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Emotion Coaching

Evaluation report

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 **National Centre
for Social Research**



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About the evaluator

The project was independently evaluated by a team from the National Centre for Social Research: Svetlana Speight; Thea Schei; Sehaj Bhatti; Ekaterina Stoilova; Kate Baird; Kate Wadsworth; Charlotte Tomlinson; and Terry Ng-Knight.

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Executive summary

The project

Emotion Coaching (EC) is a professional development programme for early years practitioners that aims to improve children's self-regulation by teaching practitioners to respond more effectively to children's emotions and support the development of co-regulation and self-regulation skills. EC is based on a four-step relational framework, which includes recognising emotions, validating them, setting limits, and problem-solving with children. Through co-regulation with attuned adults, the programme aimed to support children's development of self-regulation.

For this evaluation, the programme targeted all three- to four-year-old children in participating settings. It was developed by Emotion Coaching UK (ECUK) and delivered in partnership with Norland College from November 2024 to May 2025. Practitioners in EC in settings attended two days of online training, followed by three online workshops. They were then expected to embed the EC approach into daily interactions with children and cascade the training to colleagues within their setting. The intended model did not prescribe a fixed number of sessions and aimed for a flexible but consistent use of the EC framework.

This efficacy trial, conducted by the National Centre for Social Research (NatCen), evaluated the impact of EC using a two-arm cluster randomised controlled trial (RCT) between October 2024 and July 2025. A total of 160 early years settings were recruited and randomised, with 80 allocated to implement EC and 80 to continue with practice as usual. The primary outcome was practitioner-reported child self-regulation as measured by the Child Self-Regulation and Behaviour Questionnaire (CSBQ). An implementation and process evaluation (IPE) was conducted alongside the trial. Longer-term outcomes using Early Years Foundation Stage Profile (EYFSP) data from the National Pupil Database (NPD) will be reported separately in a later report.

As part of the Department for Education's (DfE's) Early Years Recovery Programme, the Education Endowment Foundation (EEF) worked with Stronger Practice Hubs (SPHs) across England to fund settings' access to evidence-informed programmes and study the programme's influence on practice and children's outcomes. This initiative aimed to support education recovery following the pandemic, while also developing our understanding of effective professional development in the early years. For this evaluation, the EEF partnered with eight SPHs to fund access to EC and evaluate the programme through an efficacy trial.

Table 1: Key conclusions

Key conclusions

1. The evaluation found that EC had, on average, a small positive impact on children's self-regulation as reported by practitioners after the seven-month delivery period, compared to children in the control group. This result has a moderate to high security rating.
2. EC had, on average, a small positive impact on child self-regulation as reported by practitioners, among children eligible for Early Years Pupil Premium (EYPP), compared to children eligible for EYPP in the control group. The average effect was larger for the EYPP subgroup than for the overall sample. This result may also have a lower security rating than the overall findings because of the smaller number of EYPP-eligible pupils.
3. For the secondary outcomes, the evaluation found that EC had, on average, a small positive effect on child prosocial behaviour as reported by practitioners, compared to children in the control group. For parent/carer reported outcomes, there was, on average, a small negative effect of EC on child self-regulation, and no evidence of an effect on prosocial behaviour.
4. In terms of practitioner outcomes, findings indicated evidence of a moderate positive effect of EC on practitioners' self-reported meta-emotion philosophy.^a
5. The IPE found evidence that EC was delivered as intended, and delivery standards were largely met. EC was generally perceived positively by setting managers and practitioners, even if they were not directly trained by ECUK. Cascading varied across settings but was generally viewed positively as a way to enhance the intervention's impact on children. The IPE found evidence of improvement in practitioners' practice, and an increase in practitioners' awareness of their own emotions as well as those of children. Practitioners commonly reported improvements in children's emotional intelligence, their ability to recognise and label feelings, and increased willingness to seek adult support.

^a This refers to practitioners' reactions, responses, and reasoning to emotions in themselves and others.

EEF security rating

These findings have a moderate to high security rating. This was an efficacy trial, which tested whether the intervention worked under developer-led conditions in a number of settings. The trial was a well-designed and well-powered two-arm RCT. However, the following factors reduced the security of the trial: around 25.9% of children who started the trial were not included in the final analysis because of setting withdrawal, pupil absence on testing days, and non-consent to process pupil data.

Additional findings

While evidence from the trial points tentatively towards a small positive effect of EC on children's self-regulation, as reported by practitioners, this evidence was statistically uncertain. Across all child outcomes, results were consistent with a small positive effect, no real difference, or even a very small negative effect, making it difficult to draw conclusions about the programme's impact. The trial did, however, find a moderate positive effect of EC on practitioners' self-reported meta-emotion philosophy, offering some support for the programme's logic model. The impact of EC did not differ by children's age or gender, and accounting for whether settings in the EC group completed training as intended did not change the results observed. We found no evidence of bias in practitioner reports of child self-regulation in the EC group, when comparing practitioner reports to an observation-based measure of self-regulation in a small subsample of settings.

The IPE found that the programme was generally implemented as intended. Most practitioners attended the full sequence of EC training, and qualitative evidence suggests that the EC framework was well understood and valued. Practitioners responded positively to EC and reported increased awareness of children's emotions, more intentional responses to children who were feeling emotional, and using the EC steps to guide interactions in moments of dysregulation. Practitioners also perceived improvements in children's ability to label emotions, seek support, and settle after becoming upset. Cascading was viewed as a practical way to embed EC within settings. However, differences in staffing capacity and leadership engagement led to variations in how EC was delivered and shared. Settings that reported higher levels of staff engagement with the training and with shared language around EC also tended to report smoother implementation and stronger perceived benefits for children. Future delivery may benefit from clearer and more structured approaches to cascading to ensure consistent implementation.

The pattern of our findings is consistent with the wider evidence base for relational and emotion-focused approaches, where improvements in practitioner practice commonly emerge before measurable changes in children's outcomes (Rogers *et al.*, 2017). Given that the intervention was delivered within a single school year, it is possible that effects on child outcomes had not yet had sufficient time to emerge to the extent that they can be reliably detected. In addition, many settings reported that their usual practice reflected relational approaches that aligned with EC, since all early years settings are required to follow the statutory Early Years Foundation Stage framework, which has a strong relational focus. This overlap with existing practices may have reduced the contrast between EC and practice as usual groups, and limited the likelihood of reliably detecting impact.

Cost

The average cost of EC was around £418.3 per setting and £16.7 per pupil per year, when averaged over three years, making it a very low-cost programme.

Impact

Table 2: Summary of impact on the primary outcome

Outcome / group	Effect size (95% confidence interval)	EEF security rating	No. of pupils / practitioners	P-value	EEF cost rating
Child self-regulation (practitioner-report)	0.07 (-0.08, 0.21)		2,467	0.380	£ £ £ £ £
Child self-regulation (practitioner-report) – EYPP subsample	0.18 (-0.05, 0.40)	n/a	510	0.132	£ £ £ £ £

Introduction

Background

Policy background

Self-regulation is widely recognised as a foundational skill for school readiness and educational attainment. It refers to children's ability to manage attention, behaviour, and emotions in order to engage in learning. Research shows that early childhood represents a particularly sensitive period for self-regulation. Between ages three and five, children move from relying on adult co-regulation to developing independent control of behaviour and attention (Montroy *et al.*, 2016; Howard *et al.*, 2020). Differences emerging at this stage are linked to later attainment and behavioural adjustment (Robson *et al.*, 2020). Children who enter school with poorer self-regulation are therefore more likely to experience learning and behavioural difficulties.

Within the Early Years Foundation Stage (EYFS) framework, self-regulation skills form part of personal, social, and emotional development (PSED) and are linked to engagement with classroom activities and relationships with adults and peers (DfE, 2025a). Evidence from the School Readiness Survey shows that a substantial proportion of children in England arrive at school without the foundational behaviours required for the EYFS, such as the ability to follow instructions or manage minor frustrations (Kindred², 2024). This trend is further evidenced by teachers reporting that over a third of the cohort included in the research is unable to interact effectively with peers, leading to increased pressure on school resources (Kindred², 2024). Within this context, policy attention has focused on approaches such as Emotion Coaching (EC) that help practitioners respond to children's emotions and behaviour in ways that build these skills.

Originally observed as a natural parenting approach that offered developmental advantages to children, EC was promoted as a parenting programme in the United States by Gottman *et al.* (1989). EC has since been adapted to be used within educational settings and is delivered both independently and integrated within larger interventions. Attunement, empathy, and guidance are the key ingredients of EC (Rose *et al.*, 2015). Self-regulation within children can be explained by a variety of different perspectives including cognitive and relational approaches. EC adopts a perspective that stresses the importance of children's relationships with their caregivers and views interpersonal regulation as a basis that gives rise to intrapersonal regulation (Newman and Davis, 2023).

EC is offered as an alternative relational-based paradigm to behavioural methods where adults might be disapproving or dismissive towards children's emotions. EC aims to focus attention on the feelings which underly the behaviour rather than behaviour modification (Havighurst *et al.*, 2013). EC supports children to understand the different emotions they experience, why they occur, and how to handle them. This approach recognises that children who are able to understand and regulate their emotions are better equipped to achieve higher academic success than those who lack impulse control or have poor social skills.

EC aims to improve practitioners' ability to develop warm and responsive relationships with children based on an increased ability to recognise, label, and validate children's emotions in order to promote self-awareness and understanding of emotions (Rose *et al.*, 2015). The EC framework used in the programme consists of four steps: Step 1, recognising and expressing empathy for the child's feelings; Step 2, validating and naming the emotions; Step 3, setting expectations around the child's behaviour where needed; and Step 4, problem-solving with the child.

EC has been implemented across a range of settings in the UK. While the theoretical foundations informing EC training remained consistent, programmes varied in how they were delivered, ranging from training small groups of practitioners to whole-setting or whole-school approaches. They also varied in focus—from individual child to whole-school approaches—to accommodate settings' varying needs. Almost all programmes had a strong emphasis on cascading by following an approach where the trained professionals shared their learning with colleagues. For example, Northamptonshire rolled out EC training to health professionals and early years practitioners, including identifying and training EC champions. The general training consisted of an initial EC training day and follow-up sessions (Gus *et al.*, 2021). EC was introduced in a deprived, rural community in Somerset and professionals from a range of multi-agency, education, and community contexts

attended an initial four-hour training session in EC, which was followed by four monthly, hour-long, setting-based booster meetings (Rose *et al.*, 2016).

Existing evidence

Initially, evidence for the use of EC came from family work in the United States and Australia. The UK has led on the implementation of EC in educational and community settings (Gus *et al.*, 2015; Rose *et al.*, 2015). EC has shown evidence of promise, and small-scale studies in the UK reported improvements in practitioner confidence, emotional awareness, and relationships with children (Gus *et al.*, 2015; Rose *et al.*, 2015; Gilbert, 2018; Gilbert *et al.*, 2021; Gilbert, 2026). Practitioners commonly described responding more calmly to behaviour, using shared emotional language, and supporting children to identify and manage feelings. Some studies also reported perceived improvements in children's emotional awareness and behaviour (Digby *et al.*, 2017; Gilbert, 2018; Gus *et al.*, 2021; Rose *et al.*, 2019; Gilbert, 2026).

Existing evidence included a pilot study in a rural disadvantaged area in England that sought to evaluate the effectiveness of training practitioners to apply EC strategies in professional contexts, particularly during emotionally intensive and behavioural incidents (Rose *et al.*, 2015). Based on self-reports, the study found a perceived reduction in staff members being emotion dismissive¹ towards children and increases in emotion positive acknowledgement philosophy, improved professional practice and adult self-regulation, and positive developments in children's self-regulation and behaviour. Measures for self-reporting included the Professional Emotion Coaching Questionnaire (PECQ, McGuire-Snieckus *et al.*, 2012) for staff.

The Somerset EC Project involved two cohorts over two years and trained 160 champions to lead implementation across schools and services (Rose *et al.*, 2016; Digby *et al.*, 2017). Training was cascaded to staff, and in some settings, extended to families. Staff reported improvements in school climate, more consistent relational approaches, and calmer responses to behavioural incidents. In some schools, assessments of pupils were carried out using the Thinking and Feeling and the Emotion Expression Questionnaire (Digby *et al.*, 2017). The assessments indicated perceived improvements in children's emotional awareness and behaviour, although these findings were based on small samples and non-experimental designs.

EC has been introduced as a comprehensive intervention to support mental health and well-being and promote relational practices in educational settings (Gus, 2018; Gus *et al.*, 2017; Rose *et al.*, 2017; Rose *et al.*, 2019). In Brent in London, EC training was delivered across one secondary and six feeder primary schools, with follow-up workshops supporting implementation.

Similarly, the Attachment Awareness Schools initiative and the Alex Timpson Attachment and Trauma Awareness Programme incorporated EC as part of whole-school, trauma-informed approaches (Rose *et al.*, 2019). These studies found that that EC contributed to greater staff confidence in responding to distressed pupils, and perceived improvements in pupils' capacity to manage emotions (Harrison, 2020). While these findings are descriptive and are not based on controlled trials, they provide evidence of feasibility, acceptability, and potential benefits. Studies have also highlighted facilitators and barriers to integrating EC into practice, which has supported the understanding of how EC is implemented in educational settings (Rose *et al.*, 2015; Romney *et al.*, 2022; Gilbert, 2018; Gilbert, 2026; Alaimo and Kelly, 2025).

However, the existing evidence base has some limitations. Most studies have relied on practitioner self-report or qualitative feedback. Sample sizes have typically been small, and outcomes have not included standardised measures of children's development. There has been no large-scale randomised controlled trial (RCT) of EC in the UK early years sector. Subsequently, this evaluation was planned to assess the impact of the EC programme across 80 early years settings, including both school-based and private, voluntary, and independent (PVI) providers.

¹ Emotion dismissive approaches involve minimising or ignoring children's emotional experiences. This approach suggests that negative emotions can be harmful or unproductive.

This efficacy trial used a two-arm cluster RCT with settings as the unit of randomisation and children as the unit of analysis. Settings were allocated to implement EC or continue with practice as usual. The trial focused on practitioner-reported child self-regulation as the primary outcome, alongside secondary outcomes capturing practitioner and parent/carer perspectives on children's social and emotional development. An implementation and process evaluation (IPE) was conducted in parallel, drawing on surveys, observations, interviews, and monitoring data to assess fidelity, reach, quality, responsiveness, and practitioner and child outcomes, and to support interpretation of the impact findings. This combined design was considered appropriate given the relational and practice-based nature of EC.

Intervention

EC is a training programme for early years practitioners that is based on a relational approach. It focuses on building warm and responsive relationships with children through self-regulation and co-regulation (of both children and adults). EC supports children to understand the different emotions they experience, why they occur, and how to handle them. The EC training programme was developed by **Emotion Coaching UK (ECUK)**. ECUK delivered this intervention in partnership with **Norland College**.

ECUK recruited 160 settings to take part in the evaluation. Eighty of these settings were randomised to be a part of the EC group, while the remaining 80 were randomised to the practice as usual group. The programme was delivered in 80 EC group early years settings (school-based and those in the PVI sector) and involved two to four staff members per setting (including the setting manager) taking part in training from ECUK. The trial was conducted in PVI and school-based nursery settings in England.

As a part of the **Department for Education's (DfE's) Early Years Recovery Programme**, eight Stronger Practice Hubs (SPHs) worked with the Education Endowment Foundation (EEF) to fund early years settings' access to evidence-informed programmes and study EC's influence on practice and children's outcomes. This initiative aimed to support education recovery following the pandemic, while also developing our understanding of effective professional development in the early years. For this trial, the EEF worked with the following SPHs: Derbyshire and Nottinghamshire; East of England; Kent; Northern Lights; North Yorkshire and Humberside; South West; St Edmunds; and Thames Valley. The eight SPHs involved in the trial also supported ECUK with the recruitment of settings by utilising their contacts with local settings, providing information on the programme, and generating interest in taking part.

In settings that were randomised to EC, practitioners attended ECUK training. Trained practitioners were then able to use the EC approach with the three- to four-year-old children at their settings. In settings randomised to the practice as usual group, staff carried on with their usual practice. EC-trained practitioners were encouraged to cascade their training within their setting to the rest of the staff working with three- to four-year-old children but this was not a mandatory element of the programme. The ECUK training covered a range of formal and informal approaches to cascading learning within settings and provided examples of how practitioners could share learning with their colleagues. Practitioners were provided with EC leaflets and slides and were asked to share these resources with other practitioners at their settings. EC-trained practitioners were also encouraged to work towards completing EC accreditation as a practitioner trainer and ultimately for the setting to become an accredited EC organisation. Settings who become accredited are recognised by ECUK as embodying the principles of EC. Accreditation requires settings to have at least one staff member who is an accredited ECUK practitioner trainer, and for all staff to receive EC training within three months of starting work at the setting. The programme was delivered from November 2024 to May 2025.

Intervention content

The EC training followed a four-step framework:

- **Step 1.** Recognising the child's feelings and empathising with them.
- **Step 2.** Validating the feelings and labelling them.
- **Step 3.** Setting expectations of behaviour (if needed).

- **Step 4.** Problem-solving with the child.

Training adults in the four-step framework of EC aimed to support adults in becoming more aware of, paying attention to and empathising with the emotions that children experience. It was expected that through EC, adults would be able to label and validate children's feelings and help them feel calmer. Over time, through co-regulation, the programme aimed to help children develop self-regulation. Attuned, empathetic adults were intended to provide appropriate limit setting and goal setting for children. This helped with the development of safe and secure relationships between children and adults and would enable children to respond positively to teaching and adapt more readily to behavioural expectations. The use of EC with children aimed to foster children's understanding of their own and others' feelings alongside their ability to regulate their behaviour, co-operate with others, and to focus on and engage positively with learning. In this way, it was hoped that staff working with children would develop confidence to model emotional awareness and regulation and develop resources and techniques to support PSSED.

Intervention delivery

Two to four practitioners in each setting (including one member from the senior leadership team [SLT]) attended a two-day online training workshop delivered by ECUK and Norland College. Only practitioners working with three- to four-year-old children at the setting were eligible to attend the training.

As a part of their training, they also attended three follow-up online practice and implementation workshops, each lasting two hours and held two weeks apart. The three workshops helped practitioners review how they could use EC as a part of their daily practice through discussions with ECUK trainers and their peers, developing both their individual use of EC and how they could support its use across their setting as a whole. Practitioners were also encouraged to use reflective logs, which were discussed by trainers during the workshops to help practitioners reflect on their practice. Practitioners were also asked to continue to develop resources in their settings that would support children's self-regulation and to consider making conducive changes to the setting environment. The workshops and reflective logs helped develop practitioners' understanding of how EC supported the development of self-regulation through co-regulation, and development of practical skills to use EC in everyday practice. The course training pack included training slides and activity handouts and a Pocket Guide to EC. Table 3 presents an overview of the topics that were covered in the training workshops.

Table 3: Overview of workshops

Workshop	Topics covered
Two-day online training workshop – Day 1	'Why do we need EC?' session explained how EC was developed and its connection with self-regulation. 'What is EC?' session covered the neuroscience behind using EC, the vagal tone, social engagement systems, and how to regulate emotions. It also compared EC to other styles of behaviour management.
Two-day online training workshop – Day 2	Meta-Emotion Philosophy and how it links to emotional awareness. 'How to EC?' session covered the four-step framework and activities that helped put the framework into practice.
Two-hour online workshops – Practice and Implementation Workshop 1	Revisited the four-step framework, covered personal and professional use of EC, shared reflections on EC since initial training , explored listening styles , practiced breathing exercises for practitioners to use with children and used examples to develop regulation strategies .
Two-hour online workshops – Practice and Implementation Workshop 2	Developed resources and plans to share EC , with deeper reflection on individual practice. Explored physical regulation strategies (e.g. rhythm, 7/11 breathing technique, types of listening, self-regulation games, calming corners), the challenges of co-regulating dysregulated children, and ways to share EC with colleagues.
Two-hour online workshop – Practice and Implementation Workshop 3	Focused on supporting others to understand and use EC , including adults' role in setting the emotional climate. Covered ways to encourage colleagues to try EC , mentoring and signposting resources, and managing skeptical colleagues.

EC used a within-setting cascading model where EC-trained practitioners were asked to share their learning with other staff members working with three- to four-year-old children at the setting. ECUK required at least one of the two out of four members of trained staff to be part of the SLT to encourage buy-in from settings. The cascading model covered all the resources and content provided to all trained staff, such as understanding the neuroscientific and theoretical approaches underpinning ECUK, an overview of the resources to use, and in-depth understanding of how to use the resources, including reflective logs to monitor ongoing practice.

Lastly, ECUK offered each setting an optional 45-minute online ECUK practice accreditation discussion. The aim of this discussion was to further support EC implementation in their setting as part of discussions about the process of EC accreditation. To achieve practitioner trainer accreditation, practitioners had to complete the training and follow-up reflection sessions, practice EC in their settings, and provide reflective logs as evidence of its application. To become an EC accredited organisation, all staff members at a setting needed to be trained by an ECUK practitioner trainer and the setting needed to evidence consistent use of EC.

Practitioner and setting level EC accreditations were optional elements of the programme. However, ECUK decided to remove accreditation as an option once the logic model was finalised. This was because the evaluation timeline was not long enough to permit it as part of the intervention. While these 45-minute discussions were originally linked to the EC accreditation process, in practice they were used as an opportunity to review how EC was being used and to provide consultative support, including problem-solving where needed, to support ongoing implementation.

Practitioners were encouraged to use the EC framework and training in their interactions with three- to four-year-old children at their settings. EC was intended to be used and tailored according to the individual child's needs and the overall setting's existing practice. During the initial training, practitioners could select a focus child to work with. As part of the training, practitioners completed reflective logs, in which they documented and reflected on their experience of working with the child using an EC approach. There were no explicit inclusion or exclusion criteria for identifying a child to work with, but practitioners were encouraged to select a child with whom they felt able to practise and develop their initial use of EC. The cascading model offered flexibility so that trained staff could deliver the training and implement EC in a way that was consistent with the settings' existing experience, expertise, and practices. This flexibility left room for potential high variation, which was monitored as part of the evaluation.

Mode of delivery

ECUK and Norland College delivered practitioner training online using a video conferencing software (Zoom). ECUK set the timing of the training events and spread them out in a way that offered choice to the practitioners based on their availability. ECUK used the EC framework to prepare the training materials and activities and share these materials with practitioners.

The intervention was delivered from November 2024 to May 2025. It is worth noting that ideally ECUK would deliver the intervention over a longer time period so that the EC strategies would have more time to embed within settings and children would have more time to get used to the new ways of interacting and to benefit from the intervention. Although there is no standard or prescribed delivery duration for the EC programme, ECUK highlighted that the programme is approach-based and the intended benefit of EC comes from children encountering these approaches consistently as they move through early years, primary school, and secondary school. However, the timing was amended to a shorter time frame to fit the evaluation into the school year.

ECUK delivered the two-day online training in November 2024. This was followed by three online workshop sessions held two weeks apart, in December 2024 and January 2025. ECUK also carried out an optional 45-minute online discussion per setting in April 2025 to review how EC was being used and to provide consultative support.

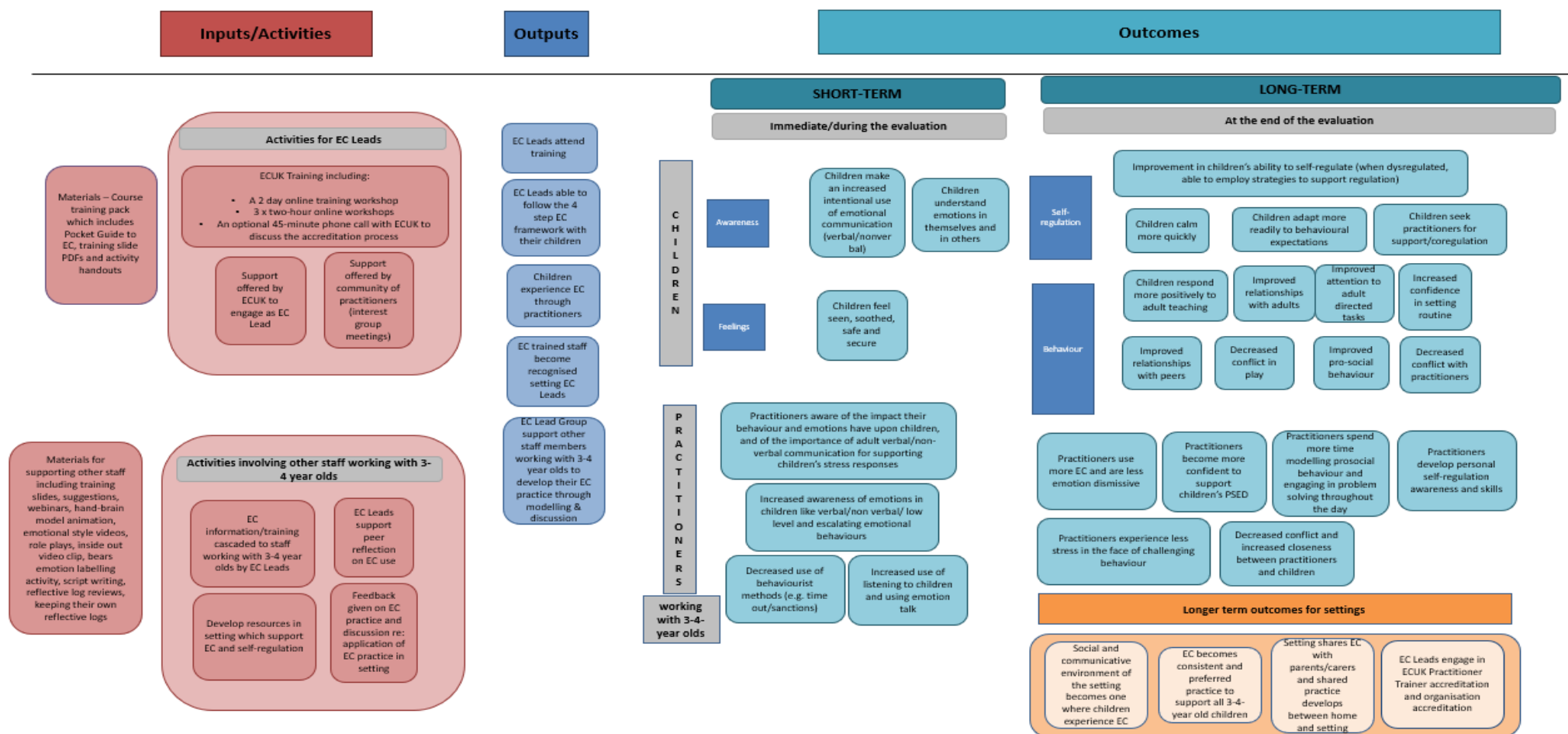
EC-trained practitioners were expected to embed the EC approach into their day-to-day practice and regular interactions with children, and to cascade the approach to colleagues in ways that were appropriate for their setting and context. There was no expectation of delivering any specific number of cascading sessions at the settings.

Logic model

The EC logic model (see Figure 1) was designed in collaboration with ECUK in December 2023. The logic model outlines the inputs and activities that were delivered by ECUK and Norland College. It also covers the sequence of activities implemented by EC practitioners and settings. It sets out the intended short- and long-term outcomes of the programme for practitioners and children, and longer-term outcomes for settings overall.

Figure 1: Logic model ^a

Emotion Coaching Logic Model



^a ECUK used the optional accreditation phone calls flexibly across settings to review EC use and provide consultative support.

Evaluation objectives

The impact evaluation aimed to answer the following primary research question (RQ).

RQ1: Does the EC programme improve children's self-regulation, as reported by practitioners?

It also aimed to answer the following secondary RQs.

RQ2: Does the EC programme improve children's self-regulation, as reported by parents/carers?

RQ3: Does the EC programme improve children's prosocial behaviour, as reported by practitioners?

RQ4: Does the EC programme improve children's prosocial behaviour, as reported by parents/carers?

RQ5: Does the EC programme improve self-regulation, as reported by practitioners, for children eligible for Early Years Pupil Premium (EYPP) (subgroup analysis)?

RQ6: Does the EC programme improve children's self-regulation and ability to build relationships in reception year (follow-up)?

RQ7: Does the EC programme improve practitioners' meta-emotion philosophy, i.e. their reactions, responses, and reasoning to emotions in themselves and others?

The IPE answered the RQs listed below. EC followed an 'approach' rather than a standardised programme as part of its delivery. When referring to the 'programme' in the RQs, we intended to capture all aspects of the EC approach, including the programme training, delivery, and how it was embedded into practice.

RQ8: How is the programme different to usual practice?

RQ9: To what extent is the programme delivered as intended?

RQ10: What are the facilitators and barriers to the delivery of the programme?

RQ11: What are the perceived outcomes of the programme for practitioners?

- RQ11a: Are there any differences in outcomes for those practitioners who are trained through the cascading model of the programme?

RQ12: What are the perceived outcomes of the programme for children, including for their self-regulation?

- RQ12a: Are there any differences in outcomes for children from disadvantaged backgrounds?

RQ13: What are the perceived outcomes of the programme at the setting level?

- RQ13a: Are there any differences in outcomes between school-based and PVI settings?

RQ14: What is the per-child cost of the programme?

The key dimensions of implementation that were assessed were: fidelity (including dosage and adaptation); quality; reach; responsiveness; usual practice; perceived outcomes; and costs.

Ethics and trial registration

The National Centre for Social Research (NatCen) Research Ethics Committee (REC) reviewed and approved NatCen's research proposal for this project on 06 December 2023. The REC procedure is designed to provide ethical guidance and advice, and to ensure all research undertaken by NatCen meets the ethical standards of government and other funders. NatCen's ethics procedure is aligned with the 2021 Government Social Research (GSR) professional guidance and the 2021 Social Research Association (SRA) ethics guidance.

The evaluation has been registered on the Open Science Framework (OSF) platform and can be accessed [here](#). The registration number (DOI) is: 10.17605/OSF.IO/RCXVB.

ECUK led on the recruitment of eligible nurseries between January 2024 and August 2024 resulting in 160 settings recruited and returning a signed Memorandum of Understanding (MoU). NatCen supported this process by helping confirm the eligibility criteria and developing information sheets to communicate details about what the trial participation would involve. The signed MoU indicated institutional consent to be involved in the study. A copy of the MoU has been included in Appendix D.

NatCen supplied a research information sheet and privacy notice explaining that settings' access to the programme would be allocated at random and that participation in the evaluation would involve the collection and processing of children's personal data. At the beginning of September 2024, participating settings were required to inform parents/carers of all eligible three- to four-year-olds about their setting's participation in the trial by letter. Parents/carers were given the opportunity to withdraw their child from the evaluation by contacting their child's setting or the NatCen evaluation team. Settings were also asked to identify which staff would take part in the programme and to carry out staff and pupil enumeration. Copies of the privacy notices and information leaflets are included in Appendix D.

Data protection

NatCen obtained personal data from settings and pupils at baseline and obtained pupil outcome data at endline as a data controller and data processor. Setting- and pupil-level information was collected and processed on the 'legitimate interest' basis.² NatCen processed the data for the legitimate purpose of conducting the evaluation of EC, which aligns with NatCen's core mission of delivering independent social research to inform policy and practice. No special category data was collected as part of the evaluation. Setting staff and pupils' parents/carers were provided with accessible information leaflets and privacy notices that explained the use, storage, and secure handling of the data. Consent was obtained on an opt-out basis, namely, participants had an option to withdraw themselves or their child from the study. Parents/carers and staff received a hardcopy or e-version of the relevant privacy notice, and the same was available on the study website. Participants taking part in IPE activities (interviews, observations, surveys) were asked to 'opt in' and were reminded that participation was voluntary.

NatCen stored and handled all data securely and confidentially in line with the **UK GDPR** (GDPR, 2016). Only the research team and approved third parties listed in the privacy statement (e.g. transcription agency, assessment agency conducting testing) had access to the data collected as part of the evaluation. Reports and other publications arising from this research do not identify any individual setting, staff member, or pupil. All personal information, and any other data held on the project, will be securely deleted from NatCen systems within 12 months of the project's completion, in July 2028.

Data sharing between NatCen, ECUK, and Norland College was governed by a data sharing agreement covering the trial. The data shared between NatCen and ECUK included contact details and information on nursery settings recruited for the trial, staff taking part in ECUK training, and staff attendance. Only data necessary for the evaluation was shared.

After this report is published, data from the impact evaluation will be stored in the EEF archive. At this point, the EEF becomes the data controller. Their lawful basis for processing data also comes under legitimate interest. In the future, researchers might link the data deposited in the EEF's data archive to information held in the DfE's National Pupil Database (NPD). For further information, see the **EEF's archive privacy notice**.

² Under the UK General Data Protection Regulation (GDPR), legitimate interest allows personal data to be processed for a clearly defined research purpose where the processing is necessary, proportionate, and does not override the rights and freedoms of the individuals concerned.

Project team

The EC training programme was delivered by ECUK, in partnership with Norland College. Table 4 lists the different people involved in delivering the intervention and their roles.

Table 4: Delivery team

Delivery team	Institution	Role
Licette Gus	Co-founder, ECUK	Project lead and manager
Louise Gilbert	Co-founder, ECUK	Project co-lead
Emma Burns	Chief financial officer, Norland College	Delivery partner lead
Janet Rose	Principal Norland College, Co-founder, ECUK	Lead trainer
Natasha Kilby-Shaw	Finance project manager, ECUK	Financial systems development and control
Pam McGuinness	ECUK	Project support
John Drew	ECUK	Recruitment co-ordinator, trainer
Amelia Donohoe	ECUK	Recruitment co-ordinator
Rebecca Digby	Head of learning, teaching, and research, Norland College	Trainer
Emma Solari	ECUK	External communication development
Ruth Estelle	ECUK	Project support
Tamsin Grimmer	Principal lecturer in early years, Norland College	Trainer
Angela Land	Financial controller, Norland College	Financial controller

The evaluation was carried out by education and evaluation specialists at NatCen who brought together extensive experience of early years research, including of other large-scale trials for the EEF. The staff involved (including roles) are shown in Table 5.

Table 5: Evaluation team

Delivery team	Institution	Role
Dr Svetlana Speight	Research director, Centre for Children and Families	Principal investigator
Dr Thea Schei	Research director, Centre for Evaluation	Impact evaluation lead
Sehaj Bhatti	Senior researcher, Centre for Children and Families	IPE support and day-to-day project manager
Ekaterina Stoilova	Senior researcher, Centre for Evaluation	Impact evaluation manager
Charlotte Tomlinson	Researcher, Centre for Children and Families	IPE support
Kate Baird	Researcher, Centre for Children and Families	IPE support
Kate Wadsworth	Researcher, Centre for Children and Families	IPE support
Alina Haque	Research assistant, Centre for Children and Families	IPE support
Matilda North	Research apprentice, Centre for Children and Families	IPE support
Dr Gayle Munro	Director, Centre for Children and Families	IPE and overall quality assurance
Dr Terry Ng-Knight	Research director, Centre for Evaluation	Impact evaluation quality assurance

Methods

Trial design

Table 6: Trial design

Trial design, including number of arms		Two-arm, cluster randomised efficacy trial (EC and practice as usual)
Unit of randomisation		Nursery setting
Stratification variables		Region (early years SPH) and setting type (PVI vs school-based)
Primary outcome	Variable	Child self-regulation (practitioner-report)
	Measure (instrument, scale, source)	Child Self-Regulation and Behaviour Questionnaire (CSBQ), combined mean score (range 1–5) of the cognitive, behavioural, and emotional self-regulation subscales (Howard and Melhuish, 2017)
Secondary outcomes	Variables	1. Child self-regulation (parent/carer report) 2. Child prosocial behaviour (practitioner-report) 3. Child prosocial behaviour (parent/carer report) 4. Child self-regulation in reception year (practitioner-report from administrative data) 5. Practitioner meta-emotion philosophy (practitioner self-report)
	Measures (instrument, scale, source)	1. CSBQ combined mean score (range 1–5) of the cognitive, behavioural, and emotional self-regulation subscales 2. CSBQ mean score on the prosocial behaviour subscale (range 1–5) 3. CSBQ mean score on the prosocial behaviour subscale (range 1–5) 4. Early Years Foundation Stage Profile (EYFSP) early learning goals attainment for self-regulation and building relationships, binary scores (expected vs emerging), NPD 5. PECQ score (range 1–5) (McGuire-Snieckus <i>et al.</i>, 2012)
Baseline for primary outcome	Variable	Not applicable—endline only
	Measure (instrument, scale, source)	Not applicable—endline only
Baseline for secondary outcome(s)	Variable	1–4. Not applicable—endline only 5. Practitioner meta-emotion philosophy (practitioner self-report)
	Measure (instrument, scale, source)	1–4. Not applicable—endline only 5. PECQ score (range 1–5) (McGuire-Snieckus <i>et al.</i>, 2012)

The impact evaluation of EC was conducted as a two-arm cluster, efficacy RCT, with randomisation at the level of settings and children as the unit of analysis. Table 6 summarises the trial design.

A total of 160 settings were recruited and randomised into two trial arms: the EC programme; and a practice as usual comparison group. We randomised at the setting level, as the programme delivery targets practitioners, and all children within a setting were expected to be exposed to EC-trained practitioners. Randomisation of settings was stratified by region

and setting type (i.e. PVI and school-based nurseries), to ensure balance of these characteristics between EC and practice as usual settings. More details on randomisation are provided below (see ‘Randomisation’ section).

Financial incentives were provided to settings allocated to the practice as usual group for participating in data collection activities. Additional incentives were provided to practitioners and parents/carers in all settings for participating in endline data collection (see ‘Participant selection’ section).

The primary outcome measure in the trial was child self-regulation, as reported by practitioners and measured by a composite score on the cognitive, behavioural, and emotional self-regulation subscales of the CSBQ (Howard and Melhuish, 2017). Child self-regulation, as reported by parents/carers on the same measure, was included as a secondary outcome.³ Prosocial behaviour, as reported by practitioners and parents/carers, and measured by the prosocial behaviour subscale of the CSBQ, was also included as a secondary outcome. More detail on the outcome measures is provided below (see ‘Outcome measures’ section). The trial also investigated the effect of EC on child self-regulation (practitioner-report) specifically among children eligible for EYPP.⁴

Longer-term child outcomes will be assessed in a separate report, via EYFSP data from the NPD, using teacher assessments of children’s progress in the early learning goals⁵ of self-regulation and building relationships during the reception year of primary school.

At the practitioner level, the trial investigated the impact of EC on practitioners’ self-reported meta-emotion philosophy, i.e. their reactions, responses, and reasoning to emotions in themselves and others, as measured by the PECQ (McGuire-Snieckus *et al.*, 2012).

Participant selection

The programme was delivered to early years practitioners in nursery settings, with children as the unit of the primary outcome analysis.

Setting and child eligibility

PVI settings, maintained nursery schools, and nursery classes in primary schools were all eligible to take part in the trial. Settings had to have a minimum of 17 children, aged three to four years and enrolled to attend the setting for at least ten hours per week⁶ in September 2024, in order to take part.

Settings that had signed up for another SPH-funded programme delivered in the 2024/2025 academic year were not eligible to take part, including settings that had been allocated to the practice as usual group for another SPH trial. Settings could also not take part if they were participating in another funded evaluation by the EEF in the early years or the DfE Early Years Professional Development Programme (EYPDP) during the year of evaluation delivery (2024/2025). Additionally, settings could not take part if they had already been involved in EC training within the previous academic year (2023/2024).

All children aged three to four years⁷ and enrolled in participating settings in September 2024 were eligible to take part in the evaluation by having their outcomes assessed at endline (see ‘Outcome measures’ section).

