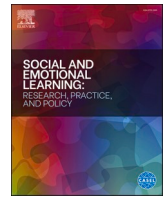| Title	Activating social empathy: An evaluation of a school-based social and emotional learning programme
Author(s)	Silke, Charlotte; Davitt, Emer; Flynn, Niamh; Shaw, Aileen; Brady, Bernadine; Murray, Clíona; Dolan, Pat
Publication Date	2024-01-06
Publication Information	Silke, Charlotte, Davitt, Emer, Flynn, Niamh, Shaw, Aileen, Brady, Bernadine, Murray, Clíona, & Dolan, Pat. (2024). Activating Social Empathy: An evaluation of a school-based social and emotional learning programme. Social and Emotional Learning: Research, Practice, and Policy, 3, 100021. doi: https://doi.org/10.1016/j.sel.2023.100021
Publisher	Elsevier
Link to publisher's version	https://doi.org/10.1016/j.sel.2023.100021
Item record	http://hdl.handle.net/10379/18011
DOI	http://dx.doi.org/10.1016/j.sel.2023.100021

Activating Social Empathy: An evaluation of a school-based social and emotional learning programme

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ABSTRACT

Previous evidence suggests that empathy is important for promoting positive youth development, and there is growing advocacy for the inclusion of empathy education within the school system. However, knowledge about the efficacy of empathy-based social and emotional learning (SEL) programmes in post-primary school settings is limited. The current research aims to evaluate the effectiveness of a novel, empathy-based SEL programme (i.e., Activating Social Empathy; ASE) in promoting empathy and prosocial responding among secondary school students in Ireland.

Method: Participants included 539 (91 male, 392 female, 56 other) students from nine secondary schools across the Republic of Ireland ($M_{age} = 14.29$; SD =.83). Participants were randomly allocated to an intervention or a control condition, and completed self-report questionnaires at pre-test and post-test.

Results: Results from mediated regression models indicated that, in comparison to the control group, participants in the intervention condition showed significantly higher levels of empathy post-test. Results also indicated that empathy significantly mediated the relationship between condition and youth's prosocial behaviour, emotional efficacy, and social responsibility.

Discussion: Overall, the findings from this study indicated that participation in the ASE programme was directly associated with higher empathy, which in turn was indirectly linked with greater prosocial responding, social responsibility, and emotional efficacy. Given the growing importance placed on the inclusion of SEL within education curricula internationally, and robust associations between empathy and positive youth development, these findings have important implications for school-related research, policy and practice.

1. Introduction

Imagine a classroom where students not only excel academically but thrive emotionally, where students are encouraged to explore their identities, establish meaningful friendships, understand their emotions, achieve their personal goals, and feel and express empathy for one another. This is the vision at the heart of social and emotional learning (SEL), an educational process which aims to equip students with essential life-skills (Collaborative for Academic Social and Emotional Learning [CASEL], 2023). Given reported declines in empathy-related skills and competencies among young people (Konrath et al., 2011), and marked societal shifts in community-based values, in recent years (Twenge & Campbell, 2012), now is a pivotal time for ensuring greater focus on empathy-based SEL within the school system. While literature indicates that SEL programmes are associated with positive social, emotional, cognitive and behavioural outcomes (Lerner et al., 2021), further evidence exploring the quality of SEL programme implementation, in secondary school settings, and across diverse cultural contexts, is needed to extend our knowledge and understanding about the utility and effectiveness of SEL education.

It is now widely acknowledged that schools and education programmes should focus on more than just preparing young people for the workplace; schools should strive to help students learn how to work effectively with others, become critical thinkers, and contribute to democratic society (Greenberg et al., 2017; OECD, 2015). Research shows that students' ability to understand social problems, form innovative solutions, and actively address social issues does not stem from their academic capabilities alone, but is also stimulated by their

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socio-affective skills (Dereli & Aypay, 2012; Gökalp & Yusuf, 2022). As schools are one of the few organisations with the capacity to reach almost every young person (Carnegie Corporation of New York, 2003; Rossi et al., 2016), they are a key setting for promoting social and emotional skills and competencies (Hymel et al., 2018). CASEL (2023) contends that there are several core competencies (including self-awareness, self-management, social awareness, relationship skills, and responsible decision-making) that are essential for SEL and should be promoted within schools. Empathy is a key element of the social-awareness domain, and has often been included as a sub-component within SEL programmes and interventions (Durlak et al., 2011; Malti et al., 2016). However, there is now a growing consensus that schools should place a stronger emphasis on explicitly teaching and cultivating empathy (Dolan, 2022), with researchers and practitioners advocating that greater focus on empathy education is warranted to promote positive personal and societal development (Berliner & Masterson, 2015; Stiff et al., 2019).

The term empathy is often used to refer to one's ability to understand and share the perspectives, mental states and emotions of others, and is believed to be comprised of both cognitive and affective elements (Cuff et al., 2016). Evidence indicates that empathy plays an integral role in supporting individual and societal wellbeing. For instance, an array of international research has shown that empathy is linked to better physical and psychological functioning (Vinayak & Judge, 2018; Zuffiano et al., 2014), and helps promote cognitive performance and academic learning (Malti et al., 2016; Spinard & Eisenberg, 2014). Other researchers have demonstrated a consistent link between empathy and improved social outcomes, including better quality peer relationships, enhanced social competency skills, and decreased bullying and delinquency (Dereli & Aypay, 2012; Gini et al., 2007; Jolliffe & Farrington, 2006). However, despite the array of social and personal benefits associated with empathy, analyses of interpersonal and societal trends from the Global North suggest that empathy-related values and competencies are declining, particularly among younger generations (Hylton, 2018; Putnam, 2016). For example, a meta-analysis in the U.S. found a large decrease in the level of empathy expressed by college students (Konrath et al., 2011), with other studies reporting lower endorsement of intrinsic values (e.g. community; affiliation), and higher rates of materialism and individualism, among the current generation of young people (Twenge & Campbell, 2012; Curran & Hill, 2019). Additionally, some researchers have found evidence of an "empathy bias" (Fowler et al., 2021; Hochschild, 2013), suggesting that individuals empathise more easily with those they are close to, and/or perceive as sharing similar traits/characteristics to themselves, and are less willing, or find it more difficult, to empathise with those who are dissimilar or are part of more distant social networks (Fowler et al., 2021; Peterson, 2015). Thus, researchers contend that nurturing the developmental roots of empathy should be a priority concern for policy and practice (Greenberg et al., 2017; Stern et al., 2021). In particular, it is argued that initiatives that target both one's *ability* and *willingness* to engage in empathic responding are needed, in order to ensure that empathy is not expressed at a parochial level only (Behler & Berry, 2022; Weisz & Zaki, 2017).

