Scales*, 2nd ed.; Psychology Foundation: Sydney, Australia, 1995.
47. Tennant, R.; Hiller, L.; Fishwick, R.; Platt, S.; Joseph, S.; Weich, S.; Stewart-Brown, S. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): Development and UK validation. *Health Qual. Life Outcomes* **2007**, *5*, 63. [[CrossRef](#)]
48. Anderson, C.S. *Attitudes toward School Scale*; University of Minnesota: Minneapolis, MN, USA, 1999.
49. Bast, L.S.; Due, P.; Bendtsen, P.; Ringgaard, L.; Wohllebe, L.; Damsgaard, M.T.; Grønbaek, M.; Ersboll, A.K.; Andersen, A. High impact of implementation on school-based smoking prevention: The X: IT study—A cluster-randomized smoking prevention trial. *Implement. Sci.* **2016**, *11*, 125. [[CrossRef](#)]
50. van Nassau, F.; Singh, A.S.; Hoekstra, T.; van Mechelen, W.; Brug, J.; Chinapaw, M.J.M. Implemented or not implemented? Process evaluation of the school-based obesity prevention program DOfT and associations with program effectiveness. *Health Educ. Res.* **2016**, *31*, 220–233. [[CrossRef](#)]
51. Landau, S.; Everitt, B.S. *A Handbook of Statistical Analyses Using SPSS*; Chapman & Hall/CRC Press: Boca Raton, FL, USA, 2004.
52. Meyers, D.C.; Durlak, J.A.; Wandersman, A. The quality implementation framework: A synthesis of critical steps in the implementation process. *Am. J. Community Psychol.* **2012**, *50*, 462–480. [[CrossRef](#)]
53. Moir, T. Why is implementation science important for intervention design and evaluation within educational settings? *Front. Educ.* **2018**, *3*, 61. [[CrossRef](#)]
54. Dooley, B.; O'Connort, C.; Fitzgerald, A.; O'Reilly, A. *My World Survey 2: The National Study of Youth Mental Health in Ireland*; UCD School of Psychology and Jigsaw National Centre for Youth Mental Health: Dublin, Ireland, 2019.
55. Banks, J.; McCoy, S.; Smyth, E. *Senior Cycle Review: Analysis of Discussions in Schools on the Purpose of Senior Cycle Education in Ireland*; Economic and Social Research Institute and Department of Sociology, Trinity College: Dublin, Ireland, 2018.

56. Weare, K.; Nind, M. Mental health promotion and problem prevention in schools: What does the evidence say? *Health Promot. Int.* **2011**, *26* (Suppl. 1), i29–i69. [CrossRef]
57. Tofi, M.M.; Farrington, D.P. Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *J. Exp. Criminol.* **2011**, *7*, 27–56. [CrossRef]
58. Adi, Y.; Killoran, A.; Janmohamed, K.; Stewart-Brown, S. Systematic review of the effectiveness of interventions to promote mental wellbeing in children in primary education: Report 1: Universal Approaches Non-violence related outcomes. In *Database of Abstracts of Reviews of Effects (DARE): Quality-Assessed Reviews*; Centre for Reviews and Dissemination: York, UK, 2007.
59. Elias, M. *Sustainability of Social-Emotional Learning and Related Programs: Lessons from a Field Study*; Rutgers, The State University of New Jersey: New Brunswick, NJ, USA, 2010.
60. Greenberg, M.T.; Domitrovich, C.E.; Weissberg, R.P.; Durlak, J.A. Social and emotional learning as a public health approach to education. In *Social Emotional Learning*; Princeton-Brookings, Princeton University: Princeton, NJ, USA, 2017.
61. Zins, J.E.; Elias, M.J. Social and emotional learning: Promoting the development of all students. *J. Educ. Psychol. Consult.* **2007**, *17*, 233–255. [CrossRef]
62. Kendziora, K.; Yoder, N. *When Districts Support and Integrate Social and Emotional Learning (SEL): Findings from an Ongoing Evaluation of Districtwide Implementation of SEL*; Education Policy Center at American Institutes for Research: Washington, DC, USA, 2016.
63. Gregory, A.; Henry, D.B.; Schoeny, M.E. School climate and implementation of a preventive intervention. *Am. J. Community Psychol.* **2007**, *40*, 250–260. [CrossRef] [PubMed]
64. Ringeisen, H.; Henderson, K.; Hoagwood, K. Context matters: Schools and the “research to practice gap” in children’s mental health. *Sch. Psychol. Rev.* **2003**, *32*, 153–168.
65. Baker, J.A.; Grant, S.; Morlock, L. The teacher-student relationship as a developmental context for children with internalizing or externalizing behavior problems. *Sch. Psychol. Q.* **2008**, *23*, 3–15. [CrossRef]
66. Wanders, E.H.K.; Dijkstra, A.B.; Maslowski, R.; van der Veen, I. The effect of teacher-student and student-student relationships on the societal involvement of students. *Res. Pap. Educ.* **2019**, *35*, 1–21. [CrossRef]
67. Wentzel, K.R. Teacher-student relationships. In *Handbook of Motivation at School*; Taylor & Francis Group: Oxfordshire, UK, 2016; pp. 211–230.
68. Keller-Margulis, M.A. Fidelity of implementation framework: A critical need for response to intervention models. *Psychol. Sch.* **2012**, *49*, 342–352. [CrossRef]
69. Humphrey, N.; Lendrum, A.; Ashworth, E.; Fearson, K.; Buck, R.; Kerr, K. *Implementation and Process Evaluation (IPE) for Interventions in Education Settings: A Synthesis of the Literature*; Education Endowment Foundation: London, UK, 2016.



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APPENDIX B: RECRUITMENT

**Appendix B1:
Sample Calculation & Stratified
Sampling Calculation**

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Sample Calculation

Cluster Size: 20

DATA:

Difference between means

Significance level = 5% Power = 80% Ratio A: B = 1

SD in 7.9 SD in 10 Difference = 3

Cohen's d = 0.15 ICC = 0.02

Cluster size = 20 Design Effect (DEFF) = 2.0

RESULTS:

REQUIRED SAMPLE: (allowing for loss of 10% of subjects)

Clusters required = 30 (15 clusters in each group) (assuming similar cluster sizes and similar ICCs)

Subjects required = 600 (ratio 1.4 to 1 in comparison with 434 if cluster samples are not used).

* Based on Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)³

Stratified Sampling: MindOut Evaluation

Total population:

N= 180 schools

Sample size:

N=34

Stratified Random Sampling:

34/180 = 0.189

Boys Urban N=12	Girls Urban N=17	Mixed Urban N=98	Mixed Rural N=53
12 x 0.189 = 2.27 =2 boys Urban	17 x 0.189 = 3.21 =4 girls Urban	98 x 0.189 = 18.52 =18 mixed Urban	53 x 0.189 = 10.02 =10 mixed Rural

³ Kuyken, W., Weare, K., Ukoumunne, O., Vicary, R., Motton, N., Burnett, R., Cullen, C., Hennelly, S. & Huppert, F. (2013). Effectiveness of the Mindfulness in Schools Programme: non-randomised controlled feasibility study. *The British Journal of Psychiatry*, 203: 126-13

Appendix B2: Randomisation of Schools

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Report on:	Stratified Random Allocation of DEIS Schools
For:	Katie Dowling
Date of request:	26 th Sept 2016
Date requested by:	ASAP
Date submitted:	26 th Sept 2016
Authored by:	Leslie Daly
Our Ref:	To be allocated

Sampling details

Group	Population size	Sample size	Sample/Population %
Urban Girls	17	4	23.5%
Urban Boys	12	2	16.7%
Rural Mixed	53	10	18.9%
Urban Mixed	98	18*	18.4%
All Schools	180	34	18.9%

* Reduced by 2 schools

Note that you will need to calculate a refusal rate or it's opposite, a response rate.

Response Rate = No Schools Participating/Total Schools Contacted

Urban Girls	Urban Boys	Rural Mixed	Urban Mixed
0001: Intervention	0001: Intervention	0001: Intervention	0001: Intervention
0002: Control	0002: Control	0002: Intervention	0002: Control
0003: Intervention		0003: Control	0003: Control
0004: Control		0004: Intervention	0004: Control
		0005: Intervention	0005: Control
		0006: Control	0006: Intervention
		0007: Control	0007: Intervention
		0008: Control	0008: Intervention
		0009: Control	0009: Control
		0010: Intervention	0010: Control
			0011: Intervention
			0012: Intervention
			0013: Intervention
			0014: Control
			0015: Intervention
			0016: Control
			0017: Intervention
			0018: Control

Appendix B3: Information Letter for Principals

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Dear Principal,

On behalf of the Health Promotion Research Centre at NUI Galway and the Health Service Executive (HSE) Health Promotion and Improvement, we would like to invite your school to partake in a study evaluating the effectiveness of a national mental wellbeing programme for post-primary school students.

The MindOut Programme was originally developed in 2004 to support the social and emotional wellbeing of young people aged 15-18 years in senior cycle in post-primary schools. The programme was further adapted to suit the needs of those in the youth setting and has been rigorously evaluated in both of these contexts. Findings from these evaluations revealed that the programme had many positive impacts on the young people who participated in it including: increased confidence and positive feelings about oneself, improved coping strategies and increased awareness of support services. These evaluations also concluded that this programme was well received by teachers and tutors, both of whom found the programme to be age appropriate and user friendly (Byrne, Barry and Sheridan, 2004; Clarke et al., 2008).

While the original MindOut programme has been successful in providing positive outcomes in the past, it became clear that programme materials were outdated and needed to be adapted in order to reflect more accurately the current issues in the lives of young people today. With this in mind, a research and development team from the Health Promotion Research Centre (HPRC) at NUI Galway in collaboration with representatives from the HSE revised and updated the programme to take into account current issues in the lives of young people and recent policy, practice and research developments. Given that this programme has just been revised, it is important to determine the effectiveness of the revised programme before implementing it in schools across the country.