³ Parent/carer reports on the CSBQ measure were collected to triangulate findings, as practitioners receive the intervention themselves and might therefore be more biased in their assessments of child outcomes.

⁴ EYPP eligibility was used as an appropriate proxy for socio-economic disadvantage that is available in early years settings.

⁵ For more information, see:

https://assets.publishing.service.gov.uk/media/6747436ba72d7eb7f348c08b/Early_years_foundation_stage_profile_handbook.pdf.

⁶ A ten-hour minimum attendance requirement has previously been set in early years studies (e.g. Melhuish and Gardiner, 2021a) to ensure that the sample consists of children who attend their setting for a sufficient proportion of time each week for the study to be able to draw conclusions about the relationship between their outcomes and the setting’s characteristics and/or implemented interventions. A detailed discussion of such considerations is available in Melhuish and Gardiner (2021b).

⁷ Children in the eligible cohort were born between 01 September 2020 and 31 August 2021.

Recruitment

A total of 160 settings⁸ was recruited in the trial between January and August 2024 and randomised into the two trial arms—half of settings were randomised to receive the programme (i.e. 80 treatment units) and half were randomised to continue practice as usual (i.e. 80 control units). ECUK were responsible for recruiting settings from across eight SPHs, with hubs supporting the recruitment.

Incentives were provided to both practice as usual and EC settings. Settings in the practice as usual group received £1,400 for supporting evaluation activities, split into two payments: £400 after data collection in September and October 2024; and £1,000 after data collection in June and July 2025. Settings receiving the programme received funding to support programme delivery and also received £400 for supporting evaluation activities, split into two payments: £150 after data collection in September and October 2024 and £250 after data collection in June and July 2025. Incentive amounts were higher in the practice as usual group, in recognition of the fact that settings in the EC group received the programme, which would otherwise have cost them £400⁹ per practitioner to purchase, as part of their participation in the trial.

All recruited settings were asked to sign an MoU and provide NatCen with lists of children who were to be included in the evaluation in September 2024. Settings randomised to receive EC allocated at least two and up to four named early years practitioners to complete the programme (see ‘Intervention’ section above). Parents/carers were given the opportunity to opt their children out from evaluation activities. NatCen provided an information sheet, privacy notice, and opt-out letters for settings to distribute to parents/carers in September 2024, alongside information on the programme.

Outcome measures

Primary outcome

The primary outcome for this evaluation was child self-regulation, as measured by practitioner-report on the CSBQ (Howard and Melhuish, 2017) at endline. This was a combined average score of the cognitive, behavioural, and emotional self-regulation subscales of the CSBQ, corresponding to the long-term outcome of improvement in children’s ability to manage self and emotionally self-regulate in the programme logic model (see Figure 1). More context to the choice of this primary outcome is available in the **study protocol** (Speight *et al.*, 2024).

Practitioner report on the measure was selected as the primary outcome in the trial, as it provided an assessment of child behaviour in the setting where the programme was delivered. The programme theory emphasises that behaviour change in children is expected to emerge as a result of practitioner–child interactions specifically and was therefore, not necessarily expected to transfer to the home environment in the short time of intervention delivery within the trial. In addition, while programme theory emphasises that child outcomes are expected to begin emerging within the context of co-regulation during practitioner–child interactions, rather than independently in children, a practitioner-report measure of children’s self-regulation abilities allowed us to capture practitioners’ experience and observations of child development, while retaining a systematic and validated measure for the study.

Settings were instructed that questionnaires for each child should be filled out by the practitioner who works most closely with that child and knows them best.

The CSBQ has been validated in a large sample of preschool and early primary school children and shows good psychometric properties: its subscales show good internal consistency (ranging $\alpha = 0.83$ to $\alpha = 0.89$ for the subscales selected for this trial), as well as strong correlations with the nearest-comparison Strengths and Difficulties Questionnaire (SDQ) subscale for hyperactivity ($r = -.66$ to $r = -.81$) as evidence for the measure’s external validity (Howard and Melhuish, 2017). The cognitive, behavioural, and emotional self-regulation subscales of the CSBQ show strong correlations among

⁸ The delivery team aimed to recruit an additional 10% to the target sample of 160 settings to allow for attrition before randomisation. This meant that a total of 176 settings were recruited, with 16 put on a waiting list and offered a place on the trial if a setting from the original 160 withdrew.

⁹ The market price of the programme at the time of trial recruitment was £400.

each other ($r = 0.63$, $r = 0.71$, and $r = 0.80$), which supports their use in combination (Howard and Melhuish, 2017). Given that the primary outcome of interest for this trial was self-regulation as a broader concept, a composite score of the three subscales was chosen as the primary outcome measure. More context to the choice of outcome measures is available in the **study protocol** (Speight *et al.*, 2024).

Each of the three selected CSBQ subscales comprised five to six items (e.g. ‘Persists with difficult tasks’), for which respondents assessed child behaviour on a 5-point Likert scale from 1 (Never true) to 5 (Always true). The cognitive self-regulation subscale (five items) captured behaviours related to control over thinking and attention (e.g. persisting with difficult tasks, choosing activities on their own). The behavioural self-regulation subscale (six items) captured behaviours related to control over impulsive behaviours (e.g. waiting their turn, sitting still). The emotional self-regulation subscale (six items) captured behaviours related to control over emotional reactions (e.g. getting over being upset quickly, not being easily upset over small events). Scores on each subscale represented averages across items belonging to the subscale (mean scores ranging from 1 to 5).¹⁰ The three subscale scores were then averaged to derive a composite child self-regulation score (mean scores ranging from 1 to 5), weighting the three subscales equally.

The three CSBQ self-regulation subscales were administered to practitioners by settings as a paper questionnaire at endline, alongside the CSBQ prosocial behaviour subscale (20 items in total).¹¹ CSBQ items were presented in a scrambled order on the questionnaire and subscales did not form different sections. The questionnaire measure is included in Appendix E.

Secondary outcomes

Child self-regulation (parent/carer report)

Parent/carer report of children’s self-regulation was investigated as a secondary outcome (RQ2), using combined scores on the CSBQ self-regulation subscales at endline, as detailed above. While ECUK did not anticipate substantial programme effects on behaviour in the home environment in the brief intervention period used for this evaluation, the evaluation team felt it was important to include parents/carers’ different perspectives on child behaviour to triangulate findings and assess impact across contexts (see **study protocol**; Speight *et al.*, 2024). This measure therefore also corresponds to the long-term outcome of improvement in children’s ability to manage self and emotionally self-regulate in the programme logic model (see Figure 1). Similarly to the primary outcome, the parent/carer report child self-regulation score was a composite score, as a mean of mean scores on the cognitive, behavioural, and emotional self-regulation subscales of the CSBQ.

The three CSBQ self-regulation subscales were administered to parents/carers by settings as a paper questionnaire at endline, alongside the CSBQ prosocial behaviour subscale (20 items in total). CSBQ items were presented in a scrambled order on the questionnaire and subscales did not form different sections. The questionnaire measure is included in Appendix E.

Child prosocial behaviour (practitioner and parent/carer report)

Both practitioner and parent/carer report on the CSBQ prosocial behaviour subscale at endline were included as secondary outcomes in the evaluation (RQ3, RQ4), corresponding to the long-term outcome of improved child prosocial behaviour in the programme logic model (see Figure 1). The average score on the CSBQ prosocial behaviour subscale (five items) captured behaviours that are for the benefit of others (e.g. sharing, helping, co-operating). Similarly to the other CSBQ

¹⁰ At the Statistical Analysis Plan (SAP) stage, we considered calculating mean subscale scores if less than half the items in a scale were missing. However, given that the number of cases with incomplete responses was comparatively small ($n = 26$ in the EC group and $n = 24$ in the practice as usual group, see ‘Participant flow including losses and exclusions’ section), and given the small number of items in each subscale (5–6), we opted to only calculate mean scores where responses on all items were provided, to ensure that the measure wholly captures the construct as intended and that scores are as comparable across the sample as possible. The same approach was adopted across all secondary outcomes.

¹¹ Two of the CSBQ items are included in both the behavioural self-regulation subscale and the prosocial behaviour subscale. The subscales are not meant to be orthogonal/independent, which reflects the nature of child development in those areas.

subscales, respondents were asked to assess child behaviour on a scale from 1 (Never true) to 5 (Always true). The prosocial behaviour score was an average (1–5) across the items belonging to the subscale.

The CSBQ prosocial behaviour subscale was administered to practitioners and parents/carers by settings as paper questionnaires at endline, alongside the CSBQ self-regulation subscales. The questionnaire measure is included in Appendix E.

Practitioner meta-emotion philosophy

As a secondary outcome, we also assessed practitioners' self-reported meta-emotion philosophy, i.e. their reactions, responses, and reasoning to emotions in themselves and others, using practitioner self-report on the PECQ (McGuire-Snieckus *et al.*, 2012). This outcome corresponds to the long-term outcome of increased practitioner use of EC practices in the programme logic model (see Figure 1). The PECQ comprises 39 items asking practitioners to rate their agreement with statements about emotions (e.g. 'A child/young person's sadness is important') on a 5-point Likert scale from 1 (Strongly disagree) to 5 (Strongly agree) or indicate how often they do listed activities/statements (e.g. 'When a child/young person is angry, I help him/her to sort out the problem causing the anger') on a scale from 1 (Never) to 5 (Always). A total score was derived by averaging practitioner responses on the 39 items, where higher scores indicate practitioners' use of EC approaches and techniques.

This measure was collected at baseline and endline via the online practitioner survey, for both EC and practice as usual group settings. The questionnaire measure is included in Appendix E.

Additional measures

An additional observation-based measure of child self-regulation was collected in a subset of settings, to explore validity and potential bias in practitioner reports on the CSBQ (see 'Additional analysis' section). For this measure, the Preschool Situational Self-Regulation Toolkit (PRSIST; Howard *et al.*, 2019) was administered in 14 randomly selected¹² settings (seven EC settings and seven practice as usual settings) by independent assessors, trained in administering the measure.

The PRSIST assessment has shown good construct validity, reliability ($\alpha = 0.86$ to 0.95), and concurrent validity with task-based self-regulation ($r = 0.50$ to 0.63) and school readiness measures ($r = 0.66$ to 0.75 ; Howard *et al.*, 2019; 2020). The assessment comprised a nine-item questionnaire in which assessors rated each child's attention, engagement, and demeanour during two game activities: one group activity (memory card game, ten minutes) and one individual activity (curiosity boxes guessing game, five minutes). For each item, assessors rated the extent to which the child engages in a described behaviour (e.g. 'Did the child sustain attention, and resist distraction, throughout the instructions and activity?') on a scale from 1 to 7, representing a judgement of the frequency and/or severity of the behaviour. Anchors for the scale were individual to each item, such that, for example, a score of 1 can represent 'a child pays virtually no attention to any aspects of the instructions or game', with a score of 7 representing 'a child has virtually no lapses in attention and pays careful attention at all times'.

The assessment questionnaire was completed twice for each child—once for each game activity. The assessment questionnaires are included in Appendix E. Ratings were first averaged for each item across the two activities, to derive a single set of scores for each child. Scores on specific items were then combined into two scales—a cognitive self-regulation scale (six items) and a behavioural self-regulation scale (three items).¹³ For each scale, the average score on respective items was calculated to derive a cognitive self-regulation score (1–7) and a behavioural self-regulation score (1–7) for each child. The two scores were then averaged to derive the overall PRSIST self-regulation score (1–7).

¹² Random selection was stratified by setting type and region, like for the random treatment allocation (see 'Randomisation' section below).

¹³ Preliminary norms derived from a large sample of three- to five-year-old children attending pre-school services in Australian children (Howard and Melhuish, 2017) are available at: www.eytoolbox.com.au/toolbox-norms.html

Randomisation

A total of 160 settings were recruited and randomised into the EC group ($n = 80$) and the practice as usual group ($n = 80$). Randomisation of settings was stratified by SPH and setting type (PVI vs school-based nurseries), to ensure balance of these characteristics between EC and practice as usual groups. The number of settings in each trial arm by type and SPH, at randomisation and at analysis, is available in the ‘Pupil and school characteristics’ section below.

Randomisation of settings was carried out by the impact evaluation team at NatCen using the `randtreat` command in Stata version 17 (StataCorp LLC, College Station, Texas, USA) in October 2024. Stata `.do` and `.log` files were used to record the process (see Appendix F for the code used for the randomisation). Researchers were blind to setting identity at the time of randomisation, with setting identifiers linked back into the data once random assignment into the two groups was complete for the pseudonymised settings list.

Random sampling of children for endline testing

The number of children in settings recruited for the trial was larger than anticipated (see ‘Sample size’ section). We therefore, additionally sampled children in larger settings to take part in endline testing. Specifically, in settings with more than 25 children, we randomly selected 25 children for endline testing, while in smaller settings all children were tested. This was done to ensure the burden of data collection remained reasonable for participating settings and minimise the risk of settings withdrawing or failing to complete endline testing due to the high demands of collecting data for a large number of children. Random sampling within each setting was stratified by EYPP status, to ensure proportional representation of EYPP-eligible children in the sample for analysis.

Furthermore, in settings randomly selected for the additional observation-based measure PRSIST (see ‘Additional measures’ section), a further subset of 15 children was randomly selected from the 25 sampled for endline testing, to complete PRSIST assessments. If selected settings had less than 15 children, all of them were selected to take part in PRSIST assessments.

The random sampling of children was carried out in R by the impact evaluation team at NatCen, after randomisation of settings was complete.

Sample size

Power calculations at each stage were informed by the research team’s experience of working with early years settings and studies using practitioner- or parent/carer-report measures. As no child-level baseline measures were collected in the trial, our calculations assumed that no child- or setting-level covariates included in the analysis models would explain variance in the primary outcome. We further estimated an intraclass correlation coefficient (ICC) of 0.13, based on previous early years trials (Robinson-Smith *et al.*, 2019). We used a Type I error rate of 0.05 and a Type II error rate of 0.20.

All power calculations were performed using PowerUp! (Dong and Maynard, 2013).

Planned sample size

As detailed in the **study protocol** (Speight *et al.*, 2024), the trial aimed to recruit 160 nursery settings, with half randomly allocated to the EC programme and half randomly allocated to practice as usual. We anticipated the average number of three- to four-year-old children per setting to be 17. We planned for all children in a setting to be assessed at endline. This meant that at protocol stage, our anticipated sample size, before accounting for attrition, was 2,720 children (1,360 in the EC group and 1,360 in the practice as usual group). The number of EYPP-eligible children in each setting was conservatively estimated using the latest national average at the time (14%).¹⁴

¹⁴ According to the DfE (2023), 14% of children aged three to four years (and not in their reception year of school) are in receipt of EYPP across England.

To account for the risk of attrition, we conducted power calculations assuming a 10% setting-level attrition rate to endline and a 90% practitioner response rate for the primary outcome at endline. This practitioner response rate estimate accounted for both possible practitioner non-completion of the CSBQ and child-level attrition (e.g. children leaving the setting). This meant that at the protocol stage, we anticipated 144 settings to remain in the trial and a sample of 2,203 children at endline.

For these anticipated sample sizes, the trial was expected to be powered to detect a minimum detectable effect size (MDES) of 0.20 for the whole sample. For the EYPP subgroup analysis, the trial was expected to be able to detect a MDES of 0.34.

Sample size achieved at randomisation

A total of 160 settings were randomised into the EC ($n = 80$) or the practice as usual ($n = 80$) group. At randomisation, the number of children in the sample was 3,999 (an average of 25 children per setting), with 2,014 children in settings randomised to the EC group and 1,985 in settings randomised to the practice as usual group. As the average number of children per setting observed at randomisation was higher than anticipated at protocol stage, in larger settings (where $n > 25$ children), we randomly selected a subset of children to take part in endline testing (see 'Randomisation' section above). In settings with 25 children or fewer, all children were to be assessed at endline. In settings with more than 25 children, 25 children were randomly sampled for endline testing.

Therefore, before accounting for attrition, the sample at randomisation comprised a total of 3,330 children selected for endline testing¹⁵ across 160 settings (an average of 20.8 children per setting), with 1,666 children in the EC group and 1,664 children in the practice as usual group (see 'Participant flow including losses and exclusions' section).

As random sampling was not yet carried out at the time of writing the **SAP**, calculations presented there used the estimated number of children in the sample after random sampling ($n = 3,306$), rather than the observed number of children in the sample after random sampling ($n = 3,330$). The MDES presented in the SAP (Schei and Stoilova, 2025) is therefore based on a slightly lower anticipated number of children at endline ($n = 2,380$) than what the anticipated number of children would be at that stage under observed sample sizes ($n = 2,396$).

In our power calculations at randomisation, we also assumed a more conservative scenario than in the protocol where practitioner response was 80% (i.e. pupil-level attrition was 20%) to ensure we were prepared for higher levels of attrition. Therefore, at the randomisation stage, we anticipated 144 settings remaining in the trial and a sample of 2,380 children at endline. Under these assumptions, we estimated that the trial would be powered to detect a MDES of 0.20 for the whole-sample analysis, which matches the MDES estimated at the protocol stage. Using the same national average for the proportion of EYPP-eligible children as in the protocol (14%), meaning an average of 2.31 EYPP-eligible children per setting at endline, and a total of 332 EYPP-eligible children in the sample, based on the observed number of children and settings in the trial at this stage, the trial was expected to detect a MDES of 0.33 for the EYPP subgroup analysis, which was slightly lower than the MDES estimated at the protocol stage (0.34), despite assuming a higher 20% pupil attrition rate.

Sample size achieved at analysis

Our sample for the primary outcome analysis comprised 2,467 children (1,249 in the EC group and 1,218 in the practice as usual group) across 135 settings (see 'Participant flow including losses and exclusions' section and 'Attrition' section). The number of children at analysis is hence slightly higher than the one anticipated at the randomisation stage after accounting for attrition, while the number of settings is slightly lower than the one anticipated.

As a development from the study protocol (Speight *et al.*, 2024) and SAP (Schei and Stoilova, 2025), EYPP eligibility was recorded at two time points: i) by settings at enumeration (baseline;) and/or ii) by practitioners when completing outcome

¹⁵ In the SAP (Schei and Stoilova, 2025), we reported an *estimated* figure for the number of pupils after random sampling ($n = 3,306$), which is slightly lower than the actual figure we arrived at after conducting the random sampling ($n = 3,330$). This means the estimates reported in the SAP differ slightly from the sample sizes reported here.

questionnaires for each child (endline). If either source reported that the child was eligible for EYPP, the child was assumed to be EYPP-eligible—even in cases where the other source might have reported that the child is not eligible for EYPP. This was done to ensure that while eligibility may change between specific time points, we capture a wide and comprehensive proxy of socio-economic disadvantage. This is consistent with the use of free school meals (FSM) eligibility in the past six years as an indicator for older pupils in other funded studies by the EEF.

The number of EYPP-eligible pupils in the analysis sample was 510 (294 children in the EC group and 216 children in the practice as usual group), which was considerably higher than the number of EYPP-eligible children anticipated at the randomisation stage. This meant an average of 3.78 EYPP-eligible children per setting was observed and that EYPP-eligible pupils made up 20.67% of the analysis sample, compared to the 14% anticipated.

Power calculations at the analysis stage also included the actual observed unadjusted ICC estimated for the primary outcome which was 0.135 (see ‘Primary analysis’ section).

This meant that at the analysis stage, the trial was powered to detect a MDES of 0.21 for the main analysis and 0.29 for the EYPP subgroup analysis (see Table 13). The MDES for the primary outcome analysis is therefore marginally higher than the MDES anticipated at each stage after accounting for anticipated attrition. The MDES for the EYPP subgroup is lower than anticipated at the protocol and randomisation stages due to a higher-than-anticipated average number of EYPP-eligible children in the sample.

Statistical analysis

The primary and secondary outcome analyses described below used an intention-to-treat (ITT) approach to estimate the impact of EC on each outcome of interest, and followed the EEF statistical analysis guidance (EEF, 2022). The analysis was implemented in R version 4.4.0.

For all primary and secondary outcomes, assumptions were tested for each regression model estimated using diagnostic plots and statistical tests, where appropriate. For linear mixed-effects regression models, residuals versus fitted values plots were used to assess linearity and homoscedasticity, while Quantile-Quantile (Q-Q) plots evaluated the normality of residuals. Multicollinearity among fixed effects was examined using variance inflation factors (VIFs). The appropriateness of random effects was assessed by inspecting variance components and comparing models with and without specific random effects using likelihood ratio tests or information criteria (Akaike Information Criterion [AIC]/Bayesian Information Criterion [BIC]). Where these diagnostics indicated violations of assumptions, sensitivity analyses were estimated and presented in Appendices G and H.

Primary analysis

The primary outcome analysis estimated the effect of EC on child self-regulation, as reported by practitioners (RQ1). We estimated a two-level linear mixed-effects regression model, to account for children (level 1) being clustered within settings (level 2).

The dependent variable was composite scores on the CSBQ self-regulation subscales (practitioner-report). The model included a binary indicator for treatment allocation, the stratification variables (early years SPH and setting type) as covariates, and a random intercept by setting. The basic form of the model was:

$$CSBQ \text{ self-regulation score}_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 Stratum_j + u_j + e_{ij}$$

Where pupils i are clustered within settings j . β_0 is the intercept and β_1 is the estimated treatment effect of the programme on self-regulation scores. u_j is a setting-level random intercept and e_{ij} is the error term, both assumed to be normally distributed and uncorrelated with covariates in the model.

We report Hedges' *g* effect sizes and confidence intervals (CIs), following the EEF guidance (EEF, 2022; see 'Estimation of effect sizes' section).

Secondary analysis

The secondary outcome analysis followed the ITT approach adopted for the primary analysis, with two-level models estimated to account for children (or practitioners) (level 1) being clustered within settings (level 2). For all secondary outcomes, we report Hedges' *g* effect sizes and CIs, following the EEF guidance (EEF, 2022; see 'Estimation of effect sizes' section).

Child self-regulation (parent/carer report)

To estimate the effect of EC on child self-regulation, as reported by parents/carers (RQ2), we estimated a two-level linear mixed-effects regression model, with children at level 1 and settings at level 2. The model included composite scores on the CSBQ self-regulation subscales (parent/carer report) as the dependent variable, a binary indicator for treatment allocation and stratification variables (SPH and setting type) as covariates (EEF, 2022), and a random intercept by setting. The basic form of the model was:

$$CSBQ \text{ self-regulation score}_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 Stratum_j + u_j + e_{ij}$$

Where pupils *i* are clustered within settings *j*. β_0 is the intercept and β_1 is the estimated treatment effect of the programme on self-regulation scores. u_j is a setting-level random intercept and e_{ij} is the error term.

Child prosocial behaviour (practitioner and parent/carer report)

To estimate the effect of EC on child prosocial behaviour, as reported by practitioners (RQ3) and by parents/carers (RQ4), we estimated a two-level linear mixed-effects regression model for each of these outcomes. The dependent variable in each model was scores on the CSBQ prosocial behaviour subscale (either practitioner- or parent/carer-report). The models included a binary indicator for treatment allocation and stratification variables (SPH and setting type) as covariates (EEF, 2022), and a random intercept by setting. The basic form of the models was:

$$CSBQ \text{ prosocial behaviour score}_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 Stratum_j + u_j + e_{ij}$$

Where pupils *i* are clustered within settings *j*. β_0 is the intercept and β_1 is the estimated treatment effect of the programme on self-regulation scores. u_j is a setting-level random intercept and e_{ij} is the error term.

Practitioner meta-emotion philosophy

To assess the impact of EC on practitioners' meta-emotion philosophy, i.e., their reactions, responses, and reasoning to emotions in themselves and others (RQ7), we estimated a two-level linear mixed-effects regression model, to account for practitioners (level 1) being clustered in settings (level 2).

The dependent variable was practitioner PECQ scores at baseline (see 'Secondary outcomes' section). The model included a binary indicator for treatment allocation, baseline PECQ scores and stratification variables (SPH and setting type) as covariates (EEF, 2022), and a random intercept by setting. The basic form of the model was:

$$PECQ \text{ score}_{ij} = \beta_0 + \beta_1 Intervention_j + \beta_2 Baseline \text{ PECQ scores}_{ij} + \beta_3 Stratum_j + u_j + e_{ij}$$

Where practitioners *i* are clustered within settings *j*. β_0 is the intercept and β_1 is the estimated treatment effect of the programme on PECQ scores. u_j is a setting-level random intercept and e_{ij} is the error term.

Subgroup analyses

As a subgroup analysis, we estimated the effect of EC on child self-regulation, as reported by practitioners, for children eligible for EYPP (**RQ5**). EYPP is an indicator of socio-economic disadvantage that is available in early years settings and was collected from settings as part of the pupil enumeration data at baseline and from practitioners as part of completing outcome questionnaires for each child at endline. A composite indicator was created that indicated a child as eligible for EYPP if either of those sources reported they are eligible.¹⁶

Following the EEF guidance (EEF, 2022), this subgroup analysis was conducted using both a subsample consisting of only children who are eligible for EYPP, and an interaction term added to the primary outcome model for the whole sample.

Specifically, we re-estimated the primary outcome model for the whole sample, with the addition of the EYPP eligibility indicator and an interaction term combining EYPP eligibility and treatment allocation. The basic form of the model was:

$$\begin{aligned} \text{CSBQ self-regulation score}_{ij} \\ = \beta_0 + \beta_1 \text{Intervention}_j + \beta_2 \text{Stratum}_j + \beta_3 \text{EYPP status}_{ij} + \beta_4 \text{Intervention} * \text{EYPP status}_{ij} + u_j \\ + e_{ij} \end{aligned}$$

Where pupils i are clustered within settings j . β_1 is the estimated treatment effect of the programme on self-regulation scores for the whole sample. β_3 is the difference in self-regulation scores between children eligible for EYPP and those who are not, across both EC and practice as usual groups. β_4 is the difference in the effect of the programme on self-regulation scores between children eligible for EYPP and those who are not. u_j is a setting-level random intercept and e_{ij} is the error term.

From this model, we report the interaction term coefficient β_4 and its CI, alongside their interpretation for RQ5.

Additionally, we estimated the primary outcome model for a subsample consisting only of pupils who are eligible for EYPP:

$$\text{CSBQ self-regulation score}_{ij} = \beta_0 + \beta_1 \text{Intervention}_j + \beta_2 \text{Stratum}_j + u_j + e_{ij}$$

Where pupils eligible for EYPP i are clustered within settings j . β_0 is the intercept and β_1 is the estimated treatment effect of the programme on self-regulation scores among children eligible for EYPP. u_j is a setting-level random intercept and e_{ij} is the error term.

From this model, we derived the effect size of the treatment effect for children eligible for EYPP, as described below (see ‘Estimation of effect sizes’ section). As a sensitivity check, we also extracted the effect size for the EYPP-eligible subgroup from the interaction effect model above and compared this to the *ES* derived from the subsample model (see EEF, 2022).

Additional analyses

Age and gender

As an additional analysis, we replicated the primary outcome analysis, accounting for age and gender as predictors of child self-regulation (Ng-Knight *et al.*, 2016a; Ng-Knight *et al.*, 2016b). For this analysis, age (in months) and gender were added

¹⁶ If either source reported that the child was eligible for EYPP, the child was assumed to be EYPP-eligible—even in cases where the other source might have reported that the child is not eligible for EYPP. This was done to ensure that while eligibility may change between specific time points, we capture a wide and comprehensive proxy of socio-economic disadvantage. This resembles the use of FSM eligibility in the past six years as an indicator for older pupils.

as fixed effects to the primary outcome model. In addition, the model included two interaction terms to assess whether the effect of EC varies by age and/or gender. The basic form of the model was:

$$\begin{aligned} \text{CSBQ self-regulation score}_{ij} &= \beta_0 + \beta_1 \text{Intervention}_j + \beta_2 \text{Stratum}_j + \beta_3 \text{Age}_{ij} + \beta_4 \text{Gender}_{ij} + \beta_5 \text{Intervention}_j * \text{Age}_{ij} \\ &+ \beta_6 \text{Intervention}_j * \text{Gender}_{ij} + u_j + e_{ij} \end{aligned}$$

Where pupils i are clustered within settings j . β_0 is the intercept and β_1 is the estimated treatment effect of the programme on self-regulation scores. β_3 is the fixed effect of age and β_4 is the fixed effect of gender on self-regulation scores. β_5 is the interaction between treatment and age, and β_6 the interaction between treatment and gender. u_j is a setting-level random intercept and e_{ij} is the error term.

PRSIST

As a descriptive analysis, for the subsample of settings in which PRSIST measurements were carried out, we calculated correlation coefficients (Pearson's r) between children's PRSIST self-regulation scores and practitioner-report CSBQ self-regulation scores, for EC and practice as usual settings separately. If the correlation between the two measures of self-regulation was stronger for settings in the practice as usual group than it was for settings in the EC group, this would indicate that practitioners' assessments of child self-regulation on the CSBQ may be biased after receiving EC training.

Additionally, we tested differences in the correlation between CSBQ practitioner-report scores and PRSIST scores using a two-level linear regression model. The model included practitioner-report CSBQ self-regulation scores as the dependent variable, and PRSIST scores, treatment allocation, and the interaction between PRSIST scores and treatment allocation, as predictors. As for the primary and secondary outcome analyses, the model also included a random intercept by setting. The basic form of the model was:

$$\begin{aligned} \text{CSBQ self-regulation score}_{ij} &= \beta_0 + \beta_1 \text{Intervention}_j + \beta_2 \text{PRSIST score}_{ij} + \beta_3 \text{Intervention}_j * \text{PRSIST score}_{ij} + u_j + e_{ij} \end{aligned}$$

Where pupils i are clustered in settings j . β_2 represents the change in practitioner-report CSBQ self-regulation scores associated with a one-unit increase in PRSIST scores. β_3 represents the degree to which the relationship between PRSIST scores and practitioner-report CSBQ scores differs between EC and practice as usual group groups. A statistically significant β_3 coefficient would therefore be an indication of possible practitioner bias in CSBQ self-regulation reports.

Imbalance at baseline

To assess imbalance between EC and practice as usual group groups at baseline, we conducted cross-tabulations at the setting and child level (see 'Pupil and setting characteristics' section). Balance was assessed: i) for the sample as randomised (to assess whether randomisation was successful at balancing characteristics); and ii) for the sample analysed (to assess whether attrition has introduced imbalance), following the EEF guidance (EEF, 2022).

At the setting level, characteristics assessed for imbalance were those used as stratifiers at randomisation—setting type and setting SPH. At the child level, we assessed balance for covariates included in the models in subgroup and additional analyses—age, gender, and EYPP eligibility. We also assessed balance at the level of practitioners for baseline PECQ scores. For continuous variables (age in months, PECQ scores), we report means and standard deviations (SDs). For categorical variables (setting type, SPH, gender, and EYPP eligibility), we report counts and percentages in each category.

We report standardised mean differences (SMDs) in baseline characteristics as Hedges' g effect sizes for continuous covariates. An effect size greater than 0.05 was considered as an indication of possible imbalance. In addition to this approach outlined in the SAP (Schei and Stoilova, 2025), we also estimate and report SMDs for all covariates, to help assess balance in proportions between the two groups for categorical covariates.

Where imbalances are detected, we estimate a sensitivity analysis for the primary outcome with unbalanced variables included as predictors in the main model.

Analysis in the presence of non-compliance

Compliance with the intervention was measured at the setting level as a binary variable indicating whether at least two members of staff per setting attended all five EC staff training sessions (i.e. the two training days and three follow-up sessions). This data was collected from ECUK via an Excel spreadsheet template, created by NatCen. While compliance was measured at the setting level, the unit of the following analysis was children.

To account for non-compliance (i.e. settings not complying with their intended treatment allocation) and isolate the impact of EC for settings that did adhere to their random assignment, we conducted a Complier Average Causal Effect (CACE) analysis. Following the EEF guidance (EEF, 2022), we adopted an instrumental variable (IV) approach (Angrist and Imbens, 1995), using two-stage least squares (2SLS) regression with random treatment allocation as the IV. As the first step of the 2SLS approach, we regressed observed compliance on random treatment allocation as the IV,¹⁷ alongside stratification variables (setting type and SPH) as a covariate:

$$Compliance_j = \beta_0 + \beta_1 Intervention_j + \beta_2 Stratum_j + e_j$$

Where $Compliance_j$ is the outcome of a setting complying with the intervention and β_1 is the change in probability of compliance for settings that is associated with being allocated to the treatment group.¹⁸ e_j is residual variation in compliance that is not explained by treatment allocation.¹⁹ From this regression model, we derived a predicted probability of compliance for each setting that isolates treatment allocation from, and accounts for, unobserved characteristics influencing compliance.

As the second step of the 2SLS approach, this predicted compliance was included as a predictor in a linear regression model,²⁰ regressing the primary outcome of practitioner-report CSBQ self-regulation scores at endline on predicted compliance instead of treatment allocation. The model included stratification variables (setting type and SPH):

$$CSBQ \text{ self-regulation score}_{ij} = \beta_0 + \beta_1 \widehat{Compliance}_j + \beta_2 Strata_j + e_{ij}$$

In this model, the coefficient for predicted compliance, β_1 , represents the CACE—the average causal effect of treatment among complier settings. This effect accounted for non-compliance and isolated the impact of EC for settings that would adhere to their random assignment.

Following best practice to use a software package with a 2SLS command rather than explicitly carry out the two-step procedure,²¹ we used the `iv_robust` function in the `estimatr` package in R to carry out the CACE analysis.

¹⁷ While in the SAP (Schei and Stoilova, 2025), we described a logistic regression model estimating our binary compliance indicator, this was not possible to implement with the `estimatr` package in R. Therefore, the first stage estimation used a linear regression model.

¹⁸ In line with the EEF guidance (EEF, 2022), we will report the results from the first stage of the 2SLS alongside with: i) the correlation between the IV and the endogenous variable; and ii) their associated F test.

¹⁹ Even though the second stage is at the pupil level, the estimation collapses to the setting level for the first stage, as treatment allocation and compliance are defined at the setting level.

²⁰ While the SAP (Schei and Stoilova, 2025) described a linear mixed-effects regression model with a random slope by setting, this was not possible to implement with the `estimatr` package in R. Therefore, the second stage estimation used a simple linear regression. However, the package's 2SLS inference takes account of clustering by using cluster-robust standard errors.

²¹ As software packages with a 2SLS command account for first stage uncertainty associated with predicted compliance which carries over into the second stage.

Missing data analysis

We followed the EEF analysis guidance to address missing data (EEF, 2022). Multiple imputation was considered, depending on the extent (e.g. if above 5%) and patterns of missingness.

We report the extent of missing data for all outcomes and covariates across models, and the number of complete cases in the sample (see ‘Missing data analysis’ section). To explore patterns of missing data, we estimated a two-level logistic regression model, regressing the presence of missing data in the primary outcome on variables in the data that might be predictive of missingness. The model included setting-level characteristics (treatment allocation, SPH, and setting type) and child-level characteristics (EYPP eligibility, age, and gender) as predictors, and a random intercept by setting:

$$\begin{aligned} \text{logit}[P(\text{Missing data}_{ij} = 1)] \\ = \beta_0 + \beta_1 \text{Intervention}_j + \beta_2 \text{SPH}_j + \beta_3 \text{Setting type}_j + \beta_4 \text{EYPP status}_{ij} + \beta_5 \text{Age}_{ij} + \beta_6 \text{Gender}_{ij} + u_j \\ + e_{ij} \end{aligned}$$

If data were missing in a way that is not correlated with either observables and/or unobservable variables, missing observations were considered missing completely at random (MCAR) and complete case analysis would be expected to yield unbiased (though less precise) estimates. If data were missing in a way that was correlated with observable variables, then the missing observations were considered missing at random (MAR). If only the outcome variable in a substantive model was MAR conditional on covariates, these covariates would be included in the model for analysis. If a covariate in a substantive model was MAR conditional on other covariates, analysis would be done after multiple imputation (MI). Given that our primary outcome model only contained setting-level covariates that were non-missing by definition (treatment allocation and strata), this was not a consideration for our missing data analysis. If there was reason to believe that missing data depended on an unobserved variable, even after considering all the information in observed variables, then the missing observations would be considered missing not at random (MNAR). If there was reason to suspect data is MNAR we would follow suggestions for employing sensitivity analyses as per the EEF analysis guidance (EEF, 2022).

Where MI was performed, we describe the variables used for imputation, the number of imputations performed, and the results of any sensitivity analyses to test assumptions about missing data.

Estimation of ICC

ICCs were estimated for the primary outcome at endline, using variance estimates from: i) the primary outcome model; and ii) an empty model with no covariates. The ICCs for settings ρ_s were estimated using the following formula (Hedges, 2007):

$$\rho_s = \frac{\sigma_B^2}{\sigma_B^2 + \sigma_W^2} = \frac{\sigma_B^2}{\sigma_T^2}$$

Where σ_B^2 is the variance in outcome between settings (the variance of u_j ; σ_u^2), σ_W^2 is the variance within settings (the variance of e_{ij} ; σ_e^2) and σ_T^2 is the total variance. ICCs are reported in the ‘Primary outcome analysis’ section.

Estimation of effect sizes

Following the EEF analysis guidance (EEF, 2022), we calculated effect sizes using the following formula for cluster randomised trials, as adapted from Hedges (2007):

$$ES = \frac{(\bar{Y}_T - \bar{Y}_C)_{adjusted}}{\sqrt{\sigma_u^2 + \sigma_e^2}}$$

Where $(\bar{Y}_T - \bar{Y}_C)_{adjusted}$ is the adjusted difference in means between the EC and practice as usual group groups, adjusting for stratification variables (and baseline characteristics where included) as specified in each respective outcome model.

$\sqrt{\sigma_u^2 + \sigma_e^2}$ is the pooled unconditional (i.e. unadjusted) SD (i.e. a weighted average of estimates for the two groups), derived using σ_u^2 , the variance of the setting-level random intercept, and σ_e^2 , the variance of residuals, from a two-level ‘null’ or ‘empty’ model with no predictors (EEF, 2022).

We also report 95% CI for effect sizes. Effect sizes were calculated in R using respective parameters in the formula²² for each outcome (see Appendix C).

IPE

Research methods

IPE research activities were conducted in three phases, as illustrated in Figure 2. This approach ensured that the activities built on each other and reduced the burden on participating settings. We aimed to minimise bias in the IPE through triangulation of multiple data sources and inclusion of diverse participant perspectives.

Figure 2: Phases of IPE research activities



IDEA=Intervention Delivery and Evaluation Analysis.

Table 7 gives an overview of IPE data collection methods and how these related to the RQs.

Table 7: IPE methods overview

Research methods	Data collection methods	No. of encounters	Data analysis methods	RQs addressed	Logic model element	IPE dimension
Training observations	Online	Encounters: five observations (two-day online + three workshops) Participants per encounter: 18–29	Qualitative	9, 10	Inputs / activities, Outputs	Fidelity, quality, responsiveness, adaptation
Pre-implementation interviews with	Online or telephone	Encounters: eight Participants per	Qualitative	8, 9, 10	Inputs / activities, Outputs	Fidelity, adaptation, reach, responsiveness, usual practice

²² While in the SAP (Schei and Stoilova, 2025), we planned to use the EEF analytics package, we were not able to do so, as our models were multilevel. We therefore, followed the formula to calculate effect sizes, using respective parameters for each outcome.

setting managers		encounter: one				
Post-implementation interviews with setting managers, practitioners directly trained by ECUK (EC leads), and those trained through cascading	Online or telephone	Encounters: 20 in total (eight setting managers, 12 practitioners trained directly or through cascading) Participants per encounter: one	Qualitative	8, 9, 10, 11, 12, 13	Outputs, outcomes	Adaptation, fidelity, reach, responsiveness, usual practice, context/moderators, perceived outcomes
Practitioner surveys	Online	Encounters: two surveys, one at baseline and one at endline	Quantitative	8, 9, 10, 11, 12, 13, 14	Inputs / activities, Outputs, Outcomes	Context, usual practice, perceived outcomes, fidelity, reach, responsiveness, dosage, costs
Monitoring data	Online	Encounters: one	Quantitative	9, 10, 14	Outcomes	Fidelity, reach, dosage
Cost pro-forma	Online	Encounters: one	Quantitative	14	Outcomes	Costs

The rest of this section gives an overview of the achieved sample (in terms of settings) and then describes each IPE activity in turn.