Findings from various systematic reviews and meta-analyses show that engagement in universal, school-based SEL programmes can promote positive outcomes (Goh & Connolly, 2020; Taylor et al., 2017; Van de Sande et al., 2019). However, despite these promising findings, there are some limitations associated with the current SEL literature base, which may restrict our knowledge and understanding about the utility of SEL education. For example, much of the research in this area neglects to provide detailed information about programme implementation and fidelity (Barry et al., 2017). This is a notable limitation as programme implementation quality and fidelity are often cited as key predictors of programme effectiveness (Dowling & Barry, 2020; Durlak et al., 2022). Furthermore, while numerous studies report that SEL programmes that emphasise empathy promotion and training produce stronger effects (Beelmann & Heinemann, 2014; Durlak et al., 2011), much of this

evidence appears to stem from research in primary school settings or with younger child samples (Morizio et al., 2021). Given that adolescence is a crucial period for the development of empathy and social-emotional skills (Allemand et al., 2015; Silke et al., 2018) this may be an important oversight. Additionally, the majority of SEL research and evaluation work seems to have been conducted within the United States (Boylan et al., 2019), and there is less research exploring the effectiveness of SEL education across more diverse, cultural contexts (Barry et al., 2017; Taylor et al., 2017). It is important to explore how SEL is implemented in other countries in order to understand the utility of SEL across different contexts and inform best practice (Bowles et al., 2017).

In Ireland, secondary schools are required to allocate at least 400 hours to the teaching and promotion of student wellbeing (Byrne et al., 2020), with subjects such as Social, Personal and Health Education (SPHE) being part of the mandatory curriculum for junior cycle (i.e., students' first three years of second level education). However, despite an increased focus on SEL within the Irish secondary school system in recent years, research suggests that many teachers lack formal training in SPHE (Moynihan et al., 2016), and SEL subjects, like SPHE, are not given comparable status to that of traditional, core-curricular subjects (e.g., maths; languages) (O'Higgins et al., 2013). Research also indicates that SEL education in Ireland has tended to focus more on the promotion of self-oriented skills (e.g., resilience) rather than other-oriented skills and values, such as empathy (Boylan et al., 2019). Furthermore, few of the SEL programmes implemented in schools have been formally evaluated for use with Irish adolescents (Dowling & Barry, 2021). Hence, further focus on the development and evaluation of empathy-based SEL education within the Irish secondary school context is needed.

In conclusion, evidence shows that empathy is an important social-emotional skill that enables individuals to relate to one another in ways that promote trust, care, and cooperation. A plethora of evidence indicates that young people benefit from participating in programmes that cultivate their empathy skills. Although schools and education centres have begun to acknowledge the important role they play in nurturing students' social and emotional development, more school-based programmes that focus on the promotion of empathy and other SEL skills among adolescents are needed. More information on how school-based SEL programmes are implemented in specific countries is also needed to inform best practice, with evidence indicating that further focus on empathy education within the Irish SEL curriculum may be particularly warranted. Thus, the purpose of the current research is to evaluate the effectiveness of a novel, school-based empathy education programme (Activating Social Empathy; ASE) in promoting empathy and prosocial responding among secondary school students in Ireland. Specifically, the current study aims to examine whether adolescents who participate in the ASE programme show significant improvements in their empathy, emotional efficacy, social responsibility, peer relations, and prosocial behaviours as well as reductions in aggressive behaviours, over time, in comparison to an age-matched control group who do not take part in the ASE programme. This research also aims to examine whether empathy mediates the relationship between programme participation and adolescents' social responsibility, peer relations, prosocial responding and aggression outcomes, after controlling for potential covariates (e.g., gender, pre-test scores).

2. Materials & methods

2.1. Participants

In total, 539 (91 male, 392 female, 56 other) students from nine (4 co-educational; 5 single-sex) secondary schools in the Republic of Ireland participated in this research. All participants were aged between 12 and 16 years (Mage = 14.29; SD =.83). Most participants were either in their 2nd (n = 112) or 3rd (n = 261) year of second level education at participating schools. Approximately 89% of the sample (n = 415) were

born in Ireland.

2.2. Study design

The current research employed a quasi-experimental, pre-post design in order to evaluate the ASE programme. Schools were randomly assigned to an Intervention (n = 4) or Control (n = 5) group. Randomisation occurred at a school level, so that all participating classes/students within a particular school were assigned to the same condition, in order to help mitigate against possible diffusion of treatment (Forman et al., 2013). In the intervention schools teachers facilitated the ASE programme with their students. In the control schools, teachers did not facilitate the ASE programme and were provided with the ASE programme at the end of the study (i.e., waitlist control group). Approximately 47% (n = 255) of participants were assigned to the intervention group and 53% (n = 284) were allocated to the control group. Students in both groups completed measures assessing their empathy, peer-student relationships, and prosocial values and behaviours prior to engaging in the intervention (pre-test) and immediately post-intervention (post-test).

2.3. The Activating Social Empathy programme

The ASE programme is an interactive, student-centred SEL programme, which was developed by the UNESCO Child & Family Research Centre (Boylan et al., 2019). The programme aims to promote personal and social development by teaching core empathy skills and helping students foster a connection between empathy, social responsibility, and prosocial action. ASE was developed as a free resource for junior cycle students in Ireland (typically aged between 13 and 16/17 years) and can be delivered in secondary schools as part of the SPHE curriculum. The programme consists of 12 sessions, which should be delivered once a week for 12 consecutive weeks.

