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The Impact Of A Positive Psychology Intervention On State Wellbeing In Irish School Children: A Cluster Randomized Control Trial Evaluating The A Lust For Life Schools Program

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Abstract

The A Lust for Life (ALFL) Schools Program is a widely employed positive psychology intervention for school children in Ireland which aims to increase levels of state wellbeing. This Randomized Control Trial (RCT) aimed to evaluate the effectiveness of the ALFL Schools program using a newly developed measure of state wellbeing in 8–11-year-old children. The ALFL group (n=165) participated in a 10-week program and the control group (n=160) was placed on a 10-week waiting list. All participants completed the Feeling Better Scale (FBS) which assesses state wellbeing, and trait measures of wellbeing, anxiety and depression before (Time 1) and after (Time 2) the intervention group completed that ALFL Schools program. Compared with the control group, the ALFL group showed a significantly greater improvement in state wellbeing assessed with the FBS total scale, and Behavioral Skills factor scale, but not the FBS Cognitive Skills factor scale. There were, however, no significant improvements in trait wellbeing, anxiety or depression. Results demonstrated that the ALFL Schools Program led to small significant improvements in state wellbeing arising from using behavioral skills learned on the ALFL Schools Program in 8–11-year-old children.

Keywords: children's wellbeing, school wellbeing programme, wellbeing, depression.

1 Introduction

Promoting positive mental health in childhood is a pivotal component in enhancing development and improving health and social wellbeing across the lifespan (World Health Organization, 2021). Adult mental health disorders have their onset in childhood and adolescence (Kieling et al., 2011), with 50% of difficulties arising before the age of 14 years old (Kessler et al., 2005). The mental health of children is being challenged further by the changing landscape of modern childhood. Children are faced with navigating pressures and anxieties from a growing 'consumerist' culture, the omnipresent digital world, climate change, and the lasting impacts of the COVID-19 pandemic (Burns et al., 2019; Christensen et al., 2017; Nearchou et al., 2024). Children with mental health difficulties are at an increased risk of experiencing poor mental and physical health in their teens and early twenties (Dooley et al., 2023; Schlack et al., 2021; Wykes et al., 2023). These young people have a trajectory marked by an increased likelihood of social isolation (Dray et al., 2017), low educational attainment (Wickersham et al., 2021), financial difficulties (Evensen et al., 2017), and substance use (Hopfer et al., 2013). Therefore, the developmental period of childhood offers a window to lay the foundation for emotional wellbeing and positive psychological functioning later in life (Langford et al., 2015).

A large body of evidence supports the long-term benefits of developing social and emotional skills and positive mental health during childhood (Burns et al., 2019). Social emotional learning (SEL) programs and positive psychology interventions (PPIs) are two overlapping and complementary approaches to positive education which aim to promote social and emotional skills development and wellbeing in schools (Waters & Loton, 2019).

SEL is a process through which pupils acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage

emotions, achieve goals, develop empathy, maintain supportive relationships, and make responsible and caring decisions. This is achieved by school-family-community partnerships creating optimal learning environments and ongoing evaluation (Niemi, 2020). Syntheses of evaluation research show that SEL programs increase pupils' personal and social skills, attitudes, prosocial behaviors, positive peer relationships, and academic achievement; reduce pupils' conduct and emotional problems; and enhance school safety, climate, and functioning (Cipriano et al., 2023; Durlak et al., 2022).

Schueller et al. (2014) defined PPIs as interventions which have the goal of enhancing wellbeing, through pathways that are consistent with positive psychology theories, such as Seligman's (2011) PERMA theory or Frederickson's broaden and build theory (Conway et al., 2013). Pathways associated with PERMA theory include savoring of **P**leasurable experiences, **E**ngaging in skillful activities, maintaining supportive **R**elationships, doing **M**eaningful projects, and **A**ccomplishing highly valued goals. Broadening thought-action repertoires and building psychological resources, such as mindfulness, are the main pathways associated with broaden and build theory. Schueller and colleagues' (2014) definition of PPIs is increasingly influential and has informed recent major syntheses of evaluation research which have shown that PPIs are effective in promoting strengths, wellbeing, and quality of life in a range of contexts, including schools (Carr et al., 2021, 2024). Seligman argued that the primary function of PPI interventions is to enhance wellbeing, rather than to reduce or prevent psychopathological symptoms (Seligman & Csikszentmihalyi, 2000). However, many PPIs (Carr et al., 2021, 2024), and programs containing multiple PPIs such as Positive Psychotherapy (Rashid, 2020) have been shown to reduce psychopathological symptoms including depression, anxiety and stress, in addition to enhancing wellbeing.

In making a comparison between SEL and PPI approaches to positive education, it may be seen that the SEL framework is systemic, and conceptualizes the pupil's SEL learning environment as involving the school, family and community (Niemi, 2020), whereas the PPI framework is more individualistic focusing on the pupil's goals and pathways to these (Schueller et al., 2014). However, a 'whole school' approach to implementing PPIs has been developed as described below (Nourish, 2015).

PPIs have been introduced into schools by offering specific classes on developing positive psychology skills such as mindfulness, gratitude and kindness; and also, by adopting a whole school approach where a positive psychology ethos is introduced into all aspects of school life for pupils and staff (Allen et al., 2022). For example, Seligman's Geelong Grammar School project pioneered positive education as a school-wide approach to promote student and staff wellbeing (Nourish, 2015). All Geelong staff were trained by Seligman's team in a wide range of PPIs and coached in how to teach these skills to students in stand-alone classes. They were also coached in how to embed a positive psychology ethos in the way that they taught all academic subjects, extra-curricular activities, and sports. There is growing evidence that wellbeing programs that are embedded within a whole-school positive education system have more sustainable outcomes (Waters, 2011).

A distinction may be made between universal programs which are provided to all students in school(s) or class(es), and targeted PPI programs which are only offered to vulnerable pupils with specific needs, for example, socially disadvantaged children or those with specific, difficulties, diagnoses or disabilities. While comparative data on universal and targeted PPI school-based programs are unavailable, evaluations of mental health school-based programs yield results that may be relevant to PPIs. Universal mental health school-based programs have a wide reach and small, but significant effects. In contrast, targeted programs have a narrower reach and larger effects (McCrone, 2025).

Universal school-based programs have several advantages over targeted programs. They are a cost-effective, efficient, and sustainable way of promoting child wellbeing on a large scale; do not require screening procedures; and reduce stigma associated with targeted programs (Barry et al., 2017; Pössel et al., 2018). Teacher-led programs have advantages over health professional-led programs. They enhance the intervention process by building upon existing positive teacher-pupil relationships, and teachers continue to reinforce learnings from the intervention following its completion (Chodkiewicz et al., 2017; Kumar et al., 2021; Seligman et al., 2009).

Universal school-based PPI programs in which mindfulness is a central component have growing popularity. However, syntheses of available evaluation studies (Grennan et al., 2025) and a large national UK controlled trial (Department of Education, 2025) indicate that such programs have small or negligible effects on indices of wellbeing typically used to evaluate such programs. In a review of six meta-analyses covering 110 primary studies involving over 28,000 young people, Grennan et al. (2025) found that mindfulness-based interventions had small but statistically significant effects on wellbeing, mindfulness, and anxiety, but no effect for depression. The UK national controlled trial of a universal mindfulness intervention found that at 3-6 months and 9-12 months follow-up, the mindfulness intervention had no significant effect on outcome of

children or adolescents assessed with a brief self-report measure of depression symptoms (Department of Education, 2025). In this trial, the intention was for pupils to receive teacher-guided mindfulness exercises for five minutes per day for four months. An unexpected finding was that where the intervention was implemented regularly and consistently it led to decreased depression symptoms in adolescents, but to increased depression symptoms in primary school children.

Evidence syntheses support the effectiveness of PPI programs for children and adolescents in schools and other contexts (Mendes de Oliveria et al., 2022; Tejada-Gallardo et al., 2020). A systematic review and meta-analysis comparing multi-component PPIs to control conditions found small, but statistically significant effects on subjective and psychological wellbeing in the short and long-term in adolescents (Tejada-Gallardo et al., 2020). A systematic review, focusing specifically on the effects of PPIs on children (0-12 years) in the school context, found that both single and multi-component PPIs were effective in increasing children's wellbeing (Mendes de Oliveria et al., 2022). Of 15 studies identified, 10 found statistically significant effects. The positive outcomes that were assessed included happiness, gratitude, character strengths, positive emotions, optimism, kindness, hope, mindfulness, values, engagement, achievement, positive relationships, self-concept and positive thinking.