IPE sample overview

Recruitment for the IPE activities was conducted to ensure that a range of views were captured based on setting type (e.g. school-based vs PVI settings) and setting size. We covered a range of geographical areas across the SPHs involved in the trial and setting profiles in terms of children eligible for EYPP.

Staff across settings held varied qualifications, spanning from Level 3 (e.g. teaching assistants) to Level 7 (e.g. EYFS leads). Nursery staff also differed in working hours, with some working full-time (e.g. nursery leads working 36 hours per week) and others part-time (e.g. agency staff working three days a week).

Researchers conducted IPE interviews with staff members across a range of early years settings, from three-form-entry school-based settings to small, single-room community-based pre-schools. Settings offered both morning and afternoon sessions, and children attended either part-time or full-time. Setting managers explained that attendance patterns usually depended on parents/carers' needs and available funding and those children with 15-hour allocations typically attended either morning or afternoon sessions, whereas those eligible for 30-hour allocations attended both sessions. Some settings operated separate rooms for babies, toddlers, and a main nursery room for three- to four-year-olds, while others only admitted children aged three and above.

Overall, the qualitative IPE interviews were conducted with staff from 28 settings that were spread across all eight SPH regions. The settings were equally split between school-based settings and PVI settings.

Table 8 shows the variation in setting size, in terms of number of pupils, split by setting type.

Table 8: IPE interview settings, by setting type and size (based on preschool children on the register)

Setting size (no.of pupils)	No. of school-based settings	No. of PVI settings	Total
<25 (small)	4	5	9
25-50 (medium)	4	5	9
>50 (large)	6	4	10
Total	14	14	28

EC training observations

We conducted observations of the EC training to gather information on delivery, any adaptations made to the programme, and practitioners' engagement with the training. We observed a two-day online training delivered to practitioners at the start of the programme and three online training workshops between November 2024 and January 2025. For each training workshop, we observed different groups of trainers and staff in order to capture adaptation and variation. The workshops were selected so that observations could cover a range of geographical areas and types of settings (school-based vs PVI).

Interviews with setting staff

We conducted interviews with setting managers from the intervention group to understand how settings participated in EC, barriers and facilitators to delivery, and perceived outcomes. We also conducted interviews with directly trained practitioners who had attended all the EC training workshops as well as practitioners trained through cascading from the intervention group to understand how EC was being delivered in practice. In all cases, participants were recruited via an invitation email, and in some cases, follow-up phone calls. Settings were sampled to achieve diversity in characteristics expected to affect experiences of EC, such as, setting type (school-based vs PVI settings), size, and geography (see section 'IPE sample overview').

- **Pre-implementation interviews with setting managers (n = 8).** We interviewed eight setting managers (or EYFS leaders at schools) from the intervention group. Interviews were conducted online or by telephone and lasted about 30 minutes. These interviews took place after the initial training had been completed, in November and December 2024. The interviews gathered contextual information on the setting and any anticipated intervention challenges. The interviews explored whether the settings planned to make any adaptations to implementing the programme and gathered data on settings' usual approaches to supporting children's emotional development and regulation.
- **Post-implementation interviews with setting managers (n = 8).** We interviewed eight setting managers (or EYFS leads) from the intervention group who had received ECUK training and had been involved in programme delivery. This was a different group of setting managers from those interviewed at pre-implementation. Interviews took place online or by telephone in June 2025 and lasted up to 60 minutes. They explored how programme delivery had progressed, perceptions of programme outcomes, and the extent to which ECUK principles were cascaded to staff who had not received ECUK training. Setting managers also reflected on perceived impacts on staff practice and the setting environment.
- **Post-implementation interviews with directly trained practitioners (n = 8).** We interviewed eight practitioners who had been trained directly by ECUK. Interviews took place online or by telephone in June and July 2025 and lasted up to 60 minutes. Interviews explored engagement with the training and delivery, including barriers and facilitators to engagement. We also gathered information on usual practice, perceived impacts of the programme on staff practice and children's emotional self-regulation, contextual factors influencing delivery, and recommendations for improvement. These interviews explored whether transitions from short-term to long-term outcomes for both children and practitioners were happening as conceptualised in the logic model and if not, to gather practitioners' reflections on what the reasons were for the absence of suggested long-term outcomes. We also probed about the mechanisms bringing about changes in the outcomes by inviting practitioners to reflect on why they think the changes that they see were there.

- **Post-implementation interviews with practitioners trained through cascading (n = 4).** We interviewed four practitioners who had received training through cascading within their setting. Interviews took place online or by telephone in June and July 2025 and lasted up to 45 minutes. By comparing experiences across directly trained practitioners and practitioners trained through cascading, we examined variation in perceived outcomes and the acceptability of the EC programme.

Practitioner survey

We conducted online surveys with practitioners in the EC and practice as usual group groups at baseline and endline. These surveys collected practitioner outcome measures for impact evaluation (see ‘Secondary outcomes’ section) as well as questions supporting IPE.

Although we did not conduct formal piloting of the surveys, the research team tested the surveys to ensure that they functioned as intended and were accessible and user-friendly for respondents.

Baseline survey

We conducted an 11-minute²³ pre-intervention web survey in September and October 2024, before settings were informed of their randomisation allocation. The survey questions primarily focused on practitioner and setting characteristics (context) and on usual practice (as well as collecting practitioner outcomes using the PECQ).

ECUK collected contact details of 1,200 practitioners from 160 settings and shared them with NatCen in September 2024. NatCen shared the baseline survey link via email with 1,200 practitioners. Each practitioner was provided with a unique access code to the survey. We received responses to the survey from 874 practitioners, giving a response rate of 73%.

The responses covered a variety of roles with the largest proportion of responses coming from teaching assistants (46%), followed by nursery or EYFS teachers (23%), nursery managers/headteachers (15%), room leaders (10%), Special Educational Needs Co-ordinators (SENCOs) (10%), and EYFS leads (6%). Additionally, 11% of responses were from ‘other roles’ such as operations managers, business managers, nursery room assistants, etc. Respondents were permitted to select multiple job roles from the list, so the reported percentages exceed 100% overall.

Endline survey

We conducted a post-intervention web survey in June and July 2025 with EC group and practice as usual group settings, after programme delivery had ended. The average length of time it took respondents to complete this survey was 17 minutes in the EC group and nine minutes in the practice as usual group.

For the endline survey with practitioners in the EC group, we included questions to assess perceived programme outcomes and engagement. As part of this, we asked about the use of behaviourist methods, emotion talk, and practitioners’ awareness of using verbal and non-verbal communication with children. These questions helped to establish the approaches that practitioners used to support children’s emotions.

To assess each practitioner’s role in the EC intervention at their setting, we collected information on whether they were trained by ECUK or through cascading, when their training had started and had been completed (including the main training and the three follow-up workshops), and when they felt they had begun implementing EC in their work with three- to four-year-old children. We also included questions about costs in the endline survey but routed these only to setting managers in the settings.

For the endline survey with practitioners in the practice as usual group, we included questions on whether staff received any training in the current school year focused on supporting children’s socio-emotional development and behaviour management. We also asked whether practice as usual group settings had implemented any interventions targeting self-

²³ This figure is based on the average time that it took for respondents to complete the survey.

regulation and behaviour since the start of the school year. Finally, we asked usual practice questions again (as in the baseline survey) to assess whether there had been any changes in practice over time.

The survey link was emailed to 1,065 practitioners from 157 settings (all settings participating in the trial except one setting that was excluded from the trial as ineligible and two settings that had withdrawn from the evaluation prior to the start of the endline data collection). However, while cleaning the survey data, we removed the practitioners who became ineligible due to leaving their setting or due to later setting withdrawals, which meant that the sample consisted of 1,027 practitioners. Out of these, we received responses from 589 practitioners, giving a response rate of 57%. Of the 549 practitioners in the practice as usual group, the endline survey was completed by 309 respondents, giving a response rate of 56%. Of the 478 practitioners in the EC group, the endline survey was completed by 280 respondents, giving a response rate of 59%.

Similar to the baseline survey, the largest proportion of responses were from teaching assistants (38%), EYFS teachers (35%), and nursery managers/headteachers (13%).

Responses to the baseline and endline practitioner surveys that were conducted with EC and practice as usual settings also show variation in terms of setting type (school-based vs PVI; see Table 9) and respondent type (see Table 10 and Table 11).

Table 9: IPE baseline and endline survey responses, by setting type

Setting type	Randomisation group	Completed baseline surveys	Completed endline surveys
PVI	EC group	260	144
	Practice as usual group	242	165
School-based	EC group	195	136
	Practice as usual group	177	144
Total number		874	589

Table 10: IPE baseline and endline survey responses, by setting managers and practitioners

Respondent type	Randomisation group	Completed baseline surveys	Completed endline surveys
Setting manager	EC group	150	109
	Practice as usual group	132	111
Practitioner	EC group	305	171
	Practice as usual group	287	198
Total number		874	589

Note: There were more than one 'setting manager' taking part in some settings as the definition of setting manager included different leadership roles.

Table 11: IPE endline survey responses from the EC group, by training status

Respondent type	Completed surveys
Directly trained by ECUK	166
Trained through cascading	107
Total number	273^a

^a There were three respondents who selected 'prefer not to answer' and four who selected 'I don't know'.

Monitoring data

We collected data from ECUK about the practitioners in the intervention group and their training and follow-up workshop attendance. ECUK recorded this information in a monitoring data spreadsheet and shared the data in May 2025.

Analysis

All qualitative interviews were audio-recorded with participants' consent and transcribed by an external professional transcription service. Observers documented details of observations using detailed field notes.

We organised and analysed qualitative data using the Framework approach, which is a structured method for qualitative data management developed by NatCen. This method enables data to be charted and summarised by theme and case (Ritchie *et al.*, 2014). This approach supports both within-case and cross-case analysis. Using themes covered in topic guides, along with additional themes that emerged inductively, we compiled the data into a matrix in which each row represented an interview or each column represented a theme or sub-theme. We then summarised the qualitative data within the matrix, adding illustrative verbatim quotations where appropriate.

We used a similar approach to analyse workshop observations. Observers documented workshop delivery using pre-designed proformas. We developed analytical frameworks and Excel matrices to reflect key thematic areas.

Following data organisation, we undertook formal analysis. This involved identifying and grouping what participants had said about particular issues and then categorising these thematically in line with the RQs. Once themes had been identified, we developed broader conceptual groupings to synthesise participants' experiences and perspectives.

Survey data were analysed descriptively, using SPSS Statistics to report frequencies and percentages. Subgroup comparisons were conducted for key variables where sample sizes allowed.

Attendance data were collected by ECUK and were categorised and analysed within IPE domains relating to reach, dosage, and fidelity.

The logic model guided interpretation of study findings. Information on programme delivery and engagement was used to assess how closely the inputs, activities, and outputs aligned with expectations for EC implementation. Perceived outcomes for children, practitioners, and settings were examined through the IPE to understand emerging benefits of the intervention. We triangulated and synthesised IPE evidence against the RQs and implementation domains, enabling a comprehensive assessment of implementation, comparison with the finalised logic model, and contextualisation of impact evaluation results.

The analysis also identified key learning points for future delivery, including considerations for potential scale-up. Although mechanisms of change were not explicitly included in the logic model, we explored them through IPE analyses, particularly within the domains of quality and responsiveness, to understand how and why programme activities may have contributed to observed outcomes.

Costs

Following with the EEF cost evaluation guidance (EEF, 2023), we collected cost data from two sources:

- **Cost to settings.** The endline practitioner survey collected data on practitioner costs to attend training and follow-up workshops, and to deliver the intervention and cascading models, including setting supply staff costs.
- **Cost to the delivery team.** A cost pro-forma was completed by ECUK to measure the cost of delivering training, follow-up workshops, and support for settings.

Following the EEF guidance, we estimated the total cost per setting for the programme as implemented for three consecutive years, and the cost per-pupil school year over a period of three years. The per-pupil cost was estimated on the basis of annual average net costs to settings divided by the number of children per school year who benefited from the programme in the trial.

Timeline

Table 12: Timeline

Dates	Activity	Staff responsible / leading
January 2024 – August 2024	Recruitment of settings	ECUK
September 2024 – October 2024	Settings enumerate children and administer parent/carer opt-out	Settings
September 2024	Settings enumerate staff	Settings
September 2024 – October 2024	Baseline practitioner survey (online)	NatCen
October 2024	Randomisation of settings	NatCen
November 2024 – May 2025	Intervention training and delivery	ECUK
November 2024 – January 2025	Practitioner training observations	NatCen
November 2024 – December 2024	Pre-implementation interviews with setting managers	NatCen
June 2025 – July 2025	Post-implementation interviews	NatCen
June 2025 – July 2025	Endline practitioner survey (online)	NatCen
June 2025 – July 2025	Endline practitioner survey (paper)	NatCen
June 2025 – July 2025	Endline parent/carer survey (paper)	NatCen
August 2025 – October 2025	Data management, analysis, and reporting	NatCen
November 2025	Draft report submitted	NatCen
December 2025 – May 2026	Comments and report finalisation	NatCen, ECUK, the EEF
June 2026 – July 2026	Archiving	NatCen

Impact evaluation results

Participant flow including losses and exclusions

Figure 3 presents the participant flow diagram from recruitment to analysis. A sample of 160 settings were recruited and randomised into the two trial arms, meaning that a total of 2,061 children were randomised to receive EC and 1,985 to continue practice as usual. In settings with over 25 children, 25 children were randomly sampled for endline testing (see sections 'Sample size' and 'Randomisation'), reducing the evaluation sample as randomised to 1,666 children in the EC group and 1,664 children in the practice as usual group.

Between randomisation/sampling and endline testing, seven EC settings withdrew from the trial leaving a sample of 153 settings at endline testing.²⁴ Alongside 47 individual pupil withdrawals (n = 16 EC, n = 31 practice as usual), this meant that 175 sampled children were withdrawn from the trial (n = 144 EC, n = 31 practice as usual), resulting in a sample of 1,522 children in the EC group and 1,633 children in the practice as usual group at endline testing.

Eighteen settings (n = 6 EC, n = 12 practice as usual) did not complete endline data collection for the primary outcome (i.e. did not return practitioner responses on the CSBQ questionnaire). In total, primary outcome data was not submitted for 247 children in the EC group and 391 children in the practice as usual group. Endline data on the primary outcome was successfully collected for 1,275 children across 67 EC settings, and for 1,242 children across 68 practice as usual settings.

For some children, primary outcome data collected was incomplete (see Figure 3). Primary outcome data was complete for 1,249 children in the EC group and 1,218 children in the practice as usual group, who make up our primary outcome analysis sample.

Table 13 presents the MDES at different stages in the trial. At the analysis stage, the trial was powered to detect a MDES of 0.21 for the primary outcome sample and 0.29 for the EYPP subgroup. This means that the MDES for the primary outcome sample is slightly larger than the one anticipated at the protocol and randomisation stages after accounting for attrition in the trial (0.20, see 'Sample size' section).

The MDES for the EYPP subgroup is lower than anticipated at the protocol stage due to a higher-than-anticipated average number of EYPP-eligible children in the sample. More detail on sample size and power calculations at different stages is available in the section 'Sample size'.

²⁴ One setting was withdrawn as it was established post-randomisation that they did not meet eligibility criteria.

Figure 3: Participant flow diagram

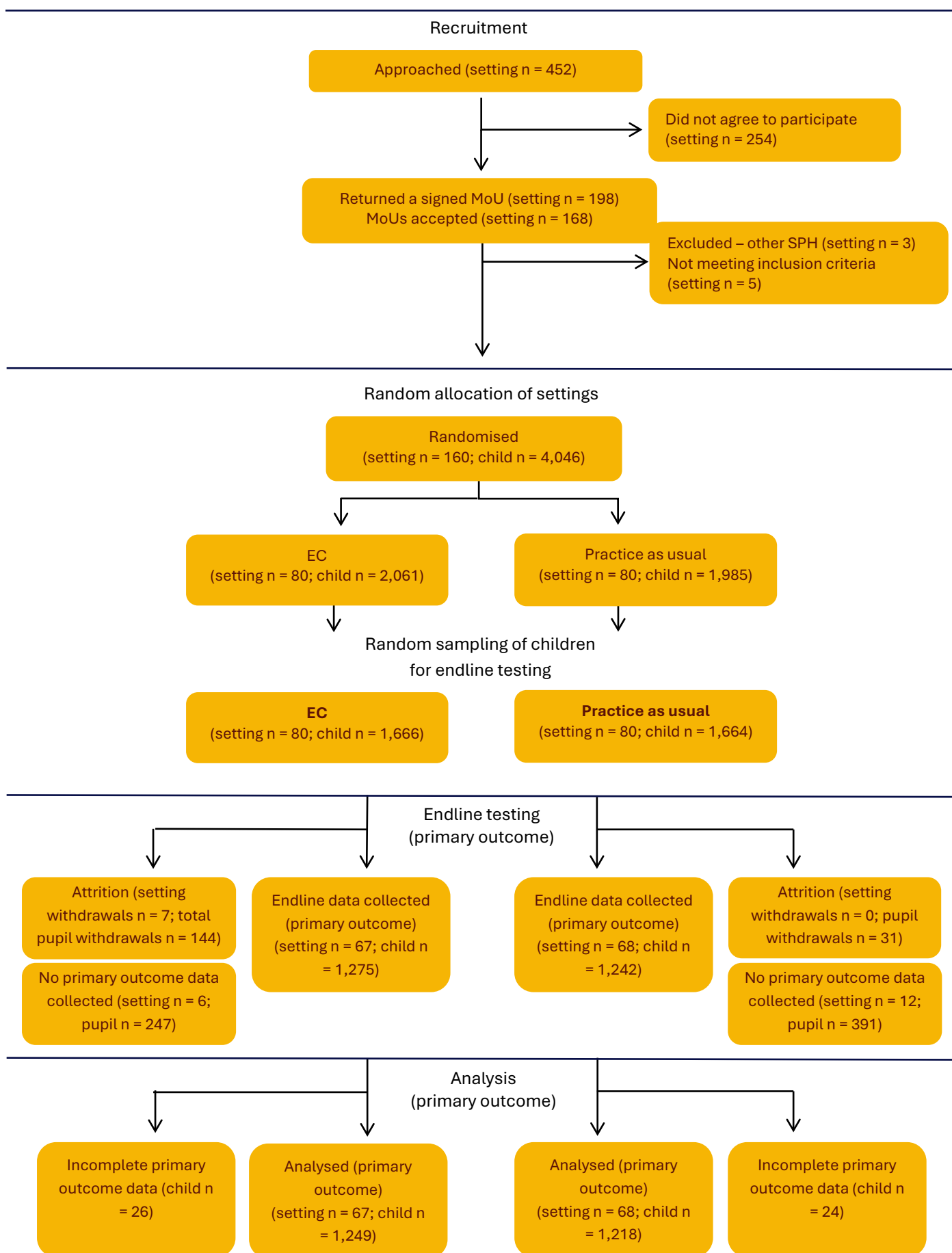


Table 13: MDES at different stages

		Protocol (no attrition) ^a		Randomisation (no attrition) ^b		Analysis	
		Overall	EYPP	Overall	EYPP	Overall	EYPP
MDES		0.19	0.34	0.18	0.26	0.21	0.29
Pre-test/post-test correlations	Level 1 (pupil)	0.00	0.00	0.00	0.00	0.00	0.00
	Level 2 (setting)	0.00	0.00	0.00	0.00	0.00	0.00
ICCs	Level 2 (setting)	0.13	0.13	0.13	0.13	0.14	0.14
Alpha		0.05	0.05	0.05	0.05	0.05	0.05
Power		0.8	0.8	0.8	0.8	0.8	0.8
One-sided or two-sided?		Two	two	two	two	Two	two
Average cluster size		17	2.38	20.8	4	18.3	3.8
No. of settings	Intervention	80	80	80	80	67	67
	Control	80	80	80	80	68	68
	Total:	160	160	160	160	135	135
No. of pupils	Intervention	1,360	190	1,666	357	1,249	294
	Control	1,360	190	1,664	284	1,218	216
	Total:	2,720	381	3,330	641	2,467	510

Note. Power calculations presented at randomisation retain assumptions of the ICC from the protocol stage but use observed sample sizes at randomisation in the study. Calculations at the analysis stage use the observed unadjusted ICC estimated for the primary outcome analysis (0.135), and observed sample sizes in the study at the analysis stage. While this table presents the MDES achievable with samples observed at each stage of the study (without accounting for anticipated attrition to analysis), the section 'Sample size' in 'Methods' section above details the MDES anticipated at each stage after accounting for anticipated attrition to analysis.

^a Numbers presented reflect estimated sample sizes at the time of writing the protocol, without accounting for anticipated attrition.

^b Power calculations presented here for our sample at randomisation include the observed numbers of pupils in our sample at randomisation/random sampling, rather than estimated numbers presented in the SAP (Schei and Stoilova, 2025).

Attrition

After randomising settings to the two trial arms and in larger settings sampling children for endline testing, the evaluation sample as randomised comprised 1,666 children in the EC group and 1,664 children in the practice as usual group. Three main sources of attrition contributed to the reduction of the sample between randomisation/sampling and analysis:

- **Formal withdrawal.** First, seven setting withdrawals²⁵ and 47 individual child withdrawals (n = 16 EC, n = 31 practice as usual) meant a total of 175 sampled children were withdrawn from the trial before endline testing (n = 144 EC, n = 31 practice as usual). Where reasons were cited for setting withdrawals this most commonly involved staff changes. Individual pupil withdrawals were overwhelmingly due to children leaving the setting, with only a small proportion of parental opt-outs.
- **Endline data collection (primary outcome) not completed.** In addition, primary outcome data (i.e. practitioner responses on the CSBQ questionnaire) was not returned by settings for a total of 247 children

²⁵ One setting was withdrawn as it was established post-randomisation that they did not meet eligibility criteria.

in the EC group and 391 children in the practice as usual group. This included 18 settings (n = 6 EC, n = 12 practice as usual) who did not complete baseline data collection for the primary outcome (i.e. did not return practitioner responses on the CSBQ questionnaire), and settings where practitioner CSBQ questionnaires were returned but not for all enumerated children.

- **Primary outcome data incomplete.** Finally, primary outcome data was collected but incomplete for 26 children in the EC group and 24 children in the practice as usual group. This included cases where practitioners responded to some but not all self-regulation items of the CSBQ.

This resulted in a sample of 1,249 children in the EC group and 1,218 children in the practice as usual group for the primary outcome analysis. Table 14 displays the respective pupil attrition rate for the trial as the ratio between the number of children randomised/sampled and those analysed.

Table 14: Pupil-level attrition from the trial (primary outcome)

		Intervention	Control	Total
No. of pupils	Randomised and sampled	1,666	1,664	3,330
	Analysed	1,249	1,218	2,467
Pupil attrition (from randomisation to analysis)	Number	417	446	863
	Percentage	25.0%	26.8%	25.9%

Table 15: Setting-level attrition from the trial

		Intervention	Control	Total
No. of settings	Randomised	80	80	160
	Analysed	67	68	135
Setting attrition (from randomisation to analysis)	Number	13	12	25
	Percentage	16.25%	15%	15.6%

Pupil and school characteristics

Balance of characteristics at randomisation

In the sample of settings as randomised, there were similar proportions of PVI versus school-based settings in the two trial arms, with the proportion of PVI settings only marginally higher in the practice as usual group, and the proportion of school-based settings only marginally higher in the EC group (see Table 16). In terms of SPHs, proportions were sufficiently balanced between the EC and practice as usual groups.²⁶

At the pupil level, there were similar proportions of boys and girls in the EC and the practice as usual group. Pupil age in months²⁷ was balanced between the practice as usual group (M = 51.23, SD = 3.52) and the EC group (M = 51.08, SD = 3.47),

²⁶ While SMDs for individual SPH categories are in some cases higher than 0.05, they represent raw differences in proportions of settings in each hub of 1–2% between the EC and practice as usual groups. Such fluctuations in the exact proportions of settings from each SPH are normal and expected (especially for multi-category variables) and occurred by chance in the stratified randomisation. They are not expected to substantively impact analyses.

²⁷ At the time of baseline testing in June 2025.

with a Hedges' g estimate of 0.04 (95% CI: -0.02, 0.11). The two groups were, however, less balanced in terms of EYPP eligibility—the proportion of EYPP-eligible pupils was higher in the EC group (23%) than in the practice as usual group (18%), with an SMD of 0.11. This imbalance occurred by chance when settings were randomised into the two trial arms.

At the practitioner level, baseline PECQ scores were balanced across the two groups, with mean scores in the EC group only marginally higher (see Table 16).

Hence, stratified randomisation at the setting level successfully balanced available setting-level and practitioner characteristics. However, it could not entirely balance pupil-level characteristics.

Table 16: Baseline characteristics of groups as randomised and randomly sampled

Setting level (categorical)	Intervention group		Control group		SMD	
	n / group N (missing)	Count (% of group)	n / group N (missing)	Count (% of group)		
Setting type: School-based	37 / 80 (0 missing)	37 (46%)	35 / 80 (0 missing)	35 (44%)	0.05	
Setting type: PVI	43 / 80 (0 missing)	43 (54%)	45 / 80 (0 missing)	45 (56%)	-0.05	
SPH: Derbyshire and Nottinghamshire	10 / 80 (0 missing)	10 (13%)	10 / 80 (0 missing)	10 (13%)	0.00	
SPH: East of England	8 / 80 (0 missing)	8 (10%)	8 / 80 (0 missing)	8 (10%)	0.00	
SPH: Kent	11 / 80 (0 missing)	11 (14%)	10 / 80 (0 missing)	10 (13%)	0.04	
SPH: North Yorkshire and Humberside	8 / 80 (0 missing)	8 (10%)	8 / 80 (0 missing)	8 (10%)	0.00	
SPH: Northern Lights	9 / 80 (0 missing)	9 (11%)	9 / 80 (0 missing)	9 (11%)	0.00	
SPH: South West	11 / 80 (0 missing)	11 (14%)	11 / 80 (0 missing)	11 (14%)	0.00	
SPH: St Edmunds	12 / 80 (0 missing)	12 (15%)	13 / 80 (0 missing)	13 (16%)	-0.03	
SPH: Thames Valley	11 / 80 (0 missing)	11 (14%)	11 / 80 (0 missing)	11 (14%)	0.00	
Pupil level (categorical)	n / group N (missing)	Count (% of group)	n / group N (missing)	Count (% of group)	SMD	
Gender: Female	815 / 1,666 (2 missing)	815 (49%)	816 / 1,664 (23 missing)	816 (50%)	0.00	
Gender: Male	849 / 1,666 (2 missing)	849 (51%)	825 / 1,664 (23 missing)	825 (50%)	0.03	
EYPP: Eligible	357 / 1,666 (105 missing)	357 (23%)	284 / 1,664 (98 missing)	284 (18%)	0.11	
EYPP: Not eligible	1,204 / 1,666 (105 missing)	1,204 (77%)	1,282 / 1,664 (98 missing)	1,282 (82%)	-0.11 (0.02 for missing)	
Pupil level (continuous)	n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	SMD	Hedges' g Effect size [95% CI]

Age in months	1,666 / 1,666 (0 missing)	51.08 (3.47)	1,664 / 1,664 (0 missing)	51.23 (3.52)	-0.04	0.04 [-0.02; 0.11]
Practitioner level (continuous)	n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	SMD	Hedges' g Effect size [95% CI]
Baseline PECQ scores	583 / 583 (139 missing)	3.35 (0.21)	557 / 557 (146 missing)	3.34 (0.22)	0.01	-0.01 [-0.15; 0.12]

Note. For pupil numbers, the sample is as randomised and randomly sampled for endline testing (see 'Randomisation' section). SMDs were derived for each categorical and continuous variable using the cobalt package in R. For categorical variables, SMDs are derived for each category treated as a binary indicator, and represent the differences in proportion of that category between the two groups.

Balance of characteristics at analysis

In the primary outcome analysis sample, setting-level characteristics were sufficiently balanced between the two groups, with small differences in setting type and SPH proportions of three percentage points or less (see Table 17).²⁸

At the pupil level, observed balance was similar to the sample as randomised. There were similar proportions of boys and girls in the EC and the practice as usual group. Pupil age in months²⁹ was also balanced between the practice as usual group (M = 51.24, SD = 3.54) and the EC group (M = 51.12, SD = 3.45), with a Hedges' g estimate of 0.04 (95% CI: -0.04, 0.11). In terms of the EYPP eligibility, the proportion of EYPP-eligible pupils was higher in the EC group (24%) than in the practice as usual group (18%), with an SMD of 0.14. This imbalance occurred by chance when settings were randomised into the two trial arms and was carried over from the sample as randomised into the sample for analysis. As EYPP status is likely to be theoretically important to child outcomes, we conducted a sensitivity analysis investigating the impact of EC on the primary outcome while controlling for child EYPP status and thereby accounting for this difference in characteristics between the two groups (see 'Additional analyses' section).

In the practitioner sample for analysis, baseline PECQ scores were only marginally higher in the practice as usual group (M = 3.34, SD = 0.22) than in the EC group (M = 3.33, SD = 0.21), with a Hedges' g estimate of 0.05 (95% CI: -0.12, 0.22). Our analysis of practitioner outcomes accounted for baseline PECQ scores and therefore accounted for this small difference between the two practitioner groups. Practitioner PECQ scores at baseline are described in detail further below (see 'Secondary analysis' section).

Table 17: Baseline characteristics of groups as analysed

Setting level (categorical)	Intervention group		Control group		SMD	
	n / group N (missing)	Count (% of group)	n / group N (missing)	Count (% of group)		
Setting type: School-based	30 / 67 (0 missing)	30 (45%)	31 / 68 (0 missing)	31 (46%)	-0.02	
Setting type: PVI	37 / 67 (0 missing)	37 (55%)	37 / 68 (0 missing)	37 (54%)	0.02	
SPH: Derbyshire and Nottinghamshire	7 / 67 (0 missing)	7 (10%)	9 / 68 (0 missing)	9 (13%)	-0.09	
SPH: East of England	7 / 67 (0 missing)	7 (10%)	7 / 68 (0 missing)	7 (10%)	0.01	

²⁸ While SMDs for individual SPH categories are in some cases higher than 0.05, they represent random fluctuations in the exact proportions of settings from each SPH that occurred by chance in the stratified randomisation and/or during the trial due to attrition. Such fluctuations are normal and expected, especially with multi-category variables. We therefore interpret balance on this variable using raw proportions.

²⁹ At the time of endline testing in June 2025.

SPH: Kent	9 / 67 (0 missing)	9 (13%)	8 / 68 (0 missing)	8 (12%)	0.05	
SPH: North Yorkshire & Humberside	5 / 67 (0 missing)	5 (7.5%)	7 / 68 (0 missing)	7 (10%)	-0.10	
SPH: Northern Lights	8 / 67 (0 missing)	8 (12%)	9 / 68 (0 missing)	9 (13%)	-0.04	
SPH: South West	9 / 67 (0 missing)	9 (13%)	9 / 68 (0 missing)	9 (13%)	0.01	
SPH: St Edmunds	12 / 67 (0 missing)	12 (18%)	10 / 68 (0 missing)	10 (15%)	0.09	
SPH: Thames Valley	10 / 67 (0 missing)	10 (15%)	9 / 68 (0 missing)	9 (13%)	0.05	
Pupil level (categorical)	n / group N (missing)	Count (% of group)	n / group N (missing)	Count (% of group)	SMD	
Gender: Female	618 / 1,249 (2 missing)	618 (50%)	614 / 1,218 (21 missing)	614 (51%)	-0.02	
Gender: Male	629 / 1,249 (2 missing)	629 (50%)	583 / 1,218 (21 missing)	583 (49%)	0.05	
EYPP: Eligible	294 / 1,249 (42 missing)	294 (24%)	216 / 1,218 (16 missing)	216 (18%)	0.14	
EYPP: Not eligible	913 / 1,249 (42 missing)	913 (76%)	986 / 1,218 (16 missing)	986 (82%)	-0.19 (0.14 for missing)	
Pupil level (continuous)	n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	SMD	Hedges' g Effect size [95% CI]
Age in months	1,249 / 1,249 (0 missing)	51.12 (3.45)	1,218 / 1,218 (0 missing)	51.24 (3.54)	-0.03	0.03 [-0.04; 0.11]
Practitioner level (continuous)	n/N (missing)	Mean (SD)	n/N (missing)	Mean (SD)	SMD	Hedges' g Effect size [95% CI]
Baseline PECQ scores	235 / 235 (0 missing)	3.33 (0.21)	277 / 277 (0 missing)	3.34 (0.22)	-0.05	0.05 [-0.12; 0.22]

Note. SMDs were derived for each categorical and continuous variable using the cobalt package in R. For categorical variables, SMDs are derived for each category treated as a binary indicator, and represent the differences in proportion of that category between the two groups.

Outcomes and analysis

Primary analysis

The primary outcome analysis estimated the impact of EC on children's self-regulation, as reported by early years practitioners (RQ1). The outcome measure was a combined mean score on the cognitive, behavioural, and emotional CSBQ self-regulation subscales (practitioner-report) at endline (see 'Outcome measures' section). No baseline measure was collected or included in the model for this outcome (see 'Statistical analysis' section).

For the primary analysis sample (n = 2,467), combined self-regulation scores had a mean of 3.77 (SD = 0.71, skewness = -0.74, kurtosis = 0.25). Children in the EC group (n = 1,249) had a mean of 3.79 (SD = 0.70, skewness = -0.65, kurtosis = -0.01), while children in the practice as usual group (n = 1,218) had a mean of 3.75 (SD = 0.72, skewness = -0.82, kurtosis = 0.43).

Figure 4: Distribution of practitioner-report self-regulation scores in the EC group

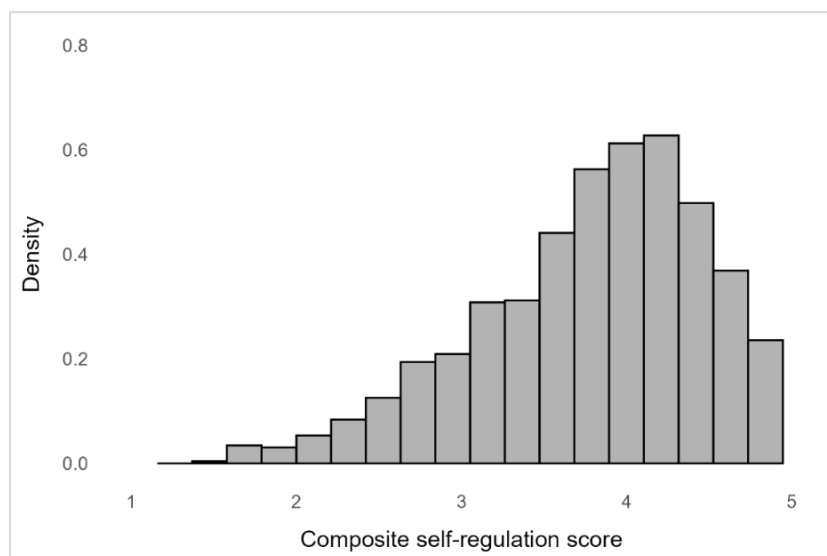
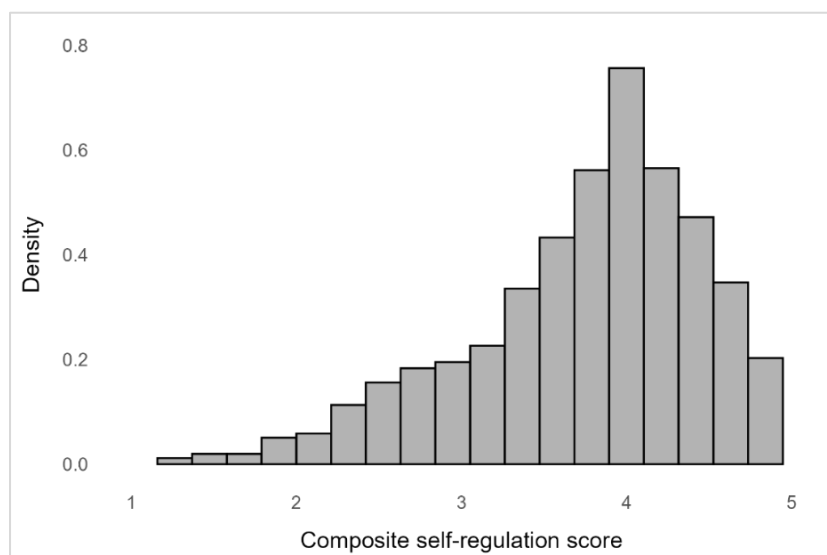


Figure 5: Distribution of practitioner-report self-regulation scores in the practice as usual group



The overall distribution of scores displayed a negative skew of -0.74, with a majority of children receiving mean scores between 3 and 5. Visual inspection of the Q-Q plot and simulated residual diagnostics using the DHARMA R package indicated that residuals deviated from normality and homoscedasticity (see Appendix G Figure 1 and Appendix G Figure 2). A sensitivity analysis using log-transformed self-regulation scores was therefore performed to assess the robustness of the linear mixed-effects model specified for the analysis (see Appendix G). The pattern of results was consistent between the two analyses, indicating that the linear mixed-effects model was sufficiently robust to this violation of assumptions. We therefore present results from the original specified model as the main analysis.

In the two-level linear mixed-effects regression model, including treatment allocation as a predictor, randomisation strata as a covariate, and a random intercept by setting, the adjusted difference in mean self-regulation scores between the EC and the practice as usual group was 0.05 ($p = 0.380$). The Hedges' g effect size associated with this difference was 0.07 (95% CI: -0.08, 0.21).

While the effect size point estimate suggests a small positive effect of EC for this outcome,³⁰ the estimate's CI also includes zero and negative values. This means the true effect could be small and positive, but it could also be zero or small and negative; therefore, the evidence is statistically uncertain.

In line with the EEF reporting guidelines (EEF, 2022), this is reported as statistically uncertain evidence of a small positive effect of EC on child self-regulation, as reported by practitioners.

Table 18: Primary outcome analysis, by practitioner-report self-regulation

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	N (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n	Hedges' g (95% CI)	P-value
Child self-regulation (practitioner-report)	1,249 (417)	3.79 (3.75, 3.83)	1,218 (446)	3.75 (3.71, 3.79)	2,467	0.07 (-0.08, 0.21)	0.38

Note. Hedges' g effect size was based on the adjusted mean difference and the SD from the total model-based variance components in a null/empty model, as per the EEF guidance (see 'Statistical analysis' section). Additional parameters for the estimation are available in Appendix C Table 1. The number of missing observations presented is from the sample as randomised/randomly sampled.

The unadjusted ICC from an empty model with no covariates or treatment indicator was 0.135, indicating that 13.5% of the total variance in self-regulation scores at endline can be attributed to differences between clusters (i.e. settings). The adjusted ICC from our fitted model was 0.136, indicating that 13.6% of the residual variance is between clusters after accounting for treatment and covariates.

