Education Endowment Foundation

Positive Action

Pilot report and executive summary

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Independent evaluators:

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QUEEN'S UNIVERSITY BELFAST

The Education Endowment Foundation (EEF) is an independent grant-making charity dedicated to breaking the link between family income and educational achievement, ensuring that children from all backgrounds can fulfil their potential and make the most of their talents.

The EEF aims to raise the attainment of children facing disadvantage by:

- identifying promising educational innovations that address the needs of disadvantaged children in primary and secondary schools in England;
- evaluating these innovations to extend and secure the evidence on what works and can be made to work at scale; and
- encouraging schools, government, charities, and others to apply evidence and adopt innovations found to be effective.

The EEF was established in 2011 by the Sutton Trust as lead charity in partnership with Impetus Trust (now part of Impetus - Private Equity Foundation) and received a founding £125m grant from the Department for Education.

The programme was co-funded by the DfE and the KPMG Foundation as part of an EEF funding round on Character Education.

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Dr Patrick Stark (PS, QUB): Dr Patrick Stark is a Research Fellow in the Centre for Evidence and Social Innovation at Queen's University Belfast. Patrick acted as co-project manager on the study.

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Executive summary

The project

Positive Action aims to improve pupils' social and emotional learning skills. Lessons focus on topics such as 'managing yourself responsibly' and 'treating others the way you like to be treated'. Schools purchase 'kits' of lesson plans and resources for 140 15-minute lessons. Each kit is tailored to a specific school year during which schools are expected to deliver 100 core lessons. In addition to these lessons, Positive Action includes whole-school elements such as assemblies and posters that aim to reinforce the messages from the classroom work. The programme focuses on three outcome areas:

- self-regulation (or 'Think');
- prosocial behaviour and levels of aggressive behaviour (or 'Act'); and
- levels of worrying and feelings about self and life (or 'Feel').

Together these outcomes form the 'Think, Act, Feel' cycle, which is based on the theory that positive actions result in positive thoughts and feelings, and vice versa—meaning that these three outcome areas should be mutually-reinforcing.

Positive Action is an established programme in the United States, but had not been widely delivered in the U.K. before this project. The pilot was designed to test the theory and feasibility of the programme, and explore whether standardised measures created using pupil survey data were appropriate for assessing the programme's three outcome areas. While the programme is available across primary and secondary schools in the U.S., this pilot focused on Years 4 and 5 in 15 primary schools in Kent. The programme was co-funded by the DfE and the KPMG Foundation as part of an EEF funding round on Character Education.

Key conclusions
1. The classroom elements of the programme were well implemented and well received across the pilot. Teachers were positive about the quality of materials but reported that the large number of core lessons were difficult to deliver.
2. Some school leaders were reluctant to implement the whole-school elements of the intervention. In schools with high levels of these elements, pupils had less positive feelings about themselves and their life, but the trial was not designed to assess whether this was due to Positive Action.
3. The study found some evidence of a relationship between the behaviour, personal feeling, and self-regulation outcomes of pupils. This is consistent with the underlying idea that positive actions lead to positive self-concepts as described by the Positive Action "Think, Act, Feel" model.
4. Pupils reported varying levels of engagement with the programme. Children who reported higher engagement also experienced improvements in reported 'Think, Act, Feel' outcomes.
5. There were mixed results across the outcomes measured. Over the course of the programme, there was a decline in aggressive behaviour, but there were also reductions in positive feelings about self and life and in levels of self-regulation. However, the pilot was not designed to assess whether any changes in these outcomes were actually caused by Positive Action.

What are the findings?

Observations found that the classroom elements of Positive Action were generally well delivered. Teachers reported that the accessibility and high quality of the programme manual made lesson delivery straightforward, but that some of the materials could be better adapted to the U.K. context. Teachers also voiced concerns over the feasibility of fitting in the large number of core lessons. The cost of the approach to schools was low, at £760 for one class for three years.

Pupils reported varying engagement with different aspects of the programme. They were especially positive about lessons with 'doing' activities such as colouring and making crafts, and longer tasks such as an ongoing art project. However, some pupils reported concerns about the repetition of certain

activities and requested the chance to provide input into Positive Action lessons. Higher reported engagement in the programme was related to improvements in all outcomes.

Some school leaders were reluctant to make whole-school changes, such as replacing current behavioural policy with Positive Action policies. The pilot found that the whole-school elements of Positive Action may not be effective as currently implemented: exploratory data suggested higher levels of exposure to the whole-school elements of the intervention were related to reductions in pupil feelings about self and life.

There was evidence that aggressive behaviour declined during the course of the programme but also that there was a decline in positive feelings about self and life and in levels of self-regulation. As the pilot aimed to explore evidence of promise rather than measure impact, there were no comparison groups for any of the outcome measures. This means that the increases and declines could have been caused by other factors (a general decline in positive social and emotional learning behaviours from the age of six years to ten years has previously been reported in the literature).

There was some evidence of a relationship between the collected outcomes relating to behaviour, personal feeling, and self-regulation consistent with the underlying idea that positive actions lead to positive thoughts and feelings. For example, a child showing high levels of self-regulation typically evidenced high prosocial behaviour. The pilot found that the Worry questionnaire, used as one measure of the 'Feel' outcomes, did not correlate with all the other outcomes (only with the other 'Feel outcome'). This measure is not recommended in future evaluation of the programme.

Positive Action is not currently ready to be evaluated in a trial. While this study did not aim to conclusively evaluate the efficacy of the programme, it is possible to see early promise of programmes through pilot studies; this was not the case for the current iteration of Positive Action. The evaluation identifies a number of improvements that could be implemented before a future trial. These include a review of the whole-school elements of the intervention, a reduction in the number of lessons, and a review of the materials and content to assess if they could be better tailored to the U.K. education system and culture.

How was the pilot conducted?

An initial developmental phase took place between November 2015 and June 2016. During this time, qualitative data was used to recommend programme adaptations for the U.K. and outcome and implementation measures were developed and piloted. The main pilot took place between October 2016 and June 2017. The study compared pre- and post-test pupil outcome data related to the three focus areas of the programme: self-regulation, behaviour, and feelings. These standardised measures were created using pupil survey data. Teacher and pupil surveys and classroom observations were conducted in May to June 2017 to assess the implementation of the programme. Focus groups were also conducted in May to June 2017 to explore opinions about the programme and how well it was implemented.

Table 1: Summary of pilot findings

Question	Finding	Comment
Is there evidence to support the theory of change?	Mixed	The measures of self-regulation and feelings about self and life both declined. There was a reduction in aggression during the programme.
Was the approach feasible?	Mixed	Overall, the approach was delivered with high fidelity. Teachers did voice concern over the number of lessons, and some school leaders were reluctant to deliver the whole-school elements of the programme.
Is the approach ready to be evaluated in a trial?	No	A number of adaptations are suggested prior to any future trial, including better tailoring to the U.K. context.

Introduction

Intervention

The Positive Action programme was developed in the U.S. for all ages of children whereas at present the U.K. version targets primary children only. It features specific kits tailored to each year level. There are approximately 140 lessons per kit with each lesson designed to last approximately 15 minutes. Of these, 100 have been identified as 'core' lessons—lessons which teachers should prioritise in their timetabling. The programme is organised around six units:

Unit 1—Philosophy and Thoughts - Actions-Feelings about Self Circle

Unit 2—Positive actions for the physical and intellectual areas

Unit 3—Positive actions for the social/emotional area of self-management

Unit 4—Positive actions for the social/emotional area of social skills

Unit 5—Positive actions for the social/emotional area of self-honesty

Unit 6— Positive actions for the social/emotional area of self-improvement

The intervention aims to teach children the benefits of intrinsic motivation, with short term aims of improving self-concept, self-control, decision-making, prosocial attitudes and skills, honesty, and goal-setting skills. The longer term aims of the programme are to reduce anxiety, depression, and negative behaviours while increasing positive health behaviours, prosocial behaviours, and academic performance. The intervention is described in standardised format in the TiDieR Checklist (Hoffmann *et al.*, 2014) presented in Table 2.

Table 2: TiDieR Checklist for the Positive Action programme

Item no.	Description
1. Brief name	Positive Action UK
2. Why	Curriculum-based primary school educational programme targeting social and emotional learning outcomes in children; three main outcome areas: 'Think' (self regulation), 'Act' (prosocial behaviour and aggressive behaviour), and 'Feel' (worrying, feelings about self and life). Numerous trials and quasi-experimental studies have evaluated long-term implementation of the programme in the U.S. but this is the first study of the programme in the U.K.
3. What	Materials: Positive Action UK lesson materials, teacher manual, whole-school activity materials.
4. Procedures and activities	Procedures: teacher training on Positive Action at the beginning of school year, and ongoing support from the Positive Action UK delivery team. Positive Action activities: 100 Positive Action lessons are taught throughout the academic year. The whole-school elements include Positive Action assemblies to promote themes of development tackling thoughts, actions, and feelings; posters to reinforce these themes; and the use of an ICU box where children can deposit notes to be read out at assembly on positive actions they have 'seen' others perform (i.e. 'I see you'). Newsletters and correspondence with parents are also part of the whole-school element of the programme.
5. Who provided	Training and materials were provided by Positive Action UK and delivered by teachers and schools.

6. How	Positive Action is a whole-class programme that is delivered multiple times a week, for 100 lessons. The holistic nature of the programme means that Positive Action concepts can be referred to during other lessons and times of the school day.
7. Where	Positive Action training can be delivered in or out of school. The initial training was delivered in school during a school inset day and the refresher training was delivered out of school. Up to 40 teachers can attend a training day. Teachers are provided with instruction on lesson delivery, how to adapt lessons to suit their class, the use of programme materials, and the use of whole-school programme elements. Teachers are trained on Positive Action as a programme involving both class level and whole-school level elements. The Positive Action lessons are implemented in the classroom and whole-school elements are implemented either in assembly or throughout the school (e.g. posters, ICU box).
8. When and how much	There are six units of teaching within the Positive Action programme comprising a total of 100 lessons that take approximately 15 minutes each. These lessons can be incorporated into a school's curriculum, averaging two to three lessons per week. Lessons may replace some personal, social, health and economic education (PSHE) lessons (e.g. PA lessons which cover personal hygiene or healthy eating) or be incorporated into the curriculum as stand-alone lessons.
9. Tailoring	A pilot study allowed the research team to collect qualitative feedback on the lessons from teachers and pupils. These findings were reported to the Positive Action UK delivery team who made adaptations to the materials and training for teachers to tailor the programme for the U.K. education system.
10. Modifications	The training was modified to ensure that teachers felt comfortable making minor adaptations to the lesson plans to suit their class, and to suit a U.K. context (relating to language, social and cultural examples). Further modifications to the programme will be facilitated based on the findings of the implementation study data collection in the current study.
11. How well (planned)	Preliminary evidence on the relationship between implementation factors, outcomes, and programme theory were identified in this implementation study.
12. How well (actual)	Aggression significantly decreased during the course of the programme in U.K. schools. However, decreases in self-regulation and feelings about self and life were also found. Pupil engagement was found to relate significantly to improvements in outcomes. The programme feasibility was reported by teachers to be impaired by too much recommended dosage.

Background evidence

Social and emotional learning (SEL) is the development of the ability to recognise and manage emotions, develop care and concern for others, responsible decision-making, positive relationships, and the ability to handle challenging situations effectively (CASEL, 2005). Considering the important role that these abilities play in a school setting, a child's level of SEL, therefore, can have direct implications for their academic performance (Durlak *et al.*, 2011).

SEL has been conceptualized as a reciprocal relationship between self-management, self-awareness, responsible decision-making, relationship skills, and social awareness (see Figure 1 below). The development of SEL also has an interactive relationship with classroom curriculum and instruction, school climate and practice, and family and community partnerships. Successful development of SEL has been shown to have academic, social, and emotional benefits. A meta-analysis (Durlak *et al.*, 2011) of 213 SEL programmes in schools found an increase of 11 percentile points in academic achievement

in children who had received an explicit SEL programme. Furthermore, increased prosocial behaviours as well as a reduction in stress and depression have also been attributed to SEL education (Durlak *et al.*, 2011).

Positive Action (PA) is an educational programme with a theoretical underpinning similar to the SEL model described by CASEL (Figure 1). Positive Action aims to improve SEL by focusing on teaching positive actions and behaviours for the whole self—physical, intellectual, social and emotional. The programme is based on an underlying philosophy that positive action results in positive self-concepts. This is articulated through the Thoughts-Actions-Feelings Circle (TAF, Figure 2).