We are, therefore, contacting you to ask if you would be interested in allowing your school to participate in this study. The purpose of this evaluation is to determine the impact this revised 12 session programme has on participants' social and emotional skills, academic outcomes (including student academic engagement, grades and attendance) and their mental health and wellbeing and to explore staff and students' attitudes and feedback of the programme.

This study will employ a randomised controlled study design, which will consist of two specific groups: the control group who will not be receiving the programme and the intervention group who will receive the twelve-week programme. The study will be conducted with 600 young people in 30 post-primary schools (15 intervention; 15 control) cross-nationally in order to determine if the revised programme has increased positive outcomes for young people who receive the programme in comparison to those who do not.

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Participation in this study will mean that you are allowing your school to be randomly selected to be allocated to either the control or intervention group. If your school is selected for the control group the students will not be receiving the MindOut programme but will be invited to participate in a questionnaire at the beginning and end of the study. These questionnaires will be used to assess participants' social and emotional skills, school engagement and overall wellbeing. This research will then be used to compare findings from the intervention group.

If your school is selected for the intervention group, they will be receiving the MindOut programme over the course of twelve weeks, which will be delivered by their teacher. Students who receive the programme will be invited to complete a questionnaire at the beginning and the end of the 12- week programme. These questionnaires will be used to assess participants' social and emotional skills, school engagement and overall wellbeing. The findings from these questionnaires will be used to compare to the data collected from the control group. Participants in the control group will also be invited to take part in an activity based workshop which will involve group discussion, brainstorming and group work activities. The purpose of this workshop is to gain feedback from participants on their experience of the programme.

It is anticipated that the outcomes of this study will have many positive impacts. Schools who receive the MindOut programme will be exposed to lessons and activities which aim to enhance their ability to deal with challenges and provide them with protective factors for sustaining good mental health. Those schools selected for the control group who are not receiving the programme will be offered the programme immediately following the end of the study.

We would be extremely appreciative if you would consider your school as a participating body in the evaluation of this cross-national programme. Training for teachers to deliver the programme will be provided by the HSE and teachers will be supported during the implementation of the programme by a local HSE Health Promotion Officer.

If you have any questions or queries re this evaluation of the MindOut programme, I would be more than happy to answer them. You can contact me either by email katherine.dowling@nuigalway.ie or by phone (+353) 091- 494165

Yours sincerely,

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Appendix B4:
Research Ethics Approval

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Re Ethics ref: 16-July-01 'Evaluating the Effectiveness of the MindOut Programme in Post-Primary Schools in Ireland'

I write to you regarding the above proposal which was submitted for Ethical review. Having reviewed your response to my letter, I am pleased to inform you that your proposal has been granted **APPROVAL**.

All NUI Galway Research Ethic Committee approval is given subject to the Principal Investigator submitting annual and final statements of compliance. The first statement is due on or before 25 August 2017. Please see section 7 of the REC's Standard Operating Procedures for further details which includes other instances where you are required to report to the REC. Statement of compliance forms are attached here.

If you require this letter of approval in hard copy, please email ethics@nuigalway.ie, quoting the reference number of your application.

Yours Sincerely
Allyn Fives
Chair, Research Ethics Committee

**Appendix B5:
Parent Information Sheet and
Consent Form**



Research Study: Evaluating the Effectiveness of the MindOut Programme in Post-Primary Schools in Ireland

Dear Parent/Guardian,

Part 1: Introduction

Your son/daughter has been invited to participate in a study evaluating the effectiveness of a mental wellbeing programme (MindOut) on post-primary school students across Ireland. This research is being conducted by researchers from the Health Promotion Research Centre (HPRC) at the National University of Ireland Galway and the Health Service Executive. Your consent is required for your son/daughter's participation in the study. Before you decide it is important that you understand why the research is being conducted and what it will involve. Please take some time to read the following information; contact details have been included if you have any concerns or questions regarding the study.

Part 2: Purpose of the study

The MindOut Programme is a school-based mental health promotion programme developed to improve the social and emotional wellbeing of senior level post-primary students. The programme was originally developed for schools in 2004 and has since been adapted for the youth settings and has been implemented and evaluated cross-nationally. As the programme is over ten years old, the programme has been updated based on current issues in the lives of young people and recent policy, practice and research developments. The purpose of this study is to determine if the revised MindOut programme has positive benefits in improving social and emotional, academic and mental wellbeing outcomes for participants.

Part 3: Invitation to take part in the study

Your consent is required in order for your son/daughter to take part in the study. A passive consent form has been included; please fill this in if you do **not** wish your son/daughter to take part. Participation in the study is voluntary and your son/daughter may withdraw their consent at any time. All information supplied to the researchers will remain confidential and anonymous; therefore, no student or school names will be used in the research.

Part 4: Taking part-what does it involve?

Your son/daughter's school will be randomly allocated into either a control group or intervention group.

If your son/daughter's school is in the control group, and you consent to your child's participation they will not be receiving the MindOut programme and will continue with their

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regular SPHE class curriculum. They will be invited to participate in filling out a questionnaire at the beginning and end of the study. These questionnaires will be used to assess participants' social and emotional skills, school engagement and overall wellbeing. This research will then be used to compare these findings with that from the intervention group.

If your son/daughter's school is selected for the intervention group, their teacher will be delivering the MindOut programme over the course of twelve weeks. If you consent to your child's participation they will be invited to complete a questionnaire at the beginning and the end of the 12-week programme. These questionnaires will be used to assess participants' social and emotional skills, school engagement and overall wellbeing. The findings from these questionnaires will be used to compare to the data collected from the control group. Participants in the control group will also be invited to take part in an activity based workshop which will involve group discussion, brainstorming and group work activities. The purpose of this workshop is to get a better understanding of participants' experiences of the programme.

Part 5: What happen if my son/daughter wishes to withdraw from the study?

Your son/daughter will be free to withdraw from the study at any time. The decision to take part is completely voluntary, but we hope that as many people as possible will agree to help with this research. If they choose to withdraw from the study their class teacher will be available to assign your son/daughter alternative school work, if required.

Part 6: What are the possible benefits in taking part?

It is anticipated that those schools in the intervention group who receive the MindOut programme will gain positive benefits from this study. The lessons and activities in the MindOut programme are designed to enhance young peoples' ability to deal with challenges and learn skills which help in protecting and sustaining good mental health. Therefore, those students who receive MindOut are likely to show improved social and emotional, academic and overall mental wellbeing outcomes. While schools in the control group will not receive the programme during the period of the study, they will be offered the programme immediately after the study is completed.

The findings from this study will be used to determine implementation of the programme cross-nationally and could inform the development and implementation of other mental wellbeing programmes in the future.

Part 7: What are the possible disadvantages in taking part?

While this is a positive mental wellbeing programme, sensitive topics may be brought up during sessions. In order to accommodate for this, all teachers who are delivering the programme will undergo a comprehensive training session which will provide them with strategies in providing support to their students. The programme manual will also include strategies and a list of resources to which the teacher can refer the students. Additionally, during the entire study process, schools will be supported by a local HSE, Health Promotion Officer who is there to provide support to teachers in the implementation of the programme and ensure that all students' wellbeing is looked after.

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Part 8: Will the information my son/daughter gives be kept confidential and anonymous?

All of the information your son/daughter provides will be kept completely confidential. When results are reported, no names will be linked to the findings.

Part 9: Who do I contact for further information?

If you have a question regarding the research process you can contact;

Katherine Dowling

Researcher
Health Promotion Research Centre
National University of Ireland, Galway

Galway

Email: katherine.dowling@nuigalway.ie
Phone: 091 494 165

Professor Margaret Barry

Principal Investigator
Discipline of Health Promotion,
School of Health Sciences.
National University of Ireland,

Email: margaret.barry@nuigalway.ie
Phone: 091 493 348



Parent/Guardian Passive Consent Form

Research Title:

Evaluating the Effectiveness of the MindOut Programme in Post-Primary Schools in Ireland

The MindOut Programme, which was developed in 2004, to promote and support social and emotional wellbeing for post-primary school students, has been revised to better reflect the needs of young people today. The purpose of this research is to evaluate the impact the MindOut programme has on young people's social and emotional, academic and overall mental wellbeing outcomes.

I understand that;

- Participation in the study is voluntary
- All information collected will remain anonymous and confidential
- No identifying information will be sought
- If you consent to your son/daughter participating in the study no action is required on your part.
- If you **do not consent** to your son/daughter participating in the study please sign the form below and return to your son/daughter's school by Wednesday 12th October 2016.

-

Only to be completed if you do NOT wish your son/daughter to participate in the study:

I do not consent to my son/daughter participating in the study.

Student name: _____

Parent/Guardian name: _____

Date: _____

Appendix B6:
Teacher Information Sheet and
Consent Form



Research Study: Evaluating the Effectiveness of the MindOut Programme in Post-Primary Schools in Ireland

Part 1: Introduction

You have been invited to participate in a study evaluating the effectiveness of a mental wellbeing programme (MindOut) on post-primary school students across Ireland. This research is being conducted by researchers from the Health Promotion Research Centre (HPRC) at the National University of Ireland Galway and the Health Service Executive. Your consent is required for your participation in the study. Before you decide it is important that you understand why the research is being conducted and what it will involve. Please take some time to read the following information; contact details have been included if you have any concerns or questions regarding the study.