The ASE programme follows the CASEL (2021) framework and engages students in a series of interactive activities, which target elements of all five SEL competencies. Specifically, each ASE session is facilitated by a teacher, who uses active-learning methodologies (e.g. role-plays, creative writing, drama/artwork, group discussions, & action projects) to help students practise specific SEL skills (e.g., identifying emotions; perspective taking; problem solving; teamwork; goal setting). The activities aim to help students develop, hone, reflect on, and practise their empathy skills and competencies.

Each session is intended to build on the skills and knowledge gained in the previous session, with sessions structured around four key learning outcomes: 1. Understanding Empathy (e.g., students increase their understanding and knowledge of empathy); 2. Practising Empathy (e.g., students practice empathy-related skills, such as perspective taking and empathic listening); 3. Overcoming Barriers to Empathy (e.g., students identify and address potential barriers to empathic action); 4. Empathy in Action (e.g., students plan a social action project, involving goal-directed prosocial behaviour in their school or local community). At the end of each session, students are asked to practise their learning from the session in their everyday lives by completing a simple learning task (e.g., find examples of empathy on TV/media) before the next session.

Teachers interested in facilitating the ASE programme are provided with a teacher handbook, which provides detailed instructions on how to facilitate each session. The handbook outlines step-by-step recommendations for how each activity can be implemented within the classroom setting, and includes a list of prompts for eliciting class discussions and encouraging student reflection. Suggested resources (e.g., websites) and materials (e.g., scenario cards) for each activity are also provided in the handbook. No formal teacher training is provided on the ASE programme, but facilitating teachers are provided with contact information for a member of the ASE research team, whom they are encouraged to contact for additional facilitation advice and support if needed. Students participating in the ASE programme are provided with a student workbook. Workbooks are not evaluated, but students are encouraged to complete a personal reflection in their workbook at the end of each ASE session and identify the key take home messages they learned from the session.

2.4. Measures

An extensive review of existing validated measures was undertaken to select the most appropriate measures for the myriad outcome variables and mediator variables of this study. Final decisions on measures were based on age- and culture-appropriateness, length (measurement burden), availability, psychometric properties, and sensitivity to change. Students completed a series of measures assessing their empathy, peer-student relationships, and prosocial values and behaviours. All outcomes were assessed using validated scales. Teachers completed items assessing programme fidelity. Socio-demographic information, including age and gender, were collected through the use of single-item categorical variables.

2.4.1. Empathy

The Basic Empathy Scale (BES; Jolliffe & Farrington, 2006) was used to measure student empathy. The BES is a 20-item scale which is designed to measure both cognitive (e.g. *I can understand how people are feeling before they tell me;* $\alpha = .79$) and affective (e.g. *after being with a friend who is sad, I usually feel sad;* $\alpha = .85$) empathy in adolescents. Scale scores range from 1 to 100. Higher scores represent higher levels of empathy.

2.4.2. Emotional self-efficacy

Emotional self-efficacy was assessed using the eight item 'dealing with emotions in others' subscale ($\alpha = .85$), from the emotional self-efficacy scale (Qualter et al., 2015). This subscale measures youths' confidence in their ability to understand the emotions of others (e.g., *I can figure out what made someone feel the way they feel*). Scores range from 1 to 40, where higher scores represent higher levels of emotional self-efficacy.

2.4.3. Social responsibility

Social Responsibility values were measured using the Youth Social Conscience scale ($\omega = .89$. Bebiroglu et al., 2013). The youth social conscience scale consists of six items which assess youths' sense of responsibility regarding problems in society (e.g., *Helping other people is important to me*). Scores range from 1 to 30, where higher scores are indicative of greater social responsibility values.

2.4.4. Peer relations

Peer relations were assessed using the Connectedness to Peers subscale ($\alpha = .60$; Hemingway Measure of Adolescent Connectedness, Karcher, 2001), which is a six-item scale measuring the extent to which adolescents feel drawn to, or cooperate with, their classmates (e.g., *I get along well with the other students in my class*). Scores can range from 1 to 30. Higher scores are indicative of more positive peer relations.

2.4.5. Peer aggression

Two subscales of the Peer Conflict Scale (Marsee et al., 2011) were used to measure overt (i.e. physical; $\alpha = .89$) and relational (i.e., non-physical/psychological; $\alpha = .79$) aggression. Both subscales contain 10 items and measure the extent to which youth engage in overt (e.g. *If others make me mad, I hurt them)* and relational (e.g., *When someone upsets me, I tell my friends to stop liking that person*) aggressive acts. Scores on both sub-scales can range from 1 to 40. Higher scores represent higher levels of aggression.

2.4.6. Prosocial behaviour

Prosocial behaviour was assessed using the prosocial subscale from

the Strengths and Difficulties questionnaire (α = .66; SDQ; Goodman, 2001). This is five item scale which measures the extent to which young people engage in prosocial responding, such as volunteering or being nice to others *(e.g. I am helpful if someone is hurt, feeling ill or upset)*. Scores range from 0 to 10, with higher scores representing greater prosocial behaviour.

2.4.7. Prosocial helping

Prosocial helping was assessed using the Prosocial Behaviour Scale (Nielson et al., 2017). This is a 20-item scale which measures 5 types of helping behaviours: Defending (e.g. *If I see someone being given a hard time, I stand up for that person*; α's ≥ .85); Emotional Helping (e.g. *If someone is upset, I listen to that person*; α's ≥ .88); Physical Helping (e.g. *If I see someone hurt themselves, I help that person*; α's ≥ .83); Inclusion (e.g. *I accept others for who they are, even if they are different*; α's ≥ .75) and Sharing (e.g. *I share my personal belongings with people*; α's ≥ .82). Scores can range from 1 to 100, where higher scores represent higher levels of prosocial helping.