1.1 Background to the A Lust for Life Schools Program

A Lust for Life (ALFL) Schools Program is a universal school-based intervention, developed in Ireland, which aims to increase children's wellbeing. The ALFL curriculum draws on contemporary positive psychology, especially mindfulness-based interventions; cognitive behavior therapy (CBT); and health, developmental, and educational psychology. The ALFL Schools Program includes ten 40-minute classes in which children learn the following specific self-regulation skills: breathing exercises; mindfulness; visualization exercises; progressive muscle relaxation; naming emotions and rating their intensity; understanding the links between actions, thoughts, and feelings; positive self-talk (cognitive restructuring, optimism, and gratitude); eliciting social support from peers and adults; addressing bullying; assertiveness; and internet safety. Didactic instruction, video modelling, classroom experiential exercises, and homework practice are used for skills training. The ALFL theory of change is that when the skills learned in the ALFL Schools Program are applied in particular situations, an increase in state wellbeing occurs. That is, the ALFL Schools Program enhances state wellbeing, but may or may not improve trait wellbeing. Trait wellbeing is the level of wellbeing children usually experience. For children in fifth and sixth class (aged 11-13 years), third and fourth class (aged 8-11 years), first and second class (aged 6-8 years), and junior and senior infants (aged 4-6 years), developmentally staged versions of ALFL Schools Program have been developed. By developmentally staged, we mean that the complexity of the language used, and the way in which the skills and concepts of the program are presented have been modified to suit the level of cognitive development of children in the age bands of the different versions of the program. The current study focused on the ALFL Schools' Program for third and fourth class children aged 8-11 years. A summary of the program for this age group is contained in Table 1.

The ALFL Schools Program was developed by an expert team (https://alflschools.com/our-team/) of clinical psychologists and educational specialists, in consultation with teachers, parents, and children (https://www.alustforlife.com). The ALFL Schools Program is integrated with other aspects of the Irish primary school curriculum, notably the social, physical, and health education (SPHE, Government of Ireland, 1999) curriculum and is framed within an Irish cultural context. SPHE fosters the personal development, health and wellbeing of pupils; helps them develop and maintain supportive relationships; and become responsible citizens in Irish society. SPHE is provided at a whole school level by fostering a positive school climate, at a discrete class level by designating specific class times for SPHE, and at an integrated level by incorporating SPHE learning experiences into the teaching of other aspects of the school curriculum. By being integrated with SPHE, the ALFL Schools Program is part of a multilevel whole-schools approach to wellbeing. Teachers who deliver the ALFL Schools Program have undertaken a three-hour training session. They use ALFL resources which are available on a website (https://alflschools.com). These include lesson plans, support sheets, lesson slides, videos for learning self-regulation exercises, and homework sheets. ALFL training and resources were designed to support intervention fidelity.

As part of the evaluative ALFL framework, two previous cluster randomized controlled trials (RCTs) were conducted. These showed that for children between the ages of 10-12 years, compared with a waiting list control group, the ALFL Schools Program did not lead to significant positive changes on a range of trait wellbeing and mental health variables that assessed how children usually feel (Clancy, 2024; O'Connor, 2022). However, O'Connor et al. (2022) also found that a subgroup of ALFL Schools Program participants who had low levels of positive mental health at baseline showed significant improvements in trait mindfulness. Two qualitative studies showed that children with low

levels of positive mental health (Hoctor, 2022) and their parents (Listwan, 2023) reported that the program improved children's emotional literacy, coping skills, self-awareness, openness to sharing feelings, emotion management, conflict resolution, and lifestyle changes. These positive changes were situation specific. Taken together the results of quantitative RCTs and qualitative studies suggest that the ALFL Schools Program for children aged 10-12 years led to improvement in trait mindfulness in children with low levels of positive mental health, but did not have a significant effect on mean scores of a group of children with the full range of positive mental health scores. This may have been due to floor or ceiling effects, where there was little room for improvement for most participants in the RCTs on scales used to assess wellbeing and positive mental-health related dependent variables. However, it may also have been due to the use of trait rather than state measures of wellbeing and mental health.

Trait measures of wellbeing contain items that ask children how they usually feel, whereas state measures contain items that ask how they have felt recently in specific situations. The theory of change underpinning the ALFL Schools Program, is that children will experience increased state wellbeing when they use skills learned on the program in specific situations in their day-to-day lives. Therefore, the most appropriate way to assess the impact of the program is with a scale that measures state wellbeing containing items that ask participants how they felt in specific situations when they recently used skills learned on the program. To assess state wellbeing in this way, a new self-report scale, 'The Feeling Better Scale' (FBS; McKenna, 2025) was developed and validated to evaluate the ALFL Schools Program. Items in this scale ask children if they used specific skills learned on the ALFL Schools Program in specific situations in the past week, and to indicate how much better using the skills made them feel. (A full description is given below in the method section.) The aim of the current study was to evaluate the effectiveness of the ALFL Schools Program for children aged between 8-11 years using the newly developed FBS to assess state wellbeing as the primary outcome variable.

1.2 The Present Study

The present study addressed the following four questions with respect to third and fourth class children aged 8-11 years who were assigned to a 10-week ALFL Schools Program or a waiting-list control group and assessed before and after this 10-week period.

1. Did the ALFL Schools Program lead to increased state wellbeing when skills taught on the program were used?
2. Did the ALFL Schools Program lead to positive changes in self-reported wellbeing, internalizing problems, anxiety, and depression?
3. For children who reported a low level of adjustment at Time 1, did the ALFL Schools Program lead to increased state wellbeing when skills taught on the program were used, and to positive changes in the level of self-reported wellbeing, internalizing problems, anxiety, and depression?
4. How satisfied were participants with the ALFL Schools Program?

2 Method

2.1 Ethics, preregistration, reporting guidelines

This study was conducted with ethical approval from the research ethics committee of the institution affiliated with the implementation of this research. The study was pre-registered on Clinical Trials (ClinicalTrials.gov ID: NCT06135779). Results are reported following CONSORT (Schultz et al., 2010; Moher et al., 2010) and American Psychological Association JARS (https://apastyle.apa.org/jars; Appelbaum et al., 2018) guidelines.

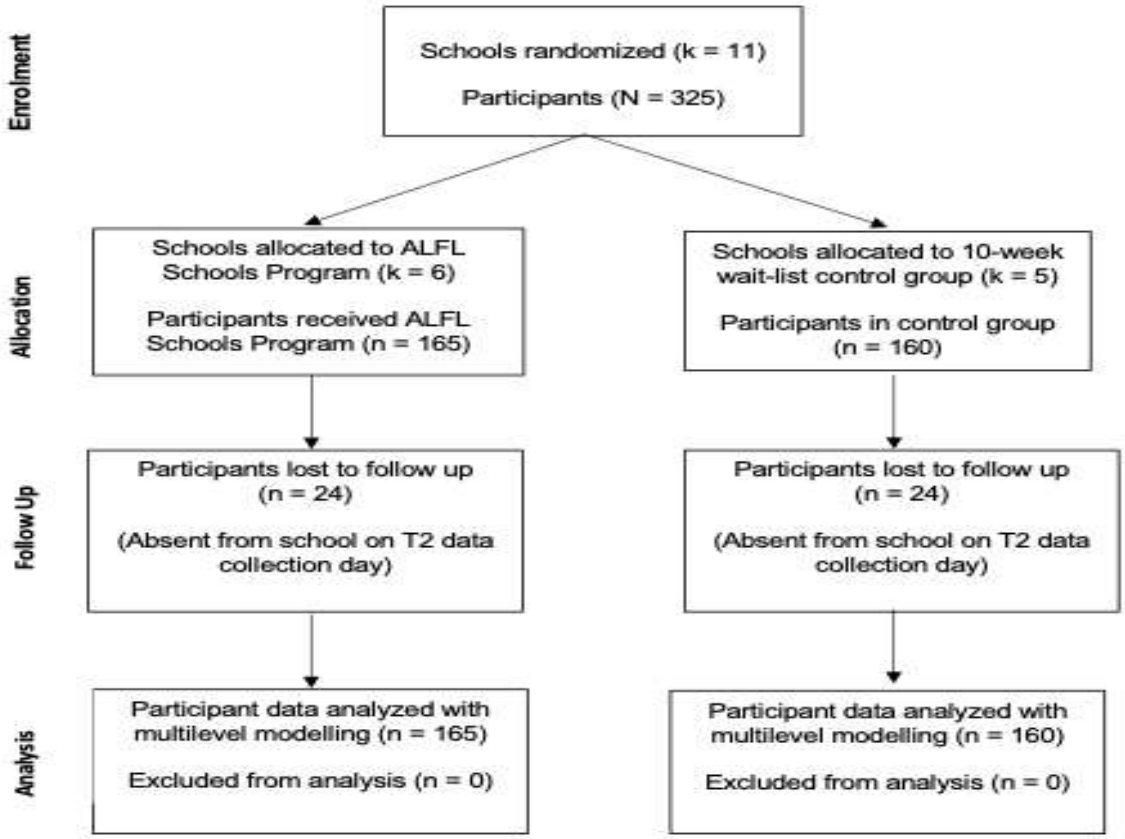
2.2 Design

The study was conducted in primary schools affiliated to the ALFL organization in Ireland. These included schools in disadvantaged areas where there was Delivery of Equality of opportunity In Schools (DEIS) by providing extra educational resources (Hyland, 2005), and regular non-DEIS schools. A parallel-group cluster randomized controlled trial design was used. Schools were chosen as the unit of randomization, with each class as a cluster. Clusters were randomized to the intervention group (n = 165 pupils) and waiting list control (n = 160 pupils) groups. The intervention group engaged in the 10-session ALFL Schools Program for children aged 8-11 years. The control group was placed on a 10-week waiting list for this program. The intervention group completed the ALFL Schools program following Time 1 data collection and before Time 2 data collection. Both groups were assessed with the Feeling Better Scale (FBS; McKenna, 2025), the Stirling Children's Wellbeing Scale (SCWS; Liddle et al., 2013, 2015), and the Revised Children's Anxiety and Depression Scale Short Form (RCADS; Ebesutani et. al., 2012). The FBS was developed specifically for the study to assess state wellbeing (as explained above in the introduction). The SCWS and RCADS were selected because they are designed for use by children, and assess variables which have been found in meta-analyses to be responsive to PPIs, i.e. wellbeing, anxiety, and depression (Carr et al., 2021, 2024).