Secondary analysis

Parent-report self-regulation scores

As a secondary outcome analysis, we explored the impact of EC on children's self-regulation, as reported by parents/carers (RQ2). The outcome measure was a combined mean score on the cognitive, behavioural, and emotional CSBQ self-regulation subscales (parent-report) at endline (see 'Outcome measures' section). No baseline measure was collected or included in the model for this outcome (see 'Statistical analysis' section).

In the sample for this analysis (n = 1,668), combined self-regulation scores had a mean of 3.50 (SD = 0.56, skewness = -0.61, kurtosis = 0.44). Children in the EC group (n = 875) had a mean of 3.48 (SD = 0.56, skewness = -0.66, kurtosis = 0.41), while children in the practice as usual group (n = 793) had a mean of 3.53 (SD = 0.56, skewness = -0.56, kurtosis = 0.43).

³⁰ As outcomes in the trial are socioemotional in nature rather than academic, we do not apply the EEF conversion to months progress (see the EEF Teaching and Learning Early Years Toolkit Guide). However, we do use the qualitative descriptors from the toolkit derived for education trials with similar populations and settings, to classify the effects as small vs moderate.

Figure 6: Distribution of parent-report self-regulation scores in the EC group

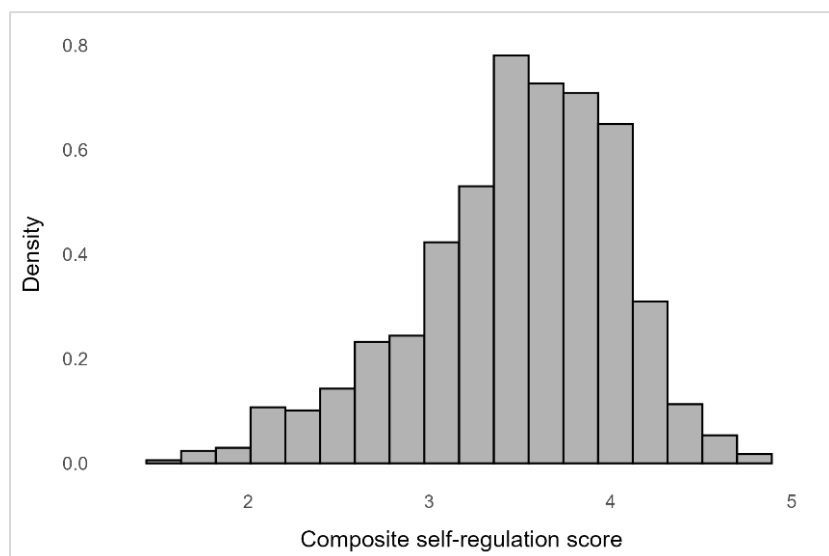
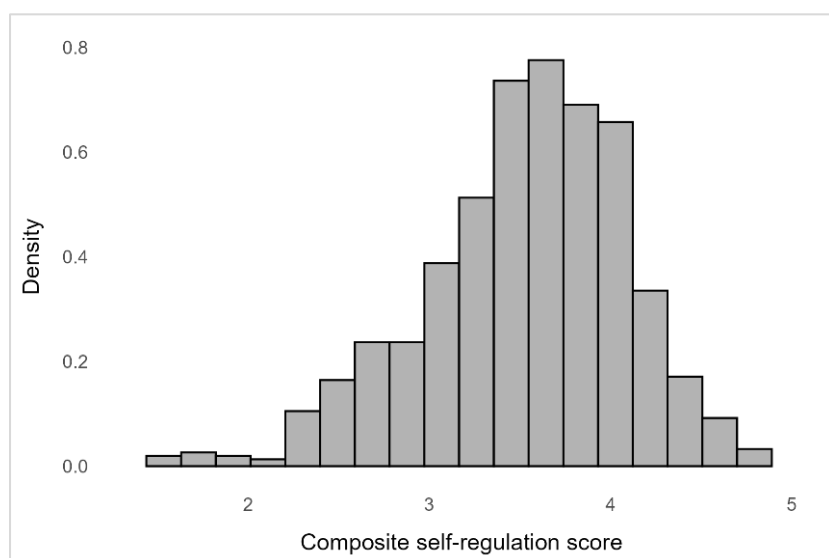


Figure 7: Distribution of parent-report self-regulation scores in the practice as usual group



As in the primary outcome, the distribution of scores displayed a negative skew (-0.61). Visual inspection of the Q-Q plot and DHARMA simulated residual diagnostics indicated that residuals deviated from normality and homoscedasticity (see Appendix H Figure 1 and Figure 2). A sensitivity analysis using log-transformed scores was therefore estimated to assess the robustness of the linear mixed-effects model to those violations, and the pattern of results was observed to be the same across the two analyses (see Appendix H). We therefore proceed with the results from the model as specified above.

In the two-level linear mixed-effects regression model, including treatment allocation as a predictor, randomisation strata as a covariate, and a random intercept by setting, the adjusted mean difference in parent-reported self-regulation scores between the EC and the practice as usual group was -0.06 ($p = 0.163$). The Hedges' g effect size associated with this difference was -0.10 (95% CI: -0.23, 0.04).

While the effect size point estimate suggests a small negative effect of EC for this outcome, the estimate's CI also includes zero and positive values. This means the true effect could be small and negative, but it could also be zero or small and positive; therefore, the evidence is statistically uncertain.

In line with the EEF reporting guidelines (EEF, 2022), this is reported as statistically uncertain evidence of a small negative effect of EC on child self-regulation, as reported by parents/carers.

Table 19: Secondary outcome analysis, by parent-report self-regulation

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n	Hedges' g (95% CI)	P-value
Child self-regulation (parent-report)	875 (791)	3.48 (3.44, 3.52)	793 (871)	3.53 (3.49, 3.57)	1,668	-0.10 (-0.23, 0.04)	0.163

Note. Hedges' g effect size was based on the adjusted mean difference and the SD from the total model-based variance components in a null/empty model, as per the EEF guidance (see 'Statistical analysis' section). Additional parameters for the estimation are available in Appendix C Table 1. The number of missing observations presented is from the sample as randomised/randomly sampled.

Practitioner-report prosocial behaviour scores

As a secondary outcome, we explored the impact of EC on children's prosocial behaviour, as reported by practitioners (RQ3). The outcome measure was mean score on the CSBQ prosocial behaviour subscale (practitioner-report) at endline (see 'Outcome measures' section). No baseline measure was collected or included in the model for this outcome (see 'Statistical analysis' section).

In the sample for this analysis ($n = 2,500$), prosocial behaviour scores had a mean of 3.95 ($SD = 0.82$, skewness = -0.96, kurtosis = 1.04). Children in the EC group ($n = 1,268$) had a mean of 4.00 ($SD = 0.78$, skewness = -0.86, kurtosis = 0.82), while children in the practice as usual group ($n = 1,232$) had a mean of 3.90 ($SD = 0.85$, skewness = -1.02, kurtosis = 1.07).

Figure 8: Distribution of practitioner-report prosocial behaviour scores in the EC group

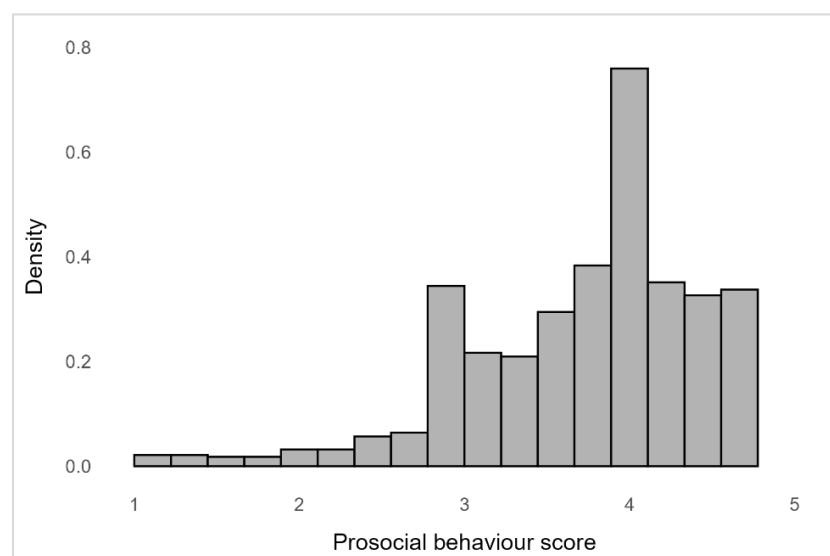
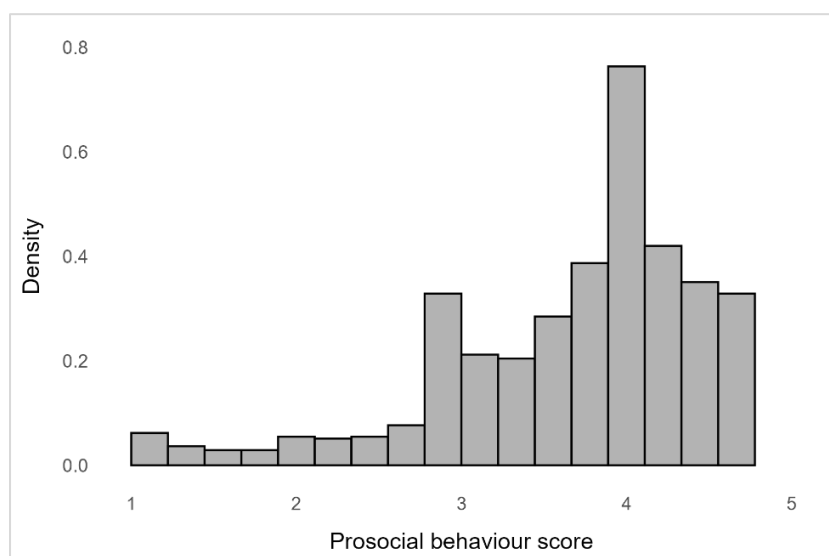


Figure 9: Distribution of practitioner-report prosocial behaviour scores in the practice as usual group



Similarly to the other CSBQ scores, the distribution of prosocial behaviour scores displayed a negative skew (-0.96). Residuals deviated from normality and homoscedasticity in the Q-Q plot and DHARMA residual diagnostics (see Appendix H Figure 5 and Appendix H Figure 6). A sensitivity analysis using log-transformed scores was estimated to assess the robustness of the linear mixed-effects model to those violations, and even though some violations were still detected after transformation, they were not severe, and the pattern of results was observed to be the same across the two analyses (see Appendix H). We therefore proceed with the results from the model as specified above.

In the two-level linear mixed-effects regression model, including treatment allocation as a predictor, randomisation strata as a covariate, and a random intercept by setting, the adjusted mean difference in practitioner-reported prosocial behaviour scores between the EC and the practice as usual group was 0.11 ($p = 0.075$). The Hedges' g effect size associated with this difference was 0.13 (95% CI: -0.01, 0.28).

While the effect size point estimate suggests a small positive effect of EC for this outcome, the estimate's CI also includes zero and very small negative values. This means the true effect could be small and positive, but it could also be zero or very small and negative; therefore, the evidence is statistically uncertain.

In line with the EEF reporting guidelines (EEF, 2022), this is reported as statistically uncertain evidence of a small positive effect of EC on child prosocial behaviour, as reported by practitioners.

Table 20: Secondary analysis, by practitioner-report prosocial behaviour

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n	Hedges' g (95% CI)	P-value
Child prosocial behaviour (practitioner-report)	1,268 (398)	4.0 (3.95, 4.04)	1,232 (432)	3.9 (3.85, 3.95)	2,500	0.13 (-0.01, 0.28)	0.075

Note. Hedges' g effect size was based on the adjusted mean difference and the SD from the total model-based variance components in a null/empty model, as per the EEF guidance (see 'Statistical analysis' section). Additional parameters for the estimation are available in Appendix C Table 1. The number of missing observations presented is from the sample as randomised/randomly sampled.

Parent-report prosocial behaviour scores

As a secondary outcome, we explored the impact of EC on children's prosocial behaviour, as reported by parents/carers (RQ4). The outcome measure was mean score on the CSBQ prosocial behaviour subscale (parent-report) at endline (see 'Outcome measures' section). No baseline measure was collected or included in the model for this outcome (see 'Statistical analysis' section).

In the sample for this analysis ($n = 1,711$), prosocial behaviour scores had a mean of 3.90 ($SD = 0.67$, skewness = -0.96, kurtosis = 1.64). Children in the EC group ($n = 897$) had a mean of 3.90 ($SD = 0.66$, skewness = -0.94, kurtosis = 1.64), and children in the practice as usual group ($n = 814$) also had a mean of 3.90 ($SD = 0.69$, skewness = -0.98, kurtosis = 1.61).

Figure 10: Distribution of parent-report prosocial behaviour scores in the EC group

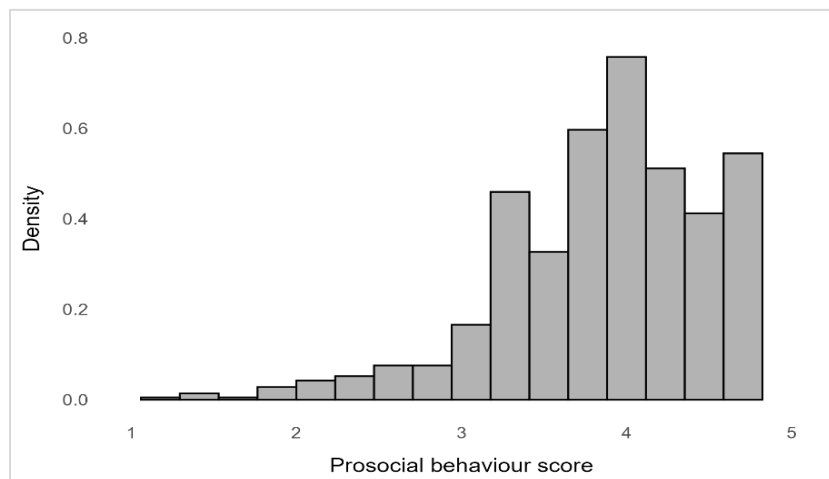
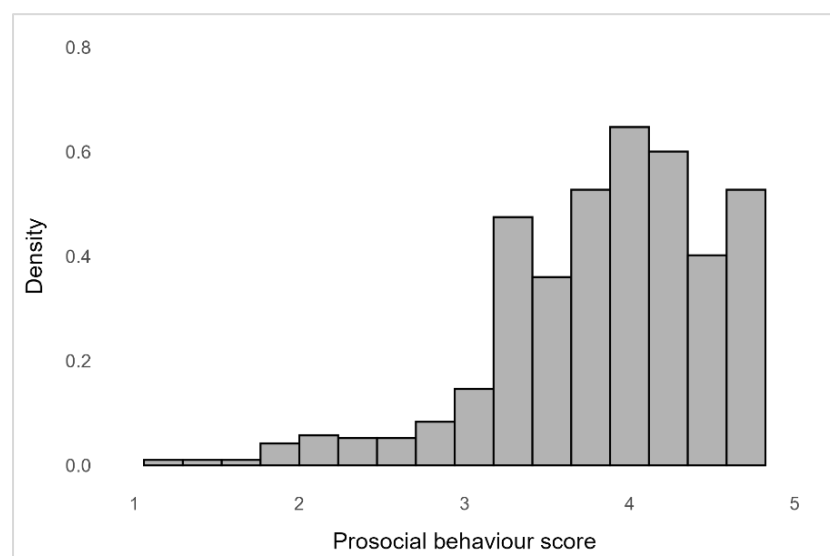


Figure 11: Distribution of parent-report prosocial behaviour scores in the practice as usual group



As for other outcomes, the distribution of prosocial behaviour scores displayed a negative skew (-0.96). Visual inspection of the Q-Q plot and simulated residual diagnostics using the DHARMA R package indicated that residuals deviated from normality and homoscedasticity (see Appendix H Figure 9 and Appendix H Figure 10). A sensitivity analysis using log-transformed scores was therefore estimated to assess the robustness of the linear mixed-effects model. While some deviations from normality were observed after transformation, they were minor, and the pattern of results was observed to be the same across the two analyses (see Appendix H). We therefore proceed with the results from the model as specified above.

In the two-level linear mixed-effects regression model, including treatment allocation as a predictor, randomisation strata as a covariate, and a random intercept by setting, the adjusted difference in mean parent-reported prosocial behaviour scores between the EC and the practice as usual group was 0.00 ($p = 0.979$). The Hedges' g effect size associated with this difference was 0.00 (95% CI: -0.13, 0.12). The point estimate for the effect size does not reflect a difference in prosocial behaviour scores between the EC group and the practice as usual group, and the estimate's CI includes both positive and negative values. This means that the results provide no evidence of an effect of EC on child prosocial behaviour, as reported by parents/carers.

Table 21: Secondary analysis, by parent-report prosocial behaviour

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n	Hedges' g (95% CI)	P-value
Child prosocial behaviour (parent-report)	897 (769)	3.9 (3.86, 3.94)	814 (850)	3.9 (3.85, 3.95)	1,711	0.00 (-0.13, 0.12)	0.979

Note. Hedges' g effect size was based on the adjusted mean difference and the SD from the total model-based variance components in a null/empty model, as per the EEF guidance (see 'Statistical analysis' section). Additional parameters for the estimation are available in Appendix C Table 1. The number of missing observations presented is from the sample as randomised/randomly sampled.

Practitioner self-reported meta-emotion philosophy

As a secondary outcome, we also explored the impact of EC on practitioners' self-reported meta-emotion philosophy (RQ7). The outcome measure was practitioners' mean PECQ scores at endline (see 'Outcome measures' section). Practitioners' PECQ scores at baseline served as a baseline measure for this analysis.

In the practitioner sample for this analysis ($n = 512$), practitioners' PECQ scores at baseline had a mean of 3.34 ($SD = 0.21$, skewness = -0.32 , kurtosis = 0.28) and PECQ scores at endline had a mean of 3.45 ($SD = 0.22$, skewness = 0.06 , kurtosis = -0.16). Practitioners in the EC group ($n = 235$) had a mean baseline PECQ score of 3.33 ($SD = 0.21$, skewness = -0.36 , kurtosis = 0.52) and a mean endline PECQ score of 3.47 ($SD = 0.21$, skewness = -0.07 , kurtosis = -0.14). Practitioners in the practice as usual group ($n = 277$) had a mean baseline PECQ score of 3.34 ($SD = 0.22$, skewness = -0.29 , kurtosis = 0.08) and a mean endline PECQ score of 3.42 ($SD = 0.22$, skewness = 0.19 , kurtosis = -0.10).

Figure 12: Baseline practitioner PECQ scores in the EC group

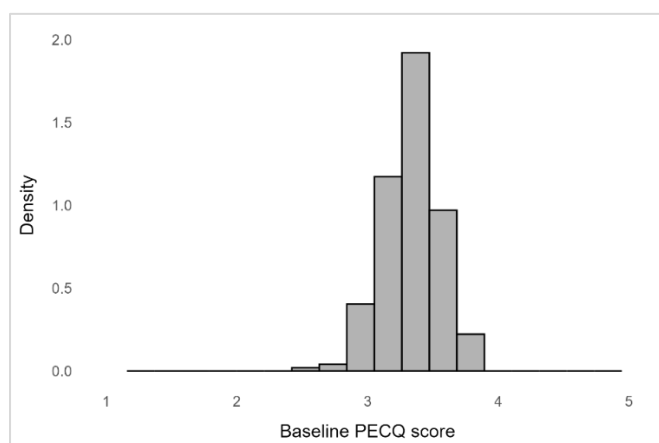


Figure 13: Endline practitioner PECQ scores in the EC group

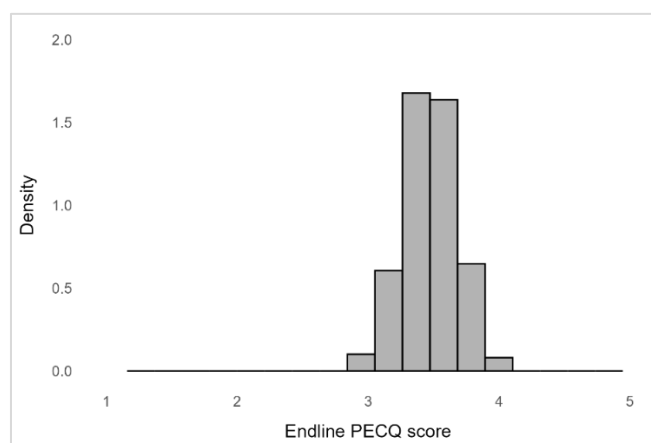


Figure 14: Baseline practitioner PECQ scores in the practice as usual group

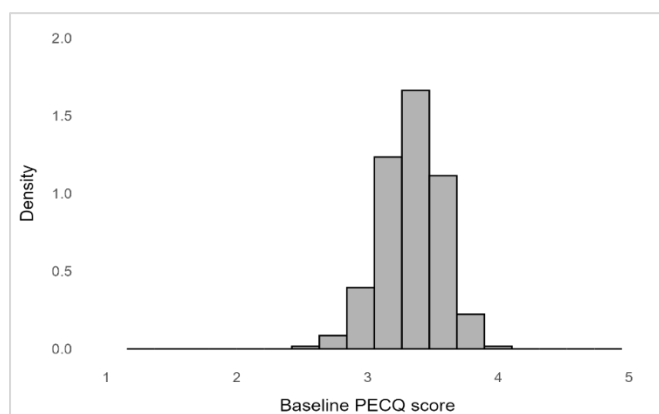
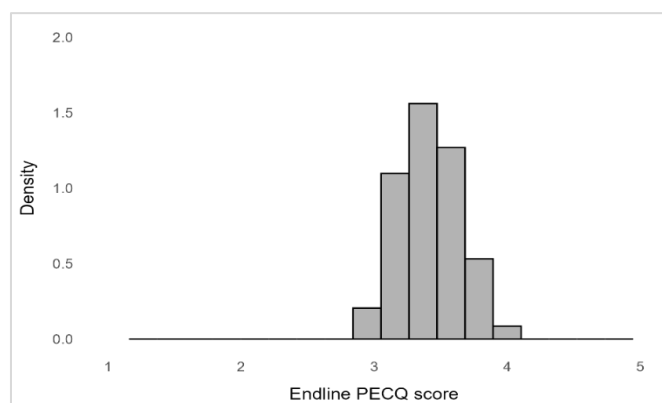


Figure 15: Endline practitioner PECQ scores in the practice as usual group



While PECQ scores at baseline displayed a small negative skew (-0.32), PECQ scores at endline did not display a skewed distribution (0.06) and residual diagnostics did not indicate any violation of assumptions for the analysis.

In the two-level linear mixed-effects regression model, including treatment allocation as a predictor, baseline PECQ scores and randomisation strata as covariates, and a random intercept by setting, the adjusted difference in mean PECQ scores between practitioners in the EC and the practice as usual group was 0.05 ($p = 0.008$). The Hedges' g effect size associated with this difference was 0.23 (95% CI: 0.06 , 0.40). This effect size and its CI indicate a moderate positive effect of EC on practitioners' self-reported meta-emotion philosophy.

Table 22: Secondary outcome analysis, by practitioner meta-emotion philosophy

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n	Hedges' g (95% CI)	P-value
Practitioner PECQ scores	235 (348)	3.47 (3.45, 3.50)	277 (280)	3.42 (3.39, 3.45)	512	0.23 (0.06, 0.40)	0.008

Note. Hedges' g effect size was based on the adjusted mean difference and the SD from the total model-based variance components in a null/empty model, as per the EEF guidance (see 'Statistical analysis' section). Additional parameters for the estimation are available in Appendix C Table 1. The number of missing observations presented is from the practitioner sample as randomised.

Subgroup analysis

As a secondary outcome analysis, we explored whether the impact of EC on children's self-regulation, as reported by practitioners, differs for children eligible for EYPP (RQ5). This analysis: i) replicated the primary outcome analysis for a sample consisting only of children eligible for EYPP; and ii) estimated the primary outcome model for the whole analysis sample with the addition of EYPP eligibility as a predictor and an interaction term between EYPP eligibility and treatment allocation. We report the results from each analysis below.

In the primary outcome analysis sample (n = 2,467), EYPP-eligible children (n = 510) had a mean self-regulation score of 3.54 (SD = 0.72, skewness = -0.72, kurtosis = 0.00), while children not eligible for EYPP (n = 1,899) had a mean self-regulation score of 3.84 (SD = 0.69, skewness = -0.73, kurtosis = 0.22).³¹

Among children eligible for EYPP (n = 510), self-regulation scores in the EC group (n = 294) had a mean of 3.61 (SD = 0.68, skewness = -0.64, kurtosis = -0.13), and scores in the practice as usual group (n = 216) had a mean of 3.45 (SD = 0.77, skewness = -0.72, kurtosis = -0.15).

Figure 16: Distribution of self-regulation scores for EYPP-eligible children in the EC group

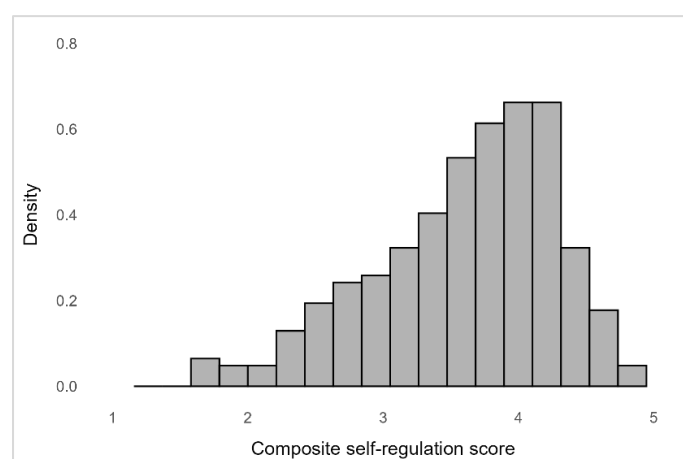
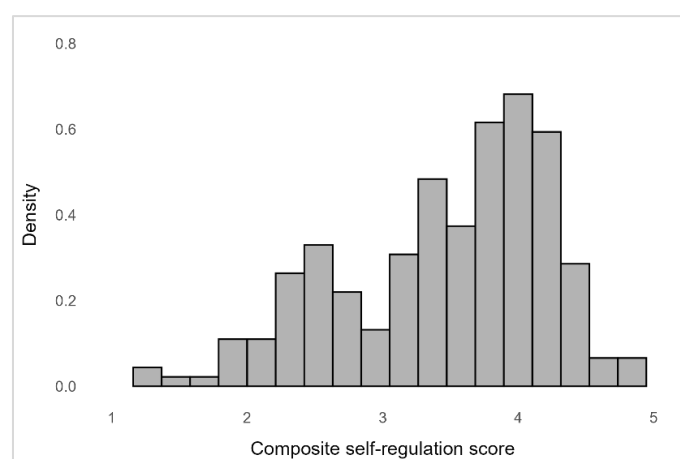


Figure 17: Distribution of self-regulation scores for EYPP-eligible children in the practice as usual group



³¹ Among children for whom EYPP eligibility status was missing (n = 58), scores had a mean of 3.76 (SD = 0.82, skewness = -1.14, kurtosis = 0.94).

Among children not eligible for EYPP (n = 1,899), self-regulation scores in the EC group (n = 913) had a mean of 3.85 (SD = 0.68, skewness = -0.65, kurtosis = -0.04), and scores in the practice as usual group (n = 986) had a mean of 3.82 (SD = 0.69, skewness = -0.80, kurtosis = 0.43).³²

Figure 18: Distribution of self-regulation scores for children not eligible for EYPP in the EC group

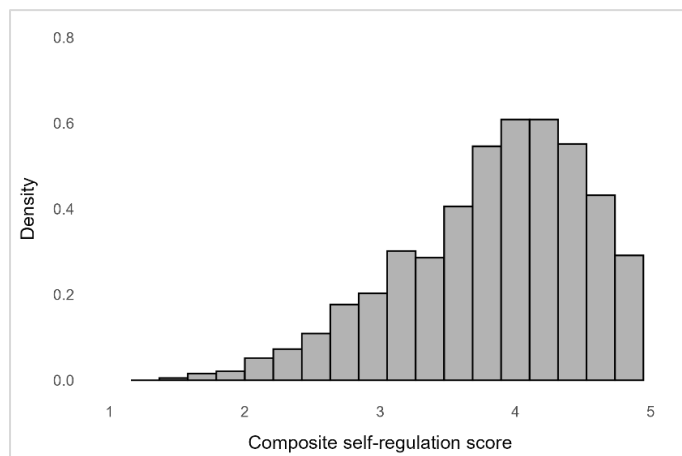
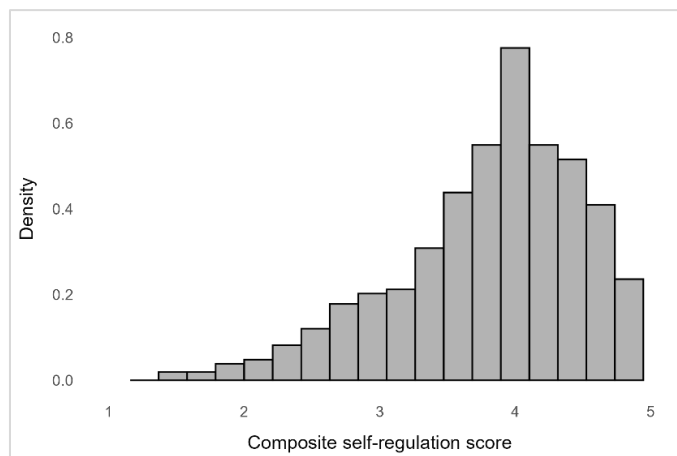


Figure 19: Distribution of self-regulation scores for children not eligible for EYPP in the practice as usual group



Subsample analysis

In the two-level linear mixed-effects regression model for the EYPP-eligible subsample only (n = 510), including treatment allocation as a predictor, randomisation strata as a covariate, and a random intercept by setting, the adjusted difference in mean self-regulation scores between the EC and the practice as usual group was 0.13 (p = 0.132). The Hedges' g effect size associated with this difference was 0.18 (95% CI: -0.05, 0.40).

While the effect size point estimate suggests a small positive effect of EC for this outcome in the EYPP subgroup, the estimate's CI also includes zero and negative values. This means the true effect could be small and positive, but it could also be zero or small and negative; therefore, the evidence is statistically uncertain. While uncertain, the effect size estimate is larger than for the primary outcome analysis.

In line with the EEF reporting guidelines (EEF, 2022), this is reported as statistically uncertain evidence of a small positive effect of EC on child self-regulation, as reported by practitioners, for the subgroup of children eligible for EYPP.

Table 23: Secondary outcome analysis, by practitioner-report self-regulation for EYPP-eligible pupils

Outcome	Unadjusted means				Effect size		
	Intervention group		Control group				
	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	Total n	Hedges' g (95% CI)	P-value
Child self-regulation (practitioner-report)	294 (173)	3.61 (3.53, 3.68)	216 (164)	3.45 (3.35, 3.55)	510	0.18 (-0.05, 0.40)	0.132

Note. Hedges' g effect size was based on the adjusted mean difference and the SD from the total model-based variance components in a null/empty model, as per the EEF guidance (see 'Statistical analysis' section). Additional parameters for the estimation are available in Appendix C Table 1. The number of missing observations presented is from the sample of EYPP-eligible children as randomised/randomly sampled.

³² Among children with unknown EYPP eligibility (n = 1,899), self-regulation scores in the EC group (n = 42) had a mean of 3.76 (SD = 0.83, skewness = -0.96, kurtosis = 0.29), and scores in the practice as usual group (n = 16) had a mean of 3.74 (SD = 0.81, skewness = -1.56, kurtosis = 2.26).

Interaction term analysis

In the two-level linear mixed-effects regression model for the whole primary outcome analysis sample ($n = 2,467$), which included treatment allocation, randomisation strata, EYPP eligibility status, an interaction term between treatment and EYPP eligibility, and a random intercept by setting, EYPP eligibility was a significant predictor of child self-regulation scores ($b = -0.29$, $p < 0.001$), indicating that EYPP-eligible children had significantly lower self-regulation scores ($M = 3.54$, $SD = 0.72$) than children who were not eligible for EYPP ($M = 3.84$, $SD = 0.69$). However, the interaction term between treatment allocation and EYPP status was not significant ($b = 0.01$, 95% CI: $-0.14, 0.15$; $p = 0.906$), indicating that the impact of EC on self-regulation scores did not differ between EYPP-eligible pupils and those not eligible for EYPP.

Additional analyses*Age and gender*

As an additional analysis, we explored whether the impact of EC on children's self-regulation, as reported by practitioners, differs by age and gender.

In the sample for this analysis ($n = 2,444$), the mean age in months at the time of endline testing (i.e. set as 01 June 2025 for consistency) was 51.1 months ($SD = 3.45$) for children in the EC group ($n = 1,247$), and 51.2 months ($SD = 3.54$) for children in the practice as usual group ($n = 1,197$). Age was positively correlated with higher self-regulation scores in both the EC group ($r = 0.08$, $p = .005$) and the practice as usual group ($r = 0.09$, $p = .001$; see Figure 20 and Figure 21).

Figure 20: Correlation between age in months and self-regulation scores in the EC group

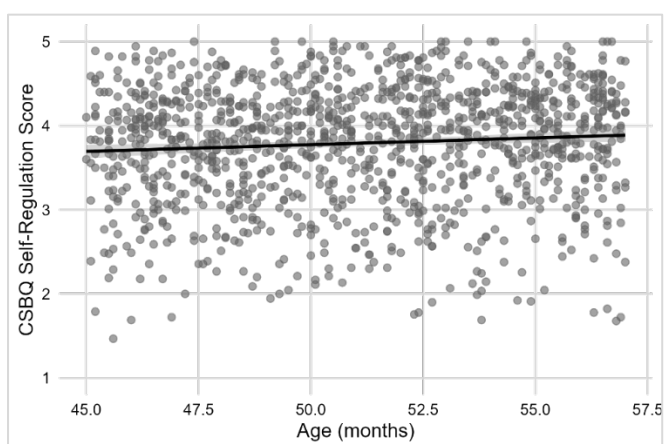
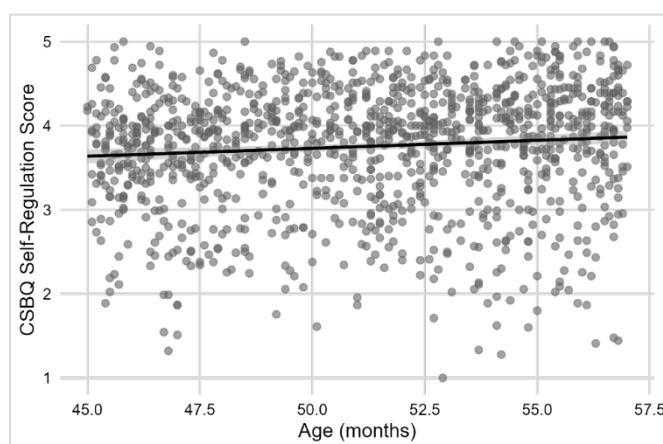


Figure 21: Correlation between age in months and self-regulation scores in the practice as usual group



Overall, girls in the sample ($n = 1,232$) had a mean self-regulation score of 3.94 ($SD = 0.62$, skew = -0.74 , kurtosis = 0.34), while boys ($n = 1,212$) had a slightly lower mean of 3.61 ($SD = 0.76$, skew = -0.60 , kurtosis = -0.14). Among children in the EC group, girls had a mean self-regulation score of 3.95 ($SD = 0.62$, skew = -0.68 , kurtosis = 0.01), while boys had a mean of 3.64 ($SD = 0.73$, skew = -0.53 , kurtosis = -0.20) (see Figure 22 and Figure 23).

Figure 22: Distribution of self-regulation scores for girls in the EC group

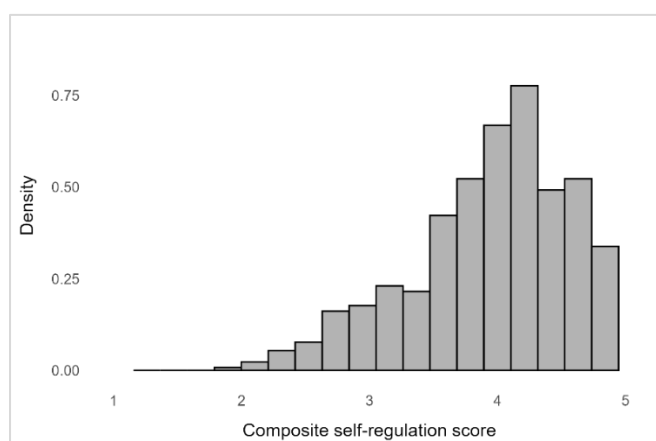
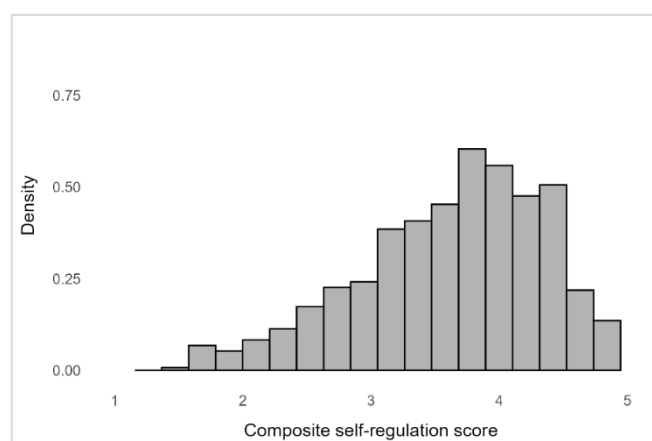


Figure 23: Distribution of self-regulation scores for boys in the EC group



In the practice as usual group, girls had a mean self-regulation score of 3.93 (SD = 0.61, skew = -0.80, kurtosis = 0.70), while boys had a mean score of 3.57 (SD = 0.80, skew = -0.63, kurtosis = -0.18) (see Figure 24 and Figure 25).

Figure 24: Distribution of self-regulation scores for girls in the practice as usual group

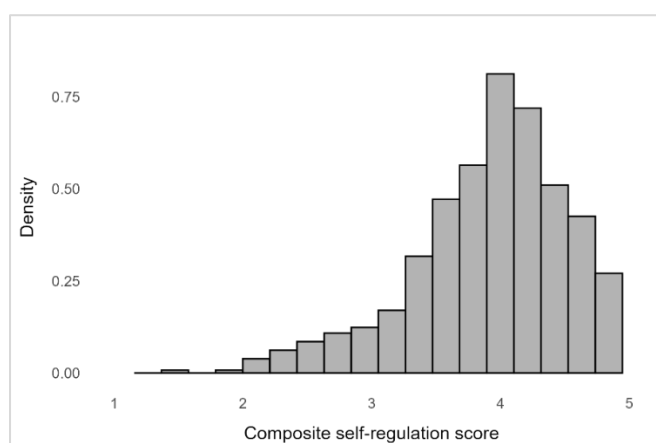
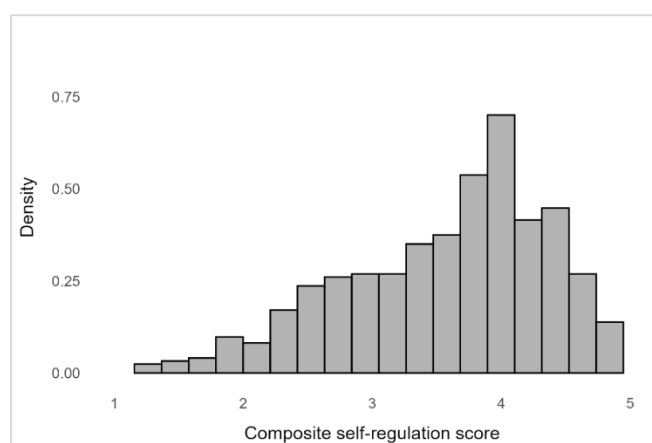


Figure 25: Distribution of self-regulation scores for boys in the practice as usual group



In the two-level linear mixed-effects regression model, replicating the primary outcome model to include age in months and gender as predictors, as well as interaction terms between age and treatment and gender and treatment, both age and gender significantly predicted self-regulation scores—higher age in months was associated with higher self-regulation scores ($b = 0.03$, $p < 0.001$), and being male was associated with lower self-regulation scores ($b = -0.34$, $p < 0.001$) compared to being female. However, the interaction coefficients between age and treatment ($b = -0.01$, 95% CI: -0.02, 0.01; $p = 0.38$) and gender and treatment ($b = 0.03$, 95% CI: -0.07, 0.13; $p = 0.59$) were not significant, indicating that the impact of EC did not differ by age and gender.