Figure 1: SEL diagram[1]

Figure 2: Thoughts-Actions-Feelings circle (reproduced from Positive Action)

To date, Positive Action has been widely implemented in the United States with corresponding research evidence limited to studies conducted in the U.S. Implementation of Positive Action in the U.K. began in 2015. Within this body of work, numerous studies with varying designs—quasi-experimental and

[1] Figure credit: **http://secondaryguide.casel.org/casel-secondary-guide.pdf**

randomised controlled trials—have reported a range of positive behavioural, emotional, and academic outcomes associated with the PA programme. For example, with regard to academic outcomes, improvements have been evidenced in tests of reading (Flay *et al.*, 2001; Flay and Allred, 2003, effect size = 0.82) and reading and maths combined (Snyder *et al.*, 2010, effect size = 0.88). It is however suggested by these studies that the effect of Positive Action on academic ability may be mediated by improvements in SEL.

With regard to SEL, early quasi-experimental studies of PA's effectiveness reported behavioural and character improvements, such as fewer disciplinary referrals (a reduction of 78%), reduced absenteeism, and reduced violence (Flay *et al.*, 2003; Flay *et al.*, 2001; Flay *et al.*, 2002). However, these studies have similar limitations in that they are based on school-level archival data and used non-randomised allocation of the programme. More recently, two RCTs have been carried out to evaluate the effectiveness of PA. Numerous studies have been published from data collected during an RCT of Positive Action in Chicago (Bavarian *et al.*, 2013; Lewis *et al.*, 2012; Lewis *et al.*, 2013; Li *et al.*, 2011). These studies have highlighted that schools using PA have reported considerably lower levels of negative behaviours in their students, for example, 59% lower scores on an aggression scale and 36% less violence. The data from school records on actual disciplinary actions relating to bullying or violence and so on show a less dramatic, but still significant, improvement of 17%. An RCT in Hawaii (Beets *et al.*, 2009; Snyder *et al.*, 2010; Snyder *et al.*, 2013) showed similarly large improvements in behaviour in Positive Action schools—for example, 44% less substance abuse and 51% less violence when compared with control schools. Additionally, although school data of absenteeism showed only a 15% improvement in PA schools, a large reduction in suspensions (72%) was also recorded. Implementation of the programme has been studied in a U.S. context (Beets *et al.*, 2008): the amount of content delivered in ten elementary schools was found to be positively associated with teacher attitudes towards the programme and towards social and character development, that is, higher dosage was found to soften teacher attitudes towards SEL. To date, there is no evidence evaluating either the implementation or effectiveness of Positive Action within a U.K. context.

Research rationale

The overall aim of this study was to test the feasibility of the Positive Action programme and to investigate early evidence of pupil outcome change. By exploring feasibility of the whole-school and classroom aspects of the programme individually, this study also aimed to determine if particular aspects of the programme showed promise.

This study comprised two phases, summarised below with reference to the research questions they aimed to answer. These research questions differ from those stated in the protocol but are in line with the published Statistical Analysis Plan. The changes from the protocol, which were included in the Statistical Analysis Plan, were deemed necessary to provide as clear an analysis of the outcomes as possible. The initial research questions in the protocol had been written before the detailed exploration of outcomes and programme aims in Phase 1 had taken place. The significant work in Phase 1 allowed more specific outcomes, the theory of change, and the intervention to be developed; these allowed more detailed research questions to be developed.

Research questions

Phase 1 research question

What is the Positive Action UK logic model?

Although this was not a research question stated in the protocol, the overall aim of Phase 1 was to develop a logic model for Positive Action UK and use this to further develop the research questions for Phase 2. Phase 1 (November 2015 to May 2016) began with a literature review and the identification

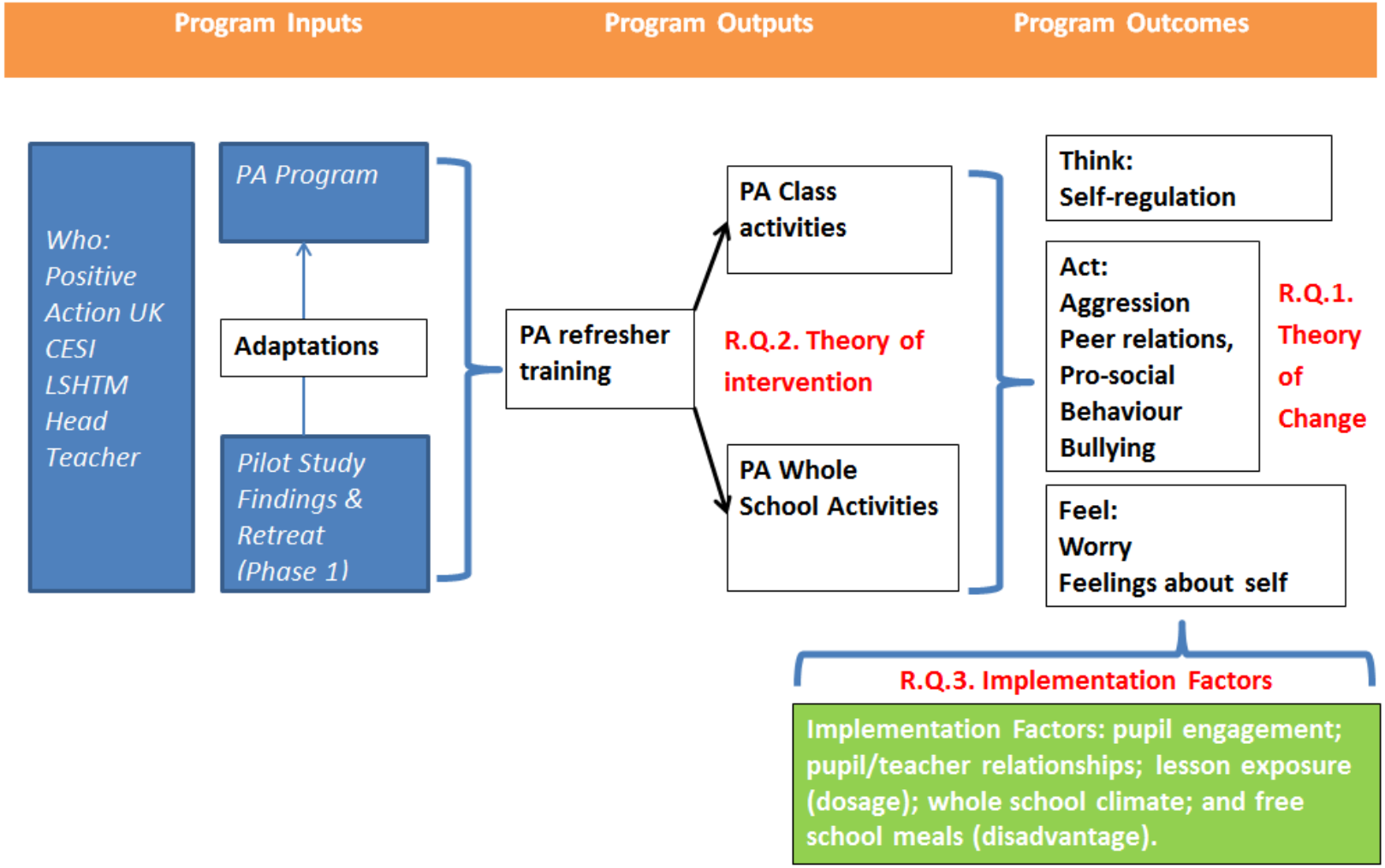
of potential programme outcomes. This was followed by piloting outcome measures and qualitative data collection. This pilot data was used to identify programme outputs, programme outcomes, and implementation factors for use in the development of a programme logic model. After this piloting, the final outcome measures for Phase 2 were selected from a range of previously published SEL measures. The research team worked closely with the programme delivery team at a two-day research meeting to develop the programme logic model. This helped to build a testable model of the theory of change, theory of intervention, and potential implementation factors influencing Positive Action. Models of programme implementation factors (Fixsen *et al.*, 2013) and implementation strategies (Powell *et al.*, 2015) were used to frame this discussion. This development phase allowed research-informed adaptations to be made to programme materials and teacher training by the delivery team for a U.K. implementation of the programme. See Figure 3 for the emerging Logic Model from Phase 1.

Phase 2 research questions

1. Did project data support the pathways in the programme logic model (that is, the programme theory of outcome change)?
2. Is there a differential relationship between the programme outputs (whole-school activities and classroom activities) and outcome change (that is, the programme theory of intervention)?
3. Which implementation factors had a significant association with outcome change?

Phase 2 (June 2016 to July 2017) was designed to explore the implementation of the programme in 15 U.K. primary school settings during a full school year. It used mixed methods to explore the implementation factors and programme outputs, including identification of those that have a relationship with observed pre-post outcome change. The research began and ended with the pre-testing and post-testing of pupils on outcome measures overlaid onto the programme's 'Think-Act-Feel' model. It also collected information on programme outputs and implementation factors through teachers completing an implementation survey at the end of each unit of the programme, a school climate survey completed by headteachers, and a pupil satisfaction questionnaire measuring pupil engagement and pupil-teacher relationships. Qualitative data was also collected through classroom observations, pupil focus groups, and teacher interviews. All were collected by Queen's University Belfast (QUB). Please note that in research question two, 'differential relationship' refers to the possibility that whole-school activities and classroom activities have distinct, different relationships with the programme's theory of intervention, that is, that they interact in different ways with programme outputs.

Figure 3: Logic model from Phase 1



Abbreviations

CESI: Centre for Evidence and Social Innovation, Queen's University Belfast; LSHTM: London School of Hygiene and Tropical Medicine.

Ethical review

Ethical approval was granted by the Queen's University Belfast School of Social Sciences, Education and Social Work ethics committee on 16 February 2016. The ethics application was prepared by the QUB team, reviewed by the EEF, and then submitted to the ethics committee. Consent forms were distributed to schools at the beginning of the project and children who opted-out received the programme (as it was part of the school curriculum) but did not participate in the tests, and no data was collected for them. Examples of opt-in and opt-out forms can be found in Appendix 1.

Project team

Dr Liam O'Hare (LOH, QUB), lecturer in the Centre for Evidence and Social Innovation at Queen's University Belfast (CESI). As Principal Investigator in the study, Liam had overall responsibility for efficient delivery of the project on time and in budget and leading the production of the programme logic model and the final report.

Dr Andy Biggart (AB, QUB), lecturer and Fellow of the CESI. Andy advised on the ethics and analysis aspects of the project.

Dr Karen Orr (KO, QUB), Research Fellow in the CESI at Queen's University Belfast. Karen acted as the project manager on the study.

Dr Patrick Stark (PS, QUB), a Research Fellow in the CESI at Queen's University Belfast. Patrick conducted data collection, data management and analysis for the project

Professor Chris Bonell (CB, LSHTM), Professor of Public Health Sociology at London School of Hygiene and Tropical Medicine. Chris provided advice on the programme logic model, evaluation design, and interpretation of findings.

Positive Action delivery team

Gilda Scarfe (Positive Action UK, PA). Gilda is the founder of Positive Action UK and was responsible on the recruitment of schools, training, and programme delivery.

Carol Allred (Positive Action US, PA). Carol is the programme developer of Positive Action and provided the programme materials for delivery.

Brad Allred (Positive Action US, PA). Brad provided advice on the development of outcomes and the logic model in terms of the aims of Positive Action.

Methods

Recruitment

The study was conducted over two years in 15 primary schools in England (Kent area) and involved pupils moving through Years 4 and 5 (N = 473) as well as their teachers (N = 19). The estimated sample size from the protocol was 600, based on an average of 40 pupils participating per school. The final sample size was smaller than this as recruitment was based on sampling year groups per school—year groups smaller than 40 reduced the overall sample size. These schools were recruited by the Positive Action team. Pupils were deemed as eligible if they were in Year 4 in academic year 2015/2016. In terms of feasibility, Years 4 and 5 were considered by the project team, evaluation team, and schools to be the most suitable for carrying out such a study.

The programme is tailor made for each year group. Data collection was thus restricted to one year group to allow modifications and exploration of a single set of lessons to be made. Primary schools in the Ashford area of Kent (N = 28) were approached to take part in the trial and all 28 returned expressions of interest. Schools were then selected at random by the Positive Action team for participation in the trial to meet the approved number of schools in the research protocol. No other eligibility criteria were applied to pupils or schools. Headteachers from selected schools were asked to read and sign a memorandum of understanding (MoU) explaining their commitments to both the programme and the research. Consent was then sought from teachers, children, and their parents for participation in the study.

Data collection

Phase 1: logic model development and pilot of measures

The first phase of this research (months one to seven) involved the development of the programme logic model (Figure 1) and a range of measures assessing pupil outcomes (see Connolly et al., 2017, Chapter 2, 'Logic models and outcome measures', for more details on methods used). Measures focused on outcomes (using the 'Think-Act-Feel' cycle), implementation factors (pupil engagement survey, pupil-teacher relationship survey, climate questionnaire, and classroom observation schedule), outputs (end of unit surveys), and qualitative methods (interview schedule and pupil focus group schedule).The research team reviewed the range of papers and previously-used measures in studies of Positive Action in the U.S.