2.4.8. Programme fidelity

Teachers facilitating the ASE programme in intervention schools were asked to complete a fidelity checklist. The purpose of the fidelity checklist was to gather information about the implementation of the ASE programme in each school throughout the evaluation process. Specifically, teachers were asked to record the start and end date of the ASE programme, how many sessions of the programme were completed, and whether each session was facilitated online or in-person.

2.5. Procedure

Secondary schools located in the Republic of Ireland were contacted and invited to participate in the ASE evaluation project. Schools were identified using the national Department of Education and Skills database, which contains a publicly available list of all registered schools in Ireland. Approximately 30% of schools registered on the Department of Education and Skills database were selected using random sampling. In total, 216 schools were contacted and invited to participate in this study. All schools were initially contacted by a member of the research team via email, and provided with a detailed letter describing the aims and procedures of the study. All schools were subsequently contacted by a follow-up telephone call to further discuss the study. Interested schools were asked to nominate a point-of-contact for all further communication. All schools were informed that if they participated in the research, the school would be randomly allocated to either an intervention or a waitlist control group. Out of the 216 schools invited to participate in the research, 25 secondary schools (10 girls only; 11 co-educational; 4 boys only) agreed to take part in this study, which represents a 12% school participation rate.

Participating schools agreed to commence the evaluation from January 2020 onwards. However, in March 2020 in response to the growing COVID-19 pandemic, the Irish government called for the closure of all schools and education centres in Ireland. All schools were contacted to discuss the ASE evaluation and a decision was made to postpone the evaluation and programme implementation until September 2020, when schools would be in a position to reopen and resume with in-person teaching activities. Upon the return to in-person teaching in September 2020, participating schools were contacted by the lead author and asked whether they would like to continue with the evaluation. Due to the new COVID-19 social distancing measures implemented in schools and the additional constraints placed on students/teachers at that time, 15 schools (8 intervention, 7 control) felt that it was no longer feasible for them to participate in the evaluation. Of the 25 schools that originally agreed to participate in the evaluation, nine (4 intervention; 5 control) schools (4 co-educational; 5 single-sex) agreed to continue with the study.

Teachers in intervention schools were posted copies of the ASE

teacher handbook and student workbooks. Teachers in these schools were also sent a short informational video via email, which provided an overview of the ASE programme and recommendations for facilitating the programme. All teachers were provided with instructions for organising the student surveys. Co-ordinating teachers in each participating school acted as gatekeepers between the researchers and the students/parents. Students were informed about the study by the co-ordinating teacher in their school, and provided with a detailed student information sheet and assent form. Informed parental information sheets and consent forms were also sent to parents of students in participating schools/classes. Interested students were asked to return a signed copy of the parental consent form and student assent form to their co-ordinating teacher. Students who did not provide written parental consent and personal assent were not eligible to participate in the research surveys.

Between October and December 2020 co-ordinating teachers invited participating students in all schools to complete an online questionnaire (created by the researchers in surveymonkey) assessing their empathy, social values, peer relationships, and prosocial behaviours (Time 1/ Pre-Test). Students were informed that they would be asked to take part in a second, similar questionnaire in approximately 12 weeks-time for comparison purposes (Time 2/ Post-test). Questionnaires were completed in class, during regular school hours. Upon the completion of the Time 1 questionnaires, students in the intervention schools began participating in the ASE programme while students in the control schools continued with their usual lessons.

In January 2021, it was announced that all schools in Ireland would be closed, due to the escalating COVID-19 case numbers, and that there would be a return to remote learning, which would remain in place until April 2021. At this time, teachers in all participating intervention and control schools were contacted and asked whether they would be willing to continue with the evaluation. Participating schools agreed to continue with the evaluation and teachers in the intervention schools were provided with an adapted ASE Teacher Manual, which provided recommendations and resources for facilitating the ASE programme in an online context, if desired. Teachers in the intervention schools stopped facilitating the ASE programme in May 2021. Students in all schools were then asked by their co-ordinating teacher to complete a second (Time 2), online questionnaire, assessing their empathy, social responsibility, peer relationships and prosocial behaviours. Ethical approval for this study was granted by the Research Ethics Committee at the authors' institution (Application Number: 19-Jun-01).

2.6. Analytic plan

Descriptive statistics, including frequency estimates, were employed to examine programme fidelity (e.g., dose, method of facilitation) across each intervention school. Preliminary analyses, involving independent t-tests and one-way between-subject ANOVAs, were performed to examine whether programme dosage (e.g., partial or full programme completion), or method of facilitation (e.g., online, offline, hybrid) were linked to student outcomes. A series of mediated regression analyses were then conducted to examine whether empathy mediated the relationship between group condition (Intervention or Control) and the outcome measures (e.g. prosocial behaviour; prosocial helping; overt aggression; relational aggression; peer relations; social responsibility; and emotional efficacy). All analyses were carried out using the PROCESS v3.5 macro add-on for SPSS (version 25; Hayes, 2018). The mediation models were specified using Model 4, where each Time 2 outcome measure was entered as a separate dependent variable (Y). The independent variable (X) was Condition, which was a dichotomous variable with two levels, coded as 1 =Control and 2 =Intervention. Time 2 empathy scores were entered as the mediator (M). Each model also contained three covariates (U1, U2, U3), in which the effects of the Time 1 measures (mediator & outcome) and gender, (1 =male, 2 =female) were controlled for. Indirect and direct effects were evaluated for

significance at 95% confidence intervals (CIs) established via bootstrapping techniques, implemented using 10,000 bootstrap samples (as recommended by Hayes, 2013). Significant mediation is considered present when zero is not contained within the CI for the indirect path (Preacher et al., 2007). Descriptive analyses, including t-tests and correlations, were also performed on the data. Only participants who provided both Time 1 and Time 2 data were included in the analyses.