PRSIST assessments

As an additional descriptive analysis, we explored the relationship between practitioner-report CSBQ self-regulation scores and an observation-based measure of self-regulation, the PRSIST assessment, administered in a randomly selected subsample of settings ($n = 14$). This was intended as a check for potential bias in practitioner reports of child self-regulation after undergoing EC training. Namely, if the same relationship between the two measures is observed across both the EC and the practice as usual group, this would provide evidence to support that practitioner reports were not biased. If the relationship between the two measures is stronger in the practice as usual group than in the EC group, that would indicate that practitioner reports might have been biased.

In the sample for this analysis ($n = 140$), children had mean practitioner-report CSBQ self-regulation scores of 3.73 (SD = 0.64, skew = -0.66, kurtosis = -0.13). Children in the EC group ($n = 79$) had a mean of 3.68 (SD = 0.67, skew = -0.66, kurtosis = -0.32), while children in the practice as usual group ($n = 61$) had a mean of 3.78 (SD = 0.60, skew = -0.57, kurtosis = -0.12).

Hence, in the sample for this analysis, children in the practice as usual group had higher primary outcome scores than children in the EC group. While the opposite pattern is observed for the primary outcome in the main analysis, where children in the EC group had higher practitioner-reported self-regulation scores than children in the practice as usual group, the randomly selected subsample for this additional analysis was very small in comparison to the main study sample, and is therefore unlikely to fully represent the wider sample.

Figure 26: Distribution of practitioner-report self-regulation scores for children in the EC group in the PRSIST analysis subsample

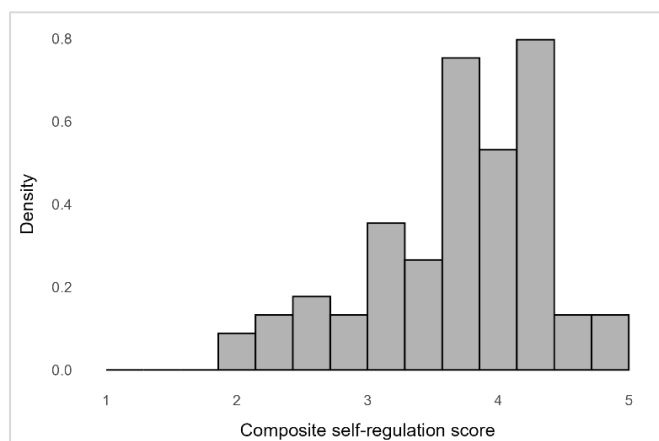
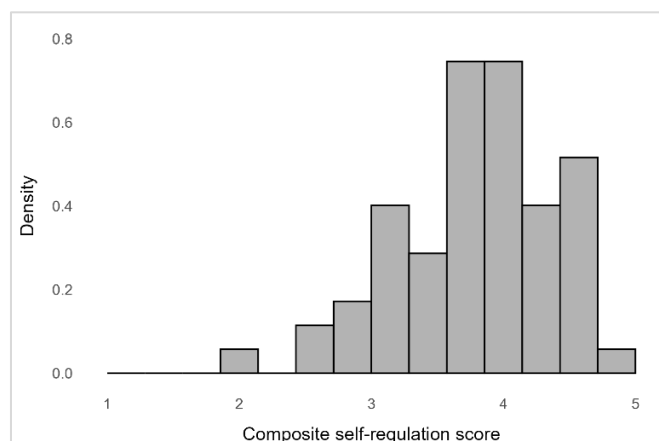


Figure 27: Distribution of practitioner-report self-regulation scores for children in the practice as usual group in the PRSIST analysis subsample



The mean PRSIST score in the sample was 4.11 (SD = 1.27, skew = -0.57, kurtosis = -0.53). Children in the EC group (n = 79) had a mean PRSIST score of 3.96 (SD = 1.29, skew = -0.44, kurtosis = -0.61), and children in the practice as usual group (n = 61) had a mean PRSIST score of 4.29 (SD = 1.23, skew = -0.74, kurtosis = -0.40). Similarly to practitioner-reported scores, children in the practice as usual group displayed higher PRSIST self-regulation scores than children in the EC group.

Figure 28: Distribution of PRSIST scores for children in the EC group

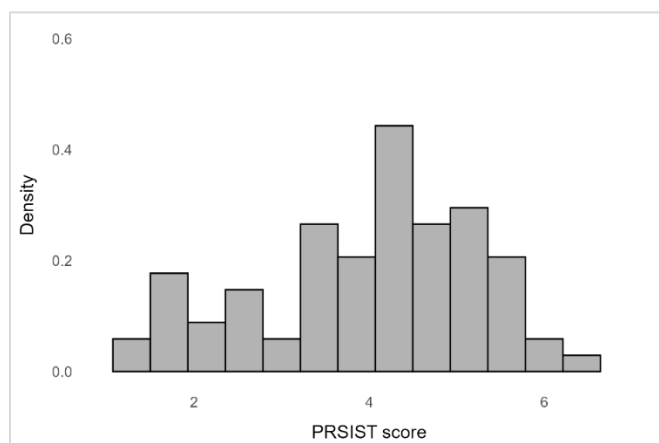
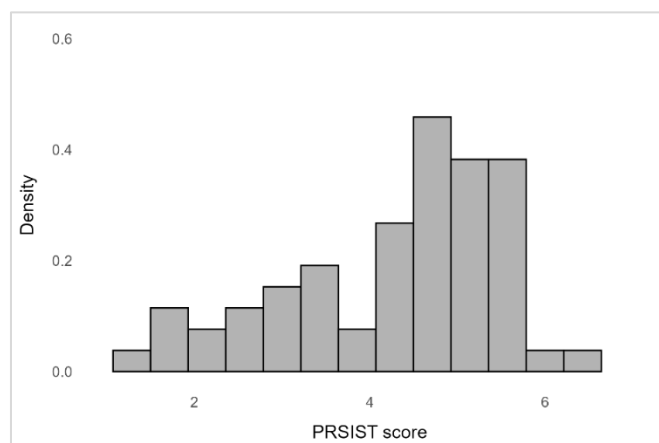


Figure 29: Distribution of PRSIST scores for children in the practice as usual group



PRSIST scores were positively correlated with practitioner-report CSBQ self-regulation scores in both groups—with a Pearson correlation coefficient of $r = 0.36$ ($p = 0.001$) in the EC group and an $r = 0.29$ ($p = 0.026$) in the practice as usual group. The correlation coefficients therefore do not indicate that the correlation between the two measures is stronger for settings in the practice as usual group than it is for settings in the EC group, which would have indicated that practitioners' assessments of child self-regulation on the CSBQ may have been biased after receiving EC training.

We further tested the differences in correlation between practitioner-report CSBQ scores and PRSIST scores, using a two-level linear mixed-effects regression, including practitioner-report CSBQ self-regulation scores as the dependent variable,

and PRSIST scores, treatment allocation, and the interaction between PRSIST scores and treatment allocation as predictors. In line with correlations observed above, PRSIST scores significantly predicted practitioner-report self-regulation scores ($b = 0.16$, $p = 0.023$). However, the interaction coefficient between treatment and PRSIST score was not significant ($b = 0.09$, $p = 0.333$), which indicated no evidence that the association between the two measures differs between the EC and practice as usual groups, and therefore no evidence of practitioner bias in CSBQ child self-regulation reports.

Sensitivity analysis

The proportion of children eligible for EYPP was higher in the EC group (24%) than in the practice as usual group (18%), with a SMD of 0.14 (see 'Setting and pupil characteristics' section). We therefore conducted a sensitivity analysis for the primary outcome accounting for this imbalance of characteristics by controlling for child EYPP status.

In the two-level linear mixed-effects regression model, including treatment allocation, randomisation strata, a random intercept by setting, and child EYPP status as an additional predictor, the adjusted mean difference in practitioner-reported self-regulation scores between the EC and the practice as usual group was 0.07 ($p = 0.172$). The Hedges' g effect size associated with this difference was 0.10 (95% CI: -0.04, 0.24).

As in the primary outcome analysis, while the effect size estimate suggests a small positive effect of EC, the estimate's CI also includes zero and negative values. This means the true effect could be small and positive, but it could also be zero or small and negative; therefore, the evidence is statistically uncertain. This is consistent with the pattern of results observed in the main analysis, indicating the same pattern of evidence is observed when EYPP eligibility is accounted for as in the primary outcome analysis.

Additional exploratory analysis

In response to peer reviewer comments, we conducted an additional unplanned exploratory analysis to examine whether the effect of EC on self-regulation outcomes differed based on the number of hours children attended nursery (with an assumption that a greater number of hours at the setting meant a greater exposure to EC approaches). To do so, we used the number of hours per week each child was enumerated to attend the setting for at baseline in September 2024, as a proxy for child attendance during the delivery of the intervention, as data on actual attendance during the delivery was not collected.³³ In the main analysis sample, attendance at enumeration was available for 2,398 children and missing for 69 (47 in the EC group and 22 in the practice as usual group). On average, children were enumerated to attend the setting for 21.7 hours per week (SD = 8.67, Median = 18 hours). In the EC group, children were enumerated to attend an average of 22.4 hours (SD = 8.89, Median = 19.5 hours), and in the practice as usual group children were enumerated to attend an average of 20.9 hours (SD = 8.38, Median = 18 hours).

We re-estimated the primary outcome model including attendance at enumeration as a predictor and an interaction term between attendance at enumeration and treatment allocation. The outcome in the model was children's practitioner-reported self-regulation scores. Attendance at enumeration was centred, to make the main effect estimates from this analysis more easily interpretable. The model also included EYPP status as a covariate, to control for differences in attendance hours that would be explained by differences in families' socio-economic circumstances.³⁴

The main effect of treatment was not significant ($b = 0.08$, $p = 0.144$), indicating no effect of EC on self-regulation scores for the average level of attendance ($M = 21.7$ hours). There was, however, a significant interaction between the effects of

³³ This information was only used as part of setting-level eligibility criteria for the trial (settings were eligible for the trial if they had at least 17 children, aged three to four, and enrolled in the setting to attend for at least ten hours a week in September 2024). It was not used as a child-level eligibility criteria and children who were enrolled to attend for less than ten hours a week were subsequently not excluded from the sample for analyses. This is in line with the ITT approach of the impact evaluation, and with the expectation that the trial evaluates the impact of the programme as implemented in real-world early years care, including under usual child attendance patterns, rather than only for children who attend nursery more regularly. It was not intended as part of the study design for analyses to include any measure of child attendance.

³⁴ Children from families in different socio-economic circumstances tend to attend early years settings for different numbers of hours per week, depending on whether both parents are in paid work and how many free hours of childcare they are eligible for (DfE, 2025b).

attendance at enumeration and treatment on the outcome ($b = 0.01$, $p = 0.005$), indicating that the effect of EC on self-regulation scores differed depending on attendance at enumeration. Simple main effects showed that self-regulation scores were higher in the EC group than in the practice as usual group when attendance was low (at the 25th percentile = 15 hours) or at the Median (18 hours), but this difference was no longer significant at higher attendance levels (at the 75th percentile = 30 hours).

This was supported by simple slopes showing a significant positive relationship between attendance at enumeration and self-regulation scores in the practice as usual group ($b = 0.006$, $p = 0.027$) but not in the EC group ($b = -0.004$, $p = 0.087$). Findings from this additional exploratory analysis suggests that the effect of EC on children's self-regulation scores is conditional on attendance hours as recorded at reenumeration, such that children with low or median attendance hours had higher self-regulation scores in the EC group than in the practice as usual group, but this difference disappeared with higher attendance hours. This means that a supposed greater exposure of children to EC approaches through a higher number of hours spent at the setting (as recorded at enumeration) was not associated with greater positive effects on their self-regulation, compared to usual practice.

Analysis in the presence of non-compliance

To account for non-compliance among settings in the EC group (i.e. where less than two practitioners per setting attended all required training sessions) and isolate the impact of EC for settings that did receive the intervention as intended, we conducted a CACE analysis using the `estimatr::iv_robust` function in R (see 'Statistical analysis' section). The analysis used cluster-robust standard errors to account for children being clustered in settings.

In the first stage, regressing observed compliance on treatment allocation and randomisation strata as a covariate, treatment assignment strongly predicted observed compliance with a coefficient of 0.92 and $F(1, 132) = 748.89$, $p < 0.001$, indicating a strong instrument.

In the second stage, we regressed practitioner-report self-regulation scores as the primary outcome on predicted compliance from stage one, instead of treatment allocation, and randomisation strata. The coefficient for predicted compliance was not significant at 0.04 ($SE = 0.06$; $p = 0.536$). This coefficient represents the CACE, accounting for non-compliance and isolating the impact of EC for settings that would adhere to their random assignment. The CACE estimate does not differ significantly from the ITT estimate of 0.05 ($F(1, 132) = 0.09$, $p = 0.759$), as indicated in the Wu-Hausman test. The Hedges' g effect size³⁵ associated with the CACE estimate was 0.05 (95% CI: -0.11, 0.21). As in the primary outcome analysis, while the effect size estimate suggests a small positive effect of EC with non-compliance accounted for, the estimate's CI also includes zero and negative values. This means the true effect could be small and positive, but it could also be zero or small and negative; therefore, the evidence is statistically uncertain. This is consistent with the pattern of results observed in the main analysis, indicating the same pattern of evidence is observed when setting non-compliance is accounted for as in the primary outcome analysis.

Missing data analysis

Missing data analysis was carried out for the pupil sample as randomised and randomly sampled for endline data collection ($n = 3,330$). This consisted of 1,666 children in the EC group and 1,664 children in the practice as usual group. Overall, 2,386 children (71.7%) had complete data across all child- and setting-level variables. The proportion of missingness for the primary outcome and for additional child- and setting-level characteristics collected is summarised in Table 24.

Around 25.9% of the primary outcome data (practitioner-report self-regulation scores) were missing, while missingness on covariates ranged from 0% to 6.1%. As the primary outcome model included only setting-level covariates (all non-missing), the proportion of missingness for practitioner-report self-regulation scores (25.9%) also represents the number of cases

³⁵ Hedges' g for the CACE estimate was calculated by dividing the CACE coefficient by the model-based total SD $\sqrt{\sigma_u^2 + \sigma_e^2}$ estimated from an empty two-level model and applying Hedges' small-sample correction.

with missing data for the primary outcome analysis. In the EC group, 417 (25.0%) children were missing self-regulation scores, while 446 (26.8%) were missing self-regulation scores in the practice as usual group.

Table 24: Proportions of missingness across pupil- and setting-level variables

Pupil-level variables	N missing (% missing)	N complete (n total)
Self-regulation score (practitioner-report)	863 (25.9%)	2,467 (3,330)
EYPP eligibility	203 (6.1%)	3,127 (3,330)
Gender	25 (0.8%)	3,305 (3,330)
Age in months	0 (0%)	3,330 (3,330)
Setting-level variables	N missing (% missing)	N complete (n total)
Treatment allocation	0 (0%)	3,330 (3,330)
Randomisation strata	0 (0%)	3,330 (3,330)

The missing data analysis used a scaled and centred version of the age in months variable, to ensure it is on a more comparable scale to the rest of the variables explored.

In the mixed-effects binomial regression model predicting missingness in self-regulation scores as the primary outcome from all pupil- and setting-level characteristics available, children in four randomisation strata (i.e. settings of a certain type in certain SPHs) were significantly less likely to have their primary outcome missing than children in other strata ($b = -2.41$ to -4.39 , $p = 0.005$ to 0.031). No other pupil- or setting-level characteristics significantly predicted missingness in the primary outcome. This was consistent with the primary outcome being MAR conditional on strata as a covariate in the primary outcome model.

As a sensitivity analysis, we performed an MI using all available covariates as auxiliary variables to impute missing primary outcome scores, re-estimate the primary outcome model for each imputed sample, and compare pooled estimates to the main analysis.

The MI hence included practitioner-report self-regulation scores, EYPP eligibility, gender, age (centred), treatment allocation, randomisation strata, and a setting identifier to account for clustering. The setting identifier was treated only as a fixed effect. Imputation was conducted under the assumption of MAR using the mice package in R, with 30 imputations. This used predictive mean matching for continuous variables and logistic regression for binary variables. Trace plots of imputed means and SDs across iterations indicated good convergence and stability across imputations. Estimates were pooled across imputations using Rubin's rules via the pool function. Fitting the primary outcome model across all imputed datasets, the pooled treatment effect was not significant at an estimate of 0.04 (SE = 0.07, $p = 0.553$). The Hedges' g effect size³⁶ associated with this pooled estimate was 0.06 (95% CI: -0.13, 0.25), which is consistent with the pattern of results observed in the main analysis.

³⁶ The Hedges' g was derived using a null-model, variance-components-based SD estimated for each imputed dataset and pooled (averaged).

Implementation and process evaluation results

Fidelity

IPE RQ9: To what extent is the programme delivered as intended?

Under the broad heading of fidelity, we explore the extent to which EC was delivered as intended. It includes:

- **Dosage.** How much of the intervention was delivered
- **Adherence.** The extent to which the delivery adhered to the intervention model
- **Adaptations.** Made to delivery

The section starts by describing the dosage of the programme elements and then moves to the adherence and adaptations to the programme. Programme delivery and any changes made to it are discussed in the context of the EC training guidance.

The core activities of the intervention included a two-day online training workshop where ECUK trainers interacted with intervention group practitioners. This was followed by three online training workshops and a programme delivery period where EC-trained practitioners delivered EC in their settings. EC-trained practitioners shared their learning with other staff in their settings who interacted with three- to four-year-olds. It is worth noting that EC is an approach-based programme and does not have a prescribed session frequency or a structured child-level dosage model. So, fidelity for this programme related to the extent to which EC principles were embedded in practice rather than to length or number of sessions. Fidelity has been explored both in terms of the training workshops as well as the delivery of the EC programme.

Dosage

Under fidelity, dosage refers to how much of the intervention was delivered. For EC, this is discussed in reference to the training that was delivered. In general, the dosage of the EC programme activities was in line with the delivery plan and is discussed for each activity below.

Two-day online training workshops

In line with expectations, ECUK trainers delivered the two-day online training at the start of the EC programme. The workshops were delivered to practitioners from 79 intervention settings.³⁷ Settings were required to nominate two to four practitioners who worked with three- to four-year-olds to attend the training run by ECUK, with at least one member from the SLT attending the workshops. Attendance monitoring data collected by ECUK suggested that settings fully adhered to this requirement for the two-day online workshop. On average, approximately three practitioners per setting attended the two-day training (the mean calculated across settings was 2.6).

Each day of the two-day online workshop was six hours long. Data from workshop observations and practitioner interviews indicated that workshops generally finished on time. The two-day training was split across consecutive weeks, with one day delivered each week between 04 November 2024 and 15 November 2024.

Practitioners from the 79 settings were split across ten cohorts, with 18–29 people attending each session. Additionally, ECUK offered practitioners the flexibility to attend a different cohort's session in case they were unable to attend their own cohort's session. Trainers recorded the job role of each practitioner attending their sessions.

³⁷ Although 80 settings were randomised to the intervention group, one setting became ineligible for the trial before training started.

Two-hour training workshops

ECUK trainers delivered all three online training workshops to practitioners, as intended. These online workshops were intended to last around two hours. Practitioners reported in interviews that sessions started and finished on time, with very minor delays reported due to technical issues. Observations suggested that some sessions ran longer due to trainers providing extra time for practitioners to have discussions or ask questions.

The three workshops were delivered in November 2024, December 2024, and January 2025, respectively. Practitioners were divided into 11 cohorts. Mop-up workshops were also offered for any practitioners who missed their original workshops. Attendance at each workshop is discussed in the section 'Reach'.

EC accreditation

ECUK conducted an optional 45-minute call with practitioners in March and April 2025. While these calls were originally intended to discuss applying for EC accreditation, this was removed as an option after the logic model was finalised. The calls were instead used to review how EC was being used within settings and to provide consultative support where needed. Attendance for this element was not captured since it was an optional activity and did not impact dosage. Practitioners' views on applying for accreditation are discussed in the section 'Adherence and adaptation' below.

Adherence and adaptation

This section describes the extent to which EC was delivered as intended and the adaptations made to delivery. It covers both practitioners' adherence to the intended delivery of the programme (using EC strategies with the children as well as cascading learning) and ECUK's pre-intervention training sessions.

It is important to note that EC is an 'approach' rather than a structured programme of activities (once the training has been completed), which means that settings and practitioners had the flexibility to use it in ways that worked within their context. We therefore explored adaptations in tandem with delivery. There were no mandatory requirements for delivery of the intervention apart from training attendance.

In summary, training was delivered broadly as intended, following the planned sequence of online workshops and incorporating key EC concepts, interactive activities, and opportunities for sharing learning. Almost all practitioners (99% of endline survey respondents) reported using EC strategies in their settings, with consistently high use across all four steps of the EC framework. Cascading also occurred at high levels and 93% of trained practitioners shared learning with colleagues, most commonly through modelling, sharing resources, and formal conversations. Adaptations were common but generally aligned with EC's flexible 'approach-based' model, with practitioners adjusting the sequencing of EC steps in response to children's emotional states and simplifying language or using non-verbal cues to support children with lower levels of emotional regulation.

Training workshops

The logic model states that ECUK training included a two-day online training workshop and three two-hours long online workshops. Additionally, settings were able to conduct an optional 45-minute phone call with ECUK to discuss the accreditation process. The logic model suggests that practitioners were offered support by ECUK and a community of practitioners. The ECUK training aimed to engage directly trained practitioners as EC leads in their settings, which in turn would enable them to share their learning with other practitioners at their settings.

Adherence to the training workshops was assessed through interviews with setting managers and practitioners, training observations, and the endline practitioner survey. Overall, training was delivered in line with the intended structure and learning objectives, with sessions following a consistent format. For a discussion of the facilitators and barriers to practitioner engagement with the training, see the section 'Responsiveness'.

Structure and format of the training

Observation data suggested that the two-day online training and the two-hour follow-up workshops followed a similar structure, beginning with an informal agenda that outlined the overall aims and topics for the workshops. This agenda

usually included information about any prepared materials that were needed for upcoming workshops, such as completed reflective logs. The structure of each workshop closely followed the PowerPoint training slides, with minor deviations from the slide order.

The training cohort comprised a range of roles within the settings, including teaching assistants, nursery and EYFS teachers, nursery managers, headteachers, room leaders, SENCOs, and EYFS leads. More information on attendance at the training sessions is provided in the section 'Reach'. In post-implementation interviews, trained practitioners and setting managers discussed that the workshops used slides covering key EC concepts, with interactive elements throughout, such as breakout group discussions, reflective tasks, and short video clips. These interactive features were appreciated for breaking up longer presentation sections and keeping practitioners engaged with the training.

Observations suggested that all training workshops were conducted online using Zoom and were not recorded. Practitioners were encouraged to keep their cameras on, and to engage with the chatroom to ask questions. They actively used the chatroom function. We observed that trainers used the chat to share resources such as video clips and references to the handbook. The chat function was also used to conduct group activities and share opinions about the training.

Observation data showed that breakout rooms were used as part of training workshops. This involved group tasks that were completed among three to four per practitioners per breakout room. These breakout sessions usually allowed practitioners a chance to complete tasks from the EC handbook. Practitioners particularly valued the scenario-based activities that were presented within the training, which enabled them to practice EC strategies in a supportive environment before applying them in their own settings.

Peer discussions also formed a key part of the training workshops for practitioners. In interviews, EC-trained practitioners described these discussions as an opportunity to share ideas and reflect on emotional development approaches with professionals from other settings. They mentioned that these discussions often reflected on best strategies to use with children eligible for EYPP and those with English as an Additional Language (EAL), which supported adapting EC strategies to different contexts.

Observations showed that trainers used the EC handbook, Pocket Guide to EC and the reflective logs to conduct activities in the three follow-up workshops. The reflective logs were designed to prompt practitioners to document and reflect on their use of EC between sessions. There was no requirement to complete any preparatory activities for the two-day online training as it was more focused on teaching key EC concepts. Throughout the training, trainers encouraged staff to use the ECUK resources to share practice at their settings. Trainers also encouraged practitioners to record examples of how they applied specific practices in their reflective logs and share them during the training sessions to help with peer discussions.

There were mixed views on whether the timing of the workshops suited all practitioners. In interviews, one view among practitioners was that they preferred having the follow-up training workshops as an evening session since they could concentrate with fewer distractions. A contrasting view among practitioners was that evening sessions might not be suitable for all staff due to other responsibilities. One suggestion offered by practitioners was to conduct weekend training to avoid workplace distractions.

Content of the training

In interviews, practitioners described the training content as clear and accessible. They emphasised that the training focused on theoretical explanations, such as brain science and emotional development, which helped them understand the rationale behind EC.

EC-trained practitioners consistently referred to the four-step EC framework as a key part of the two-day training workshop. They reported that the four steps were clearly explained and easy to follow. Training workshops also included real-life examples and video demonstrations, which setting managers and practitioners noted as relevant to their everyday practice.

The activities brought it to life, and you were thinking about actual children in the real world. [...] it was very connected to what really happens. The scenarios were real, and you could think about the behaviour and emotions of the children that you care for. (Setting manager 1, Post-implementation interview)

A contrasting view among practitioners was that the video demonstrations, at times, could be patronising in their tone when they showed specific role-play examples of how to support children.

We watched some videos that were, it was sort of two adults acting out scenarios, and I understand why it was two adults, but they were, their tone, it felt patronising. (EC-trained practitioner 1, Post-implementation interview)

Training observations revealed that trainers taught the EC four-step framework by contrasting it with other behaviour management styles like emotion disapproving, emotion dismissing and laissez-faire approaches (Gottman *et al.*, 1996). First, trainers focused on providing in-depth explanations about each step of the EC framework and used video clips and activities from the EC handbook. This was followed by video clips and role-play activities that showed examples related to upset children. These examples were used to illustrate the key features of other behaviour management approaches.

Observations of the follow-up workshops indicated that they included activities that focused on helping practitioners apply the EC framework to themselves. The workshops also supported wider implementation within settings by encouraging practitioners to share learning with colleagues working with three- to four-year-olds. In interviews, setting managers reported that their trainers printed slides with key language prompts and created lanyards featuring the EC framework to support staff in using the approach consistently within their settings.

Trainers also provided guidance on embedding EC into existing approaches at settings. In interviews, practitioners described how this advice had supported their efforts to integrate the approach into their settings' practices and routines. We observed that the three follow-up workshops placed more emphasis on group work so that practitioners could gain practical advice on how to apply techniques for their settings and share learning. For instance, activities included showing how to 'ground' children in a setting, and how repetitive, non-threatening images could help calm children.

Resources

As outlined in the logic model, practitioners were provided with a course training pack which included the Pocket Guide to EC, training slide PDFs, and activity handouts to help with implementation of EC at their settings. Additionally, they received materials including training slides and reflective logs.³⁸ Practitioners also received access to online resources such as recorded webinars, hand-brain animations, role-play videos and animation clips.

Practitioners' engagement with and use of the EC resources varied. In interviews, practitioners described the Pocket Guide to EC and lanyard as useful for quick reference, especially during interactions with children. One view among practitioners was that the Pocket Guide served as a helpful refresher of the training. However, another view was that the Pocket Guide was 'too bulky' to carry around the setting.

Additionally, practitioners who went through ECUK training shared the Pocket Guide to EC with their colleagues to support integration of EC at their settings. They suggested that the Pocket Guide could be used to both reflect on their own practice and share learning with others. Practitioners who were trained through cascading confirmed this view and mentioned in interviews that the Pocket Guide had been shared with them to support reflection of their practice.

Practitioners had mixed views on the usage of EC leaflets and slides to share learning at their settings. In some cases, practitioners mentioned that they handed them out during staff meetings but did not have enough time to talk about them in detail. There was a preference among some settings for more hands-on discussions and modelling based learning, which could explain why engagement with these types of resources was limited.

In interviews, practitioners suggested improvements to the resources to support implementation of EC in their settings. Setting managers mentioned that providing pro-forma templates could help settings update policies to be in line with EC principles. Practitioners mentioned that when settings were in busy periods, more visual aids and resources that can be accessed quickly were more accessible than lengthy, written materials.

³⁸ The reflective logs were for practitioners' personal use. Data from the reflective logs was not collected by the evaluation team.

Some practitioners suggested that more targeted cascading materials, such as summary videos or simplified resources, that could be shared with staff who did not attend the training, would be beneficial. Although the logic model suggests that these were already provided, it is possible that some practitioners trained by ECUK were unaware of these resources, which affected their ability to share learning within their settings and may help explain any variation in cascading practices across settings.

Implementing EC strategies (programme delivery)

Once the training was completed, EC-trained practitioners and setting managers were expected to follow the four-step EC framework with children at their settings. There were no mandatory activities involved for this process and practitioners had flexibility in how they chose to implement EC strategies at their settings.

Almost all (99%) practitioners from the intervention group, those that were directly trained as well as those with whom learning was shared, reported in the endline survey that they had used EC strategies at their settings. This indicates that the implementation of EC strategies in the intervention group was high. In interviews, setting managers consistently reported that their staff were regularly using EC strategies at their settings.

In the endline survey, setting managers and practitioners were asked to reflect on which specific EC strategies from the four-step framework they used. Practitioners reported consistently high usage across all four steps of the EC framework: recognising children's feelings and expressing empathy (99%); validating feelings and naming emotions (98%); setting expectations around the child's behaviour (90%); and problem-solving with the child (92%).

Similarly, in interviews, practitioners discussed how they had used EC strategies regularly in their work. They mentioned using them flexibly by adapting them to the child, timing, and context of the situation at hand. Interviews with practitioners suggested that recognising emotions (Step 1) and validating feelings (Step 2) were commonly applied by settings when implementing EC. One view among practitioners was that once they had worked on Steps 1 and 2, children were able to understand what is expected (Step 3) and problem solve (Step 4) independently to regulate themselves.

Additionally, in interviews, practitioners provided some other examples of strategies that they had learned as a part of their training and implemented in their settings:

- **STAR (Stop, Think, Attune, Reflect) approach.** A method for practitioners to pause to regulate themselves before approaching the upset child.
- **Emotional vocabulary.** Involved practitioners adapting their use of language and resources to reflect EC principles. Practitioners reported that they were able to use sentence starters from the training packs as a part of this approach to help regulate children's emotions.
- **Regulation spaces.** Involved the use of spaces such as calming corners. Practitioners reported that this worked well to support children's self-regulation.
- **The EC log.** Helped practitioners reflect on their own practice and observe peers' use of EC strategies within their settings.

Adaptations to EC strategies

Practitioners discussed in interviews how they had made small but purposeful adaptations to EC strategies to suit individual children and their settings' routines. It is important to note that such changes were permitted within the delivery model and were encouraged to make the intervention more effective.

EC-trained practitioners reported that they adapted their use of the EC steps based on the context and each child's level of emotional regulation, applying the steps flexibly rather than as a fixed sequence. For example, in interviews, practitioners mentioned using the initial steps (recognising emotions and validating feelings) when children had already begun to calm down. Practitioners also mentioned that they simplified their language, especially for children not meeting age-related expectations, by using fewer words and miming emotions to support their understanding. These changes aligned with the EC protocol, which encouraged tailoring the approach to meet children's needs.

Cascading learning to other staff

The logic model shows that EC leads in each setting were expected to cascade the training and information to other staff members working with three- to four-year-olds. Suggested activities also involved EC leads supporting peer reflection in EC use, developing resources in the setting which support EC and self-regulation, as well as providing feedback on EC practice and discussing the application of EC in the setting. While these cascading activities were suggested, it is important to note that they were not mandatory for the delivery of EC within settings.

In interviews, practitioners and setting managers reported that all cascading took place in person within the setting and was carried out by setting managers as well as practitioners who had attended the EC training workshops. They did not report any instances of sharing learning through an online platform like Zoom.

Most practitioners (93%) reported sharing EC training and strategies with other staff at their settings, with only 7% saying they had not shared learning. This closely aligned with responses from practitioners who had not been trained by ECUK, with 92% reporting that EC-trained colleagues had shared learning with them.

Similarly, in interviews, all practitioners mentioned that they had shared EC training with other staff at their setting, either formally or informally. Table 25 shows the extent to which the four-step EC framework strategies were shared among staff. It shows that sharing of all four steps of the EC framework among practitioners was high, especially for Step 1 and Step 2.

Table 25: Responses from the EC-trained practitioners and practitioners trained through cascading on sharing learning (endline survey, multi-response question)

Four-step EC framework strategy	% of practitioners trained by ECUK who shared these strategies in their setting	% of other practitioners who reported that strategies were shared with them
Recognising the child's feelings and empathising	99%	96%
Validating the feelings and labelling them	97%	90%
Setting expectations on behaviour (e.g. learning rules)	87%	70%
Problem-solving with child (e.g. scaffolding solutions)	89%	84%
None of the above	–	1%
<i>Base (number of respondents)</i>	152	96

In interviews, practitioners reported that sharing of EC learning took place at varied timings during the delivery period. Some practitioners mentioned that they had shared the learning while EC training delivery was still ongoing. For others, the range varied from a couple of weeks after the training had ended to a couple of months after the training ended. The timing of learning being shared often depended on the workload of setting managers and practitioners, and specific setting limitations.

Practitioners who had been trained by ECUK described mixed experiences when talking about the effectiveness of sharing learning. While some reported that EC became embedded in their setting's daily practice, others found it challenging to cascade the approach due to time constraints, staff workload and low confidence among staff who had not been trained by ECUK. For a discussion of the facilitators and barriers to achieving cascading within settings, see the section 'Responsiveness'.

In the survey, practitioners (including setting managers) who had been trained by ECUK were asked to reflect on the ways in which they cascaded learning at their settings. The four most common ways in which learning was shared were:

- modelling EC practitioner–child interactions to other staff (86% of respondents mentioned this);
- sharing EC resources (78%);
- formal conversations with staff, which included any scheduled sessions or meetings where practitioners presented what they had learned to other staff (75%); and
- informal conversations with staff, which included 'water cooler chat' or ad hoc sharing of learning (71%).

Responses from staff who received their EC knowledge through cascading were similar. Most commonly, EC learning was cascaded through formal conversations or meetings (78%), followed by sharing of EC resources (62%) and modelling practitioner–child interactions (58%). Fewer staff reported informal conversations (46%).

In both the survey and interviews, staff observation sessions and modelling with one-on-one support emerged as a particularly valued method. This method of sharing learning was closely linked to the logic model which suggested that an output for EC was for the EC-trained practitioners to support other members of staff through modelling and discussion.

In interviews, practitioners who had been trained by ECUK described modelling EC with children while other staff observed them. This was usually followed by brief discussions to reinforce the four-step framework. Over time, this developed into practitioners observing colleagues using EC strategies and providing informal feedback through follow-up conversations.

In interviews, practitioners highlighted that they shared EC approaches through formal staff training, including in-service training (INSET) days, staff meetings, and presentation of PowerPoint materials. They also used a range of supplementary methods such as reviewing practice together, highlighting good examples, displaying resources, and sharing EC videos and notes to support wider staff understanding. Interviews with practitioners who had been trained through cascading highlighted that they commonly received paper materials and were encouraged to review them independently. However, some felt this approach was less effective because there was no protected time for reading, and setting staff generally preferred more visual or discussion-based learning.

Adaptations to cascading learning

In interviews, EC-trained practitioners explained that they made deliberate choices about which EC resources to use with colleagues and how to adapt them for their settings. Commonly used materials for sharing learning included EC PowerPoint slides, the Pocket Guide to EC, and videos. Some practitioners reported condensing the ECUK training slides and incorporating personal notes to support sharing with colleagues. Setting managers selected resources they felt were most relevant to their context, often using slides but choosing not to use tools such as lanyards or scripts.

The time allocated to cascading varied considerably. In some settings, practitioners split delivery across multiple one-hour sessions, while others held longer one-off sessions on weekends or during unplanned closures (e.g. snow days). While some settings cascaded primarily to staff working directly with three- to four-year-olds, others delivered training to the entire staff team. Several trained practitioners also adapted EC materials for younger or older children, creating age-appropriate examples and scripts.

EC accreditation

The logic model suggested that setting managers would be encouraged to attend an optional 45-minute call with ECUK to discuss the accreditation process. This was not mandatory but was encouraged as a next step for settings in embedding EC practice even further. In practice, these calls were used flexibly, with ECUK using them to provide settings with an opportunity to review how EC was being used and to offer consultative support where needed.

A little more than half (52%) of setting managers reported that their setting wanted to apply for EC accreditation so that they could become an EC organisation, while 48% said they did not want to apply for accreditation.

At an individual level, only 27% of practitioners indicated that they would like to become an accredited EC practitioner trainer, while almost three-quarters (73%) stated that they did not want to apply.

Quality

Quality was included in the IPE to understand how well the training workshops were delivered. This is different from fidelity which is more focused on whether specific elements of the intervention were delivered. For this IPE, data on quality was collected specifically through training workshop observations and was focused on trainer delivery of the workshops. This data, together with the findings on responsiveness, can help describe how and why activities from the logic model, when delivered in a particular way, can lead to observed outcomes.

Workshops were delivered in close alignment with the training guidance, demonstrating a consistent approach to the pedagogical principles of the EC programme. Sessions typically opened with a reflective discussion on prior learning, with trainers sometimes dedicating up to an hour exploring practitioners' reflections and elaborating on each practitioner's individual experience and contribution.

Trainers explained EC concepts clearly and demonstrated enthusiasm for the content. They frequently used visual and practical demonstrations, such as modelling brain functions with hand movements. One such instance involved trainers using clenched fists as an example for dysregulation in a child's brain and asking practitioners to raise their hands and imagine that their arm formed different parts of the brain and nervous system. Trainers also made effective use of analogies to support understanding, for example, they used a 'paramedic' metaphor to explain parasympathetic co-regulation³⁹ to practitioners. These activities appeared to prompt high levels of participation among practitioners.

Trainers delivered sessions in an accessible manner, including reassuring practitioners that they were not expected to retain technical terminology. They encouraged the use of simple language when delivering EC in settings. They provided actionable guidance on embedding EC, including displaying slides at their settings to reinforce vocabulary, using sensory objects and rhythmic repetition for dysregulated children, and providing clear rationales for limit setting. Trainers also modelled EC-aligned language. For example, they suggested using positive language like 'What happened to you?' instead of 'What is wrong with you?' to make children feel understood.

Across sessions, trainers consistently encouraged contributions, validating each response, including those shared in the chat. They emphasised that sessions were safe spaces to share experience and ask questions. They made explicit links between session content and future workshops to help practitioners build a holistic understanding of EC.