A pupil outcome measure was piloted with the recruited pupils when they were in Year 4 (n = 473) and the final measure is detailed below in Table 4. The piloted measure was based on Positive Action's bespoke evaluation tool. This was then changed, in Phase 2, to a measure comprising five previously published scales specifically targeting the areas identified as pupil outcomes in the cross-team consultation meeting (see below for further detail). Pupil outcome, engagement, and pupil-teacher relationship surveys were developed by the evaluation team based on those used in previously published research (Biggart *et al.*, 2013; O'Hare, Kerr and Biggart, 2010; O'Hare et al., 2015).

To assess implementation fidelity, a classroom observation schedule was developed and piloted in each of the 15 schools. This involved observing a Positive Action lesson and scoring for fidelity (using the lesson manual as a benchmark), pupil responsiveness, teacher responsiveness, good practice, and delivery quality. Pupil focus group and teacher interview schedules were also developed and piloted in a sub-sample (five) of the schools. The piloting of these measures was to refine the measures in terms of a number of key areas that would allow effective data collection for the Implementation study: number of items, length, pace of delivery, and areas covered. The observation schedule piloted in Phase 1 was used to refine the measures only; no data from Phase 1 was used in the analysis included in this report.

This phase culminated in a cross-team consultation meeting comprising the QUB research team, the Positive Action UK delivery team, and representatives from teachers delivering PA. Measures were refined and minor adaptations to training and programme materials were suggested based on feedback from the teachers. The training was modified to encourage more freedom to adapt the lessons to suit the U.K. language and social contexts while keeping the learning aim of the lesson intact. The logic model (Figure 4) was developed during this cross-team consultation meeting. The QUB team built the logic model with expert shared knowledge from the other stakeholders. The structure of the programme outputs and the outcomes of the logic model were determined with input from the Positive Action UK team which provided insight into the content of Positive Action and goals for pupil outcomes. The teacher representatives provided feedback on their experiences of delivering the programme during the pilot phase to help determine the implementation factors. This process allowed the Phase 2 pupil outcome measure to be structured to test areas of SEL most appropriately matched to the aims of the Positive Action programme. This logic model is not the final logic model for the study. An updated logic model was developed based on the results of Phase 2 (Figure 5). The logic model from Phase 1 was the mapping of inputs, outputs, outcomes, and implementation factors and does not include every variable included in the analysis. The results section provides full detail of how each variable was used.

Phase 2: implementation study

Data collection for the implementation study was carried out by the research team. Data collection (as detailed in the logic model) focused on programme outputs, pupil outcomes, and implementation factors.

Pupil outcome measures

Pupil outcome measures were identified to assess change in the main programme outcomes predicted by the 'Think-Act-Feel cycle' theory. A pupil outcome measure was piloted with Year 4 pupils in May 2016. This measure was then changed based on the outcomes decided at the cross-team consultation meeting in June 2016. The pre-test was conducted with Year 5 pupils in October 2016 (N = 473) and the post-test in June 2017 (N = 423). Missing data was therefore 10.57%. The statistical analysis plan stated that 'missingness' would be analysed and a sensitivity analysis reported. This is an EEF requirement for efficacy and effectiveness trials, but not for pilot and feasibility studies. As such, this study's approach has changed since the SAP and further analysis of missingness or imputation has not been performed. The pilot design—without a control group, low sample size, and low power of the study to detect an effect—means that multiple imputation was deemed inappropriate for the primary analysis. The final outcome measures used with pre- and post-test reliability scores are presented in Table 4. Opt-out consent was distributed to schools at the beginning of the study. Pupils completed the pre-test and post-test measures in their classroom. The measure was delivered by a researcher from the QUB team with the teacher present. Pupils completed the surveys on paper. Data was then entered into SPSS by a QUB research assistant.

Table 3: Standardised measures of pupil outcomes

Original standardised measure	Outcome area covered	Number of items	Alpha at pre-test	Alpha at post-test
Child Self-Control Rating Scale (CSCRS, Rorhbeck *et al.*, 1991)	'Think' self-regulation	33	0.89	0.93
The Aggression Scale: a self-report measure of aggressive behaviour for young adolescents (Orpinas and Frankowski, 2001)	'Act' aggressive behaviours	10	0.84	0.81
Peer relations and prosocial behaviour questionnaire (Rigby and Slee, 1993)	'Act' prosocial behaviour	12	0.81	0.79
Penn State Worry Questionnaire for Children (PSWQ-C, Chorpita *et al.*, 1997)	'Feel' worry and anxiety	14	0.78	0.92
KIDSCREEN psychological wellbeing (Ravens-Sieberer *et al.*, 2003)	'Feel' feelings about self and life	6	0.84	0.88

Programme output measures

Programme outputs are the total number of class and whole-school activities provided to the pupils (see Table 5). There were nine classroom components or types of component, for example, the use of PA posters, PA notes, PA stickers, and so on. There were also six whole-school activities such as PA school assemblies and PA newsletters. All teachers of Year 5 pupils in the participating schools (n = 19) were asked to report the frequency of use per week. Scores were then calculated by totalling the number of specific activities used in each of these categories and calculating the mean across the returned surveys for that school (see Appendix 2 for number of survey returns per school and for a list of all items and possible scores per item). These programme outputs are used in the analysis for research question two. The maximum possible score for the classroom activity dosage measure was 38. To achieve this maximum score, a teacher would have had to report the use of posters during the unit, the use of the activity sheets, booklets, or journals most days during the unit, and the use of all other classroom activities five or more times during the unit. The maximum possible score for the whole-school activity dosage measure was ten. To achieve this maximum score, a teacher would have had to report the use of posters in common areas during the unit, the use of the ICU box in a common area during the unit, and the use of all other whole-school activities more than once.

Table 4: Measures of programme outputs—implementation factor measures

Measure	Outcome area covered	Programme activities	Level of measurement	Number of items	Role in analysis
Teacher end of unit survey	Classroom activity	Posters	Teacher	9	Research question 2
		Activity sheets/booklets/journals			
		Stickers			
		Tokens			
		Words of the Week			
		ICU box notes			
		Positive Notes			
		Music			
		Certificates of Recognition			
Teacher end of unit survey	Whole-school activity	Posters in common areas	Teacher	6	Research question 2
		Assembly			
		Positive Action Coordinating Committee			
		Newsletter			
		Newsletter for parents			
		ICU box in common area			

Quantitative implementation measures were collected from pupils, teachers, and the school principal. These are summarised in Table 6.

Pupils

The Year 5 pupils were invited to complete an engagement and relationship questionnaire at post-test. This measure was adapted from the Client Satisfaction Questionnaire (demonstrating pupil engagement with the programme; Larsen *et al.*, 1979) and Facilitator Disposition Checklist (exploring relationships between the pupil and their teacher; O'Hare, Kerr and Biggart, 2010). These scores are used in the analysis for research question three.

Teachers

Programme dosage for each school was calculated using items on the end of unit questionnaires asking teachers the length of lessons and the frequency of delivery per week. These scores are used in the analysis for research question three (see Appendix 2 for dosage for each school, the items in the end of unit survey which measured dosage, and the associated scores). The maximum possible score for lesson frequency per week was six. To achieve this maximum score, a teacher would have had to report teaching more than five lessons per week during the unit. The maximum possible score for average lesson length was also six. To achieve this maximum score, a teacher would have had to report average lesson length of more than 30 minutes for this unit. The overall dosage score was the multiple of these two scores giving a maximum overall dosage score of 36 (6 x 6). The lesson frequency recommended to schools was two to three times per week (scored as '2' and '3' respectively on the frequency item). The suggested lesson length in the Positive Action programme manual is 15 minutes (scored as '3' on the lesson length item). The score for adhering to the recommended dosage, therefore, was between six and nine.

Principals

The school principals were asked to complete a (single) school climate questionnaire. This measure was adapted from, and informed by, a variety of measures: the Questionnaire for School Survey (Connolly *et al.*, 2011), the Positive Action Visitor Perception Form, and Positive Action resources detailing climate or whole school activity. These scores are used in the analysis for research question

three (see Appendix 4 for climate scores for each school and a list of items included in the climate score analysis).

School

Classroom observations were carried out in each school to assess fidelity (in comparison with the lesson manual), pupil responsiveness, teacher responsiveness, good practice, and delivery quality. These observations were carried out in May to June 2017. One observation was carried out in thirteen of the participating schools (two schools declined to consent). These aspects were scored by the observer (a member of the QUB research team) in accordance with an observation schedule. These five scores were then summed to generate an overall Implementation fidelity score, which was scored out of 25.

- **Fidelity** was assessed with regard lesson content as well as the use of the resources detailed in the programme manual lesson plan; any adaptations were also assessed.
- **Pupil responsiveness** was scored by observing student engagement and enjoyment.
- **Teacher responsiveness** was scored by observing signs of teacher engagement and enjoyment.
- The **quality of delivery** was scored by observing evidence that resources had been prepared in advance and that the teacher was confident in delivering the lesson; that the lesson was engaging and fun for the pupils, interactive, and used the programme materials.
- **Good practice** was scored by observing the ability to relate PA to other areas (such as literacy or numeracy), explicit reference to other PA resources and materials (for example, the ICU box), explicit referral to 'positive actions' (for example, commenting on pupils thoughts, actions, or feelings), less formal or didactic teaching, recapping previous lessons, reinforcement, checking for clarification of pupil understanding of concepts, conclusion to the lesson (tying the lesson back into the purpose statement), and the use of additional resources (such as PowerPoint).

These scores are used in the analysis for research question three. To analyse these five scores separately would have been beyond the scope of a small pilot study (and it is possible that they would not have good reliability as single items), and as such a sum was deemed the most appropriate way to approach the analysis of implementation fidelity.

Table 5: Measures of implementation factors relating to research question three

Measure	Implementation factor covered	Level of measurement	Number of items	Cronbach's Alpha[2]	Role in analysis
Pupil engagement and relationship questionnaire	Engagement	Pupil	9	0.90	Research question 3
Pupil engagement and relationship questionnaire	Pupil-teacher relationship	Pupil	20	0.92	Research question 3
Teacher end of unit survey	Dosage	Teacher	2	N/A	Research question 3
Climate questionnaire (headteacher completed)	Climate	Headteacher	26	0.63	Research question 3
Classroom observation	Implementation fidelity	School	5	N/A	Research question 3

Qualitative methods for investigating implementation

In addition to the outcome, output, and implementation measures, a variety of qualitative process evaluation methods were also employed to explore the implementation of the programme. Five focus groups were conducted with pupils (each focus group involving five pupils chosen at random from the pupils who returned opt-in consent). No eligibility criteria were applied to pupils who returned opt-in consent. The five schools approached for participation in the focus groups were selected at random from the sample of 15. Focus groups were conducted in schools by a researcher from the QUB team. Five teacher and headteacher interviews—conducted either in school on the day of the pupil focus groups, or via telephone—were conducted to further explore programme implementation (research question three). Qualitative data was analysed based on the emerging quantitative results; for example, if pupil engagement with lessons was found to be an important implementation factor, then the qualitative data was explored for information that could provide insight into which lessons were more (or less) engaging than others. The qualitative methods were designed to add an exploratory and more in-depth interpretation of the quantitative results. The qualitative section includes both positive and negative aspects—facilitators and barriers—to each theme discussed, thus minimising selection bias. For example, we have included qualitative reports from pupils both on aspects of the programme they engaged with, and aspects they did not engage with.

We conducted this process evaluation, using qualitative data, in accordance with the EEF's guidelines. It is a theory driven approach rather than a data driven approach—that is, we had a set of theoretical pathways in the analysis plan and these have been explored through the quantitative and qualitative data.

[2] Cronbach's alpha not included for dosage scores or classroom scores as these are not intended as scales measuring a single construct requiring validation. They are a measure of compliance and fidelity.

Timeline

Table 6: Timeline for Phase 1 and Phase 2

	Phase 1: Development and pilot														Phase 2: Implementation study									
Task	2015		2016												2017									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Set-up	QUB, LSHTM & PA																							
Pilot data collection				QUB																				
Pilot data analysis						QUB																		
Research retreat								QUB, LSHTM, PA																
Set-up									QUB & PA															
Pre-testing and refresher training											QUB & PA													
Process implementation measure development											QUB													
Teacher implementation survey											QUB													
Process evaluation															QUB									
Post-testing																				QUB				
Data analysis and report writing																					QUB & LSHTM			

Findings

Participants

Characteristics of the schools involved in this study are detailed below in Table 7. The pupil N numbers refer to the number of pupils who sat the pre-test and the post-test. This is to provide context in terms of size, deprivation, Ofsted rating, and type of establishment. For reference, the average primary school size in England is 279 (Department for Education, 2017); the percentage of pupils receiving free school meals (FSM) across England is 14.0% (Department for Education, 2017); the percentage of primary schools holding a 'Good' or 'Outstanding' Ofsted score is 91% (OFSTED, 2017).