2.3 Procedure

School recruitment was conducted through the ALFL organization. Parents and children received information sheets and were invited to sign consent/assent forms before data collection. At the start of the Time 1 data collection session a brief presentation was delivered to participating children in their classrooms. This included an outline of the ALFL Schools Program, why participants were being invited to take part in an evaluation study, and instructions on how to complete the online assessment pack. They were informed about the confidentiality of their data, the risks and benefits of participating, supports available if they became distressed during data collection, and the option to withdraw at any time during data collection. Data were collected with parental consent and participants' assent online with the Pavlovia (https://pavlovia.org) platform on tablets in a classroom setting. Demographic questions, FBS, SCWS, and RCADS were completed at Time 1 and 2. An additional satisfaction scale was completed at Time 2. Participants' initial questions were answered in a plenary format. A one-to-one format was used to answer questions that arose while completing the assessment pack. If participants experienced fatigue, brief rest periods were permitted. The intervention group completed the ALFL Schools Program following Time 1 data collection, and the control group was on a 10-week waiting list.

Figure 1. Participant flow chart through the cluster randomized controlled trial



2.4 Power analysis and sample size

An a priori power analysis was conducted using Optimal Design Software (Raudenbush et al, 2011) for multi-level cluster randomized controlled trial designs. The analysis revealed that a total of 275 participants or 11 clusters of 25 participants would provide 80% statistical power to detect a medium-sized effect ($d = 0.5$) at $\alpha = 0.05$.

2.5 Participants

A total of 325 children from 18 classes in 11 schools were recruited. There were 165 in the ALFL group and 160 in the waiting-list control group. Participants were aged between 8-11 years (M = 9.04), of mixed genders (Male= 49.2%; Female = 50.8%), who were enrolled in third class (58.8%) or fourth class (41.2 %), in DEIS (50.2%) and non-DEIS (49.8 %) schools. Descriptive statistics for demographic variables at Time 1 for ALFL and control groups are given in Table 2, along with results of t-tests and chi square tests used to assess the statistical significance of baseline differences between groups. The mean age of ALFL group was significantly greater than that of the control group (9.25 vs 8.81, $t = 6.19$, $p < .01$) and contained

significantly more participants from DEIS schools (67.3% vs. 32.5%, $\chi^2 = 39.29$, p <. 001).

2.6 Dropouts

The flow of participants through the study is shown in Figure 1. There were 24 (14.55%) dropouts from the intervention group and 24 (15.00%) dropouts from the control group. Dropouts and completers in the ALFL and control groups differed significantly on three demographic variables: age (F (3, 321) = 13.2 p < 0.001), school gender type (χ^2 (6, N = 325) = 20.8, p<0.01), and school disadvantage status (χ^2 (6, N =325) = 40.2, p < 0.001). Details of these differences are given in Table S1 in supplementary information.

Table 1. Descriptive statistics for demographic variables for ALFL and control groups and results of t-tests and chi square tests comparing the two groups.

			ALFL (Group 1)	Control (Group 2)	t or χ^2	Group Differences
N			165	160		
Age		**M**	9.27	8.81	6.19	1>2***
		SD	0.73	0.63		
Gender§	**Female**	**f**	80	80	0.08	1=2
		%	48.5%	50%		
	Male	**f**	85	80		
		%	51.5%	50%		
School gender type§	**All female**	**f**	20	27	5.83	1=2=3
		%	12.1%	16.9%		
	All male	**f**	18	29		
		%	10.9%	18.1%		
	Mixed	**f**	127	104		
		%	77%	65%		
School disadvantage status§	**Non-DEIS**	**f**	54	108	39.29	1<2***
		%	32.7%	67.5%		
	DEIS	**f**	111	52		
		%	67.3%	32.5%		

Note. ALFL = group that received A Lust For Life Schools Program. Control = control group. DEIS = Delivering Equality of opportunity In Schools. N = number of cases. M = mean, SD = standard deviation. f = frequency. t = t-test result from comparison of means of ALFL and control groups. χ^2= chi square results from comparison of frequencies of ALFL and control groups. 1>2 indicates that the value for group 1 is greater than group 2. 1<2 indicates that the value for group 1 is less than group 2. 1 = 2 indicates that the values of groups 1 and 2 were not significantly different. *p<.05. **p<.01. ***p<.001.

2.7 Intervention

The ALFL Schools Program for 8–11-year-old children contained ten 40-min classroom-based weekly sessions facilitated by children's regular teachers between October 2023 and June 2024. Prior to the study teachers were provided with online training. Online lesson plans, slides, support sheets, videos for training children in the use of specific skills, and homework sheets to support pupils in home practice of skills learned in ALFL classroom lessons were provided to teachers through the ALFL website. The program curriculum is presented in Table 2. Each lesson focused on a set of core topics, and included video-based training in self-regulation, breathing, mindfulness, relaxation, or cognitive coping skills. Each lesson also involved individual and group activities focused on the core topics and skills for that lesson. Teachers invited pupils to add the new skills they had learned to their 'resilience app' and practice these at home at the conclusion of each lesson. The 'resilience app' was the name given to the cumulative set of wellbeing skills learned on the program.

2.8 Intervention fidelity

Ten fidelity checklists, one for each session in the third and fourth class ALFL Schools Program, were used to evaluate the fidelity with which the intervention was delivered in a 20% sample of audio recordings of lessons. Checklists specified the content of each lesson. The mean fidelity rating across 10 lessons, shown in Table S2 in supplementary information, was 84% which falls above the 80% threshold for high fidelity set by the National Institute of Health Behavior Change Consortium (Borrelli et al., 2005). However, there was variability in treatment fidelity with 6 sessions obtaining fidelity ratings above 80% and 4 obtaining ratings of 71-75%.

Table 2. Summary of key elements of each lesson in the ALFL Schools Program for children aged 8-11 years.

	Session Title	Core Topics	Self-regulation skills	Video	Activities	Resilience App	Homework
1	**My Wellbeing**	Introduction to wellbeing	Belly breathing Boat to safety	'How are you?'	Discussion & activities about word clouds & feelings basket activities	Belly Breathing	Belly breathing Make paper hope boat
2	**Boosting Resilience**	Factors that influence resilience and wellbeing	Square breathing Wellbeing battery	Selfie scan video	Discussion & activities about wellbeing battery activity Jumping Jacks and Square Breathing	Square breathing Wellbeing battery	Keep a wellbeing battery diary
3	**Identifying My Feelings**	4 Big feelings (happy, sad, angry, afraid)	Selfie scan Heart breathing	Video about the 4 big feelings	Range of emotions. Emoji people Emoji communication	Heart breathing Emoji people	Draw emoji People
4	**Understanding Feelings Thoughts & Actions**	Fight, flight, freeze Effects of thoughts on feelings & actions	Tighten, loosen calm (TLC) Tree in a storm	Video about fight, flight, and freeze	Discussion & activities about feelings Review the 4 big feelings Fight, flight, and freeze Three circles	Tighten, loosen calm Tree in a storm	Match thoughts to feelings Write thoughts & actions you experienced when you had a fight, flight or freeze feeling
5	**Mental Resilience**	Introduction to thoughts, feelings and actions.	Thoughtful words Thought bubbles	Video about life hacks	Activities & discussion about changing thoughts, feelings and actions in difficult situations.	Thoughtful words Thought bubbles	Use the Resilience Toolbox to plan how you would manage a stressful situation
6	**Healthy Relationships with Self & Others**	Relationships with self and others Self-talk Healthy relationships Boundaries One good adult	Wise words Friendly wishes	Video about relationships	Activities & discussion about Self-talk & healthy relationships Boundary exercise.	My wise words Friendly wishes	Write what you would say to a friend, a trusted adult, & yourself, if you overheard a friend saying something mean about you
7	**Tricky Friendships**	Bullying Assertive communication Consent	Belly breathing Finding your true voice	Video about bullying situations Part 1	Activities & discussion about consent & assertive communication Group work	Finding your true voice Assertive communication Consent	Write assertive responses to an unkind remark by another child
8	**Resilience in Friendships**	Bullying Assertive communication	Square breathing Inner warrior	Video about bullying situations Part 2	Activities & discussion about bullying Consent collage	Inner warrior	Draw your Inner Warrior & write words that describe him or her

