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Children's University

Evaluation report and executive summary
December 2017

Independent evaluators:

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Durham
University



Education Endowment Foundation

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This project is one of two 'youth social action' projects jointly funded by the Education Endowment Foundation, and the U.K. Cabinet Office.



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Executive summary

The project

Children's University (CU) aims to improve the aspirations, attainment, and skills of pupils aged 5–14 by providing learning activities beyond the normal school day. This trial focused on pupils in Years 5 and 6 (aged 9–11), and activities included after-school clubs, visits to universities, museums, and libraries, and 'social action' opportunities such as volunteering in the community. Local CU teams worked with schools to identify opportunities, and organise and monitor the activities. Children volunteered to take part and selected the activities they wished to attend, with the target of completing at least 30 hours of activity per year. Participation in activities was rewarded through credits, certificates, and a 'graduation' event attended by parents.

68 primary schools participated in this efficacy trial from March 2014 until July 2016. 2,603 pupils reported in an initial survey that they would like to take part in the kinds of activities offered, and these 'volunteer' pupils formed the main comparison groups. 1,452 of these pupils were in the 36 schools randomly allocated to receive the CU intervention, and 1,151 were in the 32 schools randomised to the control group. This project evaluated the impact of CU on pupils' reading and maths in Key Stage 2 tests, and on non-cognitive outcomes such as 'teamwork' and 'social responsibility' measured through an attitude survey. Results were obtained for Year 6 pupils after one year and for Year 5 pupils after two years. The headline findings below are based on the results for the 1,258 Year 5 pupils after two years. Surveys and interviews were conducted to explore other aspects of the intervention such as: participants' feedback, challenges of implementation, and control group activity. This trial was jointly funded by the Cabinet Office.

Key conclusions

1. Children in the CU schools made 2 additional months' progress in reading and maths compared to children in the other schools. The finding for maths has moderate security, and the finding for reading has low to moderate security.
2. Children in CU schools made small gains in 'teamwork' and 'social responsibility' compared to children in the other schools. The finding for social responsibility has moderate security and the finding for teamwork has low to moderate security.
3. Children ever eligible for Free School Meals (FSM) made 1 additional month's progress in maths, no additional progress in reading, and small gains in 'teamwork' and 'social responsibility' compared to ever FSM children in the other schools. The smaller number of ever FSM pupils means these results are less secure than the results for all pupils.
4. Compared to pupils in the control group, those in the treatment group were more likely to select professional occupations as their future aspiration, and to report higher levels of communication, empathy, self-confidence, resilience, and happiness, after the intervention.
5. The intervention was feasible to run with support from school leaders. However, 7 schools decided not to implement the intervention despite receiving the training because of pressures to meet performance targets, and limited time.

EEF security rating

The findings for maths and social responsibility have moderate security. The findings for reading and teamwork have low to moderate security. This was an efficacy trial, which tested whether the intervention can work under developer-led conditions. It was a randomised controlled trial conducted at a reasonably large scale. The number of pupils with missing data is low: no school dropped out of the trial, and only 2% of volunteer pupils in the initial survey are missing KS2 scores. Before the trial started, there was reasonable balance of the school background characteristics between the group receiving

CU and those in the comparison group. The treatment group had more 'Outstanding' schools, and the control had more schools with higher proportions of FSM-eligible pupils. However, there was some imbalance in terms of attainment and attitudes – with the treatment group clearly ahead on most measures at the outset, particularly for the reading outcomes. This reduces the security of the findings, particularly for reading. This is also the reason why all headline findings are presented as progress scores pre- to post-intervention.

The pupil surveys were conducted three times over two years, and all schools participated in each round. 9% of responses from the first and second, and first and third, surveys could not be matched, which adds some caution to those results. The surveys were conducted by the research team members and therefore the process was independent of the developer's involvement. The survey was piloted in schools before the trial period started. Although it is a bespoke instrument, the items were carefully and systematically selected from other standardised instruments that have a track record of use in large-scale studies.

Additional findings

CU activities were reported as attractive to pupils. Children receiving CU for one year (those in Year 6) made a small gain in maths, but less progress in reading, compared to children in control schools. The smaller size of these effects compared to the results for the Year 5 cohort (that received CU for two years) suggests that children may benefit from longer involvement in CU.