Table 7: Characteristics of participating schools

School	Urban/ rural	Size of school (n)	FSM pupils (%)	Type of establishment	Ofsted	N at pre-test	N at post-test
1	Rural village	210	3	Foundation school	Good	28	24
2	Rural village	132	16.7	Community school	Good	11	10
3	Rural village	105	10.7	Foundation school	Good	15	14
4	Rural village	210	1.9	Foundation school	Outstanding	30	29
5	Urban city and town	420	14.8	Community school	Good	53	39
6	Rural village	210	7.3	Voluntary Controlled school	Good	31	30
7	Urban city and town	210	21.9	Foundation school	Good	23	19
8	Rural village	105	10.1	Voluntary Controlled school	Good	8	7
9	Urban city and town	420	9.1	Voluntary aided school	Good	53	46
10	Urban city and town	420	4.2	Academy converter	Good	59	55
11	Rural town and fringe	420	4	Voluntary Controlled school	Outstanding	60	58
12	Rural village	210	2.6	Foundation school	Good	27	27
13	Urban city and town	210	29.9	Foundation school	Good	24	21
14	Urban city and town	420	7.6	Foundation school	Good	29	27
15	Rural hamlet and isolated dwellings	140	6.1	Foundation school	Good	22	20

Evidence to support theory of change

Research question one: Did project data support the pathways in the programme logic model (that is, the programme theory of outcome change)?

This question asks how programme outcomes are related to one another (which we have analysed through correlation) and if the outcomes have changed at the pupil level during the course of the programme (which we have analysed through t-tests). This analysis examines if there is evidence for the theorised model of the 'Think-Act-Feel' cycle, and if any of these three outcomes, as assessed by the pupil outcome scales, have changed from pre-test to post-test. This analysis does provide some evidence of effectiveness; the lack of control group, however, means that this evidence may be compromised by confounding variables.

The first step in the analysis is to examine correlations between the Pupil Outcome Scales (Table 8) at post-test. It is apparent that the 'Think' measure correlated significantly with both 'Act' measures but with only one of the 'Feel' measures (feelings about self and life). The 'Act' measures correlated with each other, and both of them also correlated with only one of the 'Feel' measures (feelings about self and life). The outcomes on the Penn State Worry Questionnaire also only correlated with the 'Feel' outcome, 'feelings about self and life'. It is apparent from these correlations that there is evidence for a relationship between the outcomes as suggested by the theorised 'Think-Act-Feel' cycle. Pearson's correlation analysis was conducted for each pair of variables.

Table 8: Correlations of Primary Outcome Scales at post-test

		Self-regulation (Think)	Aggressive behaviours (Act)	Prosocial behaviours (Act)	Worry and anxiety (Feel)	Feelings about self and life (Feel)
Self-regulation (Think)	Correlation	1	-0.488**	0.588**	-0.044	0.417**
	Sig		0.000	0.000	0.362	0.000
	N	423	423	423	423	422
Aggressive behaviours (Act)	Correlation	-0.488**	1	-0.588**	0.068	-0.360**
	Sig	0.000		0.000	0.160	0.000
	N	423	423	423	423	422
Prosocial behaviours (Act)	Correlation	0.588**	-0.588**	1	-0.079	0.484**
	Sig	0.000	0.000		0.107	0.000
	N	423	423	423	423	422
Worry and anxiety (Feel)	Correlation	-0.044	0.068	-0.079	1	-0.197**
	Sig	0.362	0.160	0.107		0.000
	N	423	423	423	423	422
Feelings about self and life (Feel)	Correlation	0.417**	-0.360**	0.484**	-0.197**	1
	Sig	0.000	0.000	0.000	0.000	
	N	422	422	422	422	422

*Note: * p <0.05, ** p < 0.001.*

The next step was to look at pre-test to post-test change in each of the means of primary outcome scales using paired-sample t-tests of the pre-test and post-test total scores (Table 9). There was a significant decrease in the Child Self-Control Rating Scale (Think) from pre-test to post-test ($p < 0.001$). This represents a decrease in pupils' self-regulation scores. There was also a significant decrease in pupil's feelings about self and life (Feel) from pre-test to post-test ($p = 0.019$). One outcome showed an improvement from pre-test to post-test: the Aggression Scale (Act), which showed a significant

decrease in aggression (p = 0.024). Peer relations and prosocial behaviour (Act) and Penn State Worry Questionnaire (Feel) showed no significant change from pre-test to post-test.

There has been considerable debate in the literature regarding correcting for multiple comparisons; there are similarly harmful aspects to correcting when unnecessary as to not correcting when necessary (Wason, Stecher and Mander, 2014). The analysis in this study meets the criteria to not require correction for multiple testing due a small number of planned comparisons and the use of simple t-tests with individually reported p-values (Armstrong, 2014).

Table 9: T-test results for pre-test to post-test change in pupil outcomes

Scale	Pre-test mean	Pre-test SD	Post-test mean	Post-test SD	t	sig
Child Self-Control Rating Scale (Think)	69.32	15.78	63.74	17.37	7.952	0.000**
The Aggression Scale (Act)	6.99	8.84	6.08	7.61	2.270	0.024*
Peer relations and Prosocial Behaviour questionnaire (Act)	38.75	7.46	39.30	6.53	-1.524	0.128
Penn State Worry Questionnaire for Children (Feel)	21.29	9.27	21.23	10.30	.148	0.883
Feelings about self and life (Feel)	17.57	4.76	16.95	5.30	2.357	0.019*

Research question two: Is there a differential relationship between the programme outputs (whole-school activities and classroom activities) and outcome change (that is, the programme theory of intervention)?

This question explores how different components of programme activity (whole-school versus classroom activity) may impact the change in each of the pupil outcomes. To answer this question, multi-level regression models of pre-test score, classroom activity score (from teacher surveys), and whole-school activity score (from teacher surveys) were regressed onto post-test score for each primary outcome scale (see Tables 10 to 14). The two levels in each model were school and child. Although the N for school is low, it is the dependent variable N that is key in terms of power, not the independent variable. Even if the low 2 level N may have reduced the power of the multilevel aspect of the analysis, this was is not the primary analysis. Whole-school activity significantly predicted post-test score for only one of the pupil outcomes—feelings about self and life. When whole-school activity was higher, post-

test scores for feelings about self and life were lower.[3] No other pupil outcomes were predicted by whole-school or classroom activity.[4]

Table 10: Multilevel regression analysis of independent variables—pre-test score, classroom activity, and whole-school activity—onto post-test score for Child Self-Control Rating Scale (n = 423)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test Child Self-Control Rating Scale	0.68	0.04	16.91	0.00	0.60	0.76
Classroom activity	-0.46	0.26	-1.79	0.07	-0.96	0.04
Whole-school activity	0.38	1.80	0.21	0.83	-3.15	3.91
Constant	19.08	6.26	3.05	0.00	6.81	31.35

Neither classroom activity nor whole-school activity significantly predicted post-test score for self-regulation as measured by the Child Self-Control Rating Scale when accounting for pre-test score.

Table 11: Multilevel regression analysis of independent variables—pre-test score, classroom activity, and whole-school activity—onto post-test score for Aggression Scale (n = 423)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test Aggression Scale	0.44	0.04	12.10	0.00	0.37	0.51
Classroom activity	0.10	0.07	1.43	0.15	-0.04	0.24
Whole-school activity	0.02	0.53	0.03	0.98	-1.03	1.06
Constant	2.07	1.79	1.15	0.25	-1.45	5.58

Neither classroom activity nor whole-school activity significantly predicted post-test score for Aggression Scale when accounting for pre-test score.

[3] Please note, the SAP stated that R^2 and unstandardized coefficients would be stated but this has since been updated as mixed effects models do not produce R^2 values, and the coefficients are unstandardized by default.
[4] The evaluation team also checked for multicollinearity by regressing each independent variable for the whole-school and classroom activity models onto each other and generating variance inflation factors (VIF) in each case. The maximum VIF recorded was 1.06. This was well below the threshold set out in the evaluation team's statistical analysis protocol (VIF > 5) before further multicollinearity analysis was required (i.e., a Partial Least Squares Regression).

Table 12: Multilevel regression analysis of independent variables—pre-test score, classroom activity, and whole-school activity—onto post-test score for peer relations and prosocial behaviour questionnaire (n = 423)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test peer relations and prosocial behaviour	0.39	0.04	10.21	0.00	0.31	0.46
Classroom activity	-0.05	0.07	-0.77	0.44	-0.19	0.08
Whole-school activity	-0.37	0.50	-0.74	0.46	-1.35	0.61
Constant	25.74	2.28	11.30	0.00	21.27	30.20

Neither classroom activity nor whole-school activity predicted post-test score for peer relations and prosocial behaviour questionnaire when accounting for pre-test score.

Table 13: Multilevel regression analysis of independent variables—pre-test score, classroom activity, and whole-school activity—onto post-test score for Penn State Worry Questionnaire (n = 423)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test Penn State Worry Questionnaire	0.62	0.05	13.66	0.00	0.53	0.70
Classroom activity	0.11	0.09	1.19	0.23	-0.07	0.29
Whole-school activity	0.61	0.69	0.89	0.38	-0.74	1.97
Constant	5.39	2.44	2.21	0.03	0.60	10.18

Neither classroom activity nor whole-school activity predicted post-test score for Penn State Worry Questionnaire when accounting for pre-test score.

Table 14: Multilevel regression analysis of independent variables—pre-test score, classroom activity and whole-school activity—onto post-test score for feelings about self and life (n = 421)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test feelings about self and life	0.47	0.05	9.54	0.00	0.37	0.56
Classroom activity	0.04	0.06	0.56	0.57	-0.09	0.16
Whole-school activity	-1.08	0.46	-2.35	0.02	-1.98	-0.18
Constant	11.56	1.80	6.43	0.00	8.03	15.08

Whole-school activity significantly predicted post-test score for feelings about self and life. When whole-school activity was higher, post-test scores for feelings about self and life were lower.

Research question three: Which implementation factors had a significant association with outcome change?

To provide a comprehensive answer to this question, the relationship between implementation factors and outcome change at both the pupil level and the school level were examined. The pupil-level analysis, section A—'Which pupil-level implementation factors (pupil engagement and pupil-teacher relationship) had a significant association with outcome change?'—investigates how pupil engagement with the programme and pupil relationship with the teacher delivering the programme may predict post-test outcome score when controlling for pre-test score. The school-level analysis, section B—'Which school- and class-level implementation factors were associated with outcome change?'—outlines characteristics of the school in terms of implementation factors (dosage, climate, and implementation fidelity), the percentage of FSM pupils, and change in each of the pupil outcomes. This is to identify any patterns into which school-level implementation factors may be most associated with outcome change. By distinguishing between pupil- and school-level implementation factors it may be possible to provide guidance on which types of programme outcomes are most associated with different programme implementation factors.

Before analysing the role of engagement with pupil outcome change, we can look at the overall pattern of engagement with the programme. As shown in Table 15, the majority of pupils responded positively to the following questions:

- What do you think of Positive Action lessons?
- How much does Positive Action help you with your thoughts, actions and feelings?
- Does Positive Action help you get along with others in school? Does Positive Action help you get along with others at home?
- How happy are you with Positive Action?
- Do you look at Positive Action displays in your school?

Overall, the majority of pupils responded positively to 'Would you be happy to do Positive Action again next year?' (combining 'Yes' and 'YES!' answers). (These answers were explained to pupils as: '"Yes" means you agree with the statement; "YES!" means you *really strongly* agree with the statement.') A majority of pupils (63.1%) responded with 'don't know' when asked if they enjoyed getting Positive Action stickers. This may be indicative of PA stickers being a less frequently used element of PA classroom activity. The only engagement item with a majority 'NO!' response was 'Do you use the ICU box?', suggesting this is the least frequently-used programme resource.