		Consent Inner voice Trusted adult Anti-bullying phrases			Anti-bullying phrases		
9	**Tricky World - Internet Safety 1**	Internet safety Telling difference between real & fake information Information that is safe or unsafe to share on the internet	Selfie scan Switching off	Be Internet legends alert video Video about real or fake information on the internet Video of five pillars from Be internet legends	Discussion & activities about real or fake and safe or unsafe internet communications	Switching off Telling the difference between real & fake information on the internet	Complete a safe or unsafe internet quiz with parents
10	**Tricky World - Internet Safety 2**	Information that is fair to share on social media & the internet. Pause think and ask (PTA) a trusted adult share code	Tighten, loosen calm (TLC)	Video of being internet sharp Video of fair to share	Discussion & activities about internet safety. Fair to share discussion. Power card	Switching off Pause think & ask a trusted adult share code	Make a safe internet poster and a safe internet shield naming the ideas that you will use to manage internet use safely

Fidelity ratings were made by a pair of researchers, with a Krippendorff's alpha (Hayes & Krippendorff, 2007) which assesses inter-rater reliability of 0.806.

2.9 Instruments

2.9.1 The Feeling Better Scale (FBS)

The FBS (McKenna, 2025) is a new child self-report scale for assessing 'state wellbeing'. It evaluates momentary increases in wellbeing due to using skills learned in the ALFL Schools Program. This 23-item scale yields a total state wellbeing score due to using any skill learned on the ALFL Schools Program (with a range of 0-92), and scores for state wellbeing due to using behavioral skills (with a range of 0-52, based on 13 items) and cognitive skills (with a range of 0-40, based on 10 items). The FBS also yields a skills score (with a range of 0-23, based on 23 items) which gives the number of wellbeing skills used. The following is an example of an item that assesses the use of a cognitive skill to increase wellbeing: 'Something upset me so I paused to think about the situation, before I decided what to do'. The following is an example of an item that assesses the use of a behavioral skill to increase wellbeing: 'I used Heart Breathing. Heart Breathing is when I breathe in love and breathe out my worries'. For all FBS items there are five response options: 'Yes and it made me feel a lot better'; 'Yes and it made me feel somewhat better'; 'Yes and it made me feel a little better'; 'Yes but I did not feel better'; and 'No I did not do it'. Each item yields a score from 0 = 'No I did not do it', to 4 = 'Yes and it made me feel a lot better'.

The FBS was developed as follows (McKenna, 2025). Based on a content analysis of the ALFL Schools Program curriculum, a pool of 37 items was developed. Where possible each item was then worded in two slightly different ways, leading to a pool of 73 items. In focus groups, comments on items were elicited from 32 pupils who had completed the ALFL Schools Program. Focus groups transcripts were analyzed to assess children's views on the readability and understandability of items, and children's item-wording preferences. This process resulted in a 38-item version of FBS and a 5-point item response format. Through exploratory and confirmatory factor analysis of a data set from a sample of 305 pupils who had completed the ALFL Schools Program the final 23-item, two-factor version of the FBS was developed. The internal consistency alpha reliabilities of the FBS total scale and behavioral and cognitive scales were 0.93, 0.94 and 0.86 respectively.

2.9.2 Stirling Children's Wellbeing Scale (SCWS)

The SCWS (Liddle et al., 2013, 2015) is a 15-item scale which yields scores for overall wellbeing (with a range of 12-60, based on 12 items); positive emotional state (with a range of 6-30, based on 6 items); and positive outlook (with a range of 6-30, based on 6 items); as well as a 3 item social desirability index (with a range of 3-15) which detects 'faking good'. The following is an example of a positive emotional state item: "I've been feeling calm". The following is an example of a positive outlook item: "I thought there are many things I can be proud of". The following is an example of a social desirability item: "I have always told the truth". There are five response options for all items ranging from 1 = 'Never' to 5 = 'Always'. The SCWS has good psychometric properties and UK norms. In this study, the SCWS showed good internal consistency (Trait wellbeing $\alpha = 0.88$, Positive Emotions $\alpha = 0.85$ and Positive Outlook $\alpha = 0.79$).

2.9.3 Revised Children's Anxiety and Depression Scale (RCADS)

The RCADS (Ebesutani et. al., 2012) is a 25-item self-report measure which yields scores for the severity of internalizing problems, anxiety and depression symptoms in children aged 8-18 years. The following is an example of an item from the 15-item anxiety scale: "I felt scared if I had to sleep on my own". The following is an example of an item from the 10-item depression scale: "I felt sad or empty". There are four response options for all items ranging from 0 = 'Never' to 3 = 'Always'. The RCADS has good psychometric properties and US norms. In this study, the RCADS showed good internal consistency (Internalizing problems, $\alpha = 0.90$; Anxiety, $\alpha = 0.85$' and Depression, $\alpha = 0.79$).

2.9.4 Satisfaction Scale (SS)

The SS is an 8-item scale which assesses participants satisfaction with the ALFL schools' program (O'Connor et al., 2022). A 5-point response format was used for all items ranging from 0= 'Strongly Disagree' to 4= 'Strongly Agree'. The following is an example of an SS item: "Overall, I am satisfied with A Lust for Life".

2.9.5 Demographic Questionnaire (DQ)

Three items were used to collect information about participants' age, gender, and attendance at a DEIS school for socially disadvantaged children.

2.10 Data analytic plan

Data were collected online via the Pavlovia platform, downloaded, cleaned, and imported into the IBM SPSS Statistics software version 27 (IBM Corp., 2020). The linear mixed-effects models (MIXED, Heck et al., 2014) procedure in IBM SPSS Statistics was conducted for repeated measures analyses of primary (FBS) and secondary (SCWS and RCADS) outcome measures. Cohen's d effect sizes were computed using Time 2 data from ALFL and control groups and interpreted using the convention that effect sizes of d = 0.2, 0.5, and 0.8

are considered small, medium, and large respectively (Cohen, 1988).

To address the first two research questions about the impact of the ALFL Schools Program on primary and secondary outcome measures, multilevel models were run to assess if there was a significant Group [ALFL vs. Control] * Time [Time 1 vs Time 2] interaction effect after controlling for the nesting of participants within classes, and controlling for the two demographic variables on which participants differed at baseline, which were age and DEIS-school attendance. The main analysis was conducted on all available data. An additional ancillary intention-to-treat analysis was conducted in which multiple imputation was used to impute dropouts' missing data points (Graham, 2009). The main analysis was conducted without imputation because analyses involving imputed data may yield less stable results (Twisk et al., 2013). In both of these analyses the value of the outcome (Y) for an individual ($_i$) measured at a time occasion ($_t$) was explained by seven fixed effects (β) at Level 1 (intercept, class, age, DEIS, group, time, and the group*time interaction), two random effects (u) at Level 2 (time and intercept) and the Level 1 residual variance (ε), as expressed in the following equation:

$$Y_{ti} = \beta_0 + \beta_1 class_i + \beta_2 age_i + \beta_3 deis_i + \beta_4 group_i + \beta_5 time_{ti} + \beta_6 group_i * time_{ti} + u_{0i} time_{ti} + u_{1i} + \varepsilon_{ti}$$

To address the third research question about the impact of the ALFL Schools Program for participants with a low level of adjustment at Time 1, multilevel models were run to assess if there was a significant Adjustment [Low adjustment vs Normal adjustment] * Group [ALFL vs. Control] * Time [Time 1 vs Time 2] interaction effect, after controlling for the nesting of participants within classes, and controlling for the two demographic variables on which participants differed at baseline, which were age and DEIS school attendance. In these analyses children were defined as having low adjustment if they scored above the median on the RCADS and below the median on the SCWS at Time 1. These analyses were conducted on available data, without imputation of missing values for dropouts. In these analyses the value of the outcome (Y) for an individual ($_i$) measured at a time occasion ($_t$) was explained by eight fixed effects (β) at Level 1 (intercept, class, age, DEIS, adjustment, group, time, and the adjustment*group*time interaction), two random effects (u) at Level 2 (time and intercept) and the Level 1 residual variance (ε), as expressed in the following equation:

$$Y_{ti} = \beta_0 + \beta_1 class_i + \beta_2 age_i + \beta_3 deis_i + \beta_7 adjustment_i + \beta_4 condition_i + \beta_5 time_{ti} + \beta_8 adjustment_i * condition_i * time_{ti} + u_{0i} time_{ti} + u_{1i} + \varepsilon_{ti}$$

3 Results

Figure 1 shows that, for 24 participants in the ALFL group and 24 in the control group, there were missing data at Time 2. Little's test of Missing Completely at Random (MCAR) was not statistically significant, χ^2 (993) = 868.26, p = .998. This indicates that dropout data were missing at random. Preliminary analyses showed that the dependent variables were reliably assessed and normally distributed. This justified the use of parametric statistical tests. For all scales Cronbach's (1951) alpha was above 0.7, as shown in Table S3 in supplementary information. Thus, all dependent variables had adequate internal consistency reliability. Skewness, and kurtosis indices were calculated on Time 1 and 2 data for all dependent variables. Their distributions in intervention and control groups and the overall sample did not deviate from normality, as shown in Table S4 in supplementary information.