3. Theory

Empathy is a complex phenomenon that lacks a unifying conceptual definition (Cuff et al., 2016). However, most theorists and researchers propose that empathy involves both a cognitive (e.g., understanding another's point of view) and affective (e.g., sharing another's feelings) response (Jolliffe & Farrington, 2006). While some models view empathy as a stable, dispositional trait (Davis, 2018; Kaplan & Iacoboni, 2006), others contend that empathy is a skill that can be strengthened through practice (Batson et al., 2004; Gerdes & Segal, 2011). Notably, it is proposed that empathy is a key driver of prosocial behaviour (Decety et al., 2016), and a foundational skill from which other wider social attitudes and values are built (Cuff et al., 2016; Wang et al., 2017). Findings from a robust literature base lend support to this conceptualisation, with evidence indicating that empathy promotes prosocial action (Carlo et al., 2010; Silke et al., 2018), and helps foster feelings of social connectedness and cohesion (Eisenberg et al., 2010; Headley & Sangganjanavanich, 2014). However, while empathy is regarded as a key mechanism of social and personal change (Dolan, 2022; Laguna et al., 2020), it is important to acknowledge that empathy is not expressed equally across all contexts, as personal/situational barriers can inhibit empathic responding (Behler & Berry, 2022). The current research is underpinned by these conceptual models, which view empathy as a malleable skill that can be influenced by environmental factors. In particular, the ASE programme is guided by research and theory, which indicates that practising empathy skills (e.g., active listening, perspective taking, understanding emotions), and engaging in interactive (e.g., role-play; games) learning strategies that involve tasks, such as communication, teamwork, problem-solving, reflection and goal setting, can help strengthen and enhance empathic responding (CASEL, 2021; Hatcher et al., 1994; Lam et al., 2011; Malti et al., 2016). The programme is also informed by research and theory, which suggests that in addition to targeting potential deficits in empathy-related skills, interventions aiming to promote greater empathic action should also target the personal or situational barriers that may adversely affect one's motivation for engaging in empathy (Behler & Berry, 2022; Weisz & Zaki, 2017). Thus, the hypothesised mechanism of action proposed by this research is that participation in the ASE programme leads to increased empathy, which in turn leads to increased prosocial responding, as such, this study posits that empathy mediates the pathway between programme participation and prosocial action.

4. Results

4.1. Missing data

In order to examine whether missing values were Missing Completely at Random (MCAR), Little's (1988) MCAR test was applied to the Time 1 and Time 2 responses. For Time 1 measures, Little's test was found to be non-significant (χ^2 [123] = 133.73, p = .24). Little's MCAR test was also found to be non-significant (χ^2 [123] = 145.81, p = .08) for the Time 2 measures, indicating that the data was missing completely at random at both Time 1 and Time 2. Hence, the data was deemed suitable for Expectation Maximisation (EM) and the EM algorithm for imputing missing values was employed on the dataset.

4.2. ASE programme fidelity

The ASE programme was delivered to 15 individual classes across the four intervention schools over a 14–26 week period, which was longer than the 12 weeks recommended in the manual. In one school, all sessions of the ASE programme were facilitated online; two schools completed the ASE programme using a combination of online and in-classroom contexts; and one school completed the ASE programme entirely on an in-person basis. Findings from a one-way ANOVA indicated that students who participated in ASE through online, offline or mixed/hybrid means, showed no differences in their Time 2 outcomes (all $p_s >.05$). One school did not complete the full 12 sessions of the ASE programme, with students in this school participating in sessions 1–9 only. An independent samples t-test revealed no difference in Time 2 outcomes between students from this school and the other three intervention schools that completed the full programme (all $p_s >.05$).

4.3. Preliminary analyses

Pearson's correlations were performed to examine the associations between Time 1 outcomes variables and participant gender. As can be seen in Table 1, significant correlations were observed between most Time 1 outcomes. Significant correlations between gender and the majority of outcomes were also observed (see Table 1).

4.4. Pre-test group comparisons

In order to examine whether the intervention and control groups were equivalent at baseline, a series of independent t-tests were conducted on all pre-test (i.e. Time 1) outcomes. Results revealed that there were no significant differences between students in the intervention and control schools on any pre-test measure (e.g. all $p_s >.05$). Descriptive statistics for all Time 1 variables are displayed in Table 2 below. As can be seen here, students reported moderate-high scores on all scales, apart from the overt and relational aggression scales.

4.5. Mediation analyses

Descriptive statistics for all Time 2 measures are displayed in Table 3. At time 2, students reported low levels of overt and relational aggression scales, but reported moderate-high scores on all other measures.

Results from the mediated regression analyses, including standardized and unstandardized regression coefficient estimates, significance values and confidence intervals are displayed in Table 4. Significant associations between Condition (X) and Time 2 (T2) empathy (M) were found for all models (all $p_s <.05$), indicating that youth in the intervention group showed higher levels of T2 empathy than youth in the control group. Significant associations were also found between T2 empathy and the majority of T2 outcomes (Y). In particular, findings indicated that higher levels of T2 empathy were associated with higher levels of T2 prosocial helping (B=.44, $p < .001$), T2 prosocial behaviour (B=.05, $p < .001$), T2 emotional efficacy (B=.25, $p < .001$), and T2 social responsibility (B=.17, $p < .001$). In addition, a number of significant relations between the covariates and T2 outcomes were observed. While a significant, positive relationship between Time 1 (U1) and T2 outcomes was observed for each model (all $p_s<.001$), Time 1 empathy (U2) and gender (U3) had limited significant associations with T2 outcome scores. Girls reported greater prosocial helping (B= 3.52, p = .02) and more positive peer relations (B=1.37, p = .01) at time 2 than boys.

No significant direct or total effects were observed for any model. However, significant indirect relationships were observed for the majority of outcomes. A review of 95% confidence intervals (CIs) for indirect effects indicated that T2 empathy significantly mediated the relationship between Condition and T2 prosocial helping (95% CI =.34; 2.06), T2 prosocial behaviour (95% CI =.03;.26), T2 social

Table 1

Showing Correlations between Gender and Time 1 Outcomes for All Participants.