Trainers shared practical advice drawn from their own experience, including realistic expectations about how long EC techniques would take to embed within settings. They encouraged practitioners to be explicit with other staff members and offer reasons to promote understanding among children. For example, they suggested replacing phrases like 'kind hands' with 'kind hands do not throw sand as it can get in people's eyes' so that children can understand the emotions behind such requests. Trainers also highlighted that repeatedly using the first two EC steps with children could be sufficient in many situations, without always progressing to Step 3 and Step 4, which could make it easier to deliver EC within settings.

Interview feedback matched these observations. Practitioners described trainers as knowledgeable and approachable, and expressed a view that trainers' own use of EC and their enthusiasm for the approach had made it easier for them to understand the practical aspects of the training. Some practitioners noted a variation in delivery styles across trainers, reflecting differences in individual training approaches, but this did not appear to negatively affect perceptions of training quality. Overall, practitioners viewed the training delivery as well-structured and supportive. Facilitators and barriers to practitioner engagement with the training are explored in the section 'Responsiveness'.

Reach

This section explores the rate and scope of practitioners' participation in the workshops as a part of the training. Compliance at the setting level is not discussed here—see the section 'Analysis in the presence of non-compliance'.

ECUK gathered attendance data for each of the training workshops. In total, 207 practitioners attended at least one workshop (i.e. two-day online training or three online workshops) in the delivery period of 2024/2025. This included at least one SLT members from each of the settings, as required. Attendance data shows that of those 207 practitioners, 99 practitioners were from school-based settings, and 108 practitioners were from PVI settings.

Between the first and the last training workshop, five practitioners withdrew from the training. This was either because their nursery dropped out of the programme or for individual reasons, including staff sickness and staff shortages within the nursery. Additionally, four settings only sent one practitioner from their setting for the training due to staff leaving the nursery

³⁹ This refers to the mechanism by which the nervous system slows down bodily activity after stress, helping individuals return to a calm, balanced state.

and long-term sick leave. In one instance, a setting did not have the required number of staff members for the training, so they selected one attendee who held multiple roles at the setting.

Mandatory activities

The mandatory activities for EC included the two-day online training and three training workshops the practitioners. Settings were required to put forward between two and four practitioners (at least one of whom must be a member of the SLT) to attend EC training.

Two-day online training

The mandatory elements of EC began with an introductory two-day online training. All practitioners (n = 207, 100%) attended the first day of the training. Attendance at the second day of the training remained very high, with 205 practitioners (99%) attending. During the training, practitioners were able to attend a programme that was held for a different cohort than their own, and this was easily accommodated since the training workshops were held online.

Three two-hour online workshops

Practitioners were required to attend all three of the two-hour online workshops (see section 'Analysis in the presence of non-compliance') in order to satisfy the requirements of the EC training programme.

The first two-hour workshop was attended by 202 practitioners (n = 202, 100%). Attendance remained high for the second two-hour workshop, which was attended by 200 practitioners (99%). For the third three-hour workshop, 198 practitioners (98%) attended the session. Table 26 provides a breakdown of workshop sessions and their attendance, by the setting type of the practitioners.

Table 26: Attendance per training workshop

Workshop sessions	No.of attendees	Setting type		Total possible attendees	%
		PVI	School-based		
First day of two-day training	207	108	99	207	100
Second day of two-day training	205	107	98	207	99
First two-hour workshop	202	104	98	202	100
Second two-hour workshop	200	103	97	202	99
Third two-hour workshop	198	102	96	202	98

In interviews, practitioners confirmed their intention to complete all of the training workshops. They mentioned attending sessions with other cohorts if necessary to ensure that their training was completed.

In the endline survey, almost all practitioners (99%) reported that they used EC strategies in their work. EC-trained practitioners were expected to embed the EC approach into their day-to-day practice and regular interactions with children. There was no expectation of delivering a specific number of EC sessions per week within their settings, since EC was a flexible approach to use in everyday practice, rather than a structured programme of activities.

Additional activities

An additional element of the EC programme was the intention that practitioners and setting managers would cascade their learning to other practitioners at their settings. Practitioners and setting managers described a range of formal and informal approaches to sharing learning, including team discussions, modelling during daily practice, and the use of EC resources. These findings are consistent with the earlier analysis, which showed that cascading occurred in most settings (as discussed earlier in the section 'Adherence and adaptation' above).

Responsiveness

IPERQ10: What are the facilitators and barriers to the delivery of the programme?

Responsiveness is defined in this evaluation as the extent to which practitioners engaged with the programme's training content and delivery, including factors that supported or hindered their participation. This section draws on data from training observations, interviews with setting managers before and after implementation, interviews with practitioners (both ECUK trained and trained through cascading), as well as the baseline and endline surveys. It explores how logistical and contextual elements shaped engagement across three key areas: the training workshops; cascading learning to other staff members; and the implementation of EC strategies in practice. As discussed elsewhere in this report, the reach and dosage of the intervention were high, and attendance was broadly maintained for the training workshops.

Signing up to EC

The section first explores reasons given by EC group and practice as usual group setting managers for wanting to sign up and take part in EC. Data from the baseline survey indicated that practitioners chose to participate in EC to develop their professional practice and provide better support for children in their settings. Additionally, ECUK had a good reputation, and its delivery approach appealed to practitioners. The key reasons for taking part that were reported at baseline are listed below:

- **Improving staff understanding and skills around children's emotions.** Almost all (98%) setting managers reported that they aimed to develop staff skills in emotional recognition and regulation. Additionally, 93% of setting managers wanted to learn more about emotional and behavioural development in young children.
- **Improving emotional support available to children from parents/carers.** Most setting managers (80%) wanted to pass on lessons to parents/carers to further children's emotional development.
- **Contributing to research.** Many (63%) setting managers wanted to participate because they wanted to contribute to research on children's well-being and development.
- **Changing organisational practices.** A sizeable proportion of setting managers (43%) reported that they wanted to use EC to change their nursery's existing approach to emotion regulation.
- **Encouraging practitioner-child relationships.** Around 41% of setting managers wanted to decrease conflict and encourage closer practitioner-child relationships.
- **Accreditation.** Only 36% of setting managers wanted to participate to gain additional accreditation for their staff or their setting.
- **Other reasons.** Around 2% of other reasons included ensuring their settings were up to date with new training and wanting to offer more PSED opportunities for staff members.

Engagement with the training

In this section, we explore how practitioners engaged with the online training workshops delivered by ECUK, highlighting factors that influenced their involvement. Key facilitators included the accessible structure and content of the training, delivery by trainers, and opportunities for peer collaboration. However, engagement was at times hindered by setting-level constraints and the online format of the training.

Facilitators to practitioner engagement

In the endline practitioner survey, practitioners rated the EC training workshops very positively: 87% of practitioners stated that they found the workshops very interesting; and the remaining 13% stated that they found the workshops somewhat interesting.

In interviews, we asked EC group practitioners and setting managers what factors supported their engagement. A range of views were expressed, which resonated with the factors that motivated setting managers to sign up for the programme initially (as detailed above).

Four key factors that supported their engagement with the training were discussed in interviews, including: i) the structure and content of the training; ii) opportunities for peer collaboration; and iii) the trainers' delivery style.

First, in interviews, practitioners described that the content of the training was engaging and accessible. Many valued the initial coverage of development and attachment theory. They appreciated that the content gradually increased in complexity by using this theory as the basis for introducing practical strategies. Setting managers noted how understanding the theoretical basis for emotional development, including the science around chemicals released in the brain when children experience negative emotions, helped them understand how the strategies would help the children. They felt inspired by the ethos of the training itself, reflecting on usefulness for the future:

Can you imagine how powerful this could be? With all of our children growing up into adults that understand their emotions. Just having that vision of how powerful that could really be. (Setting manager 2, Post-implementation interview)

Similarly, in the endline survey, most practitioners (86%) described that the content covered in the training workshops was very useful for their practice, with 14% describing it as somewhat useful.

Data from the training observations supported this view. Practitioners were observed to be generally engaged with the training and group activities. Practitioners appeared to be increasingly confident in using the training content in later training workshops, including four steps of the EC framework. In whole-group activities, they were able to identify emotional response types without prompts, and in breakout rooms they quickly recognised and discussed elements of the EC approach.

Practitioners were observed to be making links between the training and their own practice. For instance, several practitioners noted that the training activities helped them recognise that they had often relied on emotion-disapproving responses with their own children and allowed them to understand what it feels like to be on the receiving end of such approaches. Additionally, in later sessions, practitioners referred back to previous content and described using it in their practice. They also reported sharing EC approaches and training clips with wider school staff and noted that the strategies were effective across diverse groups of children, including those with speech delays.

Additionally, practitioners mentioned in interviews that the structure of the training supported engagement. One view among setting managers noted how the online nature of the training was beneficial for accessibility, particularly for those in remote areas. While the initial training sessions were long in duration, one view among practitioners was that it was highly beneficial as it encouraged full concentration and commitment.

Practitioners also appreciated receiving the training materials in advance of the training, as it enabled them to prepare and understand the content ahead of the session. Furthermore, a view among practitioners was that the two-hour online sessions were engaging as they provided an opportunity to try the EC strategies in their setting and then come back to reflect on their experiences with other practitioners.

Second, the observation data also suggested that there was strong mutual support among practitioners who attended the training. Practitioners were highly supportive of each other's contributions, particularly when discussing experiences related to completing activities like reflective logs. Practitioners actively demonstrated engagement by asking questions about implementing EC strategies in their settings. They also shared personal experiences while posing questions.

In interviews, practitioners described enjoying the videos roleplaying EC strategies, as they helped exemplify the concepts that the trainers introduced. Some practitioners also enjoyed engaging in breakout rooms and appreciated the opportunity to share ideas and experiences with practitioners from other settings. As a result of multiple staff members from the same setting attending the training, practitioners could also discuss how to implement strategies and cascade the training to the rest of the setting. This opportunity to discuss emotional development with peers in and outside of their setting was perceived as particularly advantageous.

Finally, in interviews, practitioners highlighted the trainers' approaches and delivery of the workshops as a key facilitator to engagement. The trainers created a positive, calm, and relaxed atmosphere, which helped form a non-judgemental space for the workshop. For example, when a practitioner came to the training late, the trainers responded supportively.

Practitioners also appreciated how the trainers answered questions professionally and confidently, as it created a sense of credibility.

Barriers to practitioner engagement

Setting managers and practitioners identified barriers that affected their ability to fully engage with the training workshops. These challenges, based on data from post-implementation interviews, can be broadly split into setting-level constraints and training logistics.

For setting limitations, staff illness caused a frequent disruption for participation across multiple settings. While the EC programme provided adequate support to help with setting cover, setting managers and practitioners mentioned that at times, their settings still struggled to source appropriate cover while staff attended workshops. This led to settings struggling to maintain the required staff-to-child ratio, which might have limited practitioners' availability to take part in the training. Some practitioners reported finding evening sessions difficult to engage with due to fatigue after a full day of work. It is worth noting that despite these barriers, the overall attendance rate for the training was high. This suggested that practitioners maintained high attendance through last-minute staff substitutions at the nursery and attendance at different sessions than those that were initially booked. Additionally, some practitioners reported that their nursery being loud, busy, or dealing with a high number of children limited their time for self-reflection on the strategies introduced during the training.

While practitioners expressed positive views about the training structure, a contrary view among them highlighted some limitations in the training logistics. Some practitioners reported difficulty engaging with the sessions online, particularly when managing their own childcare responsibilities at the same time.

One view among practitioners was that it was difficult to engage during the first online session, as they had to take in a large amount of information and adjust from their typically active roles in the nursery to sitting for extended periods. Additionally, some practitioners noted that limited time between the training sessions made it difficult to complete tasks such as reflective logs, which further impacted their engagement. Other practitioners described resources like the reflective logs as time-consuming and felt that limited staffing made consistent delivery of EC difficult.

Engagement with EC strategies

For this evaluation, there is no direct way to assess pupils' responsiveness to the intervention due to their age group, so this was assessed via practitioners. In the endline survey, practitioners were asked how responsive they thought the children in their setting were to EC approaches. Just over half (52%) of respondents said children were very responsive, while 48% said they were somewhat responsive. Notably, no practitioners stated that children were not responsive at all (table not shown).

Furthermore, practitioners had a positive view of the effectiveness of EC strategies with children. In the endline survey, practitioners were asked how useful they thought the EC strategies were in helping children regulate their emotions. Most practitioners (77%) said they were very useful, and 23% said they were somewhat useful.

This section explores how practitioners engaged with implementing the EC strategies within their settings. In interviews, practitioners reported that having the EC training resources and support from their colleagues motivated and enabled them to use the techniques. Facilitators and barriers to engagement with the strategies, such as contextual factors at the setting and child related challenges, are also discussed here.

Facilitators to implementing EC within settings

In interviews, setting managers and practitioners identified several factors that supported their ability to implement EC strategies effectively in their settings. These facilitators are listed below:

- **Flexibility of the EC approach.** Practitioners felt encouraged by the emphasis that EC did not need to be used at all times or followed rigorously step-by-step in every encounter with an upset child. Instead, the ECUK trainers had talked to them about using the four-step approach flexibly, applying the steps relevant to the setting and child context, which gave staff flexibility in their approach.
- **Usability of EC resources.** Practitioners mentioned that they regularly used the Pocket Guide to EC and materials, sharing them with colleagues to reinforce learning and encouraging strategy use. Settings also

displayed some of these resources as visual reminders to staff of the strategies to use. Practitioners mentioned how the resources focused on creating environments for regulation including the ‘calm corner’, which was useful to their practice. They talked about how children going to the calm area signalled to practitioners to offer regulation support, which helped them establish clear times to implement the EC strategies.

- **Support from colleagues.** Practitioners highlighted that support from other colleagues enabled them to try the EC strategies in their setting. Discussions among colleagues in team meetings and informal chats helped practitioners understand how to apply the strategies in practice, particularly when adapting approaches to suit individual children’s needs. Staff also observed each other to promote learning and maintain consistency in how EC is applied across the setting. For instance, when a child was not receptive to a particular practitioner, teams switched staff members to ensure that the child continued to receive appropriate emotional support.

Overall, practitioners viewed EC as a positive and flexible approach, allowing them to try the strategies in a supportive environment. Whether practitioners received the EC training directly or through cascading influenced how responsive they were to implementing the EC strategies. ECUK-trained practitioners discussed how they found the theory behind the methods and examples given by trainers highly beneficial and suggested that all staff would benefit from the full comprehensive training. On the other hand, setting managers mentioned that new staff joining settings well after the setting took part in EC training had found it harder to take on the practices due to lack of time in the setting to cascade the training to new arrivals.

Barriers to implementing EC within settings

Practitioners also discussed challenges that impacted their ability to implement EC strategies in their setting. Data on barriers was collected in both the endline survey and in post-implementation interviews. In the survey, just under half (46%) of EC-trained practitioners mentioned that they had faced challenges in implementing EC. The interviews provided more detail on the barriers practitioners had experienced in implementing EC:

- **Children being less receptive to the strategies at specific times.** The most common barrier reported by practitioners was that children were not responsive to the strategies (41%). In interviews, some practitioners mentioned that children were at times less receptive to EC later in the day and during hot weather due to increased dysregulation.

By the time we get to the afternoon sessions, the children are often done. We see a lot more irritability. It’s hard to implement the [EC] strategies effectively when they are exhausted. (EC-trained practitioner 2, Post-implementation interview)

- **Not always perceived as suitable for all children.** A small number of practitioners mentioned that EC was harder to apply with children with Special Educational Needs and Disabilities (SEND), especially non-verbal children.⁴⁰

It’s very hard to say to a child who is non-verbal, ‘How are you feeling? I can see that you’re feeling angry’ because these children will not respond to that. So, I think it’s a little bit different..., I’m not sure it is effective with children with severe needs. (Setting manager 4, Post-implementation interview)

- **Lack of time to plan.** Almost a quarter (24%) of practitioners reported that there was lack of time to plan. This was also mentioned in setting manager interviews who stated that limited time and missed opportunities made consistent use of EC strategies difficult, lowering practitioner confidence.
- **Lack of support from parents/carers.** In interviews, practitioners highlighted that there could be a contrast in how emotional support is provided at home and at the nursery, which created barriers to EC

⁴⁰ We did not collect data on practitioners’ prior experience, confidence, or training in supporting children with SEND. As a result, it is not possible to determine whether these perceptions were related to practitioners’ levels of experience, confidence, or other contextual factors.

responsiveness. Similarly, 20% of practitioners reported lack of support from parents/carers as a barrier to implementing EC.

- **Difficulty in implementing strategies.** Some practitioners (9%) reported that the strategies were difficult to implement. In interviews, they discussed instances where they faced challenges in implementing strategies when multiple children needed support simultaneously.

I think where you've got four or five children all having a meltdown at the same time over the same train track, it is difficult to use strategies. (EC-trained practitioner 3, Post-implementation interview)

Practitioners reported that adopting new EC-aligned language required conscious effort. While many practitioners had begun replacing phrases like 'What's wrong?' with more empathetic responses such as 'I feel sad too', some reported that they found it challenging to consistently integrate this new approach into everyday interactions. Although they stated that they recognised the benefits for children, the shift in practice demanded ongoing awareness and adaptation.

In interviews, practitioners also mentioned that they found it difficult to apply EC when staff-to-child ratios were low. This suggested that the demands of EC strategies could clash with limited staff capacity in early years settings:

Emotion Coaching takes one person a fair amount of time to spend time with that child. [...] it's not a quick fix thing; you have to spend time with that child and [...] have that one-to-one conversation. Remain calm, and that is really difficult when you've got 29 [...] other children in the room and one member of staff is with one child. (Practitioner trained through cascading 1, Post-implementation interview)

Training observations also highlighted moments where practitioners struggled to apply the steps of the EC model in real situations. One participant shared an example of finding it difficult to carry out even the first two steps when a child was distressed. In such instances, trainers reassured practitioners that challenges were expected and that increased awareness of this is a positive step rather than a sign of failure. However, it is possible that practitioners still faced this challenge in implementation of EC.

A shared view among practitioners was that not every situation with a child required full EC, as applying it constantly could be emotionally and physically demanding for the staff. Practitioners emphasised that it was not always possible to implement the full sequence of EC steps during every episode of dysregulation. Instead, they tended to use the strategies selectively when children appeared to require more focused emotional support. It is worth noting that this selective use was consistent with guidance communicated by ECUK during training and workshops.

You can't use the full EC steps with every single incident, it takes a lot out of you, so we use it when it's really needed. (EC-trained practitioner 2, Post-implementation interview)

Finally, practitioners also reported that lack of support from senior management (4%) and strategies not fitting their settings' priorities (2%) could act as barriers to implementation.

Cascading of EC strategies

This section examines the factors that practitioners identified in interviews as either supporting or hindering the cascading of training within settings. Key facilitators included strong staff relationships and access to appropriate resources. It was found that when staff were engaged and receptive, cascading was smoother and more effective, enabling practitioners to share their learning, and ensure that other practitioners benefited from the cascaded training.

In contrast, limited buy-in from staff who had not been directly trained by ECUK created barriers to successful cascading. This lack of engagement often compounded existing challenges, particularly those related to time capacity and the ability to implement formal cascading processes within settings.

Facilitators to cascading EC

Positive staff relationships were integral to cascading EC learning throughout settings. In interviews, practitioners who were trained through cascading described how encouragement from colleagues and reminders about EC steps supported ongoing use of the strategies. Role modelling by ECUK-trained staff also helped practitioners who had not been trained by

ECUK to gain confidence in using the strategies by seeing them used first-hand. The confidence and enthusiasm among directly trained staff motivated their colleagues to engage with EC approaches and related resources.

Access to training resources and materials from the original ECUK training further facilitated cascading of the learning. In interviews, practitioners discussed how written resources such as the Pocket Guide to EC helped them share knowledge on the theory and practice without having to remember all of the content in detail. Practitioners who were trained through cascading reported that the resources were clear and accessible and tools such as ‘colour monsters’ clarified the support that they needed to offer for children’s emotional validation. For those who were visual learners, the video roleplays were helpful for understanding why and how to employ EC strategies.

[The materials were]...very clear on how to empathise with the children and how to not just disregard how they were feeling or anything like that. It was about how they were feeling and trying to make them understand how they were feeling. and it was nice to talk to the children using the EC book. (Practitioner trained through cascading 2, Post-implementation interview)

A key resource for settings to promote and integrate consistent practice was the EC reflective logs. This enabled staff to review success and challenges, reflect on their practice, and learn from one another’s experiences.

...being able [...] to go around, and every member of staff had an opportunity [...] to share their reflective log on at least one occasion where they’ve had to implement Emotion Coaching. Yes, it was a really lovely session, being able to reflect on a lot of the successes that they’d had by using the approach. (Setting manager 3, Post-implementation interview)

The EC reflective log, when used, enabled practitioners trained through cascading to see how EC has been integrated into the setting practice as well as how to appropriately use the strategies with each child.

Challenges to cascading EC

Among practitioners who had been trained by ECUK, over a half (55%) reported that they faced challenges to sharing learning with other practitioners at their settings. Data on these challenges was collected in both the endline survey and post-implementation interviews.

Similar to the barriers to implementing EC, practitioners often raised a lack of capacity and time as a challenge to cascading the training, especially when their setting experienced lower staff-to-child ratios. Of those practitioners who reported challenges to cascading in the endline survey, the two most common challenges were part-time working hours of staff making it difficult to share learning (45%) and lack of time to plan for cascading (28%).

High staff turnover also posed a challenge, as new staff required individual time and support to learn EC strategies after formal cascading had taken place.

Some attempts at cascading were met with resistance from practitioners who were not part of the ECUK training. In the endline survey, 20% of practitioners trained by ECUK mentioned lack of interest from other staff as a barrier to cascading learning. In interviews, ECUK-trained practitioners mentioned that there was often a reluctance to learn new strategies if the practitioner had been in the role for a long time, where select staff had deeply ingrained habits and beliefs. One view among setting managers was that their older practitioners’ practice lacked emotional reflection and relied on more traditional, outdated methods.

Low staff confidence was also mentioned as a barrier to cascading learning, with practitioners who had not been trained directly by ECUK becoming disheartened when EC strategies did not yield positive results immediately, hindering future uptake.

Some children are not receptive to you when you empathise with them and this can make you feel not motivated to use the strategies with them. (Practitioner trained through cascading 3, Post-implementation interview)

Similarly, training observations showed that practitioners sometimes felt unsure or hesitant when using the EC framework, particularly during role-play activities. Many practitioners reported lacking confidence in sharing EC with colleagues without having the PowerPoint slides or resources available. We observed that trainers addressed this by suggesting practical strategies, such as demonstrating EC with a child while colleagues observe.

Finally, 7% of practitioners trained by ECUK reported that the lack of support from senior management at their setting had made it difficult for them to share learning with other staff members.

Future use of EC

In interviews, practitioners were asked about their intentions of using EC strategies in the future. All setting managers and practitioners, both directly trained and trained through cascading, stated that they intended to continue using EC strategies and would recommend them to others. The most popular strategies that practitioners mentioned that they would continue to use were the four steps of EC and the breathing techniques for regulation.

Setting managers discussed in interviews that they had plans to extend EC to other year groups at their nursery, with a focus on incoming reception classes. Settings also described a desire to extend the EC training to parents/carers to promote consistency in emotional support at home and in nursery, with some settings having already completed parent/carer sessions. Some practitioners also mentioned that they had shared their EC learnings with other settings, the CEO of their trusts, and their SPHs. Practitioners trained by ECUK expressed a desire for their colleagues to complete the full formal training, and they believed this would further strengthen practice and increase buy-in, especially when delivered by a professional:

I think sometimes hearing it from your own colleagues, [...] people aren't bothered. Whereas if they were hearing it from somebody else, who was an expert, perhaps some colleagues might put more weight on that and see it as really helping to develop their practice and us as a setting. (EC-trained practitioner 4, Post-implementation interview)

Perceived outcomes

This section covers the perceived outcomes of EC for practitioners, children, and settings. For this evaluation, perceived outcomes refer to practitioners' perceptions of the effects of the EC programme on themselves, children at their setting, and the setting overall. This section uses findings from post-intervention interviews with setting managers and practitioners, as well as data from the endline practitioner surveys to comment on the perceived outcomes that were achieved because of EC.

Overall, perceived outcomes for practitioners included improvements to practitioners' practice and ability to support children's PSED. Perceived benefits for children included improvements in emotional awareness, a greater ability to co- and self-regulate, and more positive interactions with peers. Additionally, settings reported instances of embedding EC into their culture and environment.

It is important to caveat that not all setting managers and practitioners in post-intervention interviews felt able to comment on the outcomes they were asked about. Additionally, practitioners were cautious about attributing observed outcomes for children directly to EC, as they highlighted that ages three to four years are a critical period of development for children, and many factors could have contributed to their emotional development. Therefore, while the intervention was perceived as adding value to children's emotional and behavioural development within settings, these findings support the impact evaluation findings of small or no impact on child-level outcomes that can solely be attributed to EC.

Perceived outcomes for practitioners

IPE RQ11: What are the perceived outcomes of the programme for practitioners?

Setting managers and practitioners all reported on outcomes for EC practitioners across a range of short-term and long-term outcomes, as outlined in the logic model. Overall, practitioners highlighted that they were more aware of children's emotions and how their own emotions and behaviour could impact children. Additionally, practitioners had learned and

used various EC strategies when they interacted with children and had managed their own self-regulation. Practitioners also reported that they had gained confidence to support children's PSED, and practitioners perceived being less stressed when dealing with children's challenging behaviours. Interestingly, practitioners had contrasting views on whether their relationships with children had improved.

A summary of practitioners' responses in the endline survey is shown in Figure 30⁴¹ for short-term practitioner outcomes and Figure 31 for long-term practitioner outcomes. Data on outcomes was only collected at endline to assess whether EC had led to these outcomes for practitioners.

Figure 30: Perceived short-term outcomes for practitioners, %

Base: EC group practitioners in the endline survey (n=267)

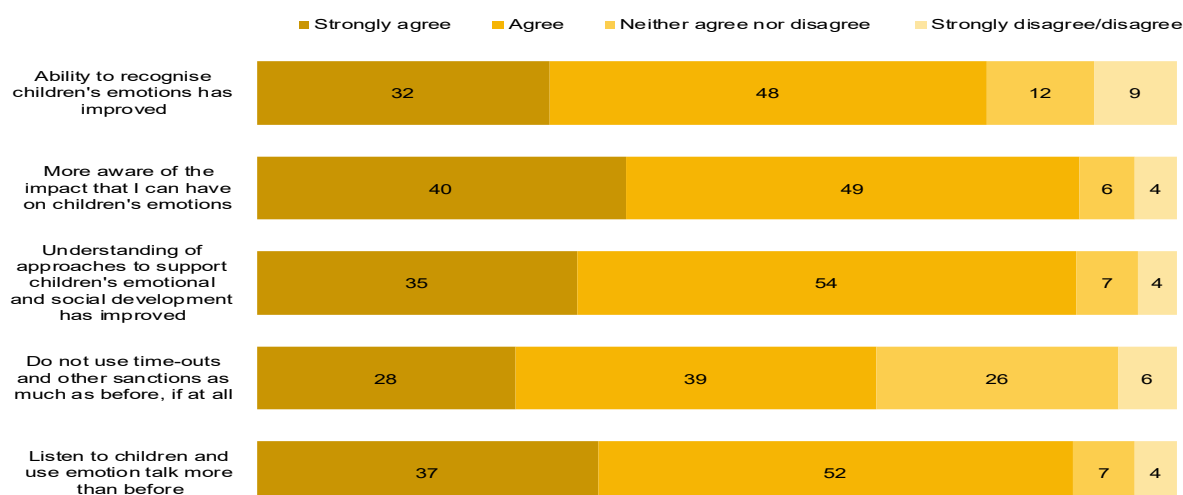
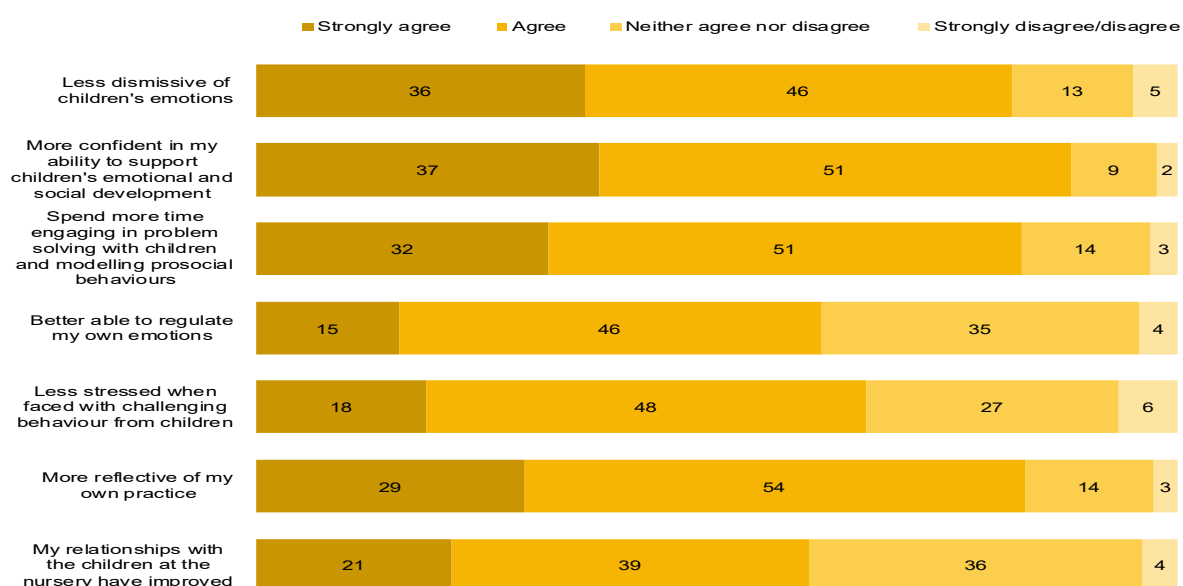


Figure 31: Perceived long-term outcomes for practitioners, %

Base: EC group practitioners in the endline survey (n=266)



⁴¹ In Figure 30, Figure 31, Figure 33, and Figure 34 some percentages will total 99% or 101% due to rounding.

Awareness of children's emotions

In interviews, setting managers and practitioners reported that they had a greater awareness of children's emotions. Similarly, in the endline survey, most practitioners (79%) 'agreed' or 'strongly agreed' that their ability to recognise children's emotions had improved, while 12% 'neither agreed nor disagreed' with this statement, and 9% 'disagreed' or 'strongly disagreed'. This finding supports the intended short-term outcome in the logic model of 'increased awareness of emotions in children like verbal/non-verbal/low level and escalating emotional behaviours'.

In interviews, setting managers and practitioners described three ways in which they were more aware of what children were feeling:

- They reported that they were better at understanding the reasons behind children's emotions.
- They recognised when children were more likely to experience emotional moments, for example, in the morning after being dropped off by their parents/carers.
- They were able to recognise how children expressed their emotions, such as with body language.

...having that understanding and recognising that, you know, it's not that they're just tired or just a bit fed up, there's more to it, they're a little person...their emotions are just as valid as adult ones. (EC-trained practitioner 4, Post-implementation interview).

Additionally, setting managers, EC-trained practitioners, and practitioners to whom training was cascaded discussed in interviews how their own emotions could impact children. They attributed this awareness to the training that they had received in EC, either directly or through trained staff at their settings. A large majority (90%) of practitioners in the endline survey reported that they were more aware of the impact that they can have on children. This supported the short-term outcome in the logic model: 'practitioners becoming aware of the impact their behaviour and emotions can have on children'.

Changes to practitioners' practice: strategies for interacting with children

Practitioners and setting managers reported that they had learned new strategies through EC, which they used in their daily practice when interacting with children and managing their own self-regulation. This supported the intended short-term and long-term outcomes of the intervention for practitioners.

Practitioners highlighted that the core benefit of EC was that it provided a toolkit of strategies for dealing with children's emotions. In the endline survey, a majority of EC practitioners (89%) 'agreed' or 'strongly agreed' that their understanding of approaches to support children's emotional and social development had improved as a result of EC training. Only 7% 'neither agreed nor disagreed' with this statement, and 4% 'disagreed' or 'strongly disagreed'. In post-intervention interviews, all practitioners described using various types of EC strategies with children, including:

- **Non-verbal techniques.** Such as breathing techniques like blowing bubbles, using visuals, 'colour monsters', or non-verbal emotional check-ins where children placed a sticker under the emotion they were feeling.
- **Verbal techniques.** Including naming emotions or encouraging children to talk about their emotions.
- **Changes in the setting's physical environment.** Such as creating calm and quiet spaces in the setting or using a calming corner as a space for children to go when they need to calm down.

In interviews, setting managers and practitioners elaborated how EC helped them to reflect on their own practice and provided them with a clearer framework of strategies. They also highlighted that EC provided a shared language for them to support children's emotional needs. Most (83%) practitioners in the endline survey 'agreed' or 'strongly agreed' that they were more reflective of their own practice as a result of EC.

Practitioners emphasised that overall, using EC strategies helped them to have more considerate communication with children and to better relate to them. Most (82%) practitioners in the endline survey 'agreed' or 'strongly agreed' that they

were less dismissive of children's emotions as a result of EC, while 13% 'neither agreed nor disagreed', and only 5% 'disagreed' or 'strongly disagreed'. This supports the long-term outcome in the logic model of 'practitioners using EC more and being less emotion dismissive'.

Additionally, 83% of practitioners in the endline survey 'agreed' or 'strongly agreed' that they spent more time engaging in problem-solving and modelling prosocial behaviours as a result of EC, while 14% 'neither agreed nor disagreed', and only 3% 'disagreed' or 'strongly disagreed'. This was in line with the logic model's long-term outcomes. In interviews, setting managers commented that using EC steps for problem-solving consistently had been highly beneficial for improving children's behaviour. For example, one setting manager described how using EC steps helped a child with SEND who was standing on a table and refusing to put on shoes to recognise that he does not enjoy PE and that this was upsetting him. After the practitioner discussed boundaries and the reasons why this behaviour was unsuitable with him, the child was able to then co-regulate and think of solutions. In another example, a child who pushed one of their peers off a climbing frame was reluctant to have a conversation about their behaviour. The child was not ready to speak until the third time the practitioner approached them. After discussing their behaviour using EC steps, this behaviour did not happen again.

It was nice that it gave us a structure with the four steps. For me, that was the benefit, it was in the structure, and I think that really supports my team by having that. (Setting manager 4, Post-implementation interview).

In addition to these strategies, practitioners highlighted how EC had shifted their approach to be more emotion focused, evidencing the short-term outcome of 'increased use of listening to children and using emotion talk'. Most practitioners (89%) in the endline survey 'agreed' or 'strongly agreed' that they were listening to children and using emotion talk more; only 7% 'neither agreed nor disagreed', and 4% 'disagreed' or 'strongly disagreed'. In interviews, EC-trained practitioners as well as practitioners trained through cascading outlined two ways in which their approach had become more emotion focused.

- Practitioners emphasised that they had moved from using distraction techniques to using direct emotional engagement based. There was an increased understanding among practitioners that distraction did not validate children's emotions or provide long-term co-regulation or self-regulation strategies.
- Practitioners understood that they did not need to solve conflict for children quickly and that it was better to take time to discuss children's behaviour and feelings with them.

It might take longer but it's a better outcome because I've listened to them and I've understood, or I've tried to understand their feelings and given them the time, whereas before I might not have given them the time. (Practitioner trained through cascading 2, Post-implementation interview)

Moreover, EC-trained practitioners highlighted various aspects of the training that helped them to implement EC strategies in their daily practice:

- **Relevance of the training.** Since the training was specific to practitioners working with three- to four-year-old children, this meant that the strategies practitioners learned were targeted towards the age group they worked with.
- **Toolkit of multiple strategies.** Having multiple strategies in their toolkit allowed practitioners to try out different strategies until they found one that worked for each child.
- **Example videos.** One view among practitioners was that it was helpful to use the wording from the example videos when interacting with children.

Strategies for own self-regulation

Practitioners also reported outcomes related to developing their personal self-regulation awareness and skills, which was a long-term outcome in the logic model. In support of this outcome, setting managers, directly trained practitioners, and practitioners trained through cascading highlighted in interviews that they were more aware of their own emotions and how they were feeling.

Practitioners further highlighted the need to identify when they or their colleagues were feeling overwhelmed or emotionally unbalanced, and to draw on appropriate self-regulation strategies in these scenarios. Specific strategies they mentioned included:

- taking a break or time out;
- letting a more 'regulated' colleague take over interacting with a child;
- using specific EC strategies such as breathing techniques; and
- seeking support from colleagues when needed.

It got me thinking about my own emotions and how, actually, maybe in certain situations I'm not best to deal with a certain situation, so it's best to get another member of staff in because they can relate more. Sometimes you can't manage your own emotions, let alone managing other people's emotions. (EC-trained practitioner 4, Post-implementation interview)

Practitioners attributed their improved awareness of their own and colleagues' emotions and use of self-regulation strategies to being more comfortable showing their emotions in front of colleagues and children as a result of EC training. They also mentioned that they had a greater awareness of reasons behind colleagues' behaviour which helped them to be more empathetic and understanding when their colleagues were emotional.

Findings from the endline practitioner survey largely supported this finding: 61% of practitioners 'agreed' or 'strongly agreed' that they were better able to regulate their own emotions as a result of EC. However, 35% 'neither agreed nor disagreed' with this statement, and 4% 'disagreed' or 'strongly disagreed'.

Confidence to support children's PSED

In alignment with the matching long-term outcome in the logic model, setting managers, directly trained practitioners, and practitioners trained through cascading highlighted that they were more confident in supporting children's PSED, and in using EC strategies. Most (88%) practitioners in the endline survey 'agreed' or 'strongly agreed' that they were more confident in their ability to support children's emotional and social development as a result of EC. Only 9% 'neither agreed nor disagreed' with this statement, and 2% 'disagreed' or 'strongly disagreed'.

In interviews, EC-trained practitioners mentioned specific EC strategies that they were more confident in using. For example, discussing emotions with children rather than resorting to distraction, validating children's positive and negative emotions, problem-solving emotions with children, and applying self-regulation techniques on themselves. Trained practitioners also described instances of feeling more confident in dealing with children's challenging behaviour, and to support children with SEND.

Practitioners attributed this increase in confidence to four factors:

- **EC tools and resources.** EC provided the tools, resources, and information for practitioners to more easily deal with children's challenging behaviour and emotional responses.

...having the resources you feel you've got armour you can tackle anything. (EC-trained practitioner 4, Post-implementation interview)

- **Observing the impact on children.** Practitioners noticed the positive impact that EC had on children, for example, that they were quicker to calm and could more independently self-regulate. This also supported the outcomes for children in the logic model: 'children calm more quickly', and 'improvement in children's ability to self-regulate'. Please see the section 'Perceived outcomes for children' for more detail on these outcomes.
- **Theoretical background.** Practitioners described that EC allowed them to understand the science and reasons behind children's emotions, which made them more confident in their practice.

- **Support from colleagues.** Practitioners discussed and reaffirmed best practice of EC with their colleagues, which made them feel more comfortable with implementing EC.

Relationships between practitioners and children

The logic model also indicates that practitioners should aim for ‘decreased conflict and increased closeness between practitioners and children’ as an intended outcome. There was no clear consensus on whether this outcome had been achieved as a result of EC.