Table 15: Responses to pupil engagement survey administered at post-test (modal responses are highlighted in **bold**)

Question	Response				
What do you think of Positive Action lessons?	NOT GOOD! 7%	Not Good 9%	Don't Know 29%	**Good** **40%**	GOOD! 16%
Do you like getting Positive Action stickers?	NO! 8%	No 4%	**Don't Know** **63%**	Yes 12%	YES! 13%
How much does Positive Action help you with your thoughts, actions and feelings?	IT DOESN'T! 11%	It Doesn't 14%	Don't Know 12%	**A Little** **45%**	A LOT! 19%
Do you use the ICU box?	**NO!** **24%**	No 20%	Don't Know 23%	Yes 19%	YES! 15%
Does Positive Action help you get along with others in school?	NO! 10%	No 17%	Don't Know 27%	**Yes** **29%**	YES! 17%
Did the things you learned during Positive Action lessons help you with your other lessons?	NO! 13%	No 25%	**Don't Know** **27%**	Yes 25%	YES! 10%
Does Positive Action help you get along with others at home?	NO! 16%	No 20%	Don't Know 24%	**Yes** **26%**	YES! 15%
Would you be happy to do Positive Action again next year?	NO! 19%	No 14%	**Don't Know** **23%**	**Yes** **23%**	YES! 22%
How happy are you with Positive Action?	NO! 12%	No 15%	Don't Know 27%	**Yes** **29%**	YES! 18%
Do you like Positive Action assemblies?	NO! 16%	No 21%	**Don't Know** **29%**	Yes 20%	YES! 15%
Do you look at Positive Action displays in your school?	NO! 17%	No 17%	Don't Know 16%	**Yes** **34%**	YES! 17%

3 (a): Which pupil-level implementation factors (pupil engagement and pupil-teacher relationship) had a significant association with outcome change?

This research question is answered by using multilevel regression models to regress pre-test scores and implementation factors (pupil engagement and pupil-teacher relationship) onto post-test score for each Primary Outcome Scale (see Table 16 for summary of analyses, and Tables 17 to 21 for results). These regression models investigate how each of the pupil outcomes is related to these implementation factors.

Table 16: Summary of MLM (multi-level regression models) for research question three

Model	Dependent variable	Independent variable 1	Independent variable 2	Independent variable 3
1	Post-test Child Self-Control Rating Scale	Pre-test Child Self-Control Rating Scale	Pupil-teacher relationship	Pupil engagement
2	Post-test Aggression Scale	Pre-test Aggression Scale	Pupil-teacher relationship	Pupil engagement
3	Post-test peer relations and prosocial behaviour	Pre-test peer relations and prosocial behaviour	Pupil-teacher relationship	Pupil engagement
4	Post-test Penn State Worry Questionnaire	Pre-test Penn State Worry Questionnaire	Pupil-teacher relationship	Pupil engagement
5	Post-test feelings about self and life	Pre-test feelings about self and life	Pupil-teacher relationship	Pupil engagement

Table 17: MLM regression analysis of pre-test score, pupil-teacher relationship score, and pupil engagement score onto post-test score for Child Self Control Rating scale (n = 358)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test Child Self-Control Rating Scale	0.56	0.04	13.90	0.00	0.48	0.64
Pupil-teacher relationship	0.04	0.11	0.34	0.73	-0.18	0.26
Pupil engagement	0.28	0.08	3.56	0.00	0.12	0.43
Constant	0.18	3.54	0.05	0.96	-6.75	7.12

Pupil engagement significantly predicted post-test score for self-regulation (as measured by Child Self-Control Rating Scale). When pupil engagement scores were higher, self-regulation scores at post-test were also higher.

Table 18: MLM regression analysis of independent variables—pre-test score, pupil-teacher relationship, and engagement score—onto post-test score for Aggression Scale (n = 358)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test Aggression scale	0.35	0.04	9.37	0.00	0.28	0.42
Pupil-teacher relationship	-0.01	0.05	-0.21	0.84	-0.12	0.09
Pupil engagement	-0.11	0.04	-2.97	0.00	-0.18	-0.04
Constant	13.05	1.43	9.10	0.00	10.24	15.86

Pupil engagement significantly predicted post-test score for Aggression Scale. When pupil engagement scores were higher, aggression scores at post-test were lower when accounting for pre-test score.

Table 19: MLM regression analysis of independent variables—pre-test score, pupil-teacher relationship, and engagement score—onto post-test score for peer relations and prosocial behaviour questionnaire (n = 358)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test peer relations and prosocial behaviour questionnaire	0.25	0.04	6.65	0.00	0.18	0.33
Pupil-teacher relationship	-0.04	0.05	-0.80	0.42	-0.13	0.05
Pupil engagement	0.16	0.03	4.81	0.00	0.09	0.22
Constant	19.20	1.60	12.03	0.00	16.07	22.33

Pupil engagement significantly predicted post-test score for peer relations and prosocial behaviour questionnaire. When pupil engagement scores were higher, post-test scores were also higher when accounting for pre-test score.

Table 20: MLM regression analysis of independent variables—pre-test score, pupil-teacher relationship, and engagement score—onto post-test score for Penn State Worry Questionnaire (n=358)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test Penn State Worry Questionnaire	0.59	0.05	12.35	0.00	0.50	0.69
Pupil-teacher relationship	-0.08	0.08	-1.02	0.31	-0.23	0.07
Pupil engagement	0.05	0.05	0.88	0.38	-0.06	0.15
Constant	9.33	2.12	4.40	0.00	5.17	13.48

Pupil teacher relationship and pupil engagement did not significantly predict post-test score for Worry.

Table 21: MLM regression analysis of independent variables—pre-test score, pupil-teacher relationship, and engagement score—onto post-test score for feelings about self and life (n = 357)

Model	Coefficient	S.E.	z	Sig.	95% Conf. Intervals	
Pre-test feelings about self and life	0.36	0.05	7.10	0.00	0.26	0.46
Pupil-teacher relationship	0.02	0.04	0.41	0.69	-0.06	0.10
Pupil engagement	0.08	0.03	2.96	0.00	0.03	0.14
Constant	2.98	1.19	2.51	0.01	0.65	5.30

Pupil engagement significantly predicted post-test score in feelings about self and life. When pupil engagement scores were higher, post-test scores were higher for feelings about self and life.

Qualitative evidence

It is apparent from the analysis that pupil engagement did significantly predict outcome change for all areas of pupil outcomes (Think, Act and Feel) with the caveat that only one aspect of the Feel outcome was predicted by engagement—feelings about self and life. When we look at the qualitative data from pupil focus groups, it shows pupil variation in their engagement with different aspects of the programme.

Aspects of PA lessons which encouraged engagement, as reported by pupils

Many pupils reported enjoying more ‘doing’-based activities such as colouring, making crafts, or art activities that were incorporated into the PA lessons.

Longer running tasks—such as an ongoing art project, working on the Positive Action booklets, or tasks which pupils worked on throughout a whole term—were also popular. Specific aspects included the activity booklets, the ‘fruit kebab’ and ’fruit salad lessons, and the ‘colour’ lesson (describing yourself in terms of colours).

Lessons involving physical activity were also reported as improving concentration and lesson engagement, for example:

> *'When we do the lessons, there are these little exercises we do in the classroom, we get 30 seconds or two minutes of something physical and it kind of wears everyone out. We try to do it as much as possible.'*

> *'It uses up your energy and then you are ready to focus.'*

Barriers to pupil engagement with PA, as reported by pupils

The context of some stories also seemed to be a potential barrier to engagement:

> *'If you don't have a sister or brother right now you aren't learning anything.'*

> *'All we learn about is brother problems and I don't have any siblings so I am not learning anything right now.'*

> *'[The stories] are too childish and too American and I can't relate to anything in America […] when they talk about baseball I didn't understand.'*

Aspects of PA that improve pupil engagement

An emerging theme for improving engagement with the programme was increased pupil input into the lessons. For example:

> *'We should be able to be more involved in it. We should be able to plan Positive Action.'*

> *'We should have a copy of our own little booklet with all the stories so we can follow it in our own way.'*

Pupils also suggested more opportunity to express themselves in the context of the PA lessons.

> *'Could we have a feeling book so every Positive Action lesson you write down how you feel about the lesson?'*

> *'It would be a good idea in Positive Action lessons that we could draw down what is on our minds. Somewhere blank on the back so you can put your mind down on the page.'*

Negative aspects of increased classroom activity

Numerous pupils reported that the stories and subsequent questions during lessons appeared repetitive:

> *'They always seem to ask us the same questions.'*

> *'It is always the same story, not the same thing happens, but the same negative thing happens.'*

> *'All the stories are basically just the same, but with different people.'*

> *'I think they kind of do go on and on and on, and it's not necessarily in the book that goes on and on. The teacher tries to make things up that suits the story and then that goes on and on and we get a bit bored and lose the plot.'*

> *'Sometimes they can go on for quite a while, everyone starts fidgeting and you can't hear.'*

Although pupil-teacher relationships were not found to significantly predict change in any of the measured outcomes, there were aspects of the programme emerging from the qualitative data that may have influenced pupil-teacher relationships.

Aspects of PA that may have potential impact on pupil-teacher relationships

Pupils reported that they felt PA had helped their teacher become more creative, and improved their perception of the variety of lessons their teacher was providing.

One pupil reported:

> *'It has helped teachers too because when, before Positive Action came the teacher was a bit boring and they didn't know what to teach and stuff and not making it fun. It has helped them to be a bit more creative. Adding creative stuff into questions.'*

> *'Positive Action kind of made the teachers get more creative, so our lessons were about Star Wars and Zootropolis. So they like, it makes them want to do the extension.'*

Potential barriers to this occur when lessons the are perceived as repetitive by the pupils and they become frustrated:

> *'I do find it annoying sometimes when the teacher is in the self-improving one they have been reminding us and then that gets quite annoying sometimes because we know what we are meant to do but they keep reminding you and I just can't actually work much harder.'*

3 (b): Which school- and class-level implementation factors were associated with outcome change?

Table 22 shows school-level implementation factors with outcome change scores. In terms of school implementation, dosage, implementation fidelity scores, and climate scores were calculated as detailed in the Data Collection section above and then converted to a proportion of the highest score in the sample, i.e. if the highest implementation fidelity score of all schools was 20, this was converted to 1, and a school with a score of 10 would therefore be converted to 0.5. This allows comparison across the various implementation factors in Table 22 (see Appendix 4 for the raw school implementation data which was used to calculate these scores). The implementation fidelity score was calculated as the sum of the five observation scores (fidelity of lesson, pupil responsiveness, teacher responsiveness delivery quality, and good practice).

The maximum possible score for implementation fidelity was 25 and the minimum 5. Overall, the lesson observations found high fidelity (a mean implementation fidelity score of 20.93, SD = 1.94).

Table 22 also shows how schools were ranked on each of the pupil outcomes based on their pre-test to post-test change with an overall rank calculated based on their mean rank across the five pupil outcomes (see Appendix 2 for the mean change scores for each school).

It is clear from this table that significant outcome changes happened across schools with a range of implementation factor profiles. Significant improvements (reductions) in aggression, for example, occurred in schools with both the highest and lowest proportions of FSM pupils. Similarly, the negative changes in self-regulation (Think) occurred across both high- and low-FSM schools with varying implementation factor profiles, that is, across schools with high and low dosage, implementation fidelity, and climate. No clear patterns, therefore, emerge from Table 22; in other words, the percentage of FSM pupils, dosage, implementation fidelity, or climate are not consistently associated with the overall rank of positive outcome change.

Table 22: Implementation factors and outcome changes for each school

School-level implementation factors					Outcome change					
School no.	FSM (%)	Dosage	Implementation fidelity	Climate	Overall rank	Change in aggression rank	Change in peer relations and prosocial behaviour rank	Change in worry rank	Change in feelings about self and life rank	Change in self-control rank
7	21.9	0.47	1.00		**1**	3*	10	1*	3	4
9	9.1	0.70	0.80	0.98	**2**	4	3	5	12	1
8	10.1	0.93	0.84	0.89	**3**	7	11	6	2	3
6	7.3	0.82	0.84		**4**	9	2	4	9	6
13	29.9	1.00	0.80	0.85	**5**	1*	8	3	8	12**
15	6.1	0.70	0.84		**6**	10	1	13	4	5
12	2.6	0.93	0.80	0.88	**7**	8	7	14	5	2
4	1.9	0.70	0.68	0.84	**8**	2*	12	8	11	7
5	14.8	0.7	0.76		**9**	6	4	9	7	14**
3	10.7	0.73	0.92	1.00	**10**	5	15*	2	6	15**
10	4.2	0.74	0.88	0.86	**11**	11	13	7	10	9**
11	4.0	0.65	0.76	0.91	**12**	14	5	11	13	8**
2	16.7	0.67	0.84		**13**	15	9	15	1	11
14	7.6	0.70	0.88	0.95	**14**	13	6	12	15**	10
1	3.0	0.45	0.92	0.90	**15**	12	14	10	14	13**

*Notes: * p < 0.05; ** p < 0.001. These outcome change ranks were determined by paired t-tests of pre-test and post-test outcome scores for each school.*
For FSM%, Dosage, Implementation, and Climate, green indicates top third of schools, red indicates bottom third of schools when ranked by score.
For Change scores, green indicates a significant positive change in outcome (e.g. reduced aggression) and red indicates a significant negative change in outcome(e.g. reduced self-control).
Five of the 15 headteachers declined to participate in the survey (hence the five empty cells in the Climate column). Dosage means were not possible to calculate for each school due to the low number of survey returns. Multilevel models have not been produced here due to the inconsistency in the number of survey returns from schools (see table in Appendix 2 for survey returns for schools and survey results per school).
See Appendix 3 for pupil outcome change scores per school.