Further analyses suggested that all Year 5 children in schools doing CU made better average progress than children in control schools, regardless of their actual level of participation in CU activities. This could be seen as adding further caution to the headline results as to the extent to which gains were due to direct involvement in CU activities. However, one of the original research questions was whether the availability of CU activities could affect the whole cohort. For the non-participating group this may be evidence of such a cohort 'effect'.

Table 1: Summary of impact on primary outcome for 'volunteers' after 2 years

Group / outcome	'Effect' size	Estimated months' progress	No of pupils	EEF security rating	EEF cost rating
KS2 reading	0.12	2	1,224		£ £ £ £ £
KS2 maths	0.15	2	1,231		£ £ £ £ £
'Teamwork'	0.04	n/a	1,154		£ £ £ £ £
'Social responsibility'	0.08	n/a	1,156		£ £ £ £ £
EverFSM KS2 reading	0.03	0	493		
EverFSM KS2 maths	0.05	1	494		
EverFSM 'Teamwork'	0.17	n/a	453		
EverFSM 'Social responsibility'	0.10	n/a	453		

Cost

Overall, the total additional cost of participation for schools is around £45 per pupil per year. In addition to this, schools had to appoint a CU Coordinator who attended an initial induction, and spent 1 or 2 hours per week organising activities and supporting teachers to run after-school clubs. Class teachers spent time running after-school clubs. Costs vary according to the kind of activities schools choose, and resources already available.

Introduction

The intervention

Children's University (CU) Trust is a charity that works across the UK through a network of local CU centres. There are also CU pilot projects in Australia, China, and Malaysia. Through this UK network, CU works with children in schools and in some areas directly with families. Participation in CU-validated activities is intended to impact on pupils' learning and attainment, and a range of wider non-attainment outcomes such as aspiration, motivation, and self-confidence.

The Children's University works with pupils aged 7 to 14, and with 5–7 year olds with family support. There are 90 CU centres in the UK working with schools, and using local communities, local authorities, and national partnerships to encourage innovative ways of learning and connecting out-of-school learning opportunities with classroom learning. The intervention offers a range of different learning opportunities such as environmental projects, after-school clubs and enrichment activities leading to attainments of credit and 'graduation certificates'. For the purposes of this evaluation, schools were supported to develop a range of activities with a social action outcome. The concept behind this intervention is to take pupils' learning beyond the boundaries of the classroom, giving pupils more control of their learning aims through experience and action, rather than being taught in a classroom. The standard programme provides a toolkit for signposting and encouraging children to participate in a range of learning activities outside school hours, such as in lunch breaks, after school, during holidays, and at weekends. There is no targeted syllabus content or outline of the activities to be followed. However, the CU approves and validates activities that have structured learning aims and are conducted in out-of-school hours.

The programme intends to motivate pupils' informal learning and participation in learning beyond school through reward-based strategies. An important feature of the CU intervention is each pupil's 'Passport to Learning', used to record each activity and hours spent on the activities. The hours spent on approved learning activities are rewarded by the collection of credits that ultimately lead to the achievement of certificates. Children make their own choice of activities and receive a stamp in their CU Passport to Learning upon completion. They must attend for a specified time in order to gain CU credits and work towards CU Certificates of Achievement (from Bronze Undergraduate Award level (30 hours) to Gold Fellowship level (1,000 hours) and various grades in between). Each participating pupil must complete 30 hours of learning activities in order to achieve CU certification and participate in a graduation ceremony.

There is a wide range of CU-validated activities in the form of after-school clubs such as arts and crafts, sports activities, book reading and maths, gardening, cookery, and youth clubs. There are also validated learning activities in approved 'Learning Destinations'. These are various sites and organisations where pupils have opportunities to learn and receive information through experience, observations, attending talks and public lectures, and science festivals (see Appendix E). Schools often arrange these visits to complement the curriculum and class lessons. The common Learning Destinations validated by CU are museums, wildlife centres, historic places and monuments, theatres, and libraries. Pupils' completion of learning activities during visits to Learning Destinations are awarded with credits in their Passports to Learning.

CU has now included a set of social action modules where the idea is to promote volunteering, charitable work, and networking within and across the communities. In 30 hours of learning, pupils are expected to devote 15 hours to social action activities where the focus is volunteering, participation in active citizenship or community service. The social action activities are aligned with the aims of CU where the purpose is raising pupils' aspiration, self-esteem and confidence, resilience, and social skills

development. The CU centres provide support and ideas to schools in planning social action activities. Pupils' participation is monitored, guided, and credited in the Passports to Learning by teachers and CU staff members. There are several social action activities and projects validated by CU. Validation criteria include conditions such as that the activity should have structured learning aims and the activity takes place under supervision of at least one staff member and must be in out-of-school hours. The range includes activities at the school level, local area level, regional, and national level. A few are described below to introduce the kind of social actions that have been validated by CU.