	Gender	Emotional Self-Efficacy	Peer Relations	Empathy	Prosocial Helping	Overt Aggression	Relational Aggression	Prosocial Behaviour
Emotional Self-Efficacy	.12*							
Peer Relations	.08	.40**						
Empathy	.28**	.55**	.25**					
Prosocial Helping	.29**	.59**	.36**	.54**				
Overt Aggression	-.23**	-.13*	-.26**	-.28**	-.20**			
Relational Aggression	-.05	-.03	-.01	-.14*	-.13*	.62**		
Prosocial Behaviour	.35**	.50**	.34**	.42**	.55**	-.21**	-0.07	
Social Responsibility	.30**	.39**	.26**	.33**	.52**	-.28*	-.17**	.49**

Note: * $p < .05$; ** $p < .001$

Table 2

Descriptive Statistics, including means (M), median (Mdn), and standard deviations (SD), for Intervention and Control Groups on All Pre-Test (Time 1) Outcomes.

Outcomes	Control Schools			Intervention Schools			Range	α	S	K
	Mdn	M	SD	Mdn	M	SD				
Empathy	75.00	75.03	8.86	78.00	76.93	9.72	1–100	.80	-0.31	-0.25
Emotional Self-Efficacy	30.00	28.95	5.09	30.00	29.75	4.94	1–40	.85	-0.60	1.43
Social Responsibility	29.00	27.16	3.94	28.00	26.94	3.82	1–30	.92	-2.37	7.28
Peer Relations	21.00	21.14	3.77	22.00	21.69	3.12	1–30	.56	-1.18	2.92
Overt Aggression	12.00	13.44	3.85	13.00	13.91	3.85	1–40	.82	2.28	8.61
Relational Aggression	12.00	12.59	2.87	12.00	12.41	2.82	1–40	.76	2.59	10.93
Prosocial Behaviour	8.00	8.05	1.60	8.00	8.02	1.69	1–10	.64	-1.47	3.51
Prosocial Helping	79.00	77.03	11.60	77.00	76.65	11.29	1–100	.92	-0.92	2.08

Note: * $p < .05$; ** $p < .001$

Table 3

Descriptive Statistics, including means (M), median (Mdn), and standard deviations (SD), for Intervention and Control Groups on All Post-Test (Time 2) Outcomes.

Outcomes	Control Schools			Intervention Schools			Range	α	S	K
	Mdn	M	SD	Mdn	M	SD				
Empathy	76.00	75.01	8.56	77.00	78.07	8.30	1–100	.80	-0.69	0.79
Emotional Self-Efficacy	30.00	29.78	4.49	30.00	30.36	4.43	1–40	.85	-0.15	-0.28
Social Responsibility	29.00	27.54	3.18	28.00	26.99	3.92	1–30	.92	-1.86	3.30
Peer Relations	21.00	21.40	3.15	22.00	21.69	3.12	1–30	.56	-0.78	1.66
Overt Aggression	13.00	14.07	4.46	13.00	14.52	4.35	1–40	.82	1.53	2.32
Relational Aggression	13.00	13.11	3.23	12.00	12.81	3.00	1–40	.76	2.18	7.07
Prosocial Behaviour	8.00	8.17	1.60	8.00	7.94	1.70	1–10	.64	-1.24	2.22
Prosocial Helping	79.00	77.39	10.38	78.00	77.53	10.64	1–100	.92	-0.60	0.78

responsibility (95% CI =.13;.80), and T2 emotional efficacy (95% CI =.17; 1.09), after controlling for gender and Time 1 responses. These results indicated that participants in the Intervention group showed higher levels of empathy at Time 2, which in turn promoted higher levels of prosocial behaviour, prosocial helping, emotional efficacy, and social responsibility. No indirect effects were observed for peer relations, overt aggression or relational aggression. A full summary of direct and indirect effects for each mediation model can be found in Table 4.

5. Discussion

The aim of this research was to examine whether secondary school students in Ireland who participate in a SEL empathy education programme (i.e., ASE) show higher levels of empathy, emotional efficacy, peer relations, social responsibility, and prosocial responding, as well as lower aggressive behaviours, in comparison to students who do not participate in the programme. Overall, findings show that the participation in the ASE programme is directly associated with increased levels of empathy. Findings also suggest that empathy mediated the relationship between programme participation and students' prosocial responding, social responsibility and emotional efficacy. Thus indicating that ASE is indirectly associated with positive adolescent outcomes. However, participation in the programme was not associated with reduced aggressive behaviour. Hence, only partial support for the

research hypotheses was observed. These findings have important implications for research and practice, and are discussed further below.

Findings from the current research are important as they provide initial support for the utility of the ASE programme within an Irish context. Results suggest that, in comparison to a control group, students who participated in the programme showed higher levels of empathy, after controlling for both gender and baseline scores. As the majority of SEL research has been conducted within North America (Durlak et al., 2022), the current findings are notable as they provide much needed insight into the efficacy of SEL within the Irish secondary-school system. Furthermore, despite empathy being identified as a key learning outcome for secondary school students in Ireland (National Council for Curriculum Assessment, 2023), there is a lack of evidenced-based SEL programmes for this age group (Boylan et al., 2019). Thus, the current research is beneficial, as it provides culturally relevant, evidence-based support for an adolescent-focused, empathy education programme. As the programme can be implemented as part of the Junior Cycle well-being curriculum (e.g., in SPHE class), it may be a valuable aide for educators attempting to nurture empathy-related student learning outcomes.

In addition to the association between ASE participation and empathy, and in line with the research hypotheses, students' participation in the programme was also indirectly linked to other positive developmental and social changes. Specifically, students who took part

Table 4
Direct and Indirect Relationship between Condition, Empathy and Time 2 Outcomes.