Part 2: Purpose of the study

The MindOut Programme is a school-based mental health promotion programme created to improve the social and emotional wellbeing of senior level post-primary students. The programme was originally developed for schools in 2004 and has been delivered in schools and youth settings for over ten years. As the programme is over ten years old, the programme has been updated to better reflect the current issues in the lives of young people today. The purpose of this study is to determine if the MindOut programme is effective in improving social and emotional, academic and mental wellbeing outcomes for its young participants.

Part 3: Invitation to take part in the study

Your consent is required to take part in the study. Participation in the study is voluntary and you may withdraw your consent at any time. All information supplied to the researchers will remain confidential and anonymous, therefore the names of students, teachers or the school will not be used in the research.

Part 4: Taking part-what does it involve?

Your school will be randomly selected into either a control group or intervention group. If your school is in the control group, you will not be delivering the MindOut programme and will continue with their regular SPHE class curriculum. You will be invited to participate in filling out a questionnaire at the beginning and end of the study. These questionnaires will be used to look at your students' social and emotional skills, academic achievement and overall wellbeing. These findings will then be used to compare to the findings from the intervention group.

If your school is selected for the intervention group, you will be trained to deliver the MindOut programme to your class over the course of twelve weeks. You will be invited to complete a questionnaire at the beginning and the end of the 12-week programme. These questionnaires will be used to look at your students' social and emotional skills, academic achievement and overall wellbeing. The findings from these questionnaires will be used to compare to the

APPENDICES

findings from the control group. You will also be asked to take part in weekly feedback forms as well as an interview at the end of the programme which will both involve questions about your experience of delivering the programme and discussing implementation factors. Finally, for a select number of schools delivering the MindOut programme a researcher will be visiting the classroom to observe the programme in action and determine if the programme is being implemented as intended.

Part 5: What happens if I want to withdraw from the study?

You will be free to withdraw from the study at any time. The decision to take part is completely voluntary, but we hope that as many people as possible will agree to help with this research.

Part 6: What are the possible benefits in taking part?

It is expected that those schools in the intervention group who receive the MindOut programme will gain positive benefits from this study. The lessons and activities in the MindOut programme are designed to enhance young peoples' ability to deal with challenges and learn skills which help in protecting and sustaining good mental health. Therefore, those students who receive MindOut are likely to show improved social and emotional, academic and overall mental wellbeing outcomes. While schools in the control group will not receive the programme during the period of the study, they will be offered the programme immediately after the study is completed.

The findings from this study will be used to determine the effectiveness of the programme and will suggest how the programme should be carried out in schools across Ireland.

Part 7: What are the possible disadvantages in taking part?

While this is a positive mental wellbeing programme, sensitive topics may be brought up during sessions. It is possible that you may feel uncomfortable discussing these sensitive topics if they are brought up. To accommodate for this, all teachers who are delivering the programme will be trained on how to deal with these situations and will have supporting materials provided to them. Additional support will be provided to you by an allocated HSE Health Promotion Officer (HPO) and staff from the National Educational Psychological Service (NEPS).

Part 8: Will the information kept private and confidential?

All of the information you provide will be kept completely confidential. When results are reported, no names will be used.

Part 9: Who do I contact for further information?

If you have a question regarding the research process you can contact:

Katherine Dowling

Researcher
Health Promotion Research Centre
National University of Ireland, Galway
Email: katherine.dowling@nuigalway.ie
Phone: 091 494 165

Professor Margaret Barry

Principal Investigator
Discipline of Health Promotion,
National University of Ireland, Galway
Email: margaret.barry@nuigalway.ie
Phone: 091 493 348



School Number:
Participant Identification Number:
(For researcher use only)

Consent Form

Evaluating the Effectiveness of the MindOut Programme in Post-Primary Schools in Ireland

The MindOut Programme, was first developed in 2004, to promote and support the social and emotional wellbeing for post-primary school students. It has recently been reviewed and updated to better reflect the lives of young people today. This research aims to examine the impact the MindOut programme has on young individuals' life skills, academic outcomes and their overall mental wellbeing.

I confirm that;

1. I have read the information provided for the above study and have had the opportunity to ask questions.
2. I understand the information provided and have had enough time to consider it.
3. I am aware that the workshop will be recorded, via audio-tape, and that this audio recording will be maintained securely throughout the research and destroyed on its completion.
4. I understand that all of the information provided during the study will remain strictly confidential and anonymous.
5. I understand that my participation in the study is voluntary and that I am free to withdraw at any time.

Name of Participant:

Signature of Participant:

Date:

Name of Researcher:

Signature of Researcher:

Date:

Appendix B7
Student Information Sheet and
Consent Form



Research Study: Evaluating the Effectiveness of the MindOut Programme in Post-Primary Schools in Ireland

Part 1: Introduction

You have been invited to participate in a study evaluating the effectiveness of a mental wellbeing programme (MindOut) on post-primary school students across Ireland. This research is being conducted by researchers from the Health Promotion Research Centre (HPRC) at the National University of Ireland Galway and the Health Service Executive. Your consent is required for your participation in the study. Before you decide, it is important that you understand why the research is being conducted and what it will involve. Please take some time to read the following information; contact details have been included if you have any concerns or questions regarding the study.

Part 2: Purpose of the study

The MindOut Programme is a school-based mental health promotion programme created to improve the social and emotional wellbeing of senior level post-primary students. The programme was originally developed for schools in 2004 and has been delivered in schools and youth settings for over ten years. As the programme is over ten years old, the programme has been updated, based on input from young people, to better reflect the current issues in the lives of young people today. The purpose of this study is to see if the revised MindOut programme has positive benefits in improving social and emotional, academic and mental wellbeing outcomes for participants.

Part 3: Invitation to take part in the study

Your consent is required to take part in the study. Participation in the study is voluntary and you may withdraw their consent at any time. All information supplied to the researchers will remain confidential and anonymous, therefore, your name or the name of your school will not be used.

In order to take part in this study parental/guardian consent is also required. An information letter and consent form for your parent/guardian has also been provided which should be shared with them so that they are aware of the study taking place.

Part 4: Taking part-what does it involve?

Your school will be randomly selected into either a control group or intervention group.

If your school is in the control group, you will not be receiving the MindOut programme and will continue with their regular SPHE class curriculum. You will be invited to participate in filling out a questionnaire at the beginning and end of the study. These questionnaires will be used to look at students' social and emotional skills, academic achievement and overall wellbeing. These findings will then be used to compare to the findings from the intervention group.

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If your school is selected for the intervention group, your teacher will be delivering the MindOut programme to your class over the course of twelve weeks. You will be invited to complete a questionnaire at the beginning and the end of the 12-week programme. These questionnaires will be used to look at students' social and emotional skills, academic achievement and overall wellbeing. The findings from these questionnaires will be used to compare to the findings from the control group. You will also be invited to take part in an activity based workshop which will involve group discussions, brainstorming and group work activities. The purpose of this workshop is to get a better understanding of your experiences from the programme.

Part 5: What happens if I want to withdraw from the study?

You will be free to withdraw from the study at any time. The decision to take part is completely voluntary, but we hope that as many people as possible will agree to help with this research. If you choose to withdraw from the study your class teacher will be available to assign you other school work, if needed.

Part 6: What are the possible benefits in taking part?

It is expected that those schools in the intervention group who receive the MindOut programme will gain positive benefits from this study. The lessons and activities in the MindOut programme are designed to enhance young peoples' ability to deal with challenges and learn skills which help in protecting and sustaining good mental health. Therefore, those students who receive MindOut are likely to show improved social and emotional, academic and overall mental wellbeing outcomes. While schools in the control group will not receive the programme during the period of the study, they will be offered the programme immediately after the study is completed.

The findings from this study will be used to determine the effectiveness of the programme and will suggest how the programme should be carried out in schools across Ireland.

Part 7: What are the possible disadvantages in taking part?

While this is a positive mental wellbeing programme, it is possible that sensitive topics may be brought up during sessions. All teachers who are delivering the programme will be trained on how to deal with these situations. Additional support will be provided to the school and students if it is needed. Participants should know that they do not have to participate in any discussion if they do not want to or if they feel uncomfortable.

Part 8: Will the information kept private and confidential?

All of the information you provide will be kept completely private. When results are reported, no names will be used.

Part 9: Who do I contact for further information?

If you have a question regarding the research process you can contact;

Katherine Dowling

Health Promotion Research Centre
National University of Ireland, Galway

Email: katherine.dowling@nuigalway.ie

Phone: 091 494 165

Professor Margaret Barry

Discipline of Health Promotion,
National University of Ireland, Galway

Email: margaret.barry@nuigalway.ie

Phone: 091 493 348



School Number:
 Participant Identification Number:
 (For researcher use only)

Consent Form

Evaluating the Effectiveness of the MindOut Programme in Post-Primary Schools in Ireland

The MindOut Programme, was first developed in 2004, to promote and support the social and emotional wellbeing for post-primary school students. It has recently been reviewed and updated to better reflect the lives of young people today. This research aims to examine the impact the MindOut programme has on individuals’ life skills, academic outcomes and their overall mental wellbeing.

I confirm that;

1. I have read the information sheet provided for the above study and have had the opportunity to ask questions.
2. I understand the information provided and have had enough time to consider it.
3. I am aware that any workshops will be recorded, via audio-tape, and that these audio recordings will be kept securely throughout the study and destroyed when it is completed.
4. I understand that all of the information provided during the study will remain strictly confidential and anonymous.
5. I understand that my participation in the study is voluntary and that I am free to withdraw at any time.

Name of Participant:

Signature of Participant:

Date:

Name of Researcher:

Signature of Researcher:

Date:

APPENDIX C: MEASURES

Appendix C1:

Student Outcome Questionnaire



School ID Number:	
Student ID Number:	

Social and Emotional Wellbeing Questionnaire

Student Questionnaire

Strictly Confidential

You **DO NOT** need to write your name or name of school

This is a survey about young people's social and emotional wellbeing. We hope that you will help us find out more about young people's wellbeing by answering the questions in this survey.