Charity and fundraising activities

CU has validated various charity and fundraising activities. A general idea is to introduce the concept of charity through school assemblies and raise pupils' awareness about different social causes, involving pupils in ideas for fundraising activities. The schools take up these activities as small projects. This involves organising events for pupils' participation in walks for awareness, selling products made by pupils in school, participating in art and craft works for raising funds (see Appendix E for photos), or making food packs for homeless people.

Community work

Community work involves social actions that target problems in the community such as litter, graffiti, vandalism, and bullying. The CU local managers provide support and information to schools in organising regular events where pupils get the opportunity to discuss problems in their local communities and engage in social actions. Sometimes local partnerships are also involved to facilitate events, awareness talks, campaigns, litter picking activities, and information and awareness on recycling and disposal. Schools are encouraged to organise activities as national events in order to maximise the awareness. This involves pupils' engagement with the local community during the time of festivals and events such as World Environment Day, Black History Month and so on.

Volunteering

CU validates several volunteering activities and schemes that allow pupils to volunteer in social action, personal development skills, and life skills. Participation in schemes such as the Duke of Edinburgh Award, Brownies, Beavers, and Cubs are acknowledged by CU as volunteering activities and pupil participation in such activities is given reward credits. Participation in learning skills that can support a social action are also given credits. Schools offer training courses in first-aid and fire-safety courses (see Appendix E). Other volunteering opportunities for pupils include being part of a team running a summer project, or supporting school staff or a local library in out-of-school hours.

CU managers ensure that all activities are aligned with the aims of learning in out-of-school hours according to which pupils learn through experience, action, and involvement rather than being taught in classroom settings. The schools are fully engaged in organising activities and monitoring pupils' participation. The main focus of the programme is to facilitate schools in developing ideas for activities and, wherever possible, provide support to schools by linking with related organisations, local authorities, and partnerships.

In this trial the CU introductory training was given to the treatment schools in all four regions in which the trial was being conducted. The training included information about the process of validating existing activities and creating new after-school clubs. It also provided information on using the Passport to Learning (booklet and Online version: see Appendix E for a photo of the Passport to Learning) as a logbook, and how CU staff could extend their support in execution of these activities. The support provided by CU involves working with school leaders and other staff members who are responsible for developing and monitoring after-school activities. The CU monitoring procedure is embedded in the credit reward system. Teachers log pupils' participation and number of hours in the pupils' Passports

to Learning after receiving the training from CU regarding the reward credit systems. The final credits and certification depend on the records of pupils' Passports to Learning. The CU managers closely monitor the execution of activities through regular visits. Schools have flexibility to tailor the CU activities according to their local community needs, their access to provisions and the available resources.

Background evidence

While academic achievements may help determine access to pathways of success in life, there are underlying attitudes and behaviour related to academic attainment that also play an important and independent role in an individual's life and well-being (Heckman and Rubenstein 2001, Chowdry et al. 2010, Gupta and Simonsen 2010, Brunello and Schlotter 2011, Kautz et al. 2014). These behaviours or attitudes include social and communication skills, resilience, determination, motivation, confidence, self-esteem, and self-efficacy. The list of such personal qualities is long and is known by various terms in the literature such as non-cognitive skills, soft skills, personal characteristics, personality traits, life skills, social and emotional skills, and wider educational outcomes. Little is known about whether these behaviours, attitudes, skills, or traits can be improved and whether any improvement can lead to gains in academic attainment, non-cognitive development, or later achievement in life (Algan et al. 2014, Siddiqui et al. 2017).

Children from disadvantaged backgrounds are less likely to participate in activities such as after-school clubs, arts and cultural events (Arts and Council 2016), volunteering, and community-based projects (Southby and South 2016). If participation in these activities really matters in terms of young people's academic success and life-long achievement outcomes then these concerns need investment and effective interventions. The cost for participation in activities that are deemed important for children's non-cognitive development is a major concern. Although school itself is free, disadvantaged children and parents can still experience difficulties in paying the cost for some provision such as sports activities and after-school clubs (Farthing 2014), and this reduces the options for enrichment activities for children living below and on the threshold of poverty (Holloway et al. 2014).