Feasibility

This section details the findings regarding programme feasibility revealed by the qualitative evidence. First, the qualitative evidence addressing research question three (b) will be examined. In addition to providing depth to the exploration of the relationship between implementation factors, the evidence discussed in this research question also explores feasibility of programme delivery. Second, further detail on findings on feasibility beyond this research question will be discussed.

Research question three (b): Which school- and class-level implementation factors were associated with outcome change? – Qualitative evidence

Despite the lack of an obvious link between school- and class-level implementation factors and overall school-level outcome change, there was still some qualitative evidence in this regard. Here we consider class- and school-level qualitative insights. Examples of reported teacher or headteacher perceptions are included to illustrate the analysis.

Implementation of classroom activities and lessons

Teachers reported finding it difficult to consistently implement three sessions per week. Numerous teachers reported that if there were time constraints during a week, PA would be the lesson that would be cut.

> *'I think the teachers have found it difficult being three short sessions a week […] if their English overruns, it tends to be the thing that falls off the end of the timetable.'*

> *'We plan to have three sessions a week as per the programme but it doesn't always work that way because time within school is obviously very limited and we run out of time.'*

Teachers reported that the programme seemed very 'Americanised', but that overall the quality of materials was good.

The posters and lesson handbook were found to be useful by teachers.

> *'The posters are very good.'*

> *'The quality of the materials is good; the only thing is that it is very Americanized and we have to adapt that or explain what certain things mean.'*

> ***'**Well—lessons very detailed. Good that staff didn't have to do their own lessons. If anything had to shorten them.'*

Some teachers felt that the activity book for pupils 'was often not age appropriate', and there were numerous reports that the songs were too 'immature' or 'childish'. One school, however, found the songs to be very popular and the children engaged highly with this.

Implementation of whole-school activities

Some teachers and headteachers reported that they were reluctant to make whole-school changes.

> *'In terms of ethos, it was a perfect fit. But a lot of what the programme does, we were already doing in ways that were slightly better. For example, the ICU box, we already had ways of doing that and didn't want to throw everything out with something that didn't fit quite so well.'*

> *'Did launch assemblies […] but didn't do as frequently as the programme suggested. Hard to judge if whole-school approach would really work as we didn't change the behaviour policy as much as we could have.'*

Reluctance to change whole-school policy may be exacerbated by circumstances such as an upcoming Ofsted inspection:

> *'It was hard to make a whole-school change to sanction and reward policy, so whole-school activity was harder to implement. Ofsted was coming and it would have been too big a change.'*

Best practice for whole-school activities seems to be improved when schools maintain consistency across years and classes in terms of which topics they are covering at a given time with PA.

> *'ICU box was used at every Friday assembly. Had a unit assembly at the beginning of every unit and tried our best to keep all classes on the same unit so that this made the most sense.'*

> *'Assemblies once a week, sometimes twice a week. Yes, the children loved the singing. This gave a whole-school approach where everyone went back to the classroom singing the same songs, talking about the same ideas. We have seen a positive effect on the playground behaviour in particular.'*

Pupil focus groups also revealed that whole-school aspects of the programme were beneficial to behaviour:

> *'Sometimes you walk around and get reminded by a display to do the right thing if you walk in from lunch and there has been a situation outside, you see one of these posters and it might help you to turn the situation more positive.'*

Teachers found the training to be in-depth and useful. The refresher training at the beginning of the new school year was considered helpful, especially the detail on making minor adaptations to suit the class and the U.K. context.

The programme materials and lesson plans were thought to be of good quality and very helpful. One teacher pointed out that electronic versions of the lessons would be more appropriate for those schools moving towards reducing paper.

An audit of the language and the context of the stories is recommended; although this was not a major issue for all teachers, there were frequent comments on the 'Americanisation' of the programme. This audit of content could also consider that the most popular and engaging lesson style (reported by the pupils) involved art or practical activities.

There were consistent comments on the number of lessons being higher than could be delivered in a year and teachers having to 'cherry-pick' which lessons to fit in. One teacher recommended that a more concrete schedule of lessons that could fit exactly into each term would be preferable. Headteachers also commented that it was difficult to schedule all units into a school year.

The reported reluctance by some headteachers to make whole-school changes, such as replacing current behavioural policy with PA, must be considered as there is potential for conflicting practice, for example relating to reward systems.

Costs

An intervention kit for one class costs £400. A kit for subsequent years costs £150 resulting in a cost over three years of £300. A training day costs £1,200 for the first year. This facilitates training for up to 40 teachers, so the cost could be shared between multiple schools; the cost per teacher is £30. Refresher training for subsequent years costs £600; the cost per teacher is £15 resulting in a cost over three years of £30. Costs per class across a three-year period and total cost per pupil per year are shown below.

Table 23: Cost data

Item	Type of cost	Cost	Total cost over 3 years	Total cost per pupil per year over 3 years
Class kit for first year of delivery	Start-up cost per class	£400	£400	
Annual class kit renewal	Running cost per class	£150	£300	
Teacher training day for first year of delivery	Start-up training cost per teacher	£30 (one day for up to 40 teachers costs £1,200)	£30	
Teacher refresher training for additional year of delivery	Running training cost per teacher	£15 (one day for up to 40 teachers costs £600)	£30	
Total			£760	£760/3/27 = £9.38

If fewer than 40 teachers attend a training day, the cost per class rises.

Readiness for trial

This is a manualised programme which has displayed some tentative evidence of a small positive effect for reducing aggression but also small negative effects on self-control and psychological wellbeing. The former is evidence of promise for the programme's potential for change in this pupil outcome. Regarding the latter, the quantitative results also found that the whole-school elements of the programme were negatively associated with pupil feelings about self and life. The feedback from schools about the whole-school aspects of the programme was also negative in that there was a reported lack of a need to adopt it as a whole-school policy. It is recommended, therefore, that the whole-school elements of the programme are scaled back or removed due to the lack of promise found in this study.

The results also suggest that a review of content and lesson style is appropriate, due to the feedback from schools on the embedding of American culture in the programme, and the presence of lessons pupils found repetitive or boring.

The decline in self-regulation and feelings about self and life suggest that the programme needs to incorporate further work to address this—particularly a review of the lessons dedicated to these outcomes to optimise them in terms of pupil engagement, reducing boredom, and U.K. culture.

The feedback from schools suggests that recommended dosage was too high and that schools needed further guidance on incorporating an effective timetable of PA dosage into their curriculum. The dosage scores had a range of 5.8 to 12.86 across the sample of schools. Recommended dosage scores would be between 6 and 9 (two to three lessons per week of 15 minutes would have resulted in such scores—see Appendix 2 for detail on dosage scoring). In this study, only one school scored slightly below the recommended dosage whereas numerous schools delivered a higher dosage than was recommended (possibly caused by lessons taking longer to get through than the 15 minutes suggested in the programme manual). Despite feedback on the difficulty of fitting in the number of lessons, it is clear that the schools in this study delivered the programme with fidelity, as reflected by the dosage scores and also by the implementation fidelity scores (the mean Implementation fidelity score was 20.93, SD = 1.94, out of a maximum of 25). The results of this study, therefore, should be considered within the context of good implementation fidelity. It should be noted, however, that the implementation fidelity scores are calculated from one observation per school; this may not be representative of the overall fidelity of delivery.

Overall, there are some important issues to be addressed before further implementation could be recommended. Key recommendations for future programme development are:

- A further review of lesson content and styles is required to adapt to the UK education system and culture.
- Comprehensive review of whole-school elements of the programme (including consideration of removing this element and reframing this programme as a classroom based or lesson-based programme.
- An audit of the lessons to remove less interesting lessons that may create repetition or pupil boredom.
- Incorporate further work to encourage a reduction in the decline of self-regulation (Think) and feelings about self and life (Feel) through opportunities to foster better pupil engagement with the lessons.
- Suggestions for schools how they can be helped in reducing dosage of the programme lessons throughout the academic year (i.e., decrease quantity but increase quality based on engagement.)

Until substantial work has been done to improve the suitability of the programme for the U.K., a full efficacy trial could not be recommended.

Conclusion

Key conclusions
1. The classroom elements of the programme were well implemented and well received across the pilot. Teachers were positive about the quality of materials but reported that the large number of core lessons were difficult to deliver.
2. Some school leaders were reluctant to implement the whole-school elements of the intervention. In schools with high levels of these elements, pupils had less positive feelings about themselves and their life, but the trial was not designed to assess whether this was due to Positive Action.
3. Pupils reported varying levels of engagement with the programme. Children who reported higher engagement also experienced improvements in reported 'Think, Act, Feel' outcomes.
4. The study found some evidence of a relationship between the behaviour, personal feeling, and self-regulation outcomes of pupils. This is consistent with the underlying idea that positive actions lead to positive self-concepts as described by the Positive Action Think-Act-Feel cycle model.
5. There were mixed results across the outcomes measured. Over the course of the programme, there was a decline in aggressive behaviour, but also reductions in positive feelings about self and life and in levels of self-regulation. However, the pilot was not designed to assess whether any changes in these outcomes were actually caused by Positive Action.

Formative findings

Positive Action has a considerable history of being trialled and tested in U.S. settings. This study was an investigation of the first implementation of this programme in the U.K. The previous literature has found a wide range of strong effects on many outcomes—educational, behavioural, and social-emotional. The present study focused on investigating how Positive Action can be implemented successfully and which implementation factors may be associated with the targeted outcomes of the programme. There were a number of specific formative findings based around the three research questions. These findings are represented in the revised programme logic model (Figure 5) where solid lines represent quantitative evidence, dashed lines qualitative evidence, black lines positive relationships, and red lines negative relationships.

Research question one: Did project data support the pathways in the programme logic model (that is, the programme theory of outcome change)?

This research question dealt with the theory of change and investigated whether the theorised cyclical connections between 'Think-Act-Feel' outcome areas were statistically evident. Evidence was found for the 'Think-Act-Feel' cycle through outcomes correlating significantly with each other at post-test. Considering this evidence, these pathways are now represented in the updated logic model as the bidirectional connections between the Think, Act and Feel boxes. The connections between these elements of the logic model (the exact direction of the arrows in PA's TAF circle)—represented bidirectionally as the direction of influence suggested by PA (thoughts before actions before feelings)—is beyond the scope of this implementation study. The Worry questionnaire in the 'Feel' outcomes, however, does not seem to fit the pathway of this model, as it did not correlate with all the other outcomes. As a result, this measure is not recommended in future evaluation of this programme.

The other main findings with regard to this first research question were that there were significant changes in outcomes over the period of the intervention—negative declines in self regulation (Think outcome) and feelings about self and life (Feel outcome) from pre-test to post-test as well as positive improvement (decrease) in aggression (Act outcome). These trends are represented by the arrows on the three outcome boxes (Think-Act-Feel). The fact that two of the three main outcomes declined over the test period and only one improved would suggest caution; that programme development is required before additional roll-out in the U.K. The pilot nature of this study and the small sample size mean that the caveats of possible regression to the mean and low power must be considered.

Research question two: Is there a differential relationship between the programme outputs (whole-school activities and classroom activities) and outcome change (that is, the programme theory of intervention)?

Generally, there were few relationships between outputs (activity levels of PA in classroom or whole school) and outcome change. There was one significant relationship: increases in whole-school activity related to a decline in the Feel outcome (represented by solid red line in Figure 5). This indicates some issues with the whole-school component of the programme and the way it was implemented. This is consistent with the reluctance expressed by headteachers to adopt a whole-school approach to the programme and to make universal behavioural policy changes based on the programme.

Research question three: Which implementation factors had a significant association with outcome change?