Your answers will be seen by the research team and by no-one else. They will not be seen by your parents or teachers. After you have filled in the questionnaire, you can place it in the envelope provided and seal it.

Things you need to know:

- If you do not want to take part, just give the questionnaire back to the researcher.
- This is not a test and there are no right or wrong answers.
- You do not have to answer any of the questions you don't want to.

Please read each question carefully, take your time and try and answer each question as truthfully as you can. If you feel that there are any questions which you do not wish to answer, then that's OK. If you need help, just let the researcher know.

How to fill in your answers on the questionnaire:

For most questions you will be asked to either tick the box or circle the answer that best fits you.

Example #1

Do you have any pets? Yes No

Example #2

I like playing sports. Strongly Disagree Disagree Agree Strongly Agree

Example #3

What year were you born? 1999 2000 2001 2002

If it is difficult to choose just one answer, please think about what is **true most of the time**

1. ABOUT YOU

1. Are you a male or female?

Male Female

2. What year are you in?

Transition Year

5th Year

6th Year

3. What month were you born?

Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec

4. On what date of the month were you born? (e.g., 5th, 17th, 23rd...)

5. What year were you born?

1998 1999 2000 2001 2002 2003

6. What is your first language?

English Irish Other (please specify)

7. Do you speak any other languages at home?

Yes (please specify) _____

No

8. Were you born in Ireland?

Yes No
↓ ↓

(skip to question 9)

In which country were you born?

How long ago did you first come to live in Ireland?

- Within the last year
- 1-3 years ago
- 4-6 years ago
- 7-10 years ago
- 10 + years ago

9. Are you part of the Travelling community (Irish Traveller)?

Yes No

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This question is about you parents' education. Please answer in both columns.

10. FATHER

What is the highest level of education your father has completed?

- Don't know
- Don't have or don't see mother
- None
- Primary education or equivalent
- Junior Certificate or equivalent
- Leaving Certificate or equivalent
- Diploma/Certificate (PLC, apprenticeship, trade, FETAC)
- 3rd level degree (College or University)

11. Does your father have a job?

- Yes (Full-time)
- Yes (Part-time)
- No
- Retired
- Don't know
- Don't have or don't see father

If you answered yes please write down exactly what they do/did. Be specific (e.g., primary school teacher, plumber, cashier in Dunnes).

MOTHER

What is the highest level of education your mother has completed?

- | | | |
|--------------------------|---|--------------------------|
| <input type="checkbox"/> | Don't know | <input type="checkbox"/> |
| <input type="checkbox"/> | Don't have or don't see mother | <input type="checkbox"/> |
| <input type="checkbox"/> | None | <input type="checkbox"/> |
| <input type="checkbox"/> | Primary education or equivalent | <input type="checkbox"/> |
| <input type="checkbox"/> | Junior Certificate or equivalent | <input type="checkbox"/> |
| <input type="checkbox"/> | Leaving Certificate or equivalent | <input type="checkbox"/> |
| <input type="checkbox"/> | Diploma/Certificate (PLC, apprenticeship, trade, FETAC) | <input type="checkbox"/> |
| <input type="checkbox"/> | 3 rd level degree (College or University) | <input type="checkbox"/> |

Does your mother have a job?

- | | | |
|--------------------------|--------------------------------|--------------------------|
| <input type="checkbox"/> | Yes (Full-time) | <input type="checkbox"/> |
| <input type="checkbox"/> | Yes (Part-time) | <input type="checkbox"/> |
| <input type="checkbox"/> | No | <input type="checkbox"/> |
| <input type="checkbox"/> | Retired | <input type="checkbox"/> |
| <input type="checkbox"/> | Don't know | <input type="checkbox"/> |
| <input type="checkbox"/> | Don't have or don't see mother | <input type="checkbox"/> |

If you answered yes please write down exactly what they do/did. Be specific (e.g., primary school teacher, plumber, cashier in Dunnes).

2. SELF-AWARENESS

12. Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. On the whole, I am satisfied with myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. At times I think I am no good at all.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel that I have a number of good qualities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I am able to do things as well as most other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel I do not have much to be proud of.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I certainly feel useless at times.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel that I am a person of worth, at least on an equal plane with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I wish I could have more respect for myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. All in all, I am inclined to feel that I am a failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I take a positive attitude towards myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDICES

13. Please read each statement and decide whether or not you agree with it. Please circle your answer.

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1. I don't pay much attention to my feelings.	1	2	3	4	5
2. I don't usually care much about what I'm feeling.	1	2	3	4	5
3. It is usually a waste of time to think about your emotions.	1	2	3	4	5
4. I don't think it's worth paying attention to your emotions or moods.	1	2	3	4	5
5. I don't let my feelings interfere with what I am thinking.	1	2	3	4	5
6. I think about my mood constantly.	1	2	3	4	5
7. I often think about my feelings.	1	2	3	4	5
8. I pay a lot of attention to how I feel.	1	2	3	4	5
9. I am usually very clear about my feelings.	1	2	3	4	5
10. I am rarely confused about how I feel.	1	2	3	4	5
11. I usually know my feelings about a matter.	1	2	3	4	5
12. I can't make sense out of my feelings.	1	2	3	4	5
13. I am often aware of my feelings on a matter.	1	2	3	4	5

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	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
14. I can always tell how I feel.	1	2	3	4	5
15. Sometimes I can't tell what my feelings are.	1	2	3	4	5
16. I almost always know exactly how I am feeling.	1	2	3	4	5
17. Although I am sometimes sad, I have a mostly optimistic (hopeful) outlook.	1	2	3	4	5
18. No matter how badly I feel, I try to think about pleasant things.	1	2	3	4	5
19. When I am upset, I think of all the pleasures (good things) in life.	1	2	3	4	5
20. I try to think good thoughts no matter how badly I feel.	1	2	3	4	5
21. If I find myself getting mad, I try to calm myself down.	1	2	3	4	5
22. I never worry about being in too good of a mood.	1	2	3	4	5
23. I usually have lots of energy when I am happy.	1	2	3	4	5
24. When I am angry, I try to change my mood.	1	2	3	4	5

3. SELF-MANAGEMENT

14. Below are some statements about difficulties or problems. Please tick the box that best describes you.

When I have difficulties or problems...	Never	Almost Never	Sometimes	Fairly Often	Very Often	Always
1. I avoid the problem by spending more time alone.	<input type="checkbox"/>					
2. I develop a plan about how to solve the problem before doing anything.	<input type="checkbox"/>					
3. I go to a friend for advice on how to solve the problem.	<input type="checkbox"/>					
4. I avoid the problem by watching television more than usual.	<input type="checkbox"/>					
5. I set goals for myself to deal with the problem.	<input type="checkbox"/>					
6. I go to a friend to help me feel better.	<input type="checkbox"/>					
7. I avoid the problem by sleeping more than usual.	<input type="checkbox"/>					
8. I make a plan of action about what I will do.	<input type="checkbox"/>					
9. I tell my fears and worries to a friend.	<input type="checkbox"/>					
10. I avoid the problem by pretending that there is no problem.	<input type="checkbox"/>					

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When I have difficulties or problems...	Never	Almost Never	Sometimes	Fairly Often	Very Often	Always
11. I try different ways to solve the problem until I find one that works.	<input type="checkbox"/>					
12. I ask my friends to support me.	<input type="checkbox"/>					
13. I avoid the problem by staying away from other people.	<input type="checkbox"/>					
14. I think about what needs to be done.	<input type="checkbox"/>					
15. I avoid the problem by wishing that people would leave me alone.	<input type="checkbox"/>					

15. The questions below involve two distinct aspects of your emotional life. One is how you feel inside and the other is how you show your emotions. For each item please tick the box that best describes you.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

1. When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.	<input type="checkbox"/>						
2. I keep my emotions to myself.	<input type="checkbox"/>						

APPENDICES

	1	2	3	4	5	6	7
	Strongly Disagree			Neutral			Strongly Agree
3. When I want to feel less negative emotions (such as sadness or anger), I change what I'm thinking about.	<input type="checkbox"/>						
4. When I am feeling positive emotions, I am careful not to express them.	<input type="checkbox"/>						
5. When I'm faced with a stressful situation, I make myself think about it in a way that helps me to stay calm.	<input type="checkbox"/>						
6. I control my emotions by not expressing them.	<input type="checkbox"/>						
7. When I want to feel more positive emotions, I change the way I'm thinking about the situation.	<input type="checkbox"/>						
8. I control my emotions by changing the way I think about the situation I'm in.	<input type="checkbox"/>						
9. When I am feeling negative emotions, I make sure not to express them.	<input type="checkbox"/>						
10. When I want to feel less negative emotions, I change the way I'm thinking about the situation.	<input type="checkbox"/>						

4. SOCIAL-AWARENESS

16. Circle the answer that best shows how well you can do each of the following things.

	1	2	3	4	5
	Not Very				Very
	Well				Well
1. How well can you express your opinions when your classmates disagree with you?	1	2	3	4	5
2. How well can you become friends with other youth (people your age)?	1	2	3	4	5
3. How well can you have a chat with an unfamiliar person?	1	2	3	4	5
4. How well can you work in harmony with your classmates?	1	2	3	4	5
5. How well can you tell other youth that they are doing something that you don't like?	1	2	3	4	5
6. How well can you tell a funny story to a group of youth?	1	2	3	4	5
7. How well do you succeed in staying friends with other youth?	1	2	3	4	5
8. How well do you succeed in preventing quarrels (arguments) with other youth?	1	2	3	4	5