Table 3 contains means and standard deviations of all dependent variables at Time 1 and Time 2 in ALFL and control groups, and Group * Time interaction results of multilevel modelling analyses, after controlling for the nesting of participants within classes, age and DEIS school attendance. Table 3 also contains Cohen's (1988) d effects sizes based on differences between intervention and control groups at Time 2.

Table 3. Means and standard deviations on all dependent variables at Time 1 and 2 in ALFL and control groups, and results of multilevel modelling analysis on all available data without multiple imputation of dropouts' missing values.

		ALFL Time 1	ALFL Time 2	Control Time 1	Control Time 2	Cohen's d at T2	G*T β	95% CI	p
N		165	141	160	136				
FBS state well-being	M	39.24	43.88	42.41	39.37	0.22	8.73	1.61, 15.84	.016*
	SD	19.73	21.24	21.28	20.68				
FBS behavioral skills	M	18.18	22.70	20.54	17.85	0.35	8.47	3.97, 12.98	.001***
	SD	12.78	13.68	13.96	13.78				

FBS cognitive skills	M	21.06	21.18	21.86	21.52	-0.04	0.89	-2.12, 3.90	.562
	SD	9.16	9.70	9.43	9.04				
FBS number of skills	M	12.60	14.73	13.34	13.22	0.26	2.62	0.69, 4.55	.008**
	SD	5.61	5.76	5.92	5.68				
SCWS trait well-being	M	35.12	42.37	36.86	43.23	-0.12	1.31	-1.32, 3.94	.328
	SD	8.47	7.41	8.50	6.94				
SCWS positive emotions	M	15.56	21.79	16.21	21.87	-0.02	0.55	-0.92, 2.02	.460
	SD	4.59	3.81	4.86	3.94				
SCWS positive outlook	M	19.56	20.57	20.65	21.36	-0.19	0.36	-1.11, 1.83	.632
	SD	4.68	4.54	4.87	3.90				
RCADS internalizing	M	45.98	46.21	44.89	44.85	0.13	-0.10	-2.83, 2.63	.945
	SD	10.79	10.38	9.90	9.90				
RCADS anxiety	M	45.45	44.98	44.24	44.54	0.04	-0.96	-3.59, 1.68	.476
	SD	10.50	10.15	9.72	9.52				
RCADS depression	M	47.62	48.73	47.06	46.51	0.22	1.10	-1.83, 4.04	.460
	SD	11.08	10.18	10.19	10.21				

Note. ALFL = group that received A Lust For Life Schools Program. Control = control group. FBS = Feeling Better Scale. SCWS= Sterling Children's Wellbeing Scale. RCADS = Revised Children's Anxiety and Depression Scale Short Form. T-scores are given for all RCADS scales. N = number of cases. M = mean. SD = standard deviation. G*T β is the Groups * Time interaction effect from multilevel modelling analysis. 95% CI = 95% confidence interval. *p<.05. **p<.01. ***p<.001.

3.1 State wellbeing

In answer to the first research question concerning the effect of the ALFL Schools Program on the primary outcome variable, significant Group * Time interactions were found on the total FBS state wellbeing scale (β = 8.73, p = 0.016, 95% CI [1.61, 15.84]), state wellbeing arising from using behavioral skills (β = 8.47, p < 0.001, 95% CI [3.97, 12.98]), and the number of FBS skills used to increase wellbeing (β = 2.62, p =.008, 95% CI [0.69, 4.55]), after controlling for the effects of nesting participants within classes, age, and DEIS school attendance. These interactions are graphed in Figure 2.

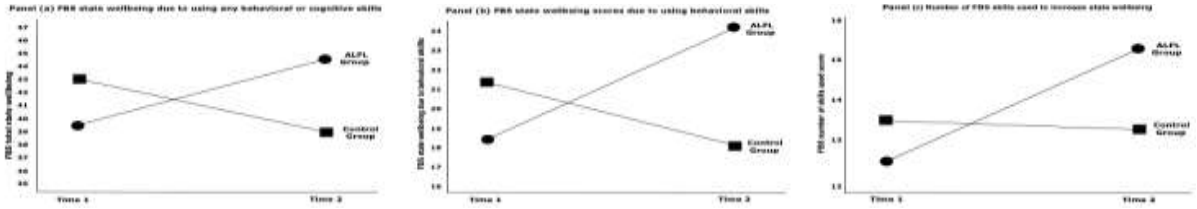
Panel (a) of Figure 2 illustrates that compared with the control group, the ALFL group showed a greater increase in state well-being from Time 1 to 2 arising from using any behavioral or cognitive skills learned on the ALFL program.

Panel (b) of Figure 2 illustrates that compared with the control group, the ALFL group showed a greater increase in state well-being from Time 1 to 2 arising from using behavioral skills.

Panel (c) of Figure 2 illustrates that there was a greater increase in use of wellbeing skills in the ALFL group from Time 1 to 2 compared with the control group.

The effect size reflecting greater state wellbeing at Time 2 in the ALFL group compared with the control group assessed with the FBS total was d = 0.18, and assessed with the FBS behavioral skills scale was d = 0.31. The effect size reflecting greater use of wellbeing skills in the ALFL group compared with the control group at Time 2 assessed with the FBS number of skills used scale was d = 0.22. These three effect sizes were small.

Figure 2. Mean Feeling Better Scale (FBS) scores at Time 1 and Time 2 in in ALFL and control groups



3.2 Trait wellbeing, anxiety, and depression

In answer to the second research question concerning the effect of the ALFL Schools Program on the secondary outcome variables, results in Table 3 show that no significant Group * Time interactions were found on SCWS wellbeing (β = 1.31, p = 0.328, 95% CI [-1.32, 3.94]), positive emotional state (β = 0.55, p = 0.460, 95% CI [-0.92, 2.02]), and positive emotional outlook (β = 0.36, p = 0.632, 95% CI [-1.11, 1.83]) scales; or RCADS internalizing (β = -0.10, p = 0.945, 95% CI [-2.83, 2.63]), anxiety (β = -0.96, p = 0.476, 95% CI [-3.59, 1.68]) and depression (β = 1.10, p = 0.460, 95% CI [-1.83, 4.04]) scales. These results indicate that compared with the control group, the ALFL group did not show a significantly greater increase in trait wellbeing, or decrease in internalizing problems, anxiety, and depression from Time 1 to 2, after controlling for the effects of nesting participants within classes, age, and DEIS school attendance.

Table S5 in supplementary Information shows that results of an ancillary intention-to-treat analyses in which multiple imputation was used to impute dropouts' missing data points yielded a similar pattern of results to the main analysis reported above.

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3.3 Subgroup analysis of participants with a low level of adjustment

To address the third research question concerning the effect of the ALFL Schools Program on participants with a low level of adjustment, Table 4 presents results of the analysis for the low adjustment subgroup that scored above the median on the RCADS and below the median on the SCWS at Time 1, and the results of the normally adjusted subgroup which did not meet the criteria for low adjustment. Significant Adjustment * Group * Time interaction effects were found for the total FBS state wellbeing scale (β =16.12, p = 0.003, 95% CI [5.40, 26.84]), state wellbeing arising from using behavioral skills assessed by the FBS (β =12.38, p = 0.001, 95% CI [5.24, 19.51]), and the number of FBS skills used to increase wellbeing (β = 4.55, p = 0.003, 95% CI [1.53, 7.58]). Significant Adjustment * Group * Time interaction effects were also found for the SCWS positive outlook scale (β = -1.94, p = 0.037, 95% CI [-3.76, -0.12]), the RCADS internalizing problems scale (β = 3.47, p = 0.039, 95% CI [0.18, 6.75]), and the RCADS depression scale (β = 4.41, p = 0.023, 95% CI [0.63, 8.19]). These interactions are graphed in Figure 3.