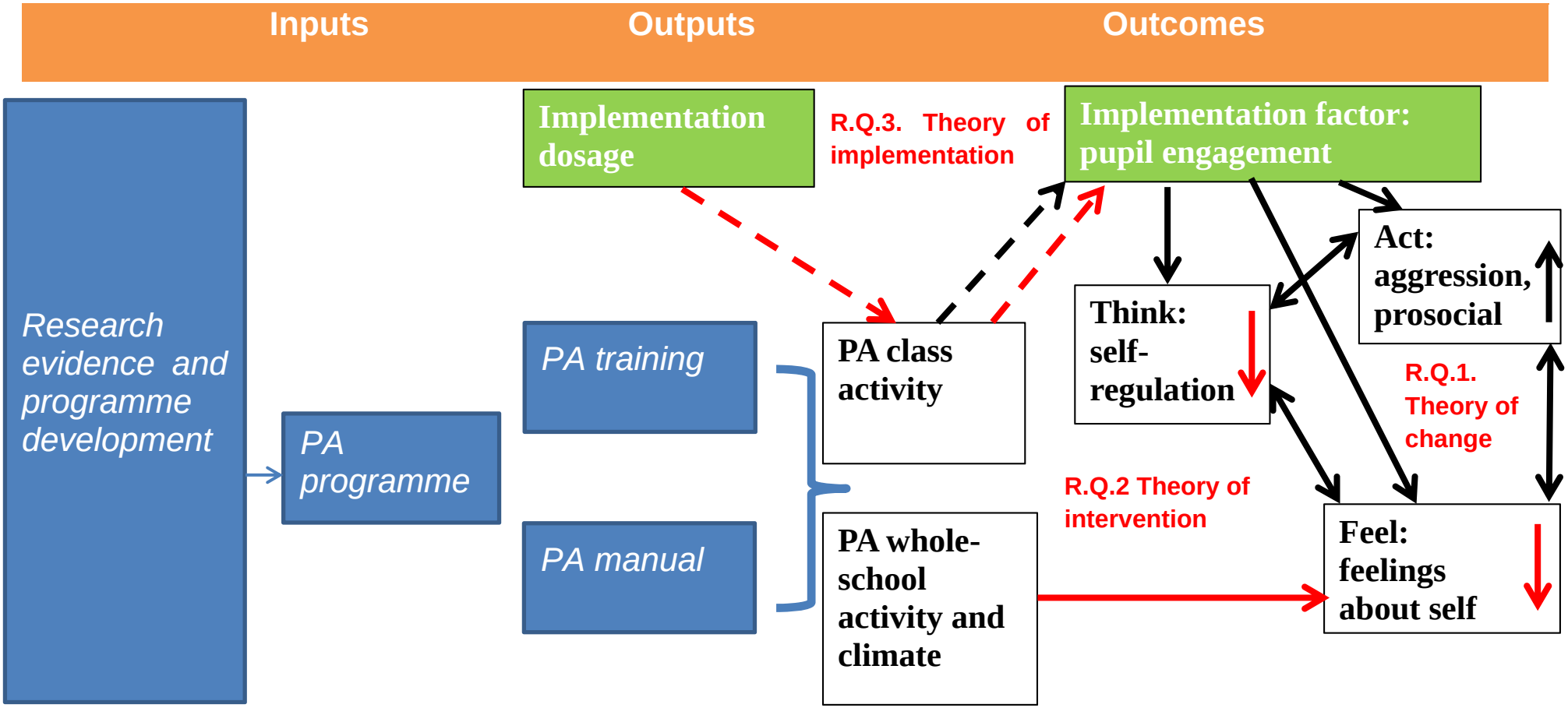
The main finding in research question three about implementation factors indicated that improved pupil engagement with the lessons was related to improvements in all outcome variables at post-test (controlling for pre-test scores). This is indicated on the logic model as the solid black pathways from pupil engagement implementation factor and all the ‘Think’, ‘Act’, and ‘Feel’ outcomes.

The qualitative evidence from the pupil focus groups suggested that classroom activity, specifically type of PA lessons, may positively or negatively influence pupil engagement (represented by both black and red dashed lines in the logic model). Lesson content seemed to create fluctuations in engagement, with some lesson content being very popular and engaging (such as art and practical lessons) and other content (such as repetitive stories) negatively impacting engagement.

The qualitative findings also suggested that recommended dosage was too high and this impacted negatively on classroom activity. By modifying the dosage in line with teacher and pupil feedback, the implementation of classroom activity could be improved. This is represented as the dashed pathways connecting PA programme, dosage, and classroom activity on the updated logic model.

Finally, the comparison of school-level implementation factors and outcome change in Table 22 shows no clear patterns and therefore it is hard to make any definitive conclusions at this level.

Figure 5: Updated logic model



Interpretation

Theory of change

This pilot study had the broad aims of exploring theory of change, feasibility, and readiness for trial. To investigate the theory of change for Positive Action, a small scale analysis of outcome change was conducted. Positive Action relies heavily on the concept of the 'Think-Act-Feel' cycle. Changes to pupil outcomes in these three facets of the cycle are how the programme aims to affect change. The present study provided some evidence for this as a theory of change by showing that some of the scales used to measure these constructs correlated significantly with each other. However, the pattern of change in these outcomes during the period of implementation is not consistent—two outcomes declined and one improved. This study cannot attribute causality for these changes to the programme as there was no control group.

Looking at the specific changes in outcomes, the finding of a reduction in aggression fits with previous studies of PA in the U.S. (Bavarian *et al.*, 2013; Lewis *et al.*, 2012; Lewis *et al.*, 2013; Li *et al.*, 2011). However, the declines in self-regulation and feelings about self and life are concerning. There was also some comparative data to suggest that increased exposure to the whole-school element of the programme was related to a decline in pupil's feelings about the self and life. When this evidence is combined with the potential of SEL programmes for this age group to cause iatrogenic effects (see O'Hare *et al.*, 2015 for an example and a literature review) we would recommend application of the precautionary principle (Ashford *et al.*, 1998). The precautionary principle states that causal evidence of potential to cause harm is not required to prevent further implementation. In essence, we suggest the programme is not yet ready for wider implementation or trial in U.K. schools. Substantial review of the programme would be required before moving in this direction.

One caveat to this recommendation is the potential for a normative decline in the population on the measured outcomes. One such decline in SEL-related outcomes has previously been found by Washburn *et al.* (2011) in children between the ages of six and ten years old in a range of U.S. based data sets. Washburn *et al.* (2011) measured behaviour relating to self-management, self-awareness, responsible decision-making, relationship skills, and social awareness (in accordance with the model of SEL by CASEL, 2005) in schools receiving PA and in control schools. Although a decline was seen across this age trajectory, the PA schools in Washburn's study mitigated the decline. It is not possible to tell if this was the case in the present study as there was no control group and this caveat would not negate the substantial programme development work required if wider implementation was pursued.

It is possible, therefore, that the observed decline in two pupil outcomes may have occurred naturally, without the influence of the PA programme. The size and significance of the decline, however, suggests that the PA programme did not provide a mitigating effect, and there is no strong evidence of promise for these two pupil outcomes. While this study did not have the remit or statistical power to conclusively evaluate efficacy of the programme, it is possible to see early promise of programmes through pilot studies; however, this was not the case for the current iteration of Positive Action in the U.K.

Feasibility

With regard to reviewing the programme, some practical suggestions are indicated by the evidence in this report. An interesting observation was that increased pupil engagement with the PA programme was related to improvements in all three of the main outcomes areas measured—Think, Act, and Feel. Furthermore, improved programme engagement has been found to be related to improved outcomes in previous studies (O'Hare, 2014). This would indicate that programme adaptations that could improve implementation by fostering pupil engagement may be beneficial. Some of the discussion of qualitative results earlier in this report provides several suggestions at pupil, class, and school levels that could encourage pupil engagement. For example, engagement was reportedly highest when lessons were practical, art-based, or involved more than simply listening to a story and answering questions.

Another practical suggestion is to substantially review the whole-school element of the programme. The qualitative evidence suggested that schools were reluctant to adopt whole-school elements of the programme and the quantitative evidence showed that increased dosage of these elements was related to a negative trend in one of the pupil outcomes. This would indicate that this component either could be removed or substantially developed to ensure schools are not reluctant to deliver it and that it is related to positive outcome change across all outcomes. The key recommendations for programme modifications have been discussed above in the 'Readiness for Trial' section.

Future research and publications

As already discussed, the QUB research team recommend that the programme undergoes further review and adaptation based on the findings in this study before any wider implementation in the U.K. context.

The research team intend to publish the results of this study, particularly emphasising the potential importance of implementation studies before the roll-out or trial of SEL programmes.

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Appendix 1: Sample opt-out and opt-in consent forms

Positive Action - Parental Information Form

Dear Parent/Guardian,

What is this research about?

Your child's school is currently involved in a study called Positive Action. It is a collaboration between Queen's University Belfast and Positive Action UK and is funded by the Education Endowment Foundation. Researchers from Queen's University Belfast are evaluating the programme and we would like to inform you about the next stage of the research and what it will involve. We would appreciate it if you could please take a few moments to read the following information carefully. What is this research about?

Your child's teacher will be delivering regular Positive Action lessons designed to promote character development, academic achievement, cooperation between pupils and to reduce disruptive and problem behaviour.

What will my child be asked to do?

As part of the evaluation we will be asking pupils in your child's class to complete a questionnaire before they receive the lessons and at the end of the year long programme. The questionnaire will take no more than 30 minutes to complete.

These questionnaires will help us establish how successfully the Positive Action lessons have been delivered. We are investigating how well the programme has been implemented in your child's class overall, **and not** how well your child is doing in school. Details of the research project will be explained verbally to your child before completing a questionnaire. Please discuss your child's participation with them after reading this form.

A classroom observation may also be carried out in your child's class. This is to observe how effectively the Positive Action program runs in the classroom, and no data will be collected about your child individually.

If you do NOT give consent for your child to be tested, please return the consent form below.

What will happen to the information collected?

Any information we collect will be held securely on an encrypted computer at Queen's University Belfast for a minimum period of 5 years before being destroyed under university policies. Any information we collect will be held securely on an encrypted computer at Queen's University Belfast for a minimum period of 5 years before being destroyed under university policies.

Your pupil's data will be treated with the strictest confidence. We will not use your child's name or the name of the school in any report or publication arising from the research.

Voluntary participation and withdrawal

The project has ethical approval from Queen's University Belfast School of Education Ethics Committee. As participation is voluntary, your child is free to withdraw from the study at any time up until the point that the information provided is made anonymous, prior to the publication of any reports derived from the study.

Can I say no to my child taking part?

Yes, you can say no to your child taking part. Your child does not have to take part in the study. A decision to participate (or not) will not affect your relationship with your child's school or with Queen's University Belfast.

If you **DO NOT** wish for your child to take part in these questionnaires, please complete the details on the consent form below, sign it, and return to your child's class teacher. If you are happy for us to administer these questionnaires **no further action from you is required.**

If your child does not take part in the data collection, they will still receive the Positive Action programme, as this has been adopted by your child's school into the curriculum.

If you have any questions please don't hesitate to contact Patrick Stark, 6 College Green, School of Education, Queen's University Belfast, Belfast. Telephone: 028 9097 5924, email: p.stark@qub.ac.uk.

If you have any broader concerns about the conduct of the research, please contact Liam O'Hare at Queen's University Belfast. Telephone: 02890975973, email: l.ohare@qub.ac.uk

Parental Consent Form

Please only return this form to your child's class teacher if you are **NOT** willing for your child to participate in the two questionnaires as part of the Positive Action programme.

I **DO NOT** give permission for my child to participate in the Positive Action research study.

Your Child's Name ……

Your Name ……..

Your Signature ……

Parent / Guardian (delete as appropriate)

Date ……

Opt-In Positive Action Focus Group

Parental Information Form

Dear Parent/Guardian,

Your child's school is taking part in a programme called Positive Action. It is collaboration between Queen's University Belfast and Positive Action UK and is funded by the Education Endowment Foundation.

What is this research about?

This study is examining whether Positive Action can be delivered effectively in schools. We would appreciate it if you could please take a few moments to read the following information carefully.

Your child's teacher will be delivering regular Positive Action lessons in school. These short lessons are designed to promote academic achievement, encourage cooperation between children and to reduce disruptive and problem behaviour.

What will my child be asked to do?

We are a research team from Queen's University Belfast who have been asked to conduct an evaluation of this programme's delivery. As part of the evaluation of the delivery we would like to get the views of children about their experience of the lessons. We would therefore like to invite your child to volunteer to participate in a focus group to be held in school where the Positive Action lessons will be discussed with other children in their class and a researcher from Queen's University Belfast. The reason for the focus group and what it will involve will be verbally explained to your child before it begins. The focus group will last no longer than 20 minutes, and will be conducted during class time which is usually assigned to the Positive Action programme.

What will happen to the information collected?