5. RELATIONSHIP-MANAGEMENT

17. Circle the answer that best shows how well you can do each of the following things.

	Poor at this	Fair at this	O.K. at this	Good at this	Extremely good at this
1. How good are you at getting people to go along with what you want?	1	2	3	4	5
2. How good are you at resolving disagreements in ways that make things better instead of worse?	1	2	3	4	5
3. How good are you at taking charge?	1	2	3	4	5
4. How good are you at dealing with disagreements in ways that make both people happy in the long run?	1	2	3	4	5
5. How good are you sticking up for yourself?	1	2	3	4	5
6. How good are you at resolving disagreements in ways so neither person feels hurt or resentful.	1	2	3	4	5
7. How good are you at getting someone to agree with your point of view?	1	2	3	4	5

APPENDICES

	Poor at this	Fair at this	O.K. at this	Good at this	Extremely good at this
8. How good are you at dealing with disagreements in ways so that one person does not always come out the loser?	1	2	3	4	5
9. How good are you at deciding what should be done?	1	2	3	4	5
10. How good are you at dealing with disagreements in ways that don't lead to big arguments?	1	2	3	4	5
11. How good are you at voicing your desires and opinions?	1	2	3	4	5
12. How good are you at getting over disagreements quickly?	1	2	3	4	5
13. How good are you at getting your way with others?	1	2	3	4	5
14. How good are you at controlling your temper when having a conflict with someone?	1	2	3	4	5

6. RESPONSIBLE DECISION-MAKING

18. Please select the appropriate response for each item below:

When I have a decision to make I...	Never	Sometimes	Usually	Always
1. Look for information to help me understand the problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Think before making a choice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Consider the risks of a choice before making a decision.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Think about all of the information I have about the different choices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Think of past choices when making new decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. ACADEMIC PERFORMANCE

19. Please circle the grade that best describes your performance in the following subjects:

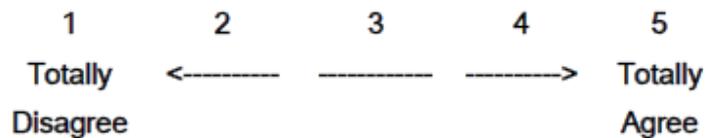
Maths	A	B	C	D	F	Don't Take
English	A	B	C	D	F	Don't Take
Irish	A	B	C	D	F	Don't Take

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12. I am not interested in what my teachers have to say to me.	1	2	3	4	5
13. I am not really learning anything important in school.	1	2	3	4	5
14. I don't really care about my grades.	1	2	3	4	5
15. I do not feel a part of my school.	1	2	3	4	5

22. Please circle the answer that shows how much you agree or disagree with each statement below.



1. I feel respected and valued in my school.	1	2	3	4	5
2. My school values the health and wellbeing of students.	1	2	3	4	5
3. My school encourages students to have a voice.	1	2	3	4	5
4. My school teaches mental and emotional health education as part of the curriculum.	1	2	3	4	5
5. I know who in the school to contact if I have a worry or concern.	1	2	3	4	5

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	1	2	3	4	5
	Totally	←-----	-----	-----→	Totally
	Disagree				Agree
6. I know my school will support me if I am stressed.	1	2	3	4	5
7. My school communicates well with my parents.	1	2	3	4	5
8. My school is effective at tackling bullying.	1	2	3	4	5

8. GENERAL MENTAL WELLBEING

23. Please read each statement and select the box which shows how much the statement applied to you over the past week.

	Never	Sometimes	Often	Almost-Always
1. I found it hard to "wind down" (relax).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I was aware of the dryness of my mouth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I couldn't seem to experience any positive feeling at all.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I found it difficult to work up the initiative to do things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I tended to over-react to situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I experienced trembling (e.g., in the hands).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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	Never	Sometimes	Often	Almost- Always
8. I felt that I was using a lot of nervous energy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I was worried about situations in which I might panic and make a fool of myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I felt that I had nothing to look forward to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I found myself getting agitated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I found it difficult to relax.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I felt down-hearted and blue.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I was intolerant of anything that kept me from getting on with what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I felt I was close to panic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I was unable to become enthusiastic about anything.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I felt I wasn't worth much as a person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I felt that I was rather touchy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I felt scared without any good reason.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I felt that life was meaningless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Please tick the box that best describes your experience of each over the last **2 weeks**.

	None of the time	Rarely	Some of the time	Often	All of the time
1. I've been feeling optimistic (hopeful) about the future.	<input type="checkbox"/>				
2. I've been feeling useful.	<input type="checkbox"/>				
3. I've been feeling relaxed.	<input type="checkbox"/>				
4. I've been feeling interested in other people.	<input type="checkbox"/>				
5. I've had energy to spare.	<input type="checkbox"/>				
6. I've been dealing with my problems well.	<input type="checkbox"/>				
7. I've been thinking clearly.	<input type="checkbox"/>				
8. I've been feeling good about myself.	<input type="checkbox"/>				
9. I've been feeling close to other people.	<input type="checkbox"/>				
10. I've been feeling confident.	<input type="checkbox"/>				
11. I've been able to make up my own mind about things.	<input type="checkbox"/>				
12. I've been feeling loved.	<input type="checkbox"/>				
13. I've been interested in new things.	<input type="checkbox"/>				
14. I've been feeling cheerful.	<input type="checkbox"/>				

THANK YOU FOR PARTICIPATING!

Appendix C2:

Teacher Weekly Reports

Teacher Weekly Report – Session 1 Example

General questions
<p>* 1. School Code</p> <input type="text"/>
<p>* 2. Please indicate the year group to which MindOut is being delivered</p> <p><input type="radio"/> 4th</p> <p><input type="radio"/> Transition</p> <p><input type="radio"/> 5th</p> <p><input type="radio"/> 6th</p>
<p>* 3. What is your position in the school?</p> <input type="text"/>
<p>* 4. In what subject are you delivering the MindOut programme? (E.g., SPHE, Religion etc..)</p> <input type="text"/>
<p>* 5. What class period/ time of the day are you delivering MindOut?</p> <input type="text"/>
<p>* 6. How long was the class period in which you delivered this session?</p> <input type="text"/>
<p>* 7. How many students were present for this MindOut session? Please state the number of males vs. females</p> <input type="text"/>

APPENDICES

Activity 1: Physical Wellbeing vs. Mental Wellbeing

9. How did the students respond to this first activity?

1 Very poorly 2 3 4 5 Very well

10. Were you able to complete this activity in the approximated time?

Yes

No

If no, can you think of a way this activity could be adjusted to fit within the time frame?

11. Were all of the resources for this activity made easily available to you? (e.g. PowerPoint slides, worksheets, scenarios etc.)

Yes

No

If no, please explain.

12. Is there anything you would suggest changing in this activity?

APPENDICES

Activity 2: Defining Personal Strengths

13. How did the students respond to the second activity?

1 Very poorly

2

3

4

5 Very well

14. Were you able to complete this activity in the approximated time?

Yes

No

If no, can you think of a way this activity could be adjusted to fit within the time frame?

15. Were all of the resources for this activity made easily available to you?

Yes

No

If no, please explain.

16. Is there anything you would change about this activity?

APPENDICES

Videos: Ditch The Monkey

17. Were you able to play the recommended video(s) during this session?

- Yes
 No
 N/A

If no, please state the reason.

18. If you answered yes to the above question, do you think the video clip (s) was appropriate for your class group?

- Yes
 No
 N/A

Please explain

19. How did the students respond to the video(s)?

- | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1 Very Poorly | 2 | 3 | 4 | 5 Very Well |
| <input type="radio"/> |

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Whole-School				
<p>20. Were you able to introduce the take-home activity for this week?</p>				
<p><input type="radio"/> Yes</p>				
<p><input type="radio"/> No</p>				
<p>If no, please explain why.</p>				
<div style="border: 1px solid black; height: 60px; background-color: #e6f2ff;"></div>				
<p>21. Did you review the Whole-School Activities for this session?</p>				
<p><input type="radio"/> Yes</p>				
<p><input type="radio"/> No</p>				
<p>22. If yes, how useful did you find the Whole-School Tips for Staff?</p>				
<p>Not at all useful Slightly useful Somewhat useful Very useful Extremely useful</p>				
<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>				
<p>Please explain your answer</p>				
<div style="border: 1px solid black; height: 60px; background-color: #e6f2ff;"></div>				
<p>23. How confident are you that these strategies could be implemented within your school?</p>				
<p>Not at all confident Not very confident Fairly confident Very confident Extremely confident</p>				
<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>				
<p>Please explain your answer</p>				
<div style="border: 1px solid black; height: 60px; background-color: #e6f2ff;"></div>				

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Overall					
* 24. Was the content of this session appropriate for your class group?					
1 Not at all	2	3	4	5 Very much	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
* 25. What percentage of the session would you say you completed during the class period?					
0%	20%	40%	60%	80%	100%
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. If you were unable to complete any parts of this session in full, please explain why. (Please be specific)					
<input type="text"/>					
27. Did you add anything extra into this lesson?					
<input type="radio"/> Yes					
<input type="radio"/> No					
If yes, please indicate what you did.					
<input type="text"/>					
* 28. Did the students show interest in this session?					
1 Not at all	2	3	4	5 Very much	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
* 29. Did the students learn new skills during this session?					
1 Not at all	2	3	4	5 Very much	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
* 30. Did the students engage/participate in the activities and discussions?					
1 Not at all	2	3	4	5 Very much	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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31. What worked well in this session?

32. Did you experience any difficulties with this session?

Yes

No

If yes, please explain.

* 33. How would you rate this session overall?