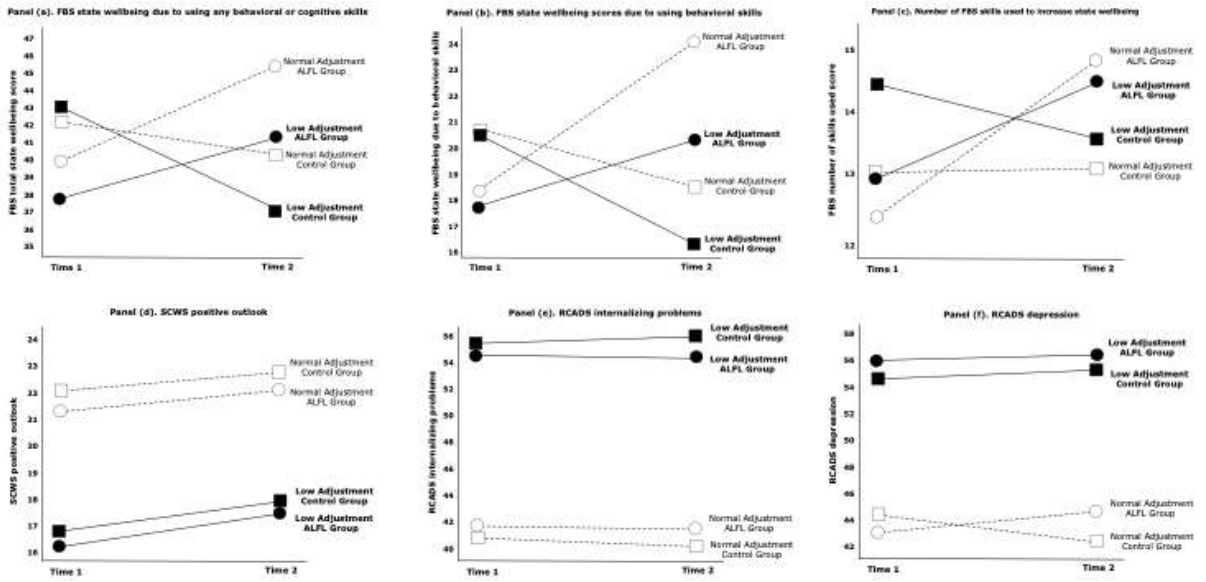
Table 4. Means and standard deviations on all dependent variables at Time 1 and 2 in the low adjustment and normal adjustment subgroups of ALFL and control groups, and results of multilevel modelling analysis for without multiple imputation of dropouts' missing values.

		Low Adjustment				Normal adjustment							
		ALFL Time 1	**ALFL Time 2**	**Control Time 1**	**Control Time 2**	**ALFL Time 1**	**ALFL Time 2**	**Control Time 1**	**Control Time 2**	**Cohen's d at T2 for low adjustment ALFL v control groups**	**A*G*T β**	**95% CI**	**p**
N		54	49	39	40	111	92	121	96				
FBS state well-being	M	37.77	41.32	43.04	37.19	39.95	45.25	42.20	40.28	0.21	16.12	5.40, 26.84	.003**
	SD	20.76	20.34	20.44	18.51	19.26	21.69	21.62	21.55				
FBS behavioral skills	M	17.99	20.21	20.52	16.19	18.27	24.03	20.55	18.54	0.32	12.38	5.24, 19.51	.001***
	SD	13.22	13.15	14.00	11.96	12.62	13.84	14.01	14.50				
FBS cognitive skills	M	19.77	21.11	22.52	21.00	21.68	21.22	21.65	21.74	0.01	2.80	-1.55, 7.14	.206
	SD	9.32	9.15	7.55	8.71	9.05	10.02	9.98	9.21				
FBS number of skills	M	12.94	14.45	14.42	13.57	12.43	14.88	12.99	13.08	0.16	4.55	1.53, 7.58	.003**
	SD	6.21	5.61	6.09	5.16	5.31	5.86	5.85	5.90				
SCWS trait well-being	M	28.49	36.64	28.11	36.56	38.35	45.42	39.68	46.00	0.02	-2.85	-5.96, 0.26	.072
	SD	4.81	5.61	5.86	4.12	7.98	6.40	7.21	5.92				
SCWS positive emotions	M	12.32	19.06	11.68	18.42	17.14	23.25	22.01	23.31	0.21	-0.75	-2.53, 1.02	.404
	SD	3.13	3.41	3.75	2.61	4.36	3.17	4.21	3.48				
SCWS positive outlook	M	16.16	17.58	16.43	18.14	21.22	22.16	22.01	22.70	0.18	-1.94	-3.76, -0.12	.037*
	SD	2.82	3.43	4.39	2.80	4.51	4.26	4.21	3.49				

RCADS internalizing	M	54.29	54.27	54.33	54.56	41.94	41.91	41.85	40.80	0.04		3.47	0.18, 6.75	.039*
	SD	8.33	7.38	8.07	7.83	9.47	9.25	8.43	7.60					
RCADS anxiety	M	52.58	52.33	53.01	53.14	41.98	41.07	41.41	40.96		-0.11	2.49	-0.85, 5.82	.144
	SD	5.58	7.35	8.37	7.63	9.58	9.25	8.36	7.80					
RCADS depression	M	56.00	56.32	55.85	55.93	43.54	44.69	44.23	42.59	0.05		4.41	0.63, 8.19	.023*
	SD	9.19	7.83	9.06	9.02	9.55	8.91	8.86	7.87					

Note. The low adjustment group scored above the median on the RCADS and below the median on the SCWS at Time 1; the normal adjustment group did not meet these criteria. ALFL = group that received A Lust for Life Schools Program. Control = control group. FBS = Feeling Better Scale. SCWS = Sterling Children's Wellbeing Scale. RCADS = Revised Children's Anxiety and Depression Scale Short Form. N = number of cases. M = mean, SD = standard deviation. A*G*T β is the adjustment * groups * time interaction effect from the multilevel modelling analysis. 95% CI = 95% confidence interval. *p<.05. **p<.01. ***p<.001

Figure 3. Mean FBS, SCWS and RCADS scores at Time 1 and Time 2 in low adjustment and normal adjustment subgroups of ALFL and control groups



Note. ALFL = group that received A Lust For Life Schools Program. FBS = Feeling Better Scale. SCWS= Sterling Children's Wellbeing Scale. RCADS = Revised Children's Anxiety and Depression Scale Short Form.

Panel (a) of Figure 3 illustrates that within the low adjustment subgroup, ALFL participants showed a greater increase in state wellbeing from Time 1 to Time 2 arising from using any behavioral or cognitive skills learned on the ALFL Schools Program, compared with controls. A similar pattern occurred in the normally adjusted subgroup.

Panel (b) of Figure 3 illustrates that within the low adjustment subgroup, ALFL participants showed a greater increase in state wellbeing from Time 1 to Time 2 arising from using behavioral skills, compared with controls. A similar pattern occurred in the normally adjusted subgroup.

Panel (c) of Figure 3 illustrates that within the low adjustment subgroup, ALFL participants showed a greater increase in the number of FBS wellbeing skills used from Time 1 to Time 2 compared with controls. A similar pattern occurred in the normally adjusted subgroup.

Panel (d) of Figure 3 illustrates that within the low adjustment subgroup, ALFL and control group participants showed similar increases from Time 1 to Time 2 in SCWS positive outlook, which is a facet of SCWS trait wellbeing. This pattern also occurred in the subgroup with normal adjustment, although the SCWS positive outlook means were lower for the low adjustment subgroup than the normal adjustment subgroup.

Panel (e) of Figure 3 illustrates that within the low adjustment subgroup, ALFL and control group participants showed little change in RCADS internalizing problem means from Time 1 to 2. This pattern also occurred in the subgroup with normal adjustment, although the means were greater (indicating more internalizing problems) for the low adjustment subgroups than the normal adjustment subgroups.

Panel (f) of Figure 3 illustrates that within the low adjustment subgroup, ALFL and control group participants showed little change in RCADS depression means from Time 1 to 2. This pattern also occurred in the subgroup with normal adjustment, although the means were higher (indicating more depression symptoms) for the low adjustment subgroups than the normal adjustment subgroups.

The effect size reflecting greater state wellbeing at Time 2 in the low adjustment ALFL subgroup compared with the low adjustment control group assessed with the FBS total was d = 0.21, and assessed with the FBS behavioral skills scale was d = 0.32. The effect size reflecting a greater increase in the use of wellbeing skills in the low adjustment ALFL subgroup compared with the low adjustment control group assessed with the FBS number of skills used scale was d = 0.16. The effect size reflecting a more positive outlook at Time 2 in the low adjustment ALFL subgroup compared with the low adjustment control group assessed with the SCWS positive outlook scale was d = 0.18. These four effect sizes were small. The effect sizes reflecting fewer internalizing problems and depression symptoms on the RCADS in the low adjustment ALFL subgroup compared with the low adjustment control group were d = 0.04 and d = 0.05 respectively, and were negligible.