Findings from the practitioner endline survey reflected contrasting views: Around half of the practitioners (51%) ‘agreed’ or ‘strongly agreed’ that children had less conflict/disagreements with themselves or other practitioners at the setting as a result of EC. But a large proportion (45%) ‘neither agreed nor disagreed’ with this statement, and 5% ‘disagreed’ or ‘strongly disagreed’. Also, 60% of practitioners ‘agreed’ or ‘strongly agreed’ that their relationships with children at the nursery had improved, and that there was less conflict and more closeness as a result of EC. However, 36% ‘neither agreed nor disagreed’ with this statement, and 4% ‘disagreed’ or ‘strongly disagreed’.

According to ECUK-trained practitioners, one reason why practitioners described experiencing no change in their relationship with children was the lack of time for implementation. They stated that because EC was implemented halfway through the academic year due to the nature of the trial, there had not been enough time for EC to influence children enough to have an impact on their relationships with practitioners. It is worth noting that ECUK highlighted in their discussions with the research team that it could take several years of consistent implementation of EC approaches to affect the socio-emotional outcomes and behaviour of children in a substantial way.

On the other hand, in interviews, practitioners described some ways in which their relationships with children had improved. Trained practitioners and practitioners trained through cascading expressed that children were more willing and confident to talk about their emotions with adults, and when doing so they were better able to explain what they were feeling. They attributed this change to EC but caveated that there could be other factors at play.

They use their words more now to describe how they’re feeling and how the other person has made them feel, which then leads on to problem-solving and then ending that with a happy child at the end. (EC-trained practitioner 5, Post-implementation interview)

In the endline survey, most practitioners (76%) ‘agreed’ or ‘strongly agreed’ that children had more high-quality emotional communication with staff as a result of EC, while 23% ‘neither agreed nor disagreed’ with this statement, and only 1% ‘disagreed’ or ‘strongly disagreed’.

In interviews, practitioners attributed this improvement in their relationship with children to two changes in their interactions:

- As a result of EC, practitioners mentioned that they had a greater understanding of children’s needs and emotions and were better equipped to show children understanding and empathy.
- In some instances, practitioners described that they were able to give children space until they were ready to share how they are feeling. This had helped children feel safe discussing their emotions with practitioners and to trust adults more after they realised adults were taking the time to listen to them.

Emotion Coaching has just opened my eyes a little bit more as to using a different language and [children] need that support, rather than [their emotions] be dismissed and not talked about. (Practitioner trained through cascading 3, Post-implementation interview)

Other outcomes

In interviews, setting managers, EC-trained practitioners, and practitioners trained through cascading described feeling calmer, more prepared, and less stressed when dealing with children’s challenging behaviours. Similarly, 66% of practitioners in the endline survey ‘agreed’ or ‘strongly agreed’ that they felt less stressed when faced with challenging behaviours from children as a result of EC. This supports the long-term outcome in the logic model of ‘practitioners facing

less stress in the face of challenging behaviour'. However, 27% of practitioners 'neither agreed nor disagreed' with this statement, and 6% 'disagreed' or 'strongly disagreed'.

Another short-term outcome for practitioners in the logic model was 'decreased use of behaviourist methods (e.g. time out/sanctions)'. More than half of practitioners (67%) in the endline practitioner survey 'agreed' or 'strongly agreed' that as a result of EC, they did not use time-outs or other sanctions as much as before, if at all. However, 26% 'neither agreed nor disagreed' with this statement, and 6% 'disagreed' or 'strongly disagreed'.

Differences in outcomes between practitioners

RQ11a: Are there any differences in outcomes for those practitioners who are trained through the cascading model of the programme?

This section covers variation in outcomes for practitioners, first in terms of those who were directly trained or trained through cascading, and then in relation to level of experience and qualification.

Trained versus cascaded

Insights from post-intervention interviews with setting managers and practitioners suggested that practitioner training status influenced some outcomes.

First, most setting managers and practitioners perceived themselves to have more confidence overall. They mentioned that the training made it easier for them to build their confidence more quickly when it came to delivering EC in their settings. Additionally, some EC-trained practitioners and setting managers believed that because of attending EC training, they had a greater understanding of the scientific foundations of EC, as well as a shared understanding of the EC approach with those who also attended the training. Additionally, they discussed how practitioners trained through cascading had to rely on learning through EC-trained practitioners' role modelling, and they became discouraged more easily when they did not experience an immediate positive outcome with children when using EC strategies.

Second, setting managers and trained practitioners observed that compared to trained practitioners, practitioners trained through cascading were more likely to apply EC strategies inconsistently, and had a shallower knowledge of EC as some information was inevitably missed when being cascaded.

When you're passing it on, you don't always get the full picture. (EC-trained practitioner 6, Post-implementation interview)

Overall, trained practitioners were slightly more likely to 'agree' or 'strongly agree' in the endline survey with statements about positive outcomes for practitioners, as shown by Table 27.

Table 27: Agreement with practitioner outcome statements, by ECUK-trained practitioners and those trained through cascading

Practitioner outcome statement from survey	Trained by ECUK			Trained through cascading		
	Strongly agree	Agree	Total	Strongly agree	Agree	Total
As a result of EC, my ability to recognise children's emotions have improved	39%	43%	82%	21%	54%	75%
As a result of EC, I am more aware of the impact that I can have on children's emotions	48%	43%	91%	28%	59%	87%
As a result of EC, I do not use time-outs and other sanctions as much as before, if at all	36%	34%	70%	16%	48%	63%

Practitioner outcome statement from survey	Trained by ECUK			Trained through cascading		
	Strongly agree	Agree	Total	Strongly agree	Agree	Total
As a result of EC, I listen to children and use emotion talk more than before	46%	45%	91%	23%	62%	85%
As a result of EC, I am more confident in my ability to support children's emotional and social development	49%	43%	92%	19%	63%	82%
As a result of EC, my understanding of approaches to support child's emotional and social development has improved	47%	44%	91%	16%	70%	86%
Base	164			100		

Level of experience and qualification

One view among EC-trained practitioners in post-intervention interviews was that those who attended the training tended to be more qualified. They mentioned that this was because at least one member of the SLT in each setting was required to attend EC training on behalf of their setting. Our survey findings supported this view. Table 28 shows distributions of endline survey respondents by level of qualifications and years of experience among those trained by ECUK and trained through cascading.

Table 28: Practitioners' training status, by highest UK early years or teaching-related qualification, by EC group only

Qualification level	Attended training (ECUK-trained)	Did not attend training (learned through cascading)
Level 6 or higher	45%	16%
Level 5	6%	3%
Level 4	5%	3%
Level 3	41%	55%
Level 2	1%	9%
Level 1	0%	0%
Overseas qualification(s)	0%	0%
No early years or teaching qualification	2%	14%
Base	163	104

Table 29: Practitioners' training status, by years of experience working in the early years sector, by EC group only

Years of experience	Attended training (ECUK-trained)	Did not attend training (learned through cascading)
Ten years or more	67%	48%
Six to nine years	13%	13%
Three to five years	13%	17%

Years of experience	Attended training (ECUK-trained)	Did not attend training (learned through cascading)
Under three years	7%	22%
Base	163	104

However, another view among trained practitioners was that they did not perceive there to be any difference in outcomes based on staff's level of qualifications.

Setting managers and practitioners described that practitioners' level of experience and qualification impacted how open-minded practitioners were about using EC strategies. According to some setting managers, better qualified practitioners were more reticent to use EC strategies and needed more encouragement and support to shift away from using outdated methods like distraction. Additionally, less experienced practitioners were generally more open to using EC strategies as they had not yet developed pre-existing habits and routines.

Perceived outcomes for children

IPE RQ12: What are the perceived outcomes of the programme for children, including for their self-regulation?

Setting managers and practitioners reported on a range of outcomes for the children in their setting. Practitioners observed improvements in children's emotional awareness and ability to co-regulate and self-regulate. Additionally, they described that EC had benefited children's peer interactions.

However, some practitioners emphasised that they had found it difficult to determine whether children's outcomes could be attributed to EC as age three to four is a critical time for children's development.

A summary of practitioners' responses in the endline survey is shown in Figure 32 for short-term child outcomes, and Figure 33 for long-term child outcomes.

Figure 32: Perceived short-term outcomes for children, %

Base: EC group practitioners in the endline survey (n=265)

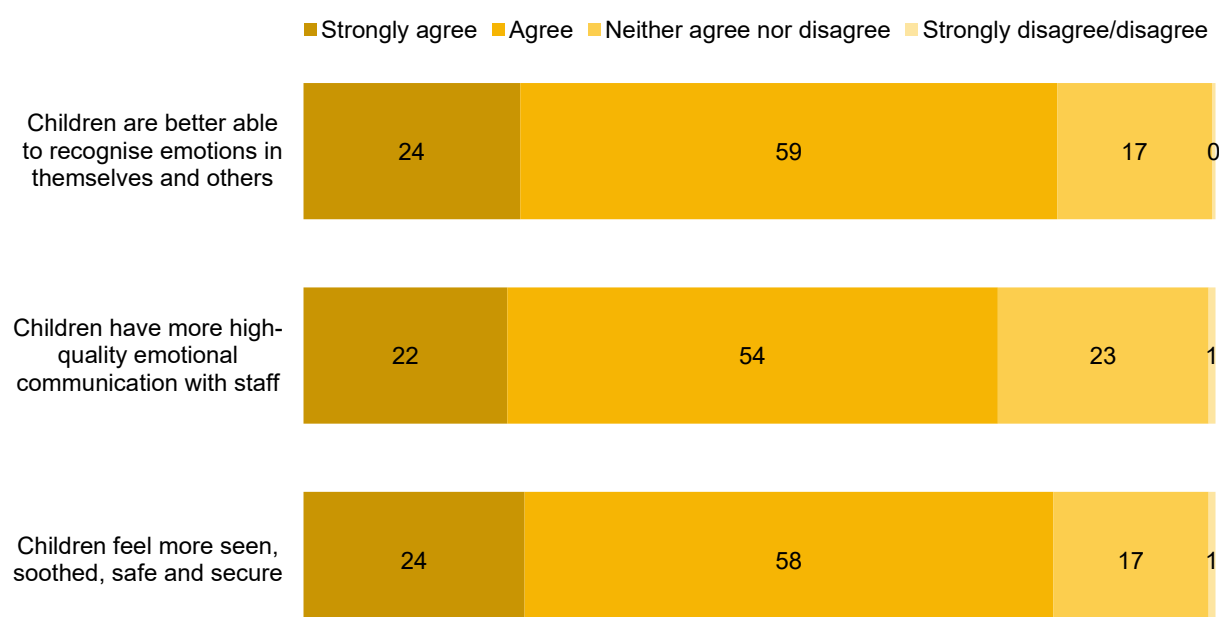
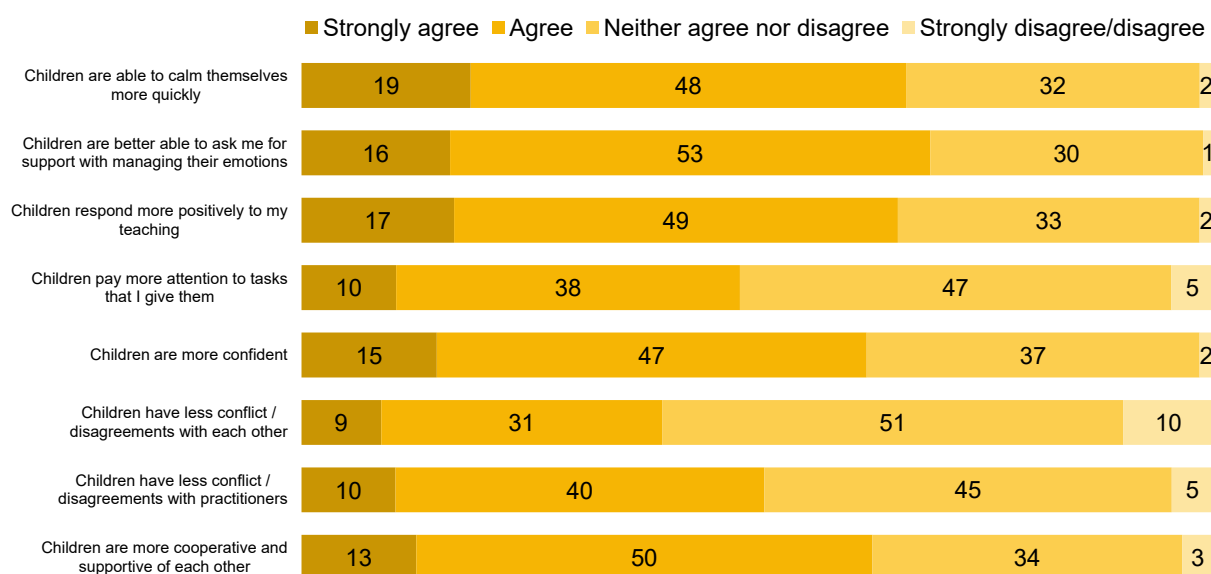


Figure 33: Perceived long-term outcomes for children, %

Base: EC group practitioners in the endline survey (n=264)



Children's awareness of emotions

A short-term outcome for children in the logic model is 'children understand emotions in themselves and others'. In line with this outcome, setting managers and practitioners perceived improvements in children's awareness of their own emotions and those of others.

In the endline practitioner survey, most practitioners (83%) 'agreed' or 'strongly agreed' that children were better able to recognise emotions in themselves and others as a result of EC, while 17% 'neither agreed nor disagreed' with this statement.

In interviews, practitioners reported children being aware of peers' emotions, as well as able to recognise the reasons behind other children's emotions and behaviour.

[S]ay one child has hit another because they took their toy, they're able to process that a bit more in terms of thinking, 'Yes, I did do something. So yes, they hit me, but they did that because they were feeling angry. If I hadn't taken the toy, they wouldn't be feeling angry.' They seem more able to see that whole picture, almost unpicking it. We try and unpick that together with the children involved. (EC-trained practitioner 7, Post-implementation interview)

Practitioners observed that children appeared to be more aware of adults' emotions. For example, in one instance, a child checked in with a practitioner about how they were feeling when the child recognised how the practitioner's tone of voice had changed.

Children's self-regulation

A long-term outcome in the logic model is 'improvement in children's ability to self-regulate (when dysregulated, able to employ strategies to support regulation)'. In line with this outcome, setting managers and practitioners identified improvements in children's ability to self-regulate.

In interviews, practitioners reported that children asked for adults' support with managing their emotions and were more confident to seek adult support. Most (69%) practitioners 'agreed' or 'strongly agreed' that children were better able to ask them for support with managing their emotions as a result of EC, while 30% 'neither agreed nor disagreed' with this statement, and 1% 'disagreed' or 'strongly disagreed'.

Additionally, practitioners listed the use of various co-regulation and self-regulation strategies that children asked adults to help them use to support their emotional regulation, including: a chat or a cuddle, calming socks, happy jars, calming music or songs, going to the calming corner, taking some time alone, or playing with sensory toys.

Just reflecting on it with them and saying, 'Well done, that's really good that you went...into the calming corner. You felt you needed to and that you could calm yourself down and then come back to playing.'
(Practitioner trained through cascading 2, Post-implementation interview)

Practitioners also observed that some children progressed from co-regulation to more independent self-regulation. For example, one practitioner recounted a child who struggled with being separate from their parent/carer in the morning. This child began by seeking adult support for emotional validation and asking for a certain book about mummy returning to be read to them. By the spring term, the child was engaging with the book by themselves and drawing pictures for their parent/carer and eventually no longer needed support after being dropped off at nursery.

Practitioners partly attributed improvements in children's ability to self-regulate to how they had shifted their practice from dismissing children's feelings to listening and validating their emotions, alongside more consistent practitioner responses and use of regulation strategies across the setting.

Practitioners also observed that children calmed down more quickly and that emotional outbursts were shortened. Similarly, in the endline survey, 66% of practitioners 'agreed' or 'strongly agreed' that children were able to calm themselves more quickly as a result of EC. This supports the long-term outcome in the logic model of 'children calm more quickly', while 32% 'neither agreed nor disagreed' with this statement and 2% 'disagreed' or 'strongly disagreed'.

Children's behaviour and relationships with other children

'Improved relationships with peers' is a long-term outcome for children in the logic model. In line with this outcome, practitioners largely observed improvements in children's relationships with other children.

In interviews, practitioners reported that conflict resolution and sharing had improved during children's play. For example, practitioners observed children recognising when other children were upset from not having a turn with a toy and identifying the emotion the other children were feeling (sadness) and then sharing their toy. Most practitioners (63%) in the endline survey 'agreed' or 'strongly agreed' that children were more cooperative and supportive of each other as a result of EC, while 34% 'neither agreed nor disagreed' with this statement and 3% 'disagreed' or 'strongly disagreed'. This supported the long-term outcome of 'Improved prosocial behaviour'.

Practitioners also discussed how children role-modelled emotional regulation and supported other children with regulation, such as by talking about their feelings and emotions with one another. For example, a practitioner recounted overhearing a little boy who, if he saw conflict between two friends, tried to tell them to 'talk about it'. This boy listened to each side of the story and came to a conclusion of how to help solve their conflict.

I think they're just getting really good at talking to each other and explaining that, 'I don't like what you're doing right now, it's making me feel sad or angry' and they're getting so much better at coming to the solutions independently. (Practitioner trained through cascading 3, Post-implementation interview)

However, some setting managers and practitioners were less certain that EC had influenced children's conflict or disagreements: 51% of practitioners 'neither agreed nor disagreed' that children had less conflict/disagreements with each other as a result of EC, while 40% 'agreed' or 'strongly agreed' and 5% 'disagreed' or 'strongly disagreed', as reported in the endline survey.

Differences in outcomes between children

IPE RQ12a: Are there any differences in outcomes for children from disadvantaged backgrounds?

This section covers differences in outcomes for children, first exploring outcomes for children with additional needs, and then in relation to parental attitudes.

Outcomes for children with additional needs

Practitioners had mixed views when reflecting on outcomes for children with additional needs in post-intervention interviews. These views were raised in interviews by individual participants rather than representing a dominant perspective across settings so they should be interpreted as illustrative examples of how EC was experienced in different contexts.

One view was that there were no benefits specific to children with additional needs. Setting managers and practitioners reported that it was difficult to use EC with children who had learning difficulties or additional needs as they could act unpredictably or exhibit heightened emotions.

One participant described that they found it difficult to use EC with children who exhibited more extreme challenging behaviours or who acted more violently. This participant also found it unclear how to use EC with non-verbal children as they thought it was more difficult to communicate using EC strategies with them.

Additionally, some practitioners highlighted that not all strategies would work for all children with additional needs and learning difficulties. Practitioners mentioned that because children could have different needs, they needed to employ different strategies to meet those different needs.

However, one setting manager participant highlighted that their setting used EC more with children with additional needs as they were more likely to experience dysregulation (e.g. inability to control or regulate their emotions) in their home life.

Other practitioners we interviewed, however, observed various positive changes in children with additional needs, such as being more aware of their emotions and more willing to talk about how they were feeling. According to one practitioner, telling children with additional needs, 'I understand what you're saying', helped them feel heard and validated. One setting manager described that they found some EC techniques that worked better for children with additional needs and learning difficulties at their setting, such as visual cards, modelled language, and acting out emotions with puppets to ensure mutual understanding, and they also used the EC-provided scripts when problem-solving.

Outcomes for children depending on parental attitudes

In interviews, practitioners had mixed views on whether outcomes for children differed depending on parental attitudes. These views were each reported in a small number of interviews and no single perspective emerged as dominant. One view was that children's outcomes did not change depending on parental attitudes. In another view, the consistency of parents/carers being open to EC and using EC at home contributed to positive outcomes for children, especially for those with more challenging behaviours.

Perceived outcomes for settings

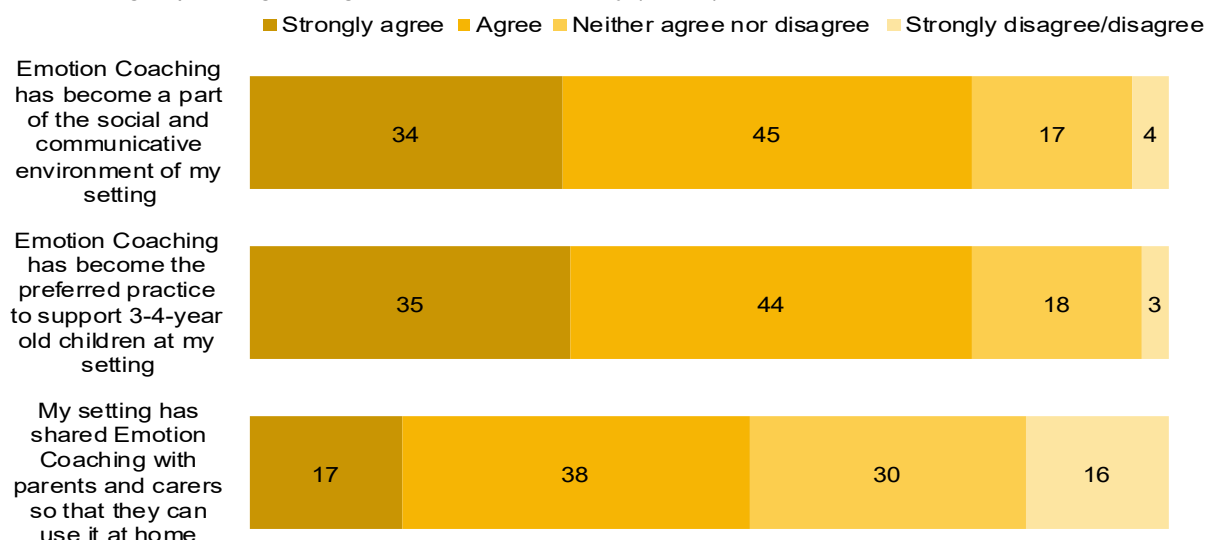
IPE RQ13: What are the perceived outcomes of the programme at the setting level?

In the endline survey and interviews, only setting managers were asked questions about setting outcomes. While practitioners were not explicitly asked about setting outcomes in interviews, some commented on these.

A summary of setting managers' responses for setting outcomes in the endline survey is shown in Figure 34.

Figure 34: Perceived outcomes for settings, %

Base: EC group setting managers in the endline survey (n=103)



Practitioners and setting managers reported various setting-level outcomes:

- Consistency of using a shared approach.** One view among practitioners in interviews was that because of using EC, practitioners throughout their settings had formulated a shared approach. This resulted in children experiencing a consistent approach when interacting with all practitioners at their settings. This supported the long-term outcome for settings in the logic model of 'EC becoming the consistent and preferred practice to support all three- to four-year-old children'.

We're all following the exact same steps now, whereas before we might've had three different people dealing with one situation in three different ways, whereas now if a situation arises, the likelihood is all three members of staff would approach it in the exact same way. So, it's brought around a level of continuity. (Practitioner trained through cascading 4, Post-implementation interview).

Most setting managers (79%) 'agreed' or 'strongly agreed' that EC had become the preferred practice to support all three- to four-year-old children at their settings, 18% 'neither agreed nor disagreed' with this statement, and only 3% 'disagreed' or 'strongly disagreed'.

- Sharing EC with parents/carers.** In interviews, setting managers and practitioners described that they shared EC learning with parents/carers and encouraged parents/carers to use EC with their children at home. A little more than half (54%) of setting managers 'agreed' or 'strongly agreed' that their setting had shared EC with parents/carers so that they could use it at home, 30% 'neither agreed nor disagreed' with this statement, and 16% 'disagreed' or 'strongly disagreed'. This evidence supports to an extent the long-term logic model outcome of 'settings sharing EC with parents/carers and shared practice developing between home and setting'.
- EC integrated into setting environment.** Most (79%) setting managers 'agreed' or 'strongly agreed' that EC had become a part of the social and communicative environment of their setting, 17% 'neither agreed nor disagreed' with this statement, and 4% 'disagreed' or 'strongly disagreed'. This aligns with the long-term outcome for settings in the logic model: 'social and communicative environment of the setting becomes one where children experience EC'.
- EC accreditation.** In the endline survey, more than a quarter (27%) of trained practitioners reported that they wanted to apply for EC accreditation to become a practitioner trainer. Moreover, more than half (52%) of setting managers reported that their setting wanted to apply for EC accreditation to become an EC organisation. It is worth noting that participation in accreditation was optional and not required as part of the programme.

*Differences in outcome by setting type***IPE RQ13a:** Are there any differences in outcomes between school-based and PVI settings?

Setting managers from school-based settings were more likely to 'agree' or 'strongly agree' that EC had become preferred practice and a part of their settings' environment than setting managers from PVI settings as shown in Table 30. More than half of the setting managers from both PVI and school-based settings reported that they shared EC with parents/carers.

Table 30: Agreement with setting outcome statements, by setting managers from PVI and school-based settings

Setting outcome statement from survey	PVI setting managers			School-based setting managers		
	Strongly agree	Agree	Total	Strongly agree	Agree	Total
EC has become a part of the social and communicative environment of my setting	33%	40%	73%	35%	53%	88%
EC has become the preferred practice to support three- to four-year-old children at my setting	38%	37%	75%	30%	55%	85%
My setting has shared EC with parents and carers so that they can use it at home	25%	29%	54%	3%	53%	55%
Base	63			40		

Unintended consequences

Unintended consequences are defined as positive or negative changes that are not detailed in the logic model or programme materials, but which emerged through the IPE findings.

In interviews, setting managers and practitioners did not directly mention any negative consequences for practitioners or children of taking part in EC. One view among practitioners was that using EC meant that they spent more time with specific children, which could lead to the other children feeling left out. In addition, findings presented earlier in the report indicated that children with additional needs experienced less consistent benefit from EC, particularly where practitioners felt that the strategies did not work for children with additional needs. This represented an unintended consequence where some children benefit more than others from the programme.

Practitioners and setting managers also described some unintended positive outcomes for their settings:

- **Development of policies and procedures.** Practitioners and setting managers discussed that their settings were planning to update setting policies and procedures to include EC principles and strategies. For example, practitioners described plans to include EC in their setting's behavioural policy so that before practitioners refer a situation to the headteacher/setting manager, they could ensure that they had followed EC steps and strategies.
- **Calmer atmosphere.** Practitioners and setting managers mentioned that the EC strategies had helped create a calmer atmosphere in their settings.
- **Positive staff culture.** Practitioners and setting managers reported that staff were more close-knit and had stronger working relationships in general and were more positive about managing children's behaviours as a result of EC.

Usual practice

IPE RQ8: How is the programme different to usual practice?

This section outlines the typical approaches to children's socio-emotional development in practice as usual group and EC group settings prior to and during the delivery of the EC programme. It explores the extent to which existing approaches to socio-emotional development differed from EC. Understanding the difference between usual practice and the EC programme helps us interpret the contribution it made to the observed and perceived outcomes.

Setting managers and practitioners described their typical strategies for supporting emotional development in interviews and surveys. In the case of EC group settings, they compared their existing strategies with EC techniques.

Usual approaches to socio-emotional development

In the baseline survey, we asked practitioners what strategies they had used to help regulate children's emotions and behaviour at their settings. The usual approaches to socio-emotional development reported by both EC and practice as usual groups were as follows:

- **Modelling positive behaviour.** Such as sharing toys with children to encourage turn-taking (97%).
- **Setting clear rules.** About acceptable and unacceptable behaviour in the nursery environment, for example, rules against children hitting each other (93%).
- **Creating calm, safe, and predictable environments.** With consistent routines to support children's confidence (92%).
- **Recognising and responding to children's emotions.** Including helping them identify and label their feelings (90%).
- **Using praise and rewards.** To reinforce positive behaviour, such as giving stickers (75%).
- **Applying sanctions.** To discourage inappropriate behaviour, for example, removing a child from the room (22%).
- Other types of approaches (mentioned by 8% of respondents in total) focused on actively teaching **emotional regulation and conflict resolution skills**, often utilising a Thrive or HighScope model (discussed later in this section). They emphasised acknowledging and helping children process their emotions, using techniques like allowing children time to think instead of relying on physical rewards.

In the endline survey, we asked setting managers whether their setting had used any specific interventions that targeted three- to four-year-old children's self-regulation, behaviour, and socio-emotional development during the school year in which EC was being administered.⁴² For practice as usual settings, a little more than half (56%) stated that they had not used any specific interventions, while 44% of practice as usual setting managers had used specific interventions. Some of the specific interventions that were mentioned as being used included: thrive; restorative practices; and using regulation zones to make children feel calm.

In the EC group settings, a majority of managers (75%) stated that they had not used specific interventions (excluding EC). However, a quarter (25%) reported that they had continued to use specific PSED interventions alongside EC. When asked if their setting would continue to use these interventions in the future, 96% of EC group setting managers reported that they would do so, indicating that these existing strategies were working well for their settings.

Both EC and practice as usual group settings' usual approaches were broadly in line with the EC intervention. A large proportion of settings were modelling positive behaviour and recognising children's emotions as a part of their usual

⁴² Early years settings are expected (under the EYFS framework) to support children's emotional development, self-regulation, and understanding of feelings as a part of their provision.

practice, which are methods that are in line with expectations from the EC model. Additionally, sanctions to discourage inappropriate behaviour was the least common way to manage children's behaviours and emotions, which indicated that there might be an awareness among settings that other approaches were more suited to their practice.

Additionally, based on information from interviews and surveys, other specific interventions that settings adopted as part of their usual practice can be classified as follows. We have highlighted the key similarities and differences of these interventions compared to the EC programme

- **HighScope conflict resolution model.** In this model, practitioners followed a six-step approach to conflict resolution (HighScope Educational Research Foundation, 2013). This included engaging children calmly, acknowledging emotions, supporting emotions, providing emotive language, learning about the conflict, looking for solutions with the child, and confirming the solution. In interviews, practitioners from the EC group mentioned that they had previously used or continued to use this model, alongside EC. They viewed this method as child-led, promoting independence and resilience. While practitioners noted that HighScope model was similar to EC because of its focus on problem-solving, some practitioners found HighScope overwhelming due to its emphasis on speed which contradicts EC's more reflective pace.
- **Curriculum-based PSED.** The baseline survey found that practitioners in the EC and practice as usual groups implemented curriculums that emphasised understanding the emotions behind children's actions. This emphasis on emotional awareness mirrored EC. However, in endline interviews, setting managers in the EC group thought the programme offered more opportunities for reinforcement and validation of children's emotions.
- **'Thrive' and 'restorative practice' training.** In this method, practitioners used a simple emotional rating scale (from 1 to 5) at the start of the day to assess children's emotional states (The Thrive Approach, 2022). In interviews, setting managers described this approach as a form of 'restorative practice' which is a method that emphasised emotional awareness, validation, and conflict resolution through open dialogue. They noted the intervention as strongly aligned with EC, particularly regarding emotional regulation among children.
- **EYPDP.** Practitioners in baseline and endline surveys identified the EYPDP as a form of continuing professional development (CPD) they had undertaken. Aimed at those working with children aged two to four, the programme covered early maths, communication and language, and PSED (DfE, 2022). In interviews, practitioners mentioned that the PSED module aligned closely with EC principles and emphasised emotional awareness, self-regulation, and supportive interactions.
- **Relational approach.** Setting managers in interviews reported using a relational approach, where practitioners used narrative scripts to guide children through the process of problem-solving. They identified similarities between this approach and EC, particularly in its principles and allowance for reflection.

Interviews and surveys with setting managers and EC-trained practitioners suggested that there were some differences in the EC approach and their usual approaches. At times, settings took a more informal approach to socio-emotional development, often at the discretion of individual practitioners. Some trained practitioners reported that they frequently relied on surface level strategies, such as distraction, as an immediate response to difficult emotions. In interviews, they reported that as usual practice, they would not discuss emotions with children and instead focused on children's behaviour.

When asked about providing written feedback to parents/carers about their child's emotional development (via an app, a home-setting communication book, or email/letter) at baseline, most practitioners (62%) had provided such feedback. Also, a majority of practitioners (80%), reported having discussions with parents/carers of three- to four-year-olds regarding their child's emotional development, 45% reported discussing this regularly (at least once a month), and 35% discussed it during scheduled parent/carer consultations. However, 20% only discussed emotional development with parents/carers when there was an issue that needed to be resolved.

CPD training

The baseline survey also asked setting managers whether staff had received CPD training to help them support children's PSED over the last three years. Most setting managers (63%) said staff had not received any such training, while 37% mentioned that staff had received it. For those who had received CPD training, this had included compliance training like onboarding, health and safety, diversity, as well as skill-based training focused on development of interpersonal abilities such as leadership, soft skills, and role-specific programmes.

There were some differences in how setting managers in the EC and practice as usual groups reported their participation in CPD training at endline. Overall, most setting managers said their staff had not attended CPD training for PSED in the past three years. This was more common in the practice as usual group, where 69% reported no recent training, compared with 57% in the EC group.

Perceived effectiveness of current approaches

Satisfaction with current approaches to supporting children's emotional development was high in both the EC and practice as usual group settings at endline. Most (94%) of practice as usual group setting managers reported that they found their usual approaches either very or somewhat effective. Only 4% found them somewhat ineffective, and 2% found them neither effective nor ineffective.

In the EC group, similarly, most managers (89%) reported that the approaches were very or somewhat effective, while 4% said they were somewhat ineffective, and 7% reported that they were neither effective nor ineffective.

Additionally, in the endline survey, the majority of practitioners in the EC group reported that the EC strategies were similar to their other strategies, suggesting alignment with existing practice. Most (84%) respondents found the EC approach to be either somewhat similar (57%), mostly similar (26%) or identical (1%) to the strategies they had used previously. Only a small minority (16%) considered the EC strategies to be mostly or completely different from their usual strategies.

Prior awareness of EC

Around a quarter (26%) of practitioners from the EC and practice as usual group settings in the baseline survey indicated that they had been aware of EC before taking part in the programme, while 74% had not heard of EC.

Of those who were aware of EC, practitioners reported different sources of prior exposure:

- **Hearing about EC from colleagues** was the most common source of awareness (43%).
- Knowing of EC **being used in other schools or nurseries** (36%).
- Seeing EC mentioned in **professional newsletters** (26%).
- Learning about EC through **media sources**, such as social media, television, or newspapers (22%).
- Encountering **EC literature during professional qualifications** (18%).
- Receiving **information from the local authority** about EC (14%).

Additionally, just over a quarter (28%) of those practitioners from the practice as usual group who were aware of EC had previously attended training in EC. Similarly, 27% of practitioners from the EC group who were aware of EC had previously attended training in EC.

Of those who had attended EC training from the practice as usual group, 18% had attended this training in the 12 months prior to the EC intervention starting, while 82% had attended EC training more than 12 months ago. Of those who had attended EC training from the EC group, 23% had attended this training in the 12 months prior to the EC intervention starting, while 77% had attended EC training more than 12 months ago.

Overall, the findings indicated that usual practice in both EC and practice as usual settings commonly included approaches aligned with key elements of EC, such as recognising children's emotions, modelling positive behaviour, and supporting emotional regulation. Some settings also reported using other interventions targeting socio-emotional development. Practitioners and setting managers perceived these approaches to be effective.

In addition, most EC-trained practitioners reported that EC strategies were similar to, or built on, their existing practice. This suggested a degree of alignment between EC and usual practice. This alignment should be taken into account when interpreting the impact findings.

Cost

Table 31 summarises the added costs associated with delivering/implementing EC for: i) the delivery team; and ii) for early years settings relative to practice as usual. For settings, the activities covered represented the *added* time associated with the programme, over and above practitioners' usual responsibilities. The costs reported are for the programme as implemented in the trial.

Following the EEF guidance (EEF, 2023) and the ingredients method (Levin *et al.*, 2017), we present the following cost categories, including:

- personnel costs for preparing for programme delivery (ECUK);
- personnel costs during training for implementation of the programme (ECUK and settings);
- personnel costs for the implementation of the programme (ECUK and settings); and
- facilities, equipment, and materials for implementation.

Table 31: Summary of cost ingredients

Category	Cost ingredient / activities	Cost incurred to	Start-up or recurring cost	No. of staff completing activities	Average time spent per staff member	Total time spent	Estimated total cost (5% VAT included)	Comments and detail of calculations (e.g. breakdowns and assumptions)
Personnel costs for preparing for programme delivery	Developing EC training materials for practitioners, scheduling training sessions	ECUK ^a	Start-up	7	40.5 hours	283.5 hours	£16,320.04	Includes: setting up of project invoicing and tracker, including guide for team support; project manager liaising with settings/SPHs; and finance administration
Personnel costs during training for implementation of the programme	Delivering EC training to practitioners, including follow-up workshops: two-day online training sessions in November 2024, and three online workshop sessions in December 2024 – January 2025	ECUK	Start-up	9	72.59 hours	653.32 hours	£76,432.62	Includes: training administration support; project manager liaising with settings/SPH; and finance administration
	Paid cover while practitioners attend EC training sessions	Settings	Start-up	n/a	n/a	2.82 days (21.15 hours) per setting	£395 per setting	Reported by setting managers in the endline practitioner survey as the total paid cover required at their setting (see section ‘Paid cover during training’)
Personnel costs for the implementation of the programme	Managing the implementation of the programme, ongoing support to schools	ECUK	Recurring	8	21.21 hours	169.7 hours	£11,147.95	Includes: implementation conversation, one per setting; project manager liaison with settings/SPHs; and finance administration
	Extra time spent by practitioners: • using EC resources, • cascading EC practices at the setting	Settings	Start-up	2 ^b	1.7 hours using EC resources; 2.5 hours cascading EC practices	4.2 hours per practitioner, 8.4 hours per setting (assuming two practitioners)		Estimation uses average reported time spent on those activities by practitioners in the endline survey (see section ‘Extra time implementing EC’)
Facilities, equipment, and materials for implementation	E.g. printing EC materials and teacher resources	ECUK	Start-up	n/a	n/a	n/a	£3,054.04	Includes: copy of the EC book for all training participants and one book per setting

^a Costs to ECUK are based on hourly rates for staff employed as contractors and therefore, do not include any overhead. Due to the nature of its operating model, ECUK does not have further indirect operating costs that would be included in those pay rates.

^b Assumed number of practitioners completing activities per setting for the purpose of this calculation.

n/a=not applicable.

Cost to settings

A total of 182 practitioners, across 69 EC settings, responded to at least one cost evaluation question in the online practitioner survey at endline. The following time cost estimates are based on non-missing responses for each question as reported below.

Estimated hourly pay

To be able to translate expended practitioner time into a monetary estimate, we collected practitioners' gross salary in the endline practitioner survey. In total, 75 practitioners provided their annual, monthly, or hourly salary, which averaged at an estimated hourly pay of £18.6 per hour. Estimates of monetary practitioner costs were based on this average hourly pay.

To estimate average hourly pay rates from average reported annual or monthly salaries, we assumed a 37.5-hour work week, which translates to about 162.5 working hours per month on average and 1,950 working hours (over 52 weeks) per year.

Paid cover during training

Of the 102 setting managers who responded to this question, 65% reported that paid teacher cover was required while practitioners attended EC training, 31% reported that cover was not required, while 5% of managers were unsure. For those reporting that cover was required, an average of 4.15 days of paid cover in total was required at the setting ($n = 65$). A little less than half (47%) of the 65 setting managers who responded to this question reported that finding practitioner cover was somewhat difficult, 42% reported it was not difficult, and 9% reported that it was very difficult.

To derive an estimate of the monetary cost of paid cover while practitioners attended EC training, we weighted the estimated average number of days cover was required for among settings who reported cover was required ($M = 4.15$ days) by the number of setting managers who reported cover was required ($n = 66$), as a proportion of the total number of managers who gave a substantial response to this question ($n = 97$), to ensure the estimate also reflects settings where cover was not required ($n = 31$). This resulted in a weighted average of 2.8 days of paid cover in total per setting.

Using the estimated average hourly pay of £18.6 per hour, the average cost of paid practitioner cover during training for EC was £395 per setting.