1	Poor	2	3	4	5	6	7	8	9	10	Excellent
<input type="radio"/>		<input type="radio"/>									

34. Any other comments about this session? (additional factors, which you feel influenced the quality of the session)

Appendix C3:

Student Review Questionnaire

Student Review Questionnaire

1. Did you complete this questionnaire already the last time the researcher visited your school?

Yes

No

2. Please tick all of the sessions that you remember being in class for:

Session 1: Minding Your Mental Wellbeing	<input type="checkbox"/>
Session 2: Dealing with your Emotions	<input type="checkbox"/>
Session 3: Thoughts, Feelings, Actions	<input type="checkbox"/>
Session 4: Coping with Challenges	<input type="checkbox"/>
Session 5: Support from Others	<input type="checkbox"/>
Session 6: Walking in Someone Else's Shoes	<input type="checkbox"/>
Session 7: Communicating and Managing Conflict	<input type="checkbox"/>
Session 8: Managing Online Behaviours	<input type="checkbox"/>
Session 9: Help-seeking	<input type="checkbox"/>
Session 10: Problem-solving and Decision-making	<input type="checkbox"/>
Session 11: Happiness and Wellbeing	<input type="checkbox"/>
Session 12: Review	<input type="checkbox"/>

3. How would you rate your overall experience of the MindOut Programme? (Check one)

Very
Poor

Poor

O.K.

Good

Very
Good

4. The sessions in the programme were relevant for me. (Check one)

Strongly
Disagree

Disagree

Average

Agree

Strongly
Agree

5. The sessions in the programme were useful for helping to deal with situations. (Check one)

Strongly
Disagree

Disagree

Average

Agree

Strongly
Agree

6. The content of the programme sessions was easy to understand. (Check one)

Strongly
Disagree

Disagree

Average

Agree

Strongly
Agree

7. The sessions in the programme were interesting. (Check one)

Strongly
Disagree

Disagree

Average

Agree

Strongly
Agree

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8. Have you been able to apply anything you have learned in the MindOut programme to your own daily life? (If yes, please give at least one example below)

Yes

No

Please give an example:

9. During the course of the MindOut programme you were taught a number of skills. Below are a number of questions about these skills. Please rate from '**Never**' to '**Several times a Week**' how often you practice the skills which you learned in each session.

Please rate how often you practice each of the following skills from MindOut:	Never	Once	Two or three times	About once a week	Several times a week
Notice and appreciate yourself and your strengths.	<input type="checkbox"/>				
'Take five' (breathing exercises, mindfulness etc.) when you were experiencing strong emotions.	<input type="checkbox"/>				
Challenge unhelpful thoughts when you were experiencing negative thoughts.	<input type="checkbox"/>				
Use different helpful coping strategies when you were dealing with stressful situations.	<input type="checkbox"/>				
Identify helpful sources of support in your life (e.g., One Good Adult).	<input type="checkbox"/>				
Put yourself in someone else's shoes and tried to imagine how others might be feeling or thinking in a situation.	<input type="checkbox"/>				
Communicated assertively with others during difficult situations.	<input type="checkbox"/>				

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	Never	Once	Two or three times	About once a week	Several times a week
Considered the consequences of your actions before posting/commenting/sending messages online.	<input type="checkbox"/>				
Increased your awareness of the different local and online support services.	<input type="checkbox"/>				
Used the five-step problem solving approach (e.g. 1. State the problem, 2. Think of your options etc.) when dealing with difficult situations.	<input type="checkbox"/>				
Practiced appreciating others around you (e.g., using the 'three good things' exercise).	<input type="checkbox"/>				

10. Please rate how often your teacher did the following during the delivery of MindOut.

	Never	Rarely	Sometimes	Often	Always
Was confident in their own knowledge and skills around each session.	<input type="checkbox"/>				
Was enthusiastic (passionate) when delivering the sessions.	<input type="checkbox"/>				
Made critical or negative remarks about the students during the sessions.	<input type="checkbox"/>				
Showed appreciation when students shared comments and participated.	<input type="checkbox"/>				
Kept students engaged and interested in the session.	<input type="checkbox"/>				
Seemed well-prepared and organised for the sessions.	<input type="checkbox"/>				

11. Please rate from 1 (poor) to 10 (excellent) how well your teacher delivered the MindOut programme? (Circle One)

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1 2 3 4 5 6 7 8 9 10

Poor

Excellent

12. Would you recommend the MindOut programme to students in future years?

Yes

No

13. What was your favourite part of the MindOut programme? (May be specific or more general)

14. What was your least favourite part of the MindOut programme? (May be specific or more general)

15. How would you rate the MindOut programme overall? (Circle one)

1 2 3 4 5 6 7 8 9 10

Poor

Excellent

Please explain your answer

16. Do you have any additional comments or suggestions for improving the MindOut Programme? (E.g. content, activities, videos, timing etc.)

Appendix C4:

Classroom Observations

Classroom Observation – Session 6 Example

1. To what extent were the following events or processes done successfully?

	Yes	In part	No	N/A
a) Teacher recapped the previous session and asked students to share their thoughts on last week.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Teacher gave an overview of the session.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Teacher used the PowerPoint slides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Teacher explained Activity 1: Stand Up Sit Down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Teacher read out statements and asked students to stand up or stay seated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Teacher chose one of these statements and asked students to explain why they agreed/disagreed with it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Teacher recapped activity by saying that we are not the same as each other and we must be aware and respect the way others feel and think.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Teacher introduced Activity 2: Below the Water by displaying the picture of the iceberg.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Teacher asked students to brainstorm which parts of themselves are above and below the water.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Teacher asked students follow up questions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Teacher introduced Activity 3: In Someone Else's Shoes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Teacher divided students into small groups (no more than 8 groups) and gave each group a scenario and worksheet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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m) Teacher discussed the main questions students must answer on their worksheets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) Teacher invited the students to present their answered to the class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) Teacher selected a few of the identified emotions and asked students to reflect on a time they experienced that emotion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p) Teacher asked students to think about a time they felt left out and asked them to share the type of support they would like to receive from others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q) Teacher recapped this activity by noting the importance of being aware of the feelings of others and putting themselves in someone else's shoes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r) Teacher delivered the additional activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s) Teacher discussed the 'practice at home' activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. How would you describe the timing of the session?

- The session was too long and the teacher couldn't complete all of the activities.
- The session was just the right length
- The session was too short and the teacher had spare time at the end.

3. Did the teacher use additional materials that were not part of the session?

Yes

No

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4. How would you rate the teacher- student interaction during the session?
(Circle one)

1 2 3 4 5 6 7 8 9 10

Poor

Excellent

5. The teacher ensured that ALL students were given the opportunity to participate during the session.

Yes

No

6. Were there any incidents or disruptive behaviours that affected the flow of the lesson?

Yes

No

No disruptive behaviour observed.

7. Were students from other cultures actively involved in the session?

Yes

No

No children from other cultures present.

To what extent did the teacher...(Circle answers)

8. Depend on the teacher's manual for instructions?

Never any extent

A little extent

Some extent

A great extent

A very great extent

9. Display confidence in their own knowledge and skills around this session?

Never any extent

A little extent

Some extent

A great extent

A very great extent

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10. Use all of the recommended teaching strategies for this session in order to maintain the students' attention? (e.g., activity/game, brainstorm, discussion, reflection, group work, presentation)

Never any extent	A little extent	Some extent	A great extent	A very great extent
------------------	-----------------	-------------	----------------	---------------------

11. Use the materials for the lesson appropriately?

Never any extent	A little extent	Some extent	A great extent	A very great extent
------------------	-----------------	-------------	----------------	---------------------

12. Adapt anything within the session to suit the class?

Never any extent	A little extent	Some extent	A great extent	A very great extent
------------------	-----------------	-------------	----------------	---------------------

13. Display enthusiasm for the session?

Never any extent	A little extent	Some extent	A great extent	A very great extent
------------------	-----------------	-------------	----------------	---------------------

14. Make critical or negative remarks about the students?

Never any extent	A little extent	Some extent	A great extent	A very great extent
------------------	-----------------	-------------	----------------	---------------------

15. Seem to genuinely appreciate students' comments and ideas?

Never any extent	A little extent	Some extent	A great extent	A very great extent
------------------	-----------------	-------------	----------------	---------------------

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16. Maintain the students' attention throughout the session?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

17. Verbally praise the students' participation throughout the session?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

To what extent did the students...(Circle answers)

18. Display enthusiasm for the session?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

19. Appear comfortable with the content of the session?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

20. Listen to each other?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

21. Lose attention/ become distracted when they were not actively involved in the activities?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

22. Interact with each other during the activities?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

23. Speak about their feelings during the lesson?

Never any extent	A little extent	Some extent	A great extent	A very great extent
---------------------	--------------------	----------------	-------------------	------------------------

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24. Come up with their own idea/solutions rather than relying on the teacher?

Never any extent A little extent Some extent A great extent A very great extent

25. What percentage of the session would you say the teacher completed during the lesson?

0% 20% 40% 60% 80% 100%

26. In terms of how well it was implemented, how would you rate this session overall? (Circle one)

1 2 3 4 5 6 7 8 9 10
Poor Excellent

27. Please describe any additional factors, which you felt influenced the quality of the session.

Appendix C5:
Teacher Telephone Interview –
Topic Guide

Teacher Interview Questions

Opening questions

- What's your impression of the MindOut programme?
- What worked well? What didn't work well?
- What were students' responses to the overall programme?
- Do you think the programme was successful in promoting social and emotional wellbeing?

Implementation factors for programme effectiveness

- Were all of the resources made easily available to you? (e.g. Power points, videos, hand outs etc.)
- Do you have any suggestions in terms of what would support you in teaching the programme? (e.g. more teacher training provided, teaching materials, student resources)
- Was timing an issue for you during any of the sessions?
 - Do you have any suggestions for improving the timing of the sessions?
- Overall did you make any changes during the delivery of the programme? (E.g. additions to the programme, aspects left out)
- How do you think the MindOut programme would best be taught?
 - Most suitable age group?
 - What time of year (which semester)?
 - Regularity/intensity of sessions e.g. once per week?