Table 5 Satisfaction with ALFL Schools Program

	Strongly agree or Agree	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Understood information	77%	25%	52%	13%	5%	5%
High quality	73%	24%	49%	18%	4%	5%
Satisfied	70%	28%	42%	18%	6%	6%
Learned something new	65%	29%	36%	16%	7%	11%
Fun	63%	28%	35%	24%	7%	6%
Helpful	59%	20%	39%	28%	11%	2%
Would recommend	54%	28%	26%	24%	13%	9%
Suited to needs	43%	15%	28%	27%	17%	13%
Mean	63%					

3.4 Satisfaction

In answer to the fourth research question, Table 5 shows that most participants (54-77%) strongly agreed or agreed with 7 of 8 SS items. Using strong agreement or agreement as an index of satisfaction, averaging across all 8 items, 63% of participants were satisfied with the ALFL schools' program for third and fourth class. Considering individual SS items, and using strong agreement or agreement as an index of satisfaction, 77% understood the ALFL content; 73% thought ALFL was a high quality program; 70% reported overall satisfaction; 65% said that they learned something new; 63% thought the program was fun; 59% said it was helpful; 54% would recommend it to a family member or friend; and 43% thought it was suited to their needs.

4 Discussion

This cluster RCT evaluated the effectiveness of a universal positive psychology program in Irish primary school children, between the ages of 8-11 years. In answer to the first research question concerning the effect of the ALFL Schools' Program on state wellbeing, the primary outcome variable, the results showed that it led to increased state wellbeing on the FBS total scale. Specifically, the ALFL Schools Program led to increased state wellbeing due to the use of behavioral skills learned on the program, and to an increase in the number of wellbeing skills used. However, the increased state wellbeing did not arise from the use of cognitive skills learned on the program. These effects, while significant, were small. In answer to the second research question concerning the effect of the ALFL Schools Program on the secondary outcome variables, it was not found to increase trait wellbeing, or decrease internalizing problems, anxiety, or depression. With regard to the third research question concerning the impact of the ALFL Schools Program on poorly adjusted participants, the results showed that for children who reported a low level of adjustment at Time 1, the ALFL Schools Program, led to increased state wellbeing due to using behavior skills learned on the ALFL program, to an increase in the number of ALFL wellbeing skills used, and an increased positive outlook. In answer to the final research question concerning satisfaction with ALFL, there was a high level of satisfaction reported for the program. However, it is important to note that more than half of participants did not think that it was suited to their needs.

The main novel finding of the study was the demonstration that the ALFL Schools Program led to small significant improvements in state wellbeing arising from the use of behavioral, but not cognitive skills learned on the program. The behavioral and cognitive skills FBS scales were established with exploratory and confirmatory factor analysis and reflect a theoretically coherent grouping of items (McKenna, 2025). The FBS behavioral skills scale assesses state wellbeing due to using specific arousal reducing behavioral skills from the ALFL curriculum. In contrast the cognitive skills scale assesses state wellbeing due to using cognitive strategies to enhance wellbeing, online safety, or to reduce distress discussed in the ALFL Schools Program. To our knowledge this is the first quantitative study to show that a PPI program had a significant effect on state wellbeing in specific situations where PPI skills were used. The results of the current study are consistent with results of two previous qualitative studies of the ALFL Schools Program which showed that children with low levels of positive mental health (Hoctor, 2022) and their parents (Listwan, 2023) reported that the program improved children's coping skills and emotion management in specific situations.

The finding that the ALFL Schools Program had no significant effect on trait wellbeing, internalizing problems, anxiety or depression is consistent with the results of two previous trials of the ALFL Schools Program (Clancy et al., 2023; O'Connor et al., 2022) and a large UK trial of a

universal school-based mindfulness intervention program (Department of Education, 2025). In the UK study, the regularity and consistency of intervention implementation affected outcome. Where the intervention was implemented regularly and consistently it led to decreased depression symptoms in adolescents, but to increased depression symptoms in primary school children. It is unlikely that the non-significant effects in the current study were due to problematic implementation because a fidelity analysis showed that the ALFL Schools Program was implemented with 84% fidelity.

The non-significant effects of the ALFL Schools Program on trait wellbeing, internalizing problems, anxiety or depression assessed with SCWS and RCADS interpreted in conjunction with the significant impact of the program on state wellbeing assessed with the FBS, suggests that when used in specific situations, skills from the ALFL curriculum increase state wellbeing in those situations, but do not affect the general level of wellbeing, anxiety, and depression that children usually experience. This interpretation is consistent with the theory of change underpinning the ALFL Schools Program which is that children will experience increased state wellbeing when they use skills learned on the program in specific situations in their day-to-day lives.

The study had several limitations. First, the unpublished FBS was the primary outcome measure. It would have been preferable to use a published scale. However, no published scale was available that assessed state wellbeing arising from using skills in the ALFL Schools Program curriculum. The use of a scale with these characteristics was essential for assessing program effectiveness because the theory of change underpinning the ALFL Schools Program proposed that the program would lead to increases in state wellbeing in situations when skills from the ALFL curriculum were used. However, despite its unpublished status, the FBS had good internal consistency reliability, and its two-factor structure was supported by exploratory and confirmatory factor analysis.

Second, there was no follow-up conducted as part of this trial. Therefore, it yielded no information on the durability of post-intervention effects. This is a significant limitation in light of findings from the British government's 'Education for Wellbeing' study, which demonstrated the importance of long-term follow-up in evaluating universal mindfulness-based school interventions (Department of Education, 2025). In this study, positive post-intervention effects on depression symptoms of some subgroups (primary school girls and secondary school pupils with emotional difficulties) were not maintained at follow-up, and other subgroups with special educational needs and a history of childhood mental health problems showed significant deterioration at long term follow-up.

Third, there was an unexpected decrease in control group mean FBS scores from Time 1 to 2. This indicates that waiting list control group participants reported higher levels of state wellbeing at Time 1 than Time 2 due to using skills from the ALF curriculum, although they had not completed the ALFL Schools program. Two possible explanations for this are that they misunderstood FBS items, or they had learned ALFL wellbeing skills in some other context, and effectively used these skills to a greater degree at Time 1 than Time 2. For example, some participants may have previously learned a number of self-regulation skills similar to those in the ALFL curriculum in programs such as FRIENDS for Life (Barrett et al., 2000) which has been used in some Irish primary schools.

Fourth, a cluster RCT design with a relatively small number of clusters was used. This may have contributed to baseline imbalances on demographic variables and unstable estimates. To address this, the two demographic variables on which the ALFL and control groups differed (age and DEIS school attendance) were controlled for in multilevel modelling analyses.

Fifth, only child self-report measures were employed in this study. Responses to items may have been biased by factors such as levels of cognitive development and self-awareness, and susceptibility to providing socially desirable responses (Owens et al., 2020). The collection of data from additional informants, such as teachers and parents, may have provided a more holistic and informed perspective of the outcomes measured.

This main strength of the study is that it was part of a wider scale evaluation of the ALFL Schools Program, which is in line with the Medical Research Council's (MRC) recommendations for evaluating complex interventions (Skivington et al., 2021). The MRC recommends when evaluating complex interventions such as multi-component PPIs for school settings to measure proximal outcomes, to assess the expected process of change, and consider how the intervention is expected to influence participants (Mangan et al., 2020). To achieve this, the MRC outlined the benefit of developing and validating new self-report measures. The current study was theoretically driven and used a newly developed and validated state wellbeing measure (McKenna, 2025) which focused on the immediate impact of skills usage in real-world situations. This study adds to the evidence base of the ALFL Schools Program as a universal school-based wellbeing intervention.

This study has key implications for the development and implementation of the ALFL Schools Program. In future iterations of the program there should be an increased focus on behavioral skills, and the way in which cognitive skills are

taught should be enhanced in line with developmental considerations. Trials involving these modifications to the ALFL Schools Program curriculum are required, and these should include follow-up assessment to assess the durability of intervention effects. Publication of the FBS scale development and validation study, and further validation studies of the scale are required. With the accumulation of data from further trials, the ALFL intervention has the potential to be implemented nationally within the Irish school system to equip children with skills to use in their day-to-day lives to improve their levels of state wellbeing.

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Author contributions: Conceptualization and design of the study (AOD & AC); participant recruitment (AOD, LC, EM); data collection (AOD, SG, NMK); data analysis (AOD, MOC, FN); drafting the manuscript (AOD & AC); reviewing and editing the final manuscript (all authors); supervision (AC).

Declaration of competing interests: Leda Connaughton and Eddie Murphy are members of the 'A Lust for Life' charity.

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Compliance with ethical standards & informed consent. This research was conducted with ethical approval of the Human Research Ethics Committee, University College Dublin, and informed consent/assent of parents/participants.