An audio recording and transcription will be made of this focus group, but all data will be anonymised and your child will not be identifiable in any resulting reports of this study. Please discuss this with your child. If your child would like to volunteer for this, and you agree, please return the form below. Any reports or publications will not mention individual names or even the name of schools that participated in the project. Any information we collect will be held securely on an encrypted computer at Queen's University Belfast for a minimum period of 5 years before being destroyed under university policies.

Voluntary participation and withdrawal

As participation is voluntary, your child is free to withdraw from the study at any time up until the point that the information provided is made anonymous, prior to the publication of any reports derived from the study.

Can I say no to my child taking part?

Yes, you can say no to your child taking part. Your child does not have to take part. A decision to participate (or not) will not affect your relationship with your child's school or with Queen's University Belfast.

If you consent for your child to take part in this focus group, please complete the details on the consent form below, sign it, and return to your child's class teacher.

If your child does not take part in the data collection, they will still receive the Positive Action programme, as this has been adopted by your child's school into the curriculum.

If you have any questions please don't hesitate to contact Patrick Stark, 6 College Green, School of Education, Queen's University Belfast, Belfast. Telephone: 028 9097 5924, email: p.stark@qub.ac.uk.

If you have any other concerns about the conduct of the research, please contact Liam O'Hare at Queen's University Belfast. Telephone: 02890975973, email: l.ohare@qub.ac.uk

Parental Consent Form

Please return this form to your child's class teacher if you give permission for your child to participate in the workshop discussing the Positive Action programme.

I give permission for my child to participate in the Positive Action workshop.

Your Child's Name ……

Your Name ……..

Your Signature ……

Parent / Guardian (delete as appropriate)

Date ……

School name:

Appendix 2: End of unit survey results per school and description of classroom and whole school activities assessed by the survey

School	Number of Survey Returns	Mean Classroom Activity[5]	Mean Whole School Activity[6]	Mean Dosage[7]
1	5	7.00	3.40	5.80
2	3	7.33	2.33	8.67
3	3	15.00	2.33	9.33
4	5	6.20	3.20	9.00
5	1	13.00	3.00	9.00
6	2	4.00	2.50	10.50
7	4	7.75	2.75	6.00
8	1	2.00	1.00	12.00
9	1	7.00	3.00	9.00
10	4	7.25	2.25	9.50
11	10	16.80	2.30	8.40
12	3	11.33	3.33	12.00
13	7	10.29	2.71	12.86
14	1	2.00	4.00	9.00
15	1	8.00	4.00	9.00

Measure	Outcome Area covered	Programme activities	Description	Question in end of unit survey	Scale and Scoring
Teacher end of unit survey	Classroom activity	Posters	Posters are provided as part of programme materials for each unit. These refer to themes and stories included in each unit. Posters are coded to particular lessons and teachers are required to display a particular poster during lessons.	During this unit, did you have Positive Action posters up in your classroom?	No/ Yes = 0/1
		Activity sheets/booklets/journals	Each student has an activity booklet containing activity sheets that correspond to particular lessons. There are 30 journaling	During this unit, did you use Positive Action activity sheets/	No/ Yes, a few times/ Yes, most days = 0/1/2

[5] Classroom activity scores per unit were created by summing the responses to the Classroom Activity questions detailed in the table below. The temporal range for these questions was within the unit the survey was being completed for. A mean was calculated for each school by calculating the mean of all Classroom activity scores for the surveys returned from each school (the number of survey returns used to calculate this mean is included above).

[6] The same procedure was used for Whole school activity means.

[7] Dosage scores for each unit survey were calculated as the scores for teacher-reported average number of lessons per week multiplied by the scores for teacher-reported average length of lessons. The mean dosage score in the table refers to the school's mean of these unit dosage scores (number of surveys used in the calculation of this mean is also included). The scores for each response category to the two dosage items are detailed below, alongside the dosage items. A dosage score of 9 represents a frequency score of 3 (3 lessons a week) and a length score of 3 (15 minute lessons).

	activities across the 6 units.	booklets/ journals?	
Stickers	These serve as a reminder of themes and positive actions/thoughts/feelings rather than as extrinsic reward.	During the average week of this Unit, how many Positive Action stickers did you give out?	0/1/2/3/4/5 or more = 0/1/2/3/4/5
Tokens	These serve as a reminder of themes and positive actions/thoughts/feelings rather than as extrinsic reward.	During the average week of this Unit, how many Positive Action tokens did you give out?	0/1/2/3/4/5 or more = 0/1/2/3/4/5
Words of the Week cards	This is a tool for introducing a theme across the lessons of the week. E.g. 'Healthy' and can be referred to in the classroom outside of the Positive Action lessons.	During the average week of this Unit, how many 'words of the week' cards did you give out?	0/1/2/3/4/5 or more = 0/1/2/3/4/5
ICU box notes	This is a box in which pupils can deposit notes for recognising positive actions they have seen their peers perform, i.e. 'I see you'. The teacher reads out these notes.	During the average week of this Unit, how many Positive Action notes did you read out from the ICU box?	0/1/2/3/4/5 or more = 0/1/2/3/4/5
Positive Notes	These can be written by the teacher and given to pupils to serve as a reminder of particular aspects of Positive Action.	During the average week of this Unit, how many days did you write Positive Notes?	0/1/2/3/4/5 or more = 0/1/2/3/4/5
Music	The programme materials includes audio files and lyric sheets for	During the average week of this	0/1/2/3/4/5 or more = 0/1/2/3/4/5

			Positive Action songs which refer to the learning outcomes of the lessons.	Unit, how many days did you use Positive Action music?	
		Certificates of Recognition	These can be to pupils by teachers for recognising Positive Actions.	During the average week of this unit, how many Positive Action certificates of recognition did you fill out?	0/1/2/3/4/5 or more = 0/1/2/3/4/5
Teacher end of unit survey	Whole school activity	Posters in common areas	The programme recommends that these posters should be displayed throughout the school which refer to programme concepts, such as the Thoughts-Actions-Feelings circle.	During this Unit, were Positive Action posters displayed in common areas?	No/ Yes = 0/1
		Assembly	The Positive Action assemblies are to introduce the beginning of a new unit to the school, to bring together the numerous aspects of the programme for different year groups into shared learning outcomes and themes.	Was a Positive Action Assembly held during this unit?	No/ Yes, once/ Yes, more than once/ Don't know = 0/1/2/NA
		Positive Action Coordinating Committee	Teachers and school administrators should meet to discuss the delivery of the programme in school, to coordinate the delivery of units across the different year groups and to coordinate the whole school approach.	Did a Positive Action Coordinating Committee meet during this unit?	No/ Yes, once/ Yes, more than once/ Don't know = 0/1/2/NA
		Newsletter	This newsletter can be produced by teachers and distributed to the school for each unit to discuss themes, to recognise different year groups positive actions	Was a Positive Action newsletter produced during this unit?	No/ Yes, once/ Yes, more than once/ Don't know = 0/1/2/NA

		and to further reinforce aspects of the programme.		
	Newsletter for parents	This newsletter can be sent home to parents to encourage reinforcement of the programme at home.	Was a Positive Action newsletter sent home to parents?	No/ Yes, once/ Yes, more than once/ Don't know = 0/1/2/NA
	ICU box in common area	This is similar to the ICU classroom box describe above, but to facilitate pupils' recognition of their peers' positive actions across the whole school. These ICU notes would be read out in Positive Action assemblies.	During this unit, was an ICU box located in a common area, e.g. lunchroom?	No/ Yes = 0/1
Dosage	Number of lessons per week	This item measures the number of lessons delivered by the teacher during the unit.	During the average week of this Unit, how many Positive Action lessons did you teach?	1/2/3/4/5/More than 5 = 1/2/3/4/5/6
	Lesson length	This item measures the average length of lessons during the unit.	On average, how long were these lessons?	5-9 minutes/10-14 minutes/15-19 minutes/20-24 minutes/25-29 minutes/30 minutes or more = 1/2/3/4/5/6

Appendix 3: Change scores for pupil outcomes for each school

School	Change in Self-control	Change in Self-control Rank	Change in Aggression	Change in Aggression Rank	Change in Peer relations and pro-social behaviour	Change in Peer relations and pro-social behaviour Rank	Change in Worry	Change in Worry Rank	Change in Feelings about self and life	Change in Feelings about self and life Rank	Mean Rank	Overall rank
7	-1.32	4	-2.63	3	-0.11	10	-4.53	1	1	3	4.2	1
9	-0.26	1	-1.89	4	1.57	3	-0.43	5	-1.15	12	5	2
8	-1.14	3	-1.71	7	-0.43	11	-0.29	6	1.14	2	5.8	3
6	-3.07	6	-0.87	9	2.03	2	-0.63	4	-0.63	9	6	4
13	-8.52	12	-4.86	1	0.76	8	-2.05	3	0	8	6.4	5
15	-1.55	5	-0.65	10	3.1	1	1.1	13	0.55	4	6.6	6
12	-0.41	2	-1.33	8	0.89	7	1.19	14	0.37	5	7.2	7
4	-3.41	7	-2.86	2	-1	12	-0.17	8	-1.07	11	8	8
5	-15.77	14	-1.72	6	1.46	4	0.64	9	0.23	7	8	9
3	-19.5	15	-1.86	5	-3.36	15	-3.07	2	0.36	6	8.6	10
10	-5.07	9	-0.11	11	-1.07	13	-0.25	7	-0.67	10	10	11
11	-4.24	8	1.52	14	1.38	5	1.05	11	-1.17	13	10.2	12
2	-5.8	11	1.9	15	0.3	9	1.6	15	1.9	1	10.2	13
14	-5.25	10	0.67	13	1.08	6	1.08	12	-4.32	15	11.2	14
1	-12.71	13	0	12	-1.21	14	0.92	10	-1.63	14	12.6	15

Appendix 4: Climate Scores and Implementation Fidelity Scores per school & Climate Score Items

School	FSM %	Climate Raw	Climate Score	Fidelity of lesson (obs)	Pupil Responsiveness (obs)	Teacher Responsiveness (obs)	Delivery Quality (obs)	Good Practice (obs)	Implementation Fidelity Score
1	3	93	0.90	5	5	5	4	4	23
2	16.7		0.91	5	5	5	5	1	21
3	10.7	103	1.00	4	5	5	5	4	23
4	1.9	87	0.84	2	4	4	3	4	17
5	14.8		0.91	4	4	4	4	3	19
6	7.3		0.91						21
7	21.9		0.91	5	5	5	5	5	25
8	10.1	92	0.89						21
9	9.1	101	0.98	3	5	5	4	3	20
10	4.2	89	0.86	5	4	3	5	5	22
11	4	94	0.91	3	4	4	4	4	19
12	2.6	91	0.88	4	4	4	4	4	20
13	29.9	88	0.85	3	4	4	5	4	20
14	7.6	98	0.95	3	5	5	5	4	22
15	6.1		0.91	5	4	4	4	4	21

Note: the Implementation Fidelity score was calculated as the sum of the 5 observation scores (Fidelity of lesson, pupil responsiveness, teacher responsiveness delivery quality and good practice). Climate raw scores were a sum of the reported values in the climate survey.

Items included in Climate Score Analysis
Established a school wide attitude that affirms the self concept of all pupils, staff, parents and visitors?
Become familiar with PA curriculum and resources?
Assisted the teachers in using resources and helped them meet any additional needs?
Coordinated training as required to support PA lessons
Facilitated PA activities beyond the classroom, e.g. assemblies?
Established a momentum with PA and encouraged staff to maintain this?
Liaised with the PA team, requesting support or advising on issues, where appropriate?
The mental health and social and emotional wellbeing of pupils is just as important as academic achievement
Emotional health is as important as physical health
the school's role is to promote, not only pupils' academic potential but their social and emotional wellbeing also
Pupil' social and emotional wellbeing has a major impact on their capacity to learn and achieve academically
The school ensures time is dedicated to implementing initiatives to promote pupils' mental health and social and emotional wellbeing
Trying to promote social and emotional wellbeing is an important use of school's time
Initiatives to promote social and emotional wellbeing can have a positive impact on pupils behaviour
It is very important to have an emotionally healthy school
Whilst school staff cannot influence pupils' home lives they can improve pupils' wellbeing via their contact during the school day
Improving the wellbeing of staff and pupils makes for a more productive learning environment
For promotion of mental health and social and emotional wellbeing to be effective , it is vitally important to adopt a 'whole school' approach
The school has a strong focus on pupil social and emotional wellbeing and on character development
Parents are always welcome in the school

The school environment is clean, comfortable and welcoming
The school learning environment is supportive and cooperative, e.g. staff and students encourage and help each other to do well
The school learning environment is participatory: the pupils have a say on matters affecting them, e.g. what's served in the canteen
The school demonstrates positive child-adult relationships
The school demonstrates positive adult-adult relationships
The school demonstrates positive parent-teacher relationships
The school has a sense of community

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