Outcome (Y)	Effect of X on M			Effect of M on Y			Effect of U1 on Y			Effect of U2 on Y			Effect of U3 on Y			Direct Effect		Total effect		Indirect Effect CI 95%			
	β	B	p	β	B	p	β	B	p	β	B	p	β	B	p	B	p	B	p	B	SE	Lower	Upper
Prosocial Helping	.30	2.55	.003	.36	.44	<.001	.57	.54	<.001	-.24	-.27	.001	.12	3.52	.02	-.41	.67	.72	.48	**1.13**	.44	.34	2.06
Prosocial Behaviour	.29	2.47	.004	.27	.05	<.001	.50	.52	<.001	-.07	-.01	.27	.05	.22	.38	-.31	.06	-.19	.27	**.13**	.06	.03	.26
Emotional Efficacy	.28	2.43	.005	.47	.25	<.001	.50	.46	<.001	-.22	-.11	.001	-.04	-.52	.42	-.39	.38	.21	.67	**.60**	.23	.17	1.09
Relational Aggression	.28	2.40	.005	-.09	-.03	.20	.48	.53	<.001	.08	.03	.26	.02	.20	.70	-.12	.73	-.20	.57	-.03	.03	-.09	.03
Overt Aggression	.29	2.50	.004	-.12	-.06	.05	.66	.76	<.001	.12	.06	.05	-.05	-.59	.35	.10	.81	-.05	.90	-.15	.12	-.43	.02
Peer Relations	.28	2.44	.005	.04	.04	.08	.43	.42	<.001	-.06	-.02	.34	.15	1.37	.01	.02	.97	.12	.78	.11	.08	-.03	.29
Social Responsibility	.29	2.54	.003	.41	.17	<.001	.48	.46	<.001	-.20	-.08	.001	.08	.79	.13	-.67	.05	-.24	.51	**.43**	.17	.13	.80

Note: U1 = Time 1 Outcome; U2 = Time 1 Empathy; U3 = Gender; M = Time 2 Empathy; X = Condition; Y = Time 2 Outcome
Significant indirect effects are highlighted in bold

in the ASE programme were found to show greater empathy, which in turn was linked to greater prosocial engagement, emotional efficacy and social responsibility. Hence, the current research adds to a growing body of evidence which suggests that empathy is an important *mechanism of change* (Decety et al., 2016; Malti et al., 2016). As researchers and policy makers have expressed concerns about the apparent decline in community engagement among younger generations, and the growing fragmentation of society (Grütter & Buchmann, 2022; Hart, 2009; Twenge & Campbell, 2012), these research findings are relevant as they suggest that empathy may play a key role in fostering greater prosocial involvement among adolescents.

However, while the ASE programme was associated with improvements in a number of youth social outcomes, in contrast to the proposed hypothesis, programme participation was not associated with changes in either students' peer relations or (relational or overt) aggression over time. Notably, these findings conflict with those reported in previous studies, which have typically indicated that empathy, and participation in empathy-based programmes, are associated with reduced delinquent or aggressive behaviours and enhanced group relations (Björkqvist et al., 2000; Eisenberg et al., 2010; Klimecki, 2019; Malti et al., 2016). Nonetheless, some emerging evidence from other intervention-based research has indicated that programmes which aim to reduce aggressive behaviour appear to produce stronger effects when implemented with younger children (Van Ryzin & Roseth, 2019; Yeager et al., 2015). As the current research was carried out with an adolescent population, this may help explain the lack of significant associations observed here. Additionally, it should be noted that participants in the current research evidenced high peer relations and low levels of aggression at baseline, and thus it is possible that potential floor or ceiling effects may also account for the lack of significant differences observed at post-test. Future research may benefit from using measures that are less susceptible to floor or ceiling effects.

Findings from the current research also provide relevant insights into how the ASE programme was implemented across participating schools. This is a notable advantage, as the lack of transparency regarding programme implementation and fidelity is often cited as a major limitation within the SEL literature (Barry et al., 2017). Within the current study, feedback from facilitating teachers suggested that none of the intervention schools implemented the ASE programme in the manner it was intended to be delivered, as all schools took longer than the proposed 12 weeks to facilitate the programme. Although no differences were observed between full and partial completers of the programme, this may be because students in the single, non-completer school still received the majority (75%) of the programme. Nonetheless, the general lack of programme fidelity (e.g., time intervals between sessions) may have impacted the magnitude of programme effects, which may explain why the ASE programme was only associated with small effect sizes. Previous research suggests that the lack of programme fidelity is a major limitation affecting SEL research generally (Dowling & Barry, 2020), and that it can be difficult for teachers to maintain fidelity with programmes if they have a demanding timetable, and/or are competing with other occupational or time constraints (Kaufman, 2015; Laguna et al., 2020). Although future research would benefit from examining whether stronger ASE effects are observed under higher levels of programme fidelity, further collaborative work with educators and policy makers may first be needed in order to explore the barriers to programme fidelity and understand how greater fidelity can be promoted within applied, educational settings where curricular demands are high.

Furthermore, it is important to comment on the COVID-19 pandemic, as this is the context through which the current research was conducted. As the pandemic is believed to have adversely affected the health and wellbeing of young people worldwide (Courtney et al., 2020; Wiguna et al., 2020), researchers and educators argued that there is more need for effective SEL programmes now than ever before (Li et al., 2021). Moreover, the COVID-19 related school closures highlight the importance of designing SEL programmes that can be easily, and flexibly,

implemented through remote learning strategies, when in-person, classroom alternatives are not possible (Li et al., 2021). Hence, the availability of an adaptable remote learning ASE package was not only a major advantage of the ASE programme, but was crucial for ensuring the viability of continuing with this evaluation during the pandemic period. However, it is important for researchers and practitioners to be aware that the due to the wider context in which this research was conducted, the ASE programme was delivered through a variety of different methods (e.g., online only, in-person only, or a hybrid approach), which may limit our understanding of the efficacy of the programme. Although the method of programme delivery did not appear to impact student outcomes in the current research, these comparisons are limited by the small number of intervention schools included in the evaluation (n = 4). Moreover, it is possible that teacher facilitation style and/or student interest or engagement in the programme were affected by the wider COVID climate (Flynn et al., 2021; Spitzer et al., 2021; Tran et al., 2021), which may have resulted in weakened programme effects. Future research should aim to examine the efficacy of the ASE programme within the post-pandemic context, and explore the impact of different facilitation methods across a larger number of schools/classrooms.