Specific aspects of the programme:

- Do you have any specific feedback on any particular session from the programme?
- How did the students respond to the practice-at-home activities?
 - Do you have any suggestions for improving these?
- What was your impression of the whole-school resources?
 - Do you think these can be improved in any way?

Final questions

- Do you have any additional final feedback on the programme?
- Do you have any questions for me regarding the programme?

**Appendix C6:
Student Participatory
Workshop—
Topic Guide**

1. Introduction – 3 minutes

Teacher: *introduces the workshop facilitator*

Facilitators: *explain “why we are here”*

- We are from NUI Galway. I have come here today because we need your help in evaluating the MindOut programme.
- Firstly, we would like to thank you for all your hard work in filling out the questionnaires as the first part of the evaluation of this programme.
- Today we will be running a workshop and we want to hear about your experiences of the MindOut programme.
- Your involvement, and opinions, will help us improve the MindOut Programme; before it is delivered in all schools across the country.
- The workshop will be approximately 35 minutes long; you will be asked to participate in large discussion groups as well as individual activities and group activities.
- We will be using a recorder so that we do not miss important points that you may share with us today. This recording will be kept safely stored away and only the immediate research team will be allowed to listen to these tapes. We would like to confirm that you are all ok with this.
- Remember this is not a test or an exam, we wish to hear your own opinions.
- Please don't write your names on the papers provide; all information supplied will remain anonymous and confidential.
- Any questions?

Is everyone clear that we are talking specifically about the MindOut Programme? Within this workshop, we are interested your opinions and experiences on the different elements of the MindOut Programme.

If not, ask the teacher to clarify.

2. Energiser – 5 minutes

- We will begin the workshop with a short game of *Would you rather?*

Instructions:

- Can you all stand up in a single line? [Or two lines, depending on class size and room layout]. We will read out various questions. Think about the answer

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for a few seconds; if you choose the first answer can you step forward and if you choose the second question take a step back.

- For example, would you rather go way back in time and meet you're ancestors [*stand up*] or go into the future and meet your great-great grandchildren [*or sit down*]?

3. Session Review – 10 minutes

1. Minding your Mental Wellbeing
2. Dealing with your Emotions
3. Thoughts, Feelings, Actions
4. Coping with Challenges
5. Support from Others
6. Standing in Someone Else's Shoes
7. Communicating and Managing Conflict
8. Managing Online Behaviours
9. Help-Seeking
10. Problem-solving & Decision-making
11. Happiness & Wellbeing
12. Review

Assign each student a number between 1 and 6 (depending on class size).

- *Now that you are warmed up, can you get into your groups? With all of the ones at one table, all of the twos at a different table and so on.*
- *You are going to discuss some questions about the MindOut Programme in your groups. You must nominate a group Journalist to write down the answers and a group Reporter to feedback the answers to the class.*
- *You will have 2 minutes to write down the answer to each question. I want to remind you that this is not a test or exam.*
- *Please do not write your names on these sheets.*
- *I will collect the answer sheets at the end.*

Group Questions

- Q1.** Which parts of the programme do you think worked best? *Why?*
- Q2.** Which parts of the programme do you think worked least well? *Why?*
- Q3.** Is the content of the MindOut Programme appropriate for your age group? *Why/Why not?*
- Q4.** What recommendations would you suggest to improve the MindOut programme? [I.e. Content, language, timing, activities etc.]

Ask the groups to share their answers with the rest of the class. Once this is finished, hand each participant five red voting dots. Ask each person to go up to the chart at the front of the room and vote on how much they agree/disagree with the statements in each category.

	The content/topics were relevant for people my age.	The activities were fun and engaging.	The language was suitable for people my age.	I learned new skills in the programme which I now use.	I would recommend this programme to a friend.
😊😊					
😊					
😐					
😞					
😞😞					

4. Peer Interview Questions – 5 minutes

- 1. Do you think you have gained anything from the MindOut programme?
 - a. Was it useful?
 - b. Did you learn anything useful?

- 2. Have you spoken to other people outside the classroom about this programme, like your friends or family?
 - a. If yes, who did you talk to?
 - b. What parts of the programme did you talk about?

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3. Do you think that this programme will make a difference in your life outside the classroom?
4. Has your relationship with your teacher changed since doing this programme?
5. Would you recommend this programme to someone else your age?
6. What is the biggest thing/skill you have taken away from the programme?

5. Postcard – 5 minutes

1. Hand out a post card to each individual in the room. Explain to the participants that they should use these post-cards to write down any questions or ideas they perhaps did not feel comfortable discussing in today's workshop. No names should be written on these postcards and these comments will not be read out loud. If participants do not have something to ask/comment on, they should write down one thing that they do to look after their mental wellbeing.
2. Once students have completed this activity ask them to drop their answers into the 'comment box'

6. Conclusion

- That completes our workshop so we'd like to say a big Thank you to all of you for helping us in our research; you've been a great group.
- The information supplied today will be useful in improving the MindOut Programme. Are there any questions before we finish up the workshop?

APPENDIX D: RESULTS

Appendix D1

Baseline Differences between Control and Intervention Groups

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Table 1: Baseline Differences between Control and Intervention Groups

Scale Name	Scales/Subscales	Group	Mean, SD	Statistic	df	P
RSES	Self-esteem	Control	27.20 (5.4)	t= -3.699	673	< .001*
		Intervention	28.72 (5.2)			
TMMS	Emotional Intelligence (Total Score)	Control	67.83 (10.1)	t= -1.657	673	.098
		Intervention	69.1 (9.9)			
	Subscale: Attention to Feelings	Control	26.20(4.6)	t= -.088	673	.930
		Intervention	26.27(4.9)			
	Subscale: Emotional Clarity	Control	24.68 (5.4)	t= -2.359	673	.019*
		Intervention	25.62 (4.9)			
	Subscale: Emotional Repair	Control	27.88 (5.8)	t= -.924	673	.667
		Intervention	28.07 (5.8)			
CSI	Subscale: Avoidance	Control	18.30 (6.2)	t= 3.554	671	< .001*
		Intervention	16.64 (5.9)			
	Subscale: Problem Solving	Control	16.06(5.3)	t= .098	671	.922
		Intervention	16.02 (5.2)			
	Subscale: Social Support	Control	13.40 (5.7)	t= 2.579	671	.010*
		Intervention	12.32 (5.2)			
SEC-Q:	Self-efficacy	Control	29.96 (6.0)	t= -.171	672	.864
		Intervention	27.11 (6.1)			

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ERQ	Subscale: Reappraisal	Control	4.33 (1.3)	t= -.335	667	.738
		Intervention	4.37 (1.2)			
	Subscale: Suppression	Control	3.99 (1.3)	t= .952	672	.421
		Intervention	3.91(1.3)			
AICQ	Subscale: Asserting Influence	Control	3.36 (.83)	t= .713	672	.476
		Intervention	3.32 (.83)			
AICQ	Subscale: Conflict Resolution	Control	3.14 (.79)	t= .643	672	.521
		Intervention	3.10 (.79)			
Decision Making	Decision Making	Control	2.78 (.65)	t= .586	672	.558
		Intervention	2.75 (.67)			
ATS	Attitudes towards School	Control	3.72 (.69)	t= -1.698	672	.090
		Control	3.72 (.69)			
DASS-21	Stress	Control	15.79 (9.8)	t= 3.021	672	.003*
		Intervention	13.57 (9.3)			
	Anxiety	Control	13.76 (10.3)	t= 2.572	672	.010*
		Intervention	11.79 (9.6)			
	Depression	Control	13.70 (10.9)	t= 3.615	671	< .001*
		Intervention	10.8 (10.0)			
WEMWBS	Wellbeing	Control	45.60 (12.3)	t= - 2.665	661	.008*
		Intervention	49.27 (12.0)			

RSES= Rosenberg Self-esteem scale

SEC-Q = Self-Efficacy Questionnaire for Children

DM= Decision Making Scale

WEMWBS: Warwick Edinburgh Mental Wellbeing Scale

TMMS = Trait meta-mood Scale

ERQ=Emotional Regulation Questionnaire

ATS: Attitudes towards School

CSI = Coping Strategy Indicator

AICQ= Adolescent Interpersonal Competence Questionnaire

DASS-21: Depression, Anxiety and Stress Scale

Appendix D2

Gender Baseline Differences

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Table 2: Results of t-test for gender differences at baseline

	Male			Female			t-test		
	M	SD	n	M	SD	n	95% CI for Mean Diff	Mean diff	df
Self-esteem	29.50	4.98	338	26.38	5.30	337	2.4, 3.9	3.12*	673
Emotional Intelligence	69.58	9.77	338	67.32	10.15	337	.75, 3.8	2.26*	673
Attention to Feelings	25.79	4.84	338	26.72	4.58	337	-1.6, -.22	-0.93*	673
Emotional Clarity	338	26.50	338	23.79	5.12	337	1.9, 3.4	2.70*	673
Emotional Repair	338	28.26	338	27.69	5.87	337	-.30, 1.4	0.57*	671
Avoidance Coping	16.39	5.57	336	18.59	6.43	337	-3.1, -1.3	-2.2*	671
Problem-solving Coping	16.52	5.27	336	15.57	5.20	337	.16, 1.7	0.95*	672
Social support Coping	11.48	4.93	336	14.26	5.68	337	-3.6, -2.0	-2.8*	671
Reappraisal	4.38	1.21	337	4.32	1.29	337	-.14, .24	0.05*	672
Suppression of Emotions	4.03	1.30	337	3.87	1.35	337	-.04, .36	0.16*	672
Asserting Influence	3.43	.73	337	3.25	.91	337	.06, .31	1.81*	672
Conflict resolution	3.17	.78	337	3.08	.79	337	-.03, .21	0.09*	672
Decision-making	2.74	.65	337	2.79	.67	337	-.15, .05	-0.05	672
Attitudes towards School	3.66	.67	337	3.87	.66	337	-.32, -.12	-0.22*	672
Stress	12.47	9.05	337	16.93	9.59	337	-5.9, -3.0	-4.46*	672
Anxiety	10.90	8.63	337	14.69	10.85	337	-5.3, -2.3	-3.79*	672
Depression	10.80	9.84	337	13.77	11.09	337	-4.6, -1.4	-2.97*	672
Wellbeing	49.12	10.78	333	44.42	11.80	337	3.0, 6.4	4.70*	668

^a SD = standard deviation; M=Mean; ^b * p < .05; ** p < .01 *** p < .001

Appendix D3

Similarities and Differences between Implementation Groups

Table 3: Similarities and differences between high- and low-implementing groups (Teacher and Student data).