Children's mental health and well-being is on the government's education agenda and schools in England are given financial incentives to encourage physical education (PE) and sports activities in order to promote children's health and well-being (ONS 2015, DfE September 2016). Schools offer non-academic activities for pupils in order to provide opportunities for improvement in non-cognitive outcomes such as well-being. The activities are organised and conducted by schools, can be in participation with external providers and do not necessarily take place on school campuses. Schools also provide various participation opportunities in activities such as sports, arts, volunteering, community work, and out-of-school visits. The government has promised £21 million in initiatives for youth social action engagement, wanting all mainstream schools to increase resources for the provision of such activities

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/262771/290106_2_SocialAction_acc.pdf).

A nationwide survey study reported that there is wide variation in provision of out-of-school activities (Power et al. 2009). The major determinants of the provisions were school geography (urban/rural), proportion of disadvantaged pupils, and type of school. Smaller schools or those in urban areas or with fewer disadvantaged pupils were found to implement out-of-schools activities more actively than those in rural areas, of larger size and with higher proportions of disadvantaged pupils. The study also identified that those who miss out from out-of-school activities are more likely to be children from traveller communities, girls from Muslim ethnic minority groups and asylum seekers. These patterns of out-of-school activities and provision are relevant for an evaluation study such as ours because we are interested in assessing the efficacy of an intervention for schools with high proportions of disadvantaged pupils. The current trial involves schools in the North of England where the schools tend to have higher

proportions of disadvantaged children and attainment is also lower than the national average (DfE 2017).

A recent study suggested that there were academic benefits from out-of-school activities (breakfast clubs, after-school clubs, sports activities, music and art lessons, tuition, religious services) on children's KS2 attainment (Chanfreau et al. 2016). These results are based on a national longitudinal birth cohort study (Millennium Cohort). The study included 11,762 pupils and systematically recorded details of their home and school life. Records of children's out-of-school activities were taken at three instances during their primary education. The out-of-school activities participation rate increased from age 5 to age 11. However, the findings confirm a large gap between social groups in the take-up of after-school activities. The KS2 results showed a positive association with attending out-of-school activities. However, there is no clear evidence that these activities have a direct impact on academic attainment (Garcia 2014, Tanner 2015). There are also indications that children's social and emotional development during childhood and adolescence can be improved by school-based non-academic activities (Gutman and Schoon 2013, Clarke et al. 2015).

Social action activities are largely defined as out-of-school hours spent by pupils in practical and volunteer engagement in the service of others. According to the National Youth Social Action Survey, 40% of young people aged 10 to 20 years old participate in social action for communities (Pye and Michelmore 2016). The government plans to increase this participation to 60% by 2020. There has been some evidence of the impact of school-based social action programmes on children's non-cognitive outcomes such as increased confidence and social communication skills, and awareness of the needs of others (Clarke et al. 2015, Kirkman et al. 2015). Some large-scale survey-based studies have also reported the benefits of youth social action engagement in the form of community cohesion and employability (Birdwell and Bani 2014, Pye and Michelmore 2016). There are positive associations between pupils' social background, their commitment and participation rate in volunteering for social actions and their academic attainment. However, there are no robust evaluations of social action programmes at primary school level that show pupils' participation in youth social action in general has an impact on raising pupils' academic attainment. In the current evaluation study, social action activities were introduced as a compulsory component in CU, allowing us to assess the impact on pupils' academic attainment at Key Stage 2.

The feasibility of the Children's University programme is suggested by various self-evaluations by CU in conjunction with Cambridge University (MacBeath and Waterhouse 2008, MacBeath 2012). Volunteers with parents able to pay for the programme reported high levels of satisfaction, higher than average levels of attendance at school, and higher levels of subsequent attainment (literacy and numeracy) than those who did not volunteer, or otherwise could not attend (MacBeath 2011). However, the programme was not assessed in relation to a randomised control group. For attendance and attainment outcomes, children who volunteered to take part in CU activities were compared with those who did not volunteer to take part. These are not comparable groups of children because participation in volunteering and after-school club activities is related to children's social background, family characteristics, and income group. Children who are more likely to attend these activities are from families in a higher socioeconomic group and so are more likely to have higher attainment at school (Wikeley et al. 2007, Pye et al. 2014, Cheung 2016).

There is, therefore, promise from youth social action both for non-cognitive changes and for improved attainment but neither outcome has been properly tested before in primary schools. This evaluation of youth social action programmes has been funded by Education Endowment Foundation and the Cabinet Office. The current evaluation of Children's University is a part of several other youth social action programmes and their evaluations for providing the necessary evidence on their feasibility and impact.