Extra time implementing EC

ECUK-trained practitioners were expected to apply the EC approach within their day-to-day practice and regular interactions with children. To support this, practitioners were provided with resources, such as reflective logs, training slides, activity handouts, and a Pocket Guide to EC. As part of EC's cascading model, ECUK-trained practitioners were also encouraged to share their learning with other staff working with three- to four-year-olds at their setting.

Below, we present descriptive statistics of any extra time practitioners reported spending, over and above their usual responsibilities, using EC resources and cascading EC practices in their setting. We asked practitioners to report any time spent on these activities between November 2024 and January 2025—a period corresponding to EC training and practice sessions delivery. To accurately represent the extra time practitioners spent implementing EC in the present trial, we also asked practitioners about any time they spent on these activities from February 2025 onwards—after EC training.

We report these time costs descriptively, in order to present accurately the resource implications of implementing the programme for settings in terms of practitioner time, based on this trial. However, practitioner time on these activities will not be included as a monetary cost of EC to settings, as the programme is meant to replace practice as usual within practitioners' standard working hours and practitioners are not expected to spend additional time beyond them that would be paid for by their setting.

Extra time spent using EC resources

Between November 2024 and January 2025, 33% out of the 162 practitioners who responded to the cost questions in the online practitioner survey reported that using EC resources did not take extra time over and above their usual responsibilities.

Most practitioners reported they spent extra time on a few occasions (41%) or as a one-off (17%), with an average of 1 hour and 37 minutes of extra time spent among them (n = 94).⁴³ Among these practitioners, most reported they spent between one and two hours in total (41%), followed by between 30 minutes and one hour in total (27%). Some reported they spent between two and three hours (15%), and others reported spending 30 minutes or less (11%). Some reported spending between three and four hours (4%) and over four hours (2%, n = 2, M = 11.5 hours).

Some practitioners reported they spent extra time more regularly (7%), with an average of 52 minutes extra time spent per week (n = 11),⁴⁴ and an estimated average total of 10 hours and 24 minutes per practitioner across the three months. Just over one-third (36%) of these practitioners reported they spent up to 15 minutes per week/about 30 minutes every two weeks, while 27% reported they spent more than one hour per week (n = 3, M = 110 minutes). Additionally, 18% of them reported they spent up to one hour per week/about two hours every two weeks and another 18% reported they spent up to 30 minutes per week/about one hour every two weeks.

From February 2025 onwards, 38% of the 162 practitioners who responded, reported that using EC resources did not take extra time over and above their usual responsibilities. Most practitioners reported they spent extra time on a few occasions (34%) or as a one-off (22%), with an average of 1 hour and 27 minutes of extra time spent in total among them (n = 90). A few practitioners reported they spent extra time more regularly (6%), with an average of 47 minutes of extra time spent per week (n = 9).

Extra time spent cascading EC practices

Between November 2024 and January 2025, 25% of the 150 practitioners who responded reported that cascading EC practices did not take extra time over and above their usual responsibilities. Most practitioners reported they spent extra time on this activity as a one-off (18%) or on a few occasions (46%), with an average of 1 hour and 39 minutes of extra time spent among them (n = 96). Most of these practitioners reported they spent between 30 minutes and one hour (29%), followed by between one and two hours (28%). Some of them reported they spent between two and three hours (25%), and some of them reported they spent between three and four hours (10%). Others reported they spent 30 minutes or less (7%).

Some practitioners reported they spent extra time on this activity more regularly (10%), with an average of one hour and ten minutes of extra time spent per week (n = 16), and an estimated average total of 13 hours and 30 minutes per practitioner across the three months. Most of them reported they spent more than one hour per week (37%, n = 6, M = 2 hours) and others reported they spent up to 30 minutes per week/about one hour every two weeks (25%). Some reported they spent up to one hour per week (19%) and some up to 15 minutes per week (19%).

From February 2025 onwards, 34% of the 149 practitioners who responded reported that cascading EC practices did not take extra time over and above their usual responsibilities. Most practitioners reported they spent extra time on a few occasions (36%) or as a one-off (23%), with an average of 1 hour and 28 minutes of extra time spent in total among them (n = 86). A few practitioners reported they spent extra time more regularly (7%), with an average of 56 minutes of extra time spent per week (n = 11).

Average time spent implementing EC

Below, we calculate the total average time practitioners reported spending on these activities between November 2024 and January 2025.⁴⁵ We focus on this time period as it corresponds to EC training and practice session delivery, during which practitioners would be expected to become familiar with EC practices.

⁴³ Averages were derived by: i) taking the median value provided in each categorical response (e.g. taking one and a half hours as the value for calculations for the response 'between one and two hours'); ii) multiplying it by the number of practitioners selecting this response; and iii) summing across time estimates across all responses provided to derive a total reported time across respondents. This total was then divided by the number of practitioners who responded to the question to derive the average reported.

⁴⁴ Averages for this calculation use the anchor value provided in each categorical response (e.g. taking one hour as the value for calculations for the response 'up to one hour').

⁴⁵ Only the time period corresponding to the time period for EC training and practice session delivery was included in this estimation, as practitioners are not expected to spend any extra time on such activities after the initial EC training period.

To arrive at an average time spent per practitioner on each activity, we weighted the total average extra time spent by practitioners as a one-off/on a few occasions in this period (M = 1 hour and 37 minutes using EC resources, M = 1 hour and 39 minutes cascading EC practices) by the number of practitioners who reported doing so (n = 94 and n = 96, respectively). Equally, we weighted the estimated average extra time spent by practitioners on a regular basis in this period (M = 10 hours and 24 minutes using EC resources, M = 13 hours and 30 minutes cascading EC practices), by the number of practitioners who reported doing so (n = 11 and n = 16, respectively). The two averages for each activity were then summed and divided by the total number of practitioners who responded to these questions (n = 159 and n = 150, respectively) in order to account for practitioners who did not spend extra time over and above their usual responsibilities on those activities.

On average across respondents, practitioners spent 1 hour and 41 minutes of extra time using EC resources, and 2 hours and 30 minutes of extra time cascading EC practices in their setting.

Estimating total cost to settings

To derive the total average cost per setting associated with implementing EC, we totalled the average cost of paid practitioner cover during training for EC (£395 per setting), and the cost of the programme that would be charged to settings outside of the trial at the current market rate (£430 per practitioner), assuming two practitioners per setting will receive training. The total start-up cost to settings was hence estimated at £1,255 for the first year of implementation. As both cost ingredients to settings relate to practitioner training and are therefore start-up costs, they are only counted towards the first year of implementation, assuming the same EC-trained practitioners remain at the nursery. Averaging the total cost across three years of implementation,⁴⁶ the per-year average cost of implementing EC as if implemented over three years was estimated at £418.3 per setting.

To calculate the cost of implementing EC to settings per pupil per year, as if implemented over three years, we divided the per-year average cost (£418.3 per setting) by the average number of children per setting observed in the trial at randomisation (n = 25). The cost of implementing EC for settings, as if implementing the programme over three years, was hence estimated at £16.7 per pupil per year.

Table 32: Cumulative costs of EC for settings (assuming delivery over three years)

	Year one	Year two	Year three	Total cost over three years	Total cost per pupil per year over three years
Cost of EC to settings	£1,255	£0 (all start-up costs)	£0 (all start-up costs)	£1,255	£16.7

⁴⁶ Following the EEF guidance (EEF, 2023), this calculation would involve counting start-up costs once and any recurring costs three times (for each year of implementation), before dividing the resulting figure by three (to derive per-year average costs). As EC does not have any recurring costs, for our calculation, the start-up costs are counted once and divided by three.

Conclusion

Table 33: Key conclusions

Key conclusions	
1.	The evaluation found that EC had, on average, a small positive impact on children's self-regulation as reported by practitioners after the seven-month delivery period, compared to children in the control group. This result has a moderate to high security rating.
2.	EC had, on average, a small positive impact on child self-regulation as reported by practitioners, among children eligible for EYPP, compared to children eligible for EYPP in the control group. The average effect was larger for the EYPP subgroup than for the overall sample. This result may also have a lower security rating than the overall findings because of the smaller number of EYPP-eligible pupils.
3.	For the secondary outcomes, the evaluation found that EC had, on average, a small positive effect on child prosocial behaviour as reported by practitioners, compared to children in the control group. For parent/carer reported outcomes, there was, on average, a small negative effect of EC on child self-regulation, and no evidence of an effect on prosocial behaviour.
4.	In terms of practitioner outcomes, findings indicated evidence of a moderate positive effect of EC on practitioners' self-reported meta-emotion philosophy. ^a
5.	The IPE found evidence that EC was delivered as intended, and delivery standards were largely met. EC was generally perceived positively by setting managers and practitioners, even if they were not directly trained by ECUK. Cascading varied across settings but was generally viewed positively as a way to enhance the intervention's impact on children. The IPE found evidence of improvement in practitioners' practice, and an increase in practitioners' awareness of their own emotions as well as those of children. Practitioners commonly reported improvements in children's emotional intelligence, their ability to recognise and label feelings, and increased willingness to seek adult support.

^a This refers to practitioners' reactions, responses, and reasoning to emotions in themselves and others.

Impact evaluation and IPE integration

In this section, we bring together the findings from the impact evaluation and the IPE. We discuss the extent to which the findings aligned with the logic model and present an interpretation of the results and key conclusions from the evaluation. Additionally, we offer recommendations for refining the logic model based on learnings from this evaluation. We also reflect on the limitations of the evaluation.

Evidence to support the logic model

We found mixed evidence to support the logic model. The IPE found strong evidence that EC training can be implemented as described in the logic model. However, the extent and format of cascading varied across settings. The IPE found evidence for some of the intended short-term and long-term outcomes for practitioners and children (see section 'Perceived outcomes'). However, in the impact evaluation, evidence for the effects of EC on children's self-regulation and prosocial behaviour was statistically uncertain. We will address each section of the logic model one by one.

Inputs and activities

The IPE found strong evidence that the inputs and activities from the logic model (e.g. EC training workshops support from ECUK) took place as expected. In surveys and qualitative interviews, practitioners and setting managers perceived activities, such as the training workshops delivered by ECUK trainers, to be of high quality. The training content was largely regarded as clear and accessible, though practitioners cited issues with staff cover and workload as barriers to their engagement. On the whole, the IPE suggests that it is feasible to deliver the EC programme as described in the logic model.

ECUK provided high-quality, standardised training materials and clear guidance on the four-step EC framework as part of their training. Settings provided staff with additional time, senior leadership support, and internal opportunities for cascading the training. The IPE found that attendance of at least one SLT member at the training was viewed positively and helped align delivery with leadership at settings. On the whole, the inputs that were provided acted as facilitators for EC to be delivered as intended.

The IPE found that core intervention activities (ECUK-delivered training sessions, the use of the four-step EC framework in daily interactions with children, and cascading within settings) were implemented in nearly all EC group settings. Practitioners attended structured training that included modelling, reflective discussion, and opportunities to practice EC techniques. They then applied these strategies in interactions with three- to four-year-olds, such as validating emotions, offering co-regulation, and collaboratively problem-solving with children.

A notable finding from the IPE was that practitioners appreciated the flexibility of the EC framework. Practitioners described the approach as easy to integrate with existing routines and relational practices. They also valued being able to adapt the steps to fit their own communication style and the needs of individual children. This flexibility was seen as supporting buy-in, although it also contributed to some of the variation in how EC was used and cascaded in different settings. Fidelity was highest where settings offered structured cascading sessions, modelling, and follow-up support, and it was lower where cascading relied on informal sharing or there was limited staff capacity.

Cascading was implemented in different ways, and these differences affected how consistently staff used EC in daily practice. Some settings delivered structured team sessions or used modelling opportunities, while others relied on informal peer support or brief handovers. This aligned with the logic model's expectation that EC would be shared within settings, but there is scope to strengthen how cascading is delivered across settings. Findings from the IPE suggest that cascading was viewed as a potentially powerful way to increase the impact of EC on children's outcomes. However, settings cited barriers to sharing learning such as lack of time and lack of support from other staff members. As a result, differences in cascading likely contributed to variation in fidelity, and might help explain why practitioner-level changes were clearer than the child-level effects of EC. The logic model could be revised to provide greater detail on the form and expectation of cascading, thereby improving its implementation across settings. This would help clarify its relationship to the programme outcomes being achieved.

Outputs

We also found evidence that the outputs were largely achieved. Practitioners reported applying EC strategies in daily routines, adjusting their emotional responses, and changing the language and tone they used with children. Many settings created or adapted spaces (e.g. calming corners) and integrated EC into existing policies or behaviour approaches. Evidence indicated that practitioners who were trained through cascading, especially where cascading was more formalised, gained sufficient understanding and started using EC principles. However, inconsistency in cascading practices meant that outputs varied in depth and reach across settings. This variation likely affected the extent to which the programme was implemented uniformly. Together, these findings indicate that the resources, activities, and immediate outputs aligned closely with the intended logic model, though the variation in how much cascading was delivered likely influenced the consistency of implementation.

Outcomes

Evidence of short-term and long-term outcomes as described in the logic model is mixed. The logic model includes outcomes for practitioners as well as children. Observed outcomes were measured in the impact evaluation, while the IPE explored perceived outcomes. The findings provided partial support for the EC logic model, with clearer effects for practitioners than for children.

The impact results found statistically uncertain evidence of a small positive effect of EC on child self-regulation as reported by practitioners. While the effect size estimate reflected a small positive difference in practitioner-reported self-regulation scores for children in the EC group compared to the practice as usual group, the data were also compatible with a small negative and no effect of EC on the primary outcome. The results suggest that any true effect, positive or negative, is likely to be smaller than our MDES (MDES = 0.21).

Similarly, we found statistically uncertain evidence of a small positive effect of EC on practitioner-reported child self-regulation for children eligible for EYPP, where the range of plausible effects also included small negative effects and no effect of EC on the primary outcome in this subgroup.

Findings for the secondary child outcomes were mixed and similarly uncertain. There was statistically uncertain evidence of a small positive effect of EC on child prosocial behaviour, as reported by practitioners, where the range of plausible

effects also included small negative effects and no effect of EC on this outcome. As for parent-reported outcomes, there was statistically uncertain evidence of a small negative effect of EC on child self-regulation as reported by parents/carers, and there was no evidence of an effect of EC on prosocial behaviour as reported by parents/carers. Taken together, these results suggest that evidence of the effects of EC on the child-level socio-emotional outcomes assessed in the trial is uncertain.

We will conduct follow-up analysis of longer-term child outcomes using data from EYFSP assessments in 2027.

Despite the uncertainty of effects in the impact evaluation, practitioners reported positive perceived outcomes for children. Practitioners commonly reported improvements in children's emotional understanding, their ability to recognise and label feelings, and increased willingness to seek adult support. Some settings noted early signs of progress in co-regulation and peer interactions.

In contrast to the uncertainty of child-level findings in the impact evaluation, there was clear evidence of a moderate positive effect of EC on practitioners' self-reported meta-emotion philosophy. The IPE evidence also provides support for the intended short-term practitioner outcomes in the logic model. Practitioners reported increased awareness of children's emotions, greater confidence in responding to dysregulation, and a shift toward more reflective interactions. Practitioners described using more emotion-focused language, validating children's feelings, and relying less on sanctions. The flexibility of the EC framework was viewed positively, enabling practitioners to adapt the approach to their own style, routines, and setting context.

At the setting level, the IPE found that EC contributed to improved staff communication, shared emotional language, and increased reflective practice. Several settings reported more consistent responses to children's emotional needs. While not primary outcomes of the trial, these findings align with the longer-term aims of the EC logic model.

Contextual factors and change mechanisms

According to the IPE results, the EC training was well-received. Data on responsiveness and quality pointed to successful delivery methods that enabled practitioner engagement. Although the trial's logic model did not define specific change mechanisms, the IPE tried to identify specific elements that may have impacted results.

Based on practitioner feedback in the IPE, several enabling factors influenced engagement and outcomes for the EC programme. These factors included organisational support like availability of staff cover and support from leadership at the settings. Support from leadership and other staff at settings was good for engagement and led to integration of EC principles into policies and routines. Conversely, limited leadership involvement or high staff turnover disrupted cascading within settings. Variations in staff capacity, workload, and external pressures shaped the consistency with which EC could be applied. Practitioners in settings with limited staffing found it harder to embed the EC steps during busy or challenging periods.

Practitioners working with children with complex needs or limited language skills sometimes struggled to adapt EC strategies. This influenced the extent to which the intended child-level strategies such as emotional understanding and co-regulation could be used across the cohort within settings.

Crucially, the IPE highlighted cascading as a major vehicle for change. We recommend incorporating well-defined ways of cascading of EC (from trained to other staff) as a change mechanism. The effectiveness of cascading lies in its ability to ensure wider staff adoption, leading to children experiencing more frequent and consistent interactions using the EC approach.

The EEF guidance report for 'Effective Professional Development' highlights that high-quality professional development should contain mechanisms within four categories: build knowledge; motivate staff; develop teaching techniques; and embed practice (EEF, 2021). The IPE found evidence of these mechanisms. The EC training's clear focus on understanding emotions and supporting co-regulation provided a good foundation for practitioner learning and development of teaching techniques. Practitioners appreciated the conceptual clarity of the four-step framework, which helped them recognise emotional cues and interpret children's behaviours. Practitioners were also able to integrate and embed EC strategies more readily as the programme aligned well with existing relational approaches in many settings. EC enabled staff to reinforce

each other's learning and foster consistency in responses to children's emotional needs. In settings where cascading was structured and supported, this mechanism operated more strongly.

Interpretation

The combined findings from the impact evaluation and the IPE present a detailed picture of how EC operated in early years settings and the extent to which it achieved its intended outcomes. The evaluation found evidence of changes in practitioners' attitudes and behaviour. However, it found uncertain and mixed evidence of impact on children's socio-emotional outcomes within the study period. This pattern is consistent with findings from other large-scale evaluations of early years relational and socio-emotional professional development programmes, like Hanen Learning Language and Loving It™ (LLLI) (Bhatti *et al.*, 2024), and systematic reviews (Rogers *et al.*, 2017), which similarly identified practitioner improvements without corresponding short-term measurable child outcomes.

The findings are suggestive of a very small positive impact of EC on children's self-regulation when judged by practitioners, but the evidence is not strong enough for us to be confident about this. The results are also consistent with there being no real difference, or even a very small negative effect. A similar level of uncertainty was seen when focusing specifically on children eligible for EYPP. Overall, the findings point to the impact of EC on self-regulation being small. For the other child outcomes examined, the findings were mixed and similarly unclear, so it is difficult to draw firm conclusions about wider impacts.

These findings should be interpreted in the context of the inherent challenges of measuring socio-emotional development in children aged three to four. At this age, child behaviour is expected to fluctuate, and measurement instruments might struggle to detect subtle, incremental changes over short time periods.

The uncertainty of effects on child outcomes in the impact evaluation does not necessarily indicate that EC had no influence on children's socio-emotional development. The IPE identified early signs of change, such as increased emotional awareness, improved language around feelings, and early co-regulation, which might possibly reflect the beginnings of the intended child-level mechanisms. However, these shifts may require more time, greater dosage, or more consistent implementation to translate into measurable changes in self-regulation or prosocial behaviour. This aligns with broader evidence suggesting that practitioner-focused interventions often require extended periods of embedding before child-level impacts become apparent. Such interventions can often show delayed effects on children's outcomes because these outcomes improve only when adults apply their new knowledge reliably and at scale across settings and phases of education, which can take an extended period (Moore *et al.*, 2024; Fixsen *et al.*, 2009; Bierman *et al.*, 2008).

The IPE results also show that the EC was delivered well and perceived positively by practitioners. The IPE found clear improvements in practitioner knowledge, confidence, and behaviour, consistent with the short-term practitioner outcomes described in the EC logic model. These short-term outcomes are an important precursor to sustained practice change. Practitioners reported greater emotional awareness, increased use of validation, and more reflective responses to children experiencing strong emotions. Notably, the trial also found evidence of a moderate positive effect on practitioners' self-reported meta-emotion philosophy, which links to potential changes in practitioners' underlying beliefs about emotions.

These findings can be understood through the lens of established mechanisms of effective professional development. The training provided a clear conceptual framework, opportunities for modelling, and a shared emotional language within settings. Together, these mechanisms supported practitioners to internalise the EC approach and apply it in everyday interactions within settings. The flexibility of the EC framework enabled practitioners to adapt EC to their own style and setting context, which strengthened engagement but also contributed to variability in fidelity.

Several factors may have impacted our findings, as follows:

- **Time frame.** Practitioner behaviour appeared to show changes relatively quickly. However, it is possible that EC had not been in place for long enough to allow for larger, measurable effects on child outcomes to emerge. In addition, some ECUK-trained practitioners reported that the timing of the implementation limited observable changes. They noted that EC was introduced partway through the academic year and that there had been insufficient time for the approach to influence children's behaviour or practitioner-child relationships in a sustained way. Staff shortages compounded these timing-related challenges.

- **Variability in cascading.** In settings with structured, well-supported cascading processes, the EC approach was more consistently understood. In settings with more light-touch cascading, implementation gaps may have reduced the likelihood of child-level impacts emerging. The extent to which cascading had been established also varied across settings. Some settings began cascading alongside EC training, while others delayed cascading till later in the school year.
- **Similarity to usual practice.** In the IPE, many settings reported using various approaches aimed at improving children's self-regulation, behaviour, and socio-emotional development. This was both prior to and alongside EC. Since all early years settings follow the EYFS framework, EC was viewed as complementary to the established approach to early years teaching. This created a positive context for adoption of EC. However, this reduced the contrast between EC and practice as usual groups, making additional measurable gains less likely.

Thus, while EC appears to lead to meaningful practitioner-level gains, the evaluation suggests that the translation of these mechanisms into clearer, measurable effects on child outcomes may require more time, consistency, or targeted delivery.

The findings also need to be understood within the broader context of early years professional practice. Settings valued the ethos of EC, and many saw it as strengthening existing approaches. Practitioners described EC as helping them to interpret behaviour through the lens of emotions, creating more emotionally supportive environments for children. However, the overlap with existing practices may have meant that EC reinforced, rather than changed, practice in some settings. This may be beneficial in terms of cultural alignment but limits the possibility of reliably detecting distinct programme impacts when comparing to a practice as usual group already using similar approaches.

At the same time, the evaluation indicates that EC influenced staff culture and reflective practice, which are important foundations for a long-term change. These broader cultural shifts are consistent with the later stages of the EC logic model and may create conditions for clear effects on child outcomes to emerge over time.

Finally, the cost evaluation estimates that EC is a very low-cost intervention. Overall, the per pupil per year cost of delivering EC is £16.7.

Limitations and lessons learned

While we are confident in the findings from this evaluation, there are limitations to note within the methods. In this section, we discuss limitations to the evaluation such as power, suitability of outcome measures, and missing data in different elements of the evaluation. We also reflect on lessons learned.

The trial was powered to detect a small effect on the primary outcome (MDES = 0.21). However, even at this level, there remains a high degree of uncertainty in the estimates, and the study was not able to reliably detect effects smaller than this. In the context of PSED outcomes, impacts may plausibly be very small in magnitude. For the EYPP subgroup, the trial was powered to detect a larger minimum effect (MDES = 0.29), meaning that only relatively moderate effects could be identified with confidence. The study was therefore not able to reliably detect smaller effects for EYPP-eligible children.

Taken together, this suggests that the level of precision achievable in trials of this kind may be limited where true effects are very small. This raises considerations for future trials regarding the choice of MDES for PSED outcomes, and whether larger samples or alternative approaches may be needed to improve precision.

The observation-based measure of self-regulation was based on a smaller sample of settings and children, further limiting precision. As such, it had limited capacity to detect subtle differences or to assess potential bias in practitioner-reported outcomes.

As we did not collect child outcome data at baseline in this trial, we were not able to describe and compare how outcomes changed in the two groups over time. However, our design was limited by the lack of comparable appropriate measures we could use at baseline, when: i) children were younger; and ii) practitioners were not necessarily familiar enough with children to report on their self-regulation abilities.

Using practitioner reports on the primary outcome measure was also associated with an inherent risk of bias, since practitioners were not blind to random allocation, and in the case of practitioners in the EC group underwent EC training themselves. For example, practitioners' scores of children's self-regulation in the EC group might have been inflated or deflated compared to scores in the control group. Our bias check, which used the observation-based PRSIST measure administered by independent assessors and found no evidence of bias in practitioner-reported outcomes, was only based on a very small subset of settings and children. As such, it would have only been able to detect bias if a large one had been present and observable.

It is worth noting that the implementation window for the programme might have been too short to allow for larger, and more reliably detectable effects on child outcome to emerge. The time frame between training and post-test measurement was seven months and this may not have allowed sufficient opportunity for practitioner behaviour change to translate into reliably measurable child-level change, which could explain the uncertainty of child-level outcomes. Practitioner feedback in the IPE supported this view. In addition, differences in the timing and extent of cascading to colleagues across settings are likely to have influenced the dosage of EC experienced by children within the trial period. This also reflects wider uncertainty about the time frame required for child-level change to emerge from relational approaches. Relatedly, the trial focused on child self-regulation as the primary outcome of interest, and as such measures in the trial would not have been able to detect any subtle precursor processes in the development of this skill, such as emerging co-regulation in practitioner-child interactions.

While attendance hours at enumeration were used in the exploratory analysis to explore the relationship between attendance at nursery and the effect of EC, the trial did not collect a measure of children's actual nursery attendance levels during the implementation of the intervention. Attendance hours are likely to be closely linked to social deprivation, including through their link to parental employment status, which determines eligibility for funded childcare hours. Future trials will benefit from measuring child attendance during implementation, as well as including more comprehensive socio-economic deprivation measures, to enable analysis to more fully account for the relationship between those factors and child outcomes. Our IPE findings on practitioners' pre-existing knowledge of strategies to help with children's self-regulation are limited by the fact that the practitioners were already part of the trial when we asked about their awareness of these strategies. We asked practitioners about this in the baseline survey (by which point they would have been recruited for the trial and been given information about the programme aims). This means that our survey may not have fully captured practitioners' genuine pre-trial knowledge or usual practice.

It is also possible that settings choosing to participate in the trial already had a stronger interest in children's PSED or were more aware of strategies for supporting socio-emotional learning, than settings that did not sign up. This potential selection effect means the practitioners in our sample may not be fully representative of the wider early years workforce, and any reported baseline awareness of self-regulation strategies may be higher than would be expected elsewhere.

Additionally, the alignment of IPE survey questions with the logic model outcomes might have led to a social desirability bias in responses. Some participants might have felt inclined to report behaviours that aligned with the training's ideal responses, potentially leading to an overestimation of reported perceived outcomes.

Finally, while we heard a range of views in the IPE, we are limited to the perspectives of those who took part in these elements of the evaluation. There is a risk that the IPE survey and interview data from practitioners are skewed by the responses coming from individuals with greater interest in and more positive perceptions of EC. It is possible that other perspectives, which could have influenced findings, are not captured in the IPE results included in this evaluation. We are continuing to reflect on ways to minimise the data collection burden on evaluation participants, particularly busy professionals with limited time, to increase engagement in the IPE elements of evaluation.

These limitations align with those observed in other early years evaluations and should be considered in the design of future trials of EC or similar relational approaches.

Future research and publications

Although the effects observed in the efficacy trial of EC were uncertain, this could have been because the trial period did not allow enough time for the intervention to embed into the settings, especially in terms of cascading EC strategies to other

practitioners. It is also possible that any effects on child outcomes emerging in this period were smaller than the MDES that the trial was powered to reliably detect. Future research should therefore explore whether the practitioner-level changes observed in this evaluation translate into larger, more reliably detected child outcomes over a longer period, with continued implementation of the EC approach, as well as the required length of time for the intervention to achieve a clear positive effect on child outcomes. This could include trials with a longer delivery period, spanning, for example, the nursery and reception years, or even longer, to assess whether sustained use of EC strengthens self-regulation and prosocial behaviours over time.

Future studies should explore how dosage and consistency in both implementation and child exposure can influence outcomes. Future analyses could incorporate cascading into compliance measures and additionally, collect attendance hours of children throughout the trial so that attendance data can be used to estimate the impact of levels of exposure to the intervention on outcomes. We also recommend that more detailed social deprivation data, such as the Income Deprivation Affecting Children Index (IDACI), is used alongside the attendance hours to portion out the effect of exposure levels on the outcome that would not be explained by the link between hours and parental employment and income.

There is one planned additional publication for this trial, which will present the follow-up analysis of longer-term child outcomes from the EYFSP assessments. This additional report will be published in 2027.

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Appendix A: EEF cost rating

Appendix A Table 1: Cost rating

Cost rating	Description
£ £ £ £ £	<i>Very low:</i> less than £80 per pupil per year.
£ £ £ £ £	<i>Low:</i> up to about £200 per pupil per year.
£ £ £ £ £	<i>Moderate:</i> up to about £700 per pupil per year.
£ £ £ £ £	<i>High:</i> up to £1,200 per pupil per year.
£ £ £ £ £	<i>Very high:</i> over £1,200 per pupil per year.

Appendix B: Security classification of trial findings

OUTCOME: Child Self-regulation (practitioner-report)

Rating	Criteria for rating			Initial score		Adjust		Final score
	Design	MDES	Attrition					
5	Randomised design	≤ 0.2	0-10%					
4	Design for comparison that considers some type of selection on unobservable characteristics (e.g. RDD, Diff-in-Diffs, Matched Diff-in-Diffs)	0.21 - 0.29	11-20%					
3	Design for comparison that considers selection on all relevant observable confounders (e.g. Matching or Regression Analysis with variables descriptive of the selection mechanism)	0.30 - 0.39	21-30%	3		Adjustment for threats to internal validity [0]		3
2	Design for comparison that considers selection only on some relevant confounders	0.40 - 0.49	31-40%					
1	Design for comparison that does not consider selection on any relevant confounders	0.50 - 0.59	41-50%					
0	No comparator	≥ 0.6	$>50\%$					

Threats to validity	Risk rating	Comments
Threat 1: Confounding	Moderate	The randomisation procedure was appropriate and disclosed in the report. There was evidence of an imbalance in children eligible for EYPP, with a higher proportion in the EC group (24% compared to 18% in the practice as usual group at the analysis stage, equivalent to 0.14 SD). There is external evidence that EYPP status can be a predictor of child self-regulation scores; however, in the trial neither the EYPP subgroup or sensitivity analysis accounting for the EYPP imbalance, found a different effect to that for the primary outcome analysis. In addition to the imbalance in EYPP, exploratory analysis examined an imbalance in attendance at enumeration, with it being higher in the EC group (mean=22.4 hours) than the practice as usual group (mean=20.9 hours). Overall, the analysis found that attendance data did not predict self-regulation scores.
Threat 2: Concurrent Interventions	Low	44% of practice as usual settings, compared to 25% of EC settings, reported implementing interventions that targeted self-regulation, behaviour, and socio-emotional development; however, analysis of the interventions reported by the practice as usual group show that there were limited examples of structured interventions comparable to EC.

		There is therefore not strong evidence of a differential uptake in concurrent interventions that would lead to bias in the trial.
Threat 3: Experimental effects	Low	Evidence suggests that settings did not change their behaviour because of their participation the trial. Although data is not available for the number of practice as usual setting who were implementing interventions prior to the trial that targeted self-regulation, behaviour, and socio-emotional development, the 44% of practice as usual settings reporting this in the trial year (as cited above) is likely to be broadly in line with previous practice. The IPE found that many settings in both EC and practice as usual group were using relational or nurturing approaches prior to EC. 84% of practitioner survey respondents felt that EC was somewhat (57%), mostly (26%) or identical (1%) to previous strategies.
Threat 4: Implementation fidelity	Low	The programme was delivered as intended and the level of compliance was high. Training attendance was strong. Adaptations were common, but generally within the flexibility allowed by the model. 99% of practitioners reported using EC strategies in their settings; and 93% reported sharing learning in their setting (cascading to others).
Threat 5: Missing Data	Low	The total level of missing primary outcome data (from practitioner reports) was a moderate to high level (25.9% - see above reduction to interim score due to the attrition rate). Data was MAR and was not differential between the EC and practice as usual groups. Analysis to account for missing data reported a similar effect to the complete case analysis.
Threat 6: Measurement of Outcomes	Moderate	The CSBQ is an externally validated, self-reported and practitioner-led measure; not possible to be delivered blinded. An additional observation-based measure (PRISIST) of child self-regulation was collected in a subset of settings and was used to explore validity. It showed no evidence of practitioner bias in CSBQ scores.
Threat 7: Selective reporting	Low	The analytical approach was as specified in the Protocol and SAP.

- **Initial padlock score:** [3] Padlocks – RCT with a MDES at randomisation of 0.18. -2 Padlocks due to pupil-level attrition rate of 25.9%.
- **Reason for adjustment for threats to validity:** [0] Padlocks – There is evidence of moderate threats to internal validity related to confounding and the practitioner-reported nature of the outcome measure; however, the direction of bias is unclear in both cases, so they do not pose a serious threat to validity.
- **Final padlock score:** [3] Padlocks – Initial score adjusted for threats to validity.

Appendix C: Effect size estimation

Appendix C Table 1: Additional estimation parameters

Outcome	Unadjusted difference in means (95% CI)	Adjusted difference in means (95% CI)	Intervention group		Control group		Pooled SD (pooled variance)	Population variance (if applicable)
			n (missing)	SD (variance of outcome)	n (missing)	SD (variance of outcome)		
Child self-regulation (practitioner-report)	0.04 (-0.02, 0.10)	0.05 (-0.06, 0.15)	1,249 (417)	0.70 (0.48)	1,218 (446)	0.72 (0.52)	0.71 (0.50)	n/a
Child self-regulation (parent-report)	-0.05 (-0.10, 0.00)	-0.06 (-0.13, 0.02)	875 (791)	0.57 (0.32)	793 (871)	0.56 (0.32)	0.56 (0.32)	n/a
Child prosocial behaviour (practitioner-report)	0.10 (0.03, 0.16)	0.11 (-0.01, 0.23)	1,268 (398)	0.79 (0.62)	1,232 (432)	0.85 (0.73)	0.82 (0.67)	n/a
Child prosocial behaviour (parent-report)	0.00 (-0.07, 0.06)	0.00 (-0.09, 0.08)	897 (769)	0.66 (0.43)	814 (850)	0.69 (0.47)	0.67 (0.45)	n/a
Practitioner PECQ scores	0.05 (0.02, 0.09)	0.05 (0.01, 0.09)	235 (348)	0.21 (0.04)	277 (280)	0.22 (0.05)	0.22 (0.05)	n/a
Child self-regulation (practitioner-report) – EYPP subsample	0.16 (0.03, 0.29)	0.13 (-0.04, 0.29)	294 (173)	0.68 (0.46)	216 (164)	0.77 (0.60)	0.72 (0.52)	n/a

Note. 95% CIs presented are Wald intervals. For the adjusted mean difference, profile CIs for all outcomes rounded to the same values. The pooled variance was calculated from the pooled SD as a weighted average of the SDs of both groups (Coe, 2002),⁴⁷ not the estimate of the SD of all individuals pooled (see the EEF analysis guidance; EEF 2022, p. 7). To account for the multilevel structure of the model, as per the EEF guidance, the Hedges' g effect size is instead based on the SD from the total model-based variance components in a null/empty model (the EEF analysis guidance, EEF, 2022, p. 11; see 'Statistical analysis' section). For all outcomes, this SD rounded to the same value as the pooled SD derived using Coe's (2002) formula and also equalled the one-sample unconditional SD for all individuals pooled.

n/a=not applicable.

⁴⁷ Coe, R. (2002). It's the effect size, stupid. In *British educational research association annual conference* (Vol. 12, p. 14). Available at: <https://f.hubspotusercontent30.net/hubfs/5191137/attachments/ebe/ESguide.pdf> (accessed 30/06/2026)

Further Appendices

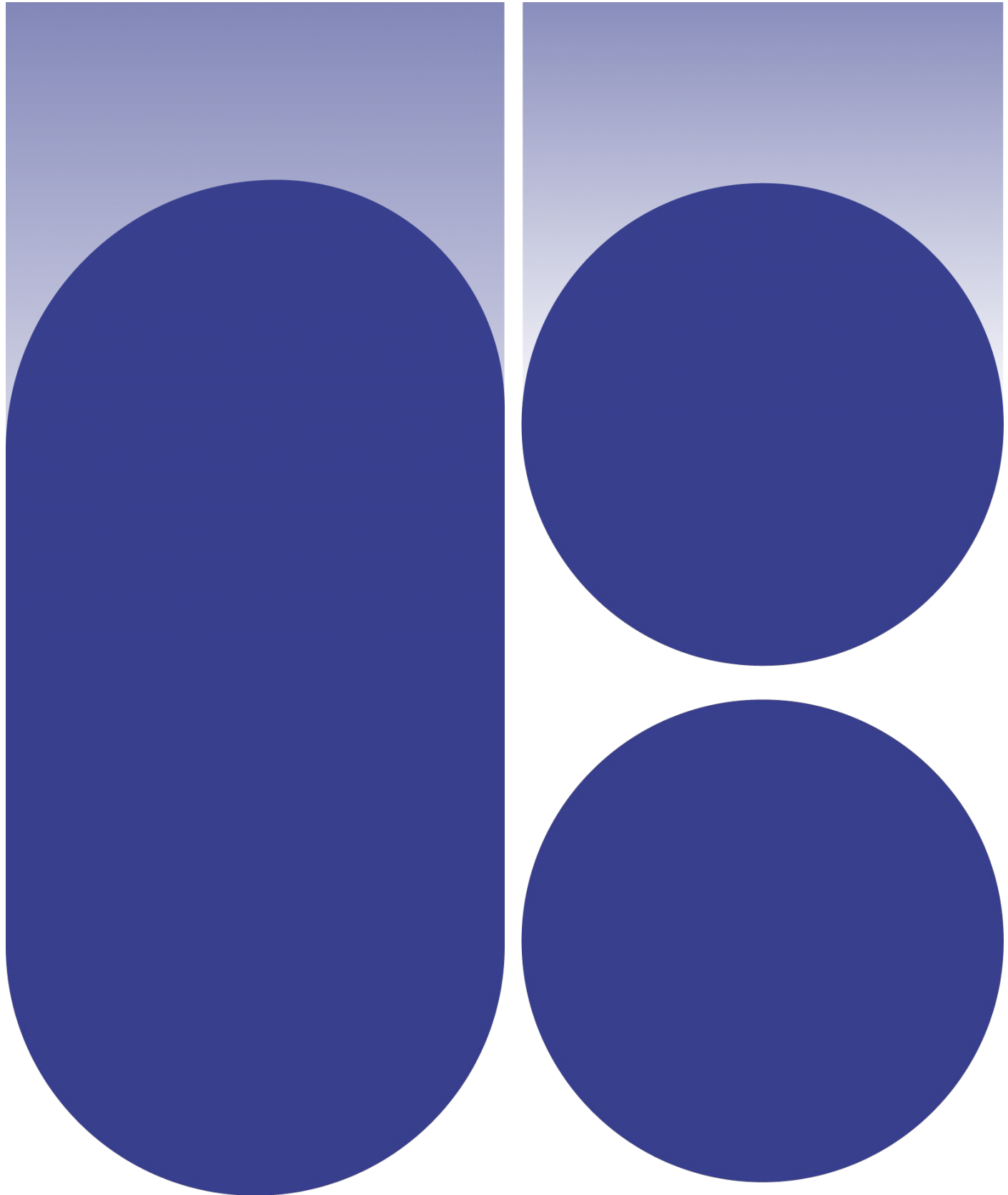
Appendix D to Appendix H can be found published as a separate document '*Further Appendices*' on the project page.

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