Themes	Informant	High-implementation group (n=8)	Both Groups	Low-implementation group (n= 8)
1. Programme Factors	Teacher		<ul style="list-style-type: none"> Felt the program was relevant for students. Commented on the program’s user-friendliness and easy accessibility to resources. Praised the variety of teaching strategies, particularly the interactive elements. 	
	Student		<ul style="list-style-type: none"> Thought that some sessions in the program were too long or felt rushed. Though the programme was relevant. 	<ul style="list-style-type: none"> Reported that they experienced disruptions during the sessions and/or peer disengagement.
2. Participant Factors	Teacher	<ul style="list-style-type: none"> More positive comments when discussing group dynamic More likely to discuss students’ engagement and response to the program in a positive light. 		<ul style="list-style-type: none"> More issues with the group dynamic (high-need, difficult, low emotional literacy, low resilience etc.) More negative comments in terms of student engagement and response to program.
	Student	<ul style="list-style-type: none"> Reported more benefits from the program in terms of helpfulness. Provided specific examples of how the program impacted on their learning and skill development. More likely to report enjoyment of the program and discuss positive experiences. 	<ul style="list-style-type: none"> Found some parts of the program boring. Found the program interesting. 	<ul style="list-style-type: none"> More likely to report negative experiences with the program. Less likely to report the program benefitting them and did not provide examples of skill development.

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3. Teacher Factors	Teacher	<ul style="list-style-type: none"> • More likely to demonstrate positive attitudes towards program. 	<ul style="list-style-type: none"> • Felt that comfort, interest and teaching background were important for implementation • Agreed the training was good. 	
	Student			<ul style="list-style-type: none"> • Commented on their teachers' poor delivery of the program.
4. School Contextual Factors	Teacher		<ul style="list-style-type: none"> • Identified 'timing' as a major issue in implementing the program. • Felt delivering the program early in the year would make implementation easier. 	<ul style="list-style-type: none"> • Discussed issues delivering the program to TY students. • Faced issues with accessing technology.
	Student		<ul style="list-style-type: none"> • Thought that some sessions in the program were too long or felt rushed. 	<ul style="list-style-type: none"> • Reported that they experienced disruptions during the sessions and/or peer disengagement.
5. Organisational Capacity Factors	Teacher	<ul style="list-style-type: none"> • Expressed a desire to receive external support in terms of updates from Health Promotion Officers and support groups for teachers implementing. 	<ul style="list-style-type: none"> • Felt other staff didn't value the program and that they would like more support from their colleagues. 	<ul style="list-style-type: none"> • Would have liked more support at the management level. • Felt they could be supported by having an external person visiting the school to deliver the sessions.

Appendix D4
Mean Outcome Scores for All
Groups at each Time-point

Table 4 Mean outcome scores for high-implementation, low-implementation, and control groups at pre-, post-, and 12-month follow-up.

		High-Implementation			Low-Implementation			Control		
		M (SD)			M (SD)			M (SD)		
		Pre- n = 169	Post- n = 125	Follow- up n = 116	Pre- n = 149	Post- n = 106	Follow- up n = 77	Pre n= 345	Post n = 251	Follow- up n = 220
RSES	Self-esteem	28.60 (5.2)	29.19 (5.3)	27.56 (5.5)	29.24 (5.0)	29.25 (5.2)	28.62 (5.0)	27.20 (5.5)	27.49 (5.4)	26.96 (5.2)
TMMS	Total Emotional Intelligence	69.15 (10.0)	81.78 (11.7)	77.88 (10.8)	69.41 (9.6)	81.96 (10.5)	79.93 (9.4)	67.83 (10.1)	79.27 (11.6)	79.04 (10.2)
	Subscale: Attention to Feelings	26.4 (4.8)	26.9 (5.0)	26.0 (5.0)	26.2 (4.8)	26.7 (3.9)	26.0 (4.1)	26.2 (4.6)	25.9 (4.8)	26.4 (4.9)
	Subscale: Emotional Clarity	25.7 (4.7)	26.1 (5.9)	24.6 (5.1)	25.9 (4.9)	26.7 (5.0)	25.9 (4.4)	24.7 (5.4)	25.2 (5.5)	25.1 (5.1)
	Subscale: Emotional Repair	28.0 (6.0)	29.1 (5.1)	27.0 (5.1)	28.2 (5.6)	28.6 (5.2)	28.3 (5.2)	27.9 (5.7)	28.2 (5.7)	27.7 (5.0)
CSI	Subscale: Avoidance	16.7 (6.0)	15.8 (4.9)	16.6 (5.5)	16.5 (5.8)	16.6 (5.5)	17.0 (6.1)	18.3 (6.2)	18.4 (5.7)	19.2 (5.7)
	Subscale: Problem-Solving	16.2 (5.2)	16.5 (5.1)	15.4 (4.7)	16.1 (5.0)	15.7 (5.0)	15.7 (4.7)	16.1 (5.3)	16.0 (5.0)	15.7 (5.1)
	Subscale: Social Support	12.05 (5.0)	13.7 (5.2)	13.4 (4.4)	12.6 (5.5)	12.7 (5.4)	13.3 (4.5)	13.4 (5.7)	13.1 (5.2)	13.4 (5.2)
SEC-Q	Social Self-efficacy	26.8 (6.2)	27.5 (6.6)	6.2 (6.0)	27.7 (6.1)	27.4 (6.1)	27.2 (6.2)	27.0 (6.0)	27.0 (6.3)	27.0 (6.3)

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ERQ	Subscale: Reappraisal	26.4 (7.4)	27.0 (6.6)	25.5 (6.4)	26.1 (6.6)	25.9 (6.7)	25.5 (6.1)	25.9 (8.1)	25.8 (7.5)	25.0 (7.3)
	Subscale: Expressive Suppression	15.5 (5.3)	14.2 (4.2)	15.5 (4.2)	15.5 (5.2)	15.0 (4.3)	15.5 (4.7)	15.9 (5.3)	15.6 (4.8)	15.6 (4.6)
AICQ	Subscale: Asserting Influence	22.8 (5.9)	23.5 (6.0)	22.7 (6.1)	23.7 (5.7)	23.6 (5.4)	23.7 (5.2)	23.5 (5.8)	23.1 (5.7)	23.0 (6.3)
	Subscale: Conflict Resolution	21.4 (5.7)	22.1 (5.6)	21.4 (5.6)	22.2 (5.4)	22.3 (5.2)	22.1 (4.7)	21.9 (5.6)	22.1 (5.5)	22.3 (5.6)
DMS	Decision-Making	13.9 (3.6)	14.0 (3.3)	13.5 (3.7)	13.6 (3.1)	13.3 (3.3)	13.1 (3.2)	13.9 (3.3)	13.7 (3.4)	13.6 (3.4)
DASS-21	Stress	13.7 (8.8)	12.2 (8.3)	14.0 (7.8)	12.9 (9.4)	13.0 (8.9)	14.0 (8.0)	15.8 (9.8)	15.8 (9.6)	16.6 (9.5)
	Anxiety	12.04 (9.1)	9.9 (8.9)	12.3 (7.9)	11.2 (9.8)	10.8 (8.9)	12.0 (7.6)	13.8 (10.3)	13.1 (10.1)	14.0 (10.1)
	Depression	10.4 (9.6)	8.8 (9.1)	10.5 (7.3)	10.3 (9.7)	10.3 (8.9)	10.6 (7.5)	13.7 (11.0)	13.0 (10.2)	13.5 (9.1)
WEMWBS	Wellbeing	48.2 (9.9)	50.0 (9.4)	48.1 (9.1)	48.6 (11.1)	48.6 (10.7)	49.8 (9.8)	45.6 (12.3)	47.7 (11.0)	44.9 (10.5)
ATS	Attitudes toward School	57.7 (9.8)	58.6 (10.1)	55.0 (10.1)	55.6 (9.9)	53.6 (10.3)	54.6 (8.6)	55.6 (10.5)	53.9 (11.1)	55.3 (9.5)

Notes: ^a Group allocation (e.g., high and low) based on Total Implementation Quality score; ^b M = mean; SD = standard deviation; ^c RSES: Rosenberg Self-esteem scale, TMMS = Trait meta-mood Scale, CSI = Coping Strategy Indicator, SEC-Q = Self-Efficacy Questionnaire for Children, ERQ = Emotional Regulation Questionnaire, AICQ = Adolescent Interpersonal Competence Questionnaire, DMS = Decision-Making Scale ATS: Attitudes towards School Scale, DASS-21: Depression, Anxiety and Stress Scale, WEMWBS: Warwick Edinburgh Mental Wellbeing Scale