5.1. Implications for research, policy and practice

The findings from this research have important implications for research and policy/practice, both nationally and internationally. This research is among the first to examine the effectiveness of a school-based SEL programme in promoting empathy and prosocial responding among Irish adolescents, and provides preliminary evidence to support the utility of the ASE programme. The study is important as it provides researchers and practitioners with insight into the implementation and effectiveness of SEL within an Irish context, extending knowledge and understanding about SEL practices across different cultures, which may help inform the development and refinement of culturally diverse SEL initiatives. As ASE is designed to be implemented as part of the Irish Junior Cycle curriculum (e.g., through subjects such as SPHE), the findings of this research may be particularly relevant for researchers and educators working with secondary-school students in Ireland. Due to the lack of empathy education resources, and evaluated SEL programmes, currently available for Irish adolescents (Boylan et al., 2019), schools may benefit from having access to a developmentally-tailored, evidenced-based SEL programme, which can help teachers address targeted learning outcomes, by promoting students' empathy skills. As ASE is a freely-available resource, that can be implemented without placing high demand on school resources, the programme offers practical advantages for schools and education centres internationally, increasing the scalability of the programme (Durlak et al., 2022). However, while the activities and learning methodologies employed in the ASE programme (e.g., group work, active listening, role-play), may be easily adapted to other educational contexts, further research is needed to evaluate the efficacy of ASE with adolescents from other cultural backgrounds. Researchers or educators wishing to adapt the ASE programme for use with adolescents in other countries, should consider the cultural and age-appropriateness of the programme activities, and how the resource aligns with local or national educational policy and curriculum.

Notably, findings from the current research suggest that empathy is a key predictor of positive adolescent outcomes, as participation in the ASE programme was associated with higher levels of prosocial responding, social responsibility, and emotional efficacy, only when participants also experienced heightened empathy levels. This finding has important implications for SEL policy and practice nationally and internationally, as it adds to a body of evidence which suggests that empathy is a critical pathway through which SEL programmes bring about positive intra- and inter-personal outcomes (Durlak et al., 2011), and highlights the importance of including empathy education within the school curriculum. Policy-makers and practitioners should be aware of the important role that empathy plays in adolescents' SEL.

Nonetheless, researchers and practitioners interested in the ASE programme, should be aware that while the current research indicates that ASE participation is associated with significant improvements (in comparison to a control group), the programme may only produce small changes in empathy-related outcomes, as programme effect sizes were typically weak. Crucially, some researchers contend that stand-alone SEL programmes may not be sufficient to promote substantial, long-term, changes in attitudes and behaviours (Barry et al., 2017; Frydenberg & Muller, 2017). These findings may indicate that empathy education programmes, like ASE, may be better implemented as part of a whole-school approach (e.g., through cross-curricular links or as part of a wider SEL curricula). Open, ongoing collaboration between researchers, educators and policymakers is needed to facilitate knowledge-exchange and establish best practice guidelines for SEL implementation in secondary schools.

5.2. Limitations and recommendations for future research

While this study has several strengths, there are a number of limitations, which should be acknowledged. First, participants in this study were composed predominantly of female respondents, which restricts understanding about the effectiveness of the ASE programme with youth who identify as other genders, and may explain why few significant gender differences were observed in the current research. Future research should strive to obtain a more balanced gender representation. Additionally, while the measurement of student outcomes across multiple time points is a major strength of this research, the design is limited by the lack of a follow-up assessment, as it is not possible to comment on the durability of the observed group differences. Future evaluations should include follow-up assessments in order to examine the long-term effects that participation in the ASE programme exerts on adolescents' social and developmental outcomes. Similarly, the reliance on self-report assessments, and the predominance of measures assessing positive outcomes, are other notable limitations of the research. Future research aiming to assess the utility of the ASE (or other SEL) programme should strive to include more objective measures, and examine how programme participation impacts both prosocial and antisocial behaviour. Finally it should be noted that the current research was conducted during the context of a global pandemic, which may not only have impacted the rigour and fidelity of the programme, but may also have had adverse effects on student engagement, wellbeing and/or opportunities for social interaction (Li et al., 2021; Margolius et al., 2020). It is important for researchers and practitioners to be aware of the unprecedented context in which this research was conducted, and an important objective for future research should be to examine the utility of the ASE programme in the post-pandemic context. Future research may also benefit from exploring the individual, classroom and school-level factors that influence the implementation of the ASE programme, or other similar SEL programmes.

5.3. Conclusions

Overall, findings from this research provide preliminary support for the ASE programme. Irish secondary students who participated in the programme showed greater empathy, which in turn was linked to higher prosocial responding, enhanced emotional efficacy, and greater social responsibility, compared to youth who did not take part in ASE. As the programme was delivered during the context of the COVID-19 pandemic and issues with programme fidelity were noted, the presence of significant, small effects is notable, and highlights the potential of the ASE programme to promote positive developmental outcomes among adolescents. However, it is clear that further research examining the effectiveness of this programme in the long-term and in other cultural contexts is still needed.

Impact statement

This study evaluated the effectiveness of an empathy-based Social and Emotional Learning (SEL) programme, Activating Social Empathy (ASE), in promoting empathy, social concern and helping among secondary-school students in Ireland. Findings from this study show that adolescents who participate in the ASE programme show higher levels of empathy over time (compared to adolescents who do not participate in ASE). Higher empathy was in turn linked to greater altruism, emotional understanding, and social concern. This study has implications for schools by documenting the positive outcomes associated with participation in the ASE programme and highlighting the important connection between empathy and wider social values.

Funding

Declaration of Competing Interest

The authors declare no conflict of interests. At the time of writing, the first author was employed as a post-doctoral researcher and was paid from funding granted by the Galway University Foundation.

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