Evaluation objectives

This evaluation answers the following main research questions:

1. What is the impact of an opportunity to participate in Children's University on pupils' attainment in English and maths measured at KS2?
2. What is the impact of an opportunity to participate in Children's University on pupils' non-cognitive outcomes, particularly 'teamwork' and 'social responsibility'?
3. What is the impact of an opportunity to participate in Children's University on disadvantaged pupils, defined as those eligible for free school meals (EverFSM)?

Ethical review

Ethical approval was provided by the Durham University Ethics Committee. The project was conducted in accordance with the School of Education Code of Practice on Research Ethics and in line with the British Educational Research Association's 'Revised Ethical Guidelines for Educational Research' (2004). There was assured anonymity and confidentiality for all participants. No individual pupil or school is identified or identifiable. Schools and individual organisations obtained opt-out parental consent for activities, and to be part of the evaluation.

Project team

The intervention programme was managed by the Children's University Trust led by Debbie Bird and Lynne Upton. The regional CU centres were managed by Laura Grigsby, Sacha Koster, Vikki Cameron-Hall, Julie Whalley, and Sara Casey. The evaluation was led by Dr Nadia Siddiqui, Professor Stephen Gorard, and Dr Beng Huat See of Durham University with the co-operation of a team from Leicester University led by Professor Emma Smith and Dr Patrick White.

Trial registration

The trial was not registered in advance. The protocol was published at the start of the trial, the report will be published in its entirety on the EEF website, the findings will be in the public domain, and the datasets will be archived with Family Fisher Trust.

Methods

Trial design

This is a school-level randomised control trial with two arms. Prior to randomisation, pupils entering Years 5 and 6 in September 2014 across all schools were asked if they wanted to take part in CU or similar activities. Those who said they would volunteer became the main comparators for the headline findings – for Year 5 after two years (and for Year 6 after one year). The interim results after one year were reported to the funders, but made no difference to the ongoing intervention or evaluation. The funders were not able to pay for CU activities for all pupils in the relevant years in the treatment schools. Therefore, after schools were randomised to treatment, a minimum of 20 pupils in each treatment school were selected by schools to participate. CU were able to fund a maximum of 20 pupils per school to take part in the intervention and consequently some treatment schools used their own funds so that all pupils took part. The potential for spill over within schools meant that neither pupil nor class-level randomisation was possible. Treatment schools received the Children's University intervention in the school years 2014/15 and 2015/16, and the control schools were able to receive Children's University after July 2016 when the evaluation was complete. This waiting-list approach is fair, and should reduce any post-allocation demoralisation or dropout.

Participant selection

Schools

The funders, evaluator, and CU agreed that recruitment would target 80 schools in the north of England, with a particular focus on Lancashire and Middlesbrough, that had been identified as areas with low levels of existing provision. The schools were recruited by CU regional offices in Lancashire, Middlesbrough, Blackpool, Blackburn and Darwen. The participating cohorts were Years 5 and 6, with the former involved for two years and the latter for one year until they left primary school. The invitation calls to schools were sent through CU centres, local authorities and publicised through CU websites. The final invitation was accepted by 68 schools who signed the Memorandum of Understanding (MoU) to take part in the programme, subject to the decision of blind randomisation, as well as agreeing to take part in the evaluation process. Parental opt-out consent letters (Appendix C) were sent out by all schools informing parents about the evaluation project and encouraging them to allow participation of their child.

CU introduction training was provided for schools after randomisation of schools and allocation to treatment and control groups. Seven of the treatment schools withdrew from the intervention after training, pre-test, and starting to recruit participants. According to the MoU signed by the schools, they continued being part of the evaluation, cooperated in sharing the data, and conducted the pupil survey. The reasons for school drop-out are discussed later in this report.

Pupils

The funding for intervention was allocated to the developer (CU) in order to provide free places in CU for 20 pupils per school, which they were encouraged to select from the pool of pre-identified 'volunteers' at random, but could use other means as appropriate. This is far from ideal from the evaluators' point of view. In practice, 14 of 36 intervention schools offered CU to the entire age cohort and subsidised the extra cost themselves, 16 schools asked children to volunteer to take part, and the other 6 initially tried to maximise participation by the most disadvantaged pupils – offering places first to FSM-eligible pupils. Irrespective of the strategies used by schools to encourage participation, the main analysis remained on the pre-specified group of 'volunteer' pupils identified prior to randomisation.