Clinical Trial registration: The trial was pre-registered on a public trials registry (ClinicalTrials.gov ID: NCT06135779).

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Supplementary Information

Table S1 Descriptive statistics for demographic variables at Time 1 for completers and dropouts in ALFL and control groups, and results of one-way analysis of variance and chi square comparing four groups

	ALFL Completers (G1)	ALFL Dropouts (G2)	Control Completers (G3)	Control Dropouts	F or χ^2 (Gps 1-4)	Group Differences

						(G4)		
N			141	24	136	24		
Age		**M**	9.26	9.33	8.83	8.67	13.16***	**1=2>3=4**
		SD	0.73	0.70	0.63	0.64		
Gender§	**Female**	**f**	67	13	69	11	0.21	
		%	45.52	54.17	50.74	45.83		
	Male	**f**	74	11	67	13		
		%	52.48	45.83	49.26	54.17		
School gender type§	**All female**	**f**	13	7	19	8	20.81***	**1=3>2=4**
		%	9.21	29.17	13.97	33.33		
	All male	**f**	16	2	23	6		
		%	11.34	8.33	16.91	25.00		
	Mixed	**f**	112	15	94	10		**1>2=3>4**
		%	79.43	62.25	69.11	41.67		
School disadvantage status§	**Non-DEIS**	**f**	44	10	92	16	40.19***	**1<3, 2=4**
		%	31.20	41.67	67.64	66.67		
	DEIS	**f**	97	14	44	8		**1>3, 2=4**
		%	68.79	58.33	32.35	33.33		

Note. ALFL = group that received A Lust For Life Schools Program. Control = control group. Completer = cases who completed data collection at Time 1 and 2. Dropout = cases who completed data collection at Time 1 but not Time 2. DEIS = Delivering Equality of opportunity In Schools. N = number of cases in each group. M = mean, SD = standard deviation. F = F value form one-way analysis of variance on 4 groups. §Frequencies (f) and percentages are given and frequencies were compared with chi square tests. Significant group differences were detected with post hoc tests for continuous variables, and inspection of standardized residuals for categorical variables. 1=2>3=4: means or frequencies of groups 1 and 2 are greater than those of group 3 and 4. *p<.05. **p<.01. ***p<.001.

Table S2. Mean fidelity ratings in a 20% sample of ALFL lessons

	Lesson number									
Fidelity rating	1	2	3	4	5	6	7	8	9	10
Mean Rating	89%	93%	82%	89%	71%	71%	86%	85%	71%	75%

Table S3. Cronbach's alpha internal consistency reliability for all dependent variables in the total sample at Times 1 and 2.

	Total Sample Time 1	**Total Sample Time 2**
N	**325**	**277**
FBS state wellbeing	0.92	0.93

FBS behavioral skills	0.90	0.92
FBS cognitive skills	0.82	0.84
FBS total skills used	0.91	0.91
SCWS trait wellbeing	0.88	0.85
SCWS positive emotions	0.85	0.80
SCWS positive outlook	0.79	0.76
RCADS internalizing	0.90	0.91
RCADS anxiety	0.85	0.87
RCADS depression	0.79	0.82

Note. FBS = Feeling Better Scale. SCWS = Sterling Children's Wellbeing Scale. RCADS = Revised Children's Anxiety and Depression Scale Short Form. N = number of cases in each group. M = mean, SD = standard deviation. Values exceeding .69 indicate acceptable reliability

Table S4. Skewness and kurtosis of distributions of all dependent variables at Time 1 and 2 in the ALFL and control groups and the total sample

			ALFL Time 1	**ALFL Time 2**	**Control Time 1**	**Control Time 2**	**Total Time 1**	**Total Time 2**
N			**165**	**141**	**160**	**136**	**325**	**277**
FBS State wellbeing		**S**	0.22	0.10	0.07	0.31	0.16	0.10
		K	-0.69	-0.91	-1.17	0.99	-0.96	-0.91
FBS Behavioral skills		**S**	0.45	0.06	0.20	0.55	0.33	0.06
		K	-0.76	-1.10	-1.28	-0.90	-1.06	-1.10
FBS Cognitive skills		**S**	0.04	0.01	-0.02	0.07	0.33	0.01
		K	-0.82	-0.98	-0.90	-0.96	-1.06	-0.98
FBS total skills used		**S**	0.81	-0.43	-0.96	0.08	-0.00	-0.15
		K	-0.95	-0.92	-1.23	-1.21	-1.11	-1.16
SCWS trait wellbeing		**S**	-0.29	-0.17	-0.43	-0.07	-0.37	-0.17
		K	-0.28	-0.09	0.16	-0.34	-1.11	-0.09
SCWS positive emotions		**S**	-0.43	-0.36	-0.59	0.16	-0.51	-0.36
		K	-0.00	0.03	0.37	-0.55	0.15	0.03
SCWS positive outlook		**S**	-0.26	-0.17	-0.45	-0.17	-0.00	-0.17
		K	-0.20	-0.17	-0.25	-0.05	-1.11	-0.17
RCADS internalizing	**Raw score**	**S**	0.85	1.01	1.15	0.95	0.99	0.92
		K	0.43	1.28	1.90	1.27	0.10	1.14
	T-score	**S**	0.72	0.84	0.89	0.84	0.81	0.84
		K	0.19	0.68	1.02	0.21	0.53	0.80
RCADS anxiety	**Raw score**	**S**	0.69	1.01	0.95	0.89	0.83	0.96
		K	0.05	1.23	0.96	0.86	0.42	1.13
	T-score	**S**	0.46	0.82	0.85	0.84	0.64	0.83
		K	-0.30	0.56	0.68	0.68	0.08	0.61
RCADS depression	**Raw score**	**S**	0.79	1.07	0.72	0.81	0.76	0.90
		K	0.20	1.96	0.83	0.78	0.49	1.19
	T-score	**S**	0.82	1.03	0.73	0.78	0.78	0.90
		K	0.14	1.64	0.65	0.75	0.36	1.21

Note. FBS = Feeling Better Scale. SCWS = Sterling Children's Wellbeing Scale. RCADS = Revised Children's Anxiety and Depression Scale Short Form. N = number of cases. M = mean, SD = standard deviation.

Table S5. Means and standard deviations, using imputed values for dropouts' missing data, on all dependent variables at Time 1 and 2 in ALFL and control groups, and results of intention-to-treat multilevel modelling analysis

		ALFL Time 1	ALFL Time 2	Control Time 1	Control Time 2	Cohen's d at Time 2	G*T β	95% CI	p
N		165	165	160	160				
FBS state wellbeing	**M**	39.24	42.92	42.41	39.48	0.18	6.62	1.15, 12.09	.018*
	SD	19.73	19.78	21.28	19.36				
FBS behavioral skills	**M**	18.18	21.87	20.54	17.94	0.31	6.30	2.70, 9.89	.001***
	SD	12.78	12.81	13.96	12.85				
FBS cognitive skills	**M**	21.06	21.05	21.86	21.53	-0.05	0.32	-2.17, 2.80	.802
	SD	9.16	8.99	9.43	8.47				
FBS number of skills	**M**	12.60	14.43	13.34	13.27	0.22	1.90	0.41, 3.38	.012*
	SD	5.60	5.40	5.92	5.30				
SCWS trait wellbeing	**M**	35.12	42.41	36.86	43.17	-0.11	0.97	-1.15, 3.10	.368
	SD	8.47	6.87	8.50	6.47				
SCWS positive emotions	**M**	15.56	21.76	16.21	21.84	-0.02	0.57	-0.64, 1.78	.357
	SD	4.89	3.54	4.86	3.68				
SCWS positive outlook	**M**	19.56	20.65	20.65	21.3	-0.17	0.41	-0.80, 1.61	.509
	SD	4.68	4.22	4.87	3.631				
RCADS internalizing	**M**	45.98	46.36	46.86	45.06	0.14	0.21	-2.21, 2.64	.862
	SD	10.19	9.76	9.66	9.38				
RCADS anxiety	**M**	45.45	45.30	44.24	44.62	0.07	-0.54	-2.83, 1.76	.646
	SD	10.50	9.62	9.71	9.18				
RCADS depression	**M**	47.62	48.74	47.06	44.89	0.40	1.32	-1.31, 3.96	.325
	SD	11.08	9.58	10.19	9.90				

Note. ALFL = group that received A Lust For Life Schools Program. Control = control group. FBS = Feeling Better Scale. SCWS= Sterling Children's Wellbeing Scale. RCADS = Revised Children's Anxiety and Depression Scale Short Form. N = number of cases. M = mean. SD = standard deviation. G*T β is result of intention-to-treat multilevel modelling analysis. 95% CI = 95% confidence interval. §The percentage of the group that scored in the clinically significant range, i.e., RCADS T-score >65. *p<.05. **p<.01. ***p<.001.