Comparing all pupils in treatment schools with all pupils in control schools risked 'diluting' the observed impact of the intervention because the intention was that only a subset of pupils in each school (20 per school) would actually take part in the intervention. Instead, pupils in both treatment and control schools were surveyed to identify those who would be willing to take part in the intervention (referred to as 'volunteers'). The headline findings are based on all pupils in both groups who reported in the pre-test survey before randomisation that they would like to be involved in something like CU (henceforth the 'volunteers'). A comparison is also made between all pupils in all schools in both groups, although this would tend to mute the apparent 'effect' size further.

We also compared the results for those who actually participated in CU with those in treatment schools who did not participate (perhaps because of shortage of places). See impact evaluation section for further details.

Outcome measures

This evaluation measures the impact of pupil participation in the social action and out-of-school hours activities offered by Children's University. The impact is measured for pupils' academic attainment and wider non-cognitive outcomes. The two primary attainment outcomes used are Key Stage 2 reading and maths scores. The two primary non-attainment outcomes are self-reports of 'teamwork' and 'social responsibility' (as measured by pupil survey after the intervention). The non-cognitive measures were pre-selected by CU (and agreed with the evaluators and the EEF), from a larger list provided in the protocol once the survey instrument had been developed and piloted.

The academic attainment measures

The attainment outcomes were measured using KS1 reading and maths results as the pre-intervention attainment measure and KS2 reading and maths results as the post-intervention attainment measure. These results were the scale scores for maths and reading. The use of KS2 reading as an outcome is a change from the protocol that had specified KS2 English. However, in 2016 there were changes to how English was assessed at KS2. Reading remained an independently marked test with raw scores, while writing became teacher assessed with one of 3 descriptors as the outcome (i.e. no raw scores). Owing to the teacher-assessed nature of the writing, the lack of raw scores, and evidence that the writing is poorly correlated to reading outcomes,¹ the decision was made by the EEF and the evaluator to focus on KS2 reading outcomes only.

The rationale for using KS results is their high external validity, and also because it reduces the burden of additional testing for both schools and pupils. It also means that it does not matter if pupils change schools in the interim as long as they move to another maintained school in England. We obtained the results from the National Pupil Database (NPD) by providing the Department for Education with the Unique Pupil Numbers (UPN) and Unique School Reference Number of the participating pupils and schools. Individual pupils' results for each subject were extracted and sent to the evaluation team to be matched by UPN with the survey results. There were two cohorts, and NPD provided fine point scores for the original Year 6 and scaled scores for the original Year 5 (used for the headlines findings). The original plan had included testing the initial Year 5 after one year but this was dropped during the recruitment phase to reduce testing burden.

¹ <https://educationdatalab.org.uk/2016/09/consistency-in-key-stage-2-writing-across-local-authorities-appears-to-be-poor/>

Non-attainment measures

Impact assessment of the intervention on young people's wider outcomes was via a bespoke pupil survey instrument developed especially for use in trials such as this (Appendix D). The instrument was developed by the evaluators in co-operation with the CU, the EEF, and the Cabinet Office. This instrument was piloted in two schools from areas not participating in this trial, and has been used in at least four other evaluations to measure outcomes related to pupil's non-cognitive skills, including the two reported as headline outcomes here.

The instrument comprised basic questions about whether respondents had previously participated in any activities similar to those offered by the CU, and how keen they were to undertake such activities in the future. The pre-test results from these items were to help identify 'volunteers' in all schools, regardless of whether those schools or pupils were going to be offered the intervention.

In addition, the instrument contained a set of single-item questions scored on a scale of 1–10, covering a range of wider outcomes covering concepts including teamwork, communication, motivation, self-esteem, confidence, resilience, civic mindedness, and future intentions. These items were taken from validated instruments, or provided by the Office for National Statistics, reviews of the literature, prior studies by the evaluators, or professional advice. The items are similar to the survey developed by the Behavioural Insights Team who evaluated other youth social action programmes funded by the Cabinet Office. This linkage was deliberate and aimed to make the results comparable with other evaluation studies in this area. All items in the survey have clear audit trails leading to their derivation. For example, the item on self-esteem is the one recommended for single-item use by Rosenberg (1965). All questions are single items either, as with self-esteem, the one item recommended by the developer or, in most cases, the item with the highest loading on the purported underlying construct (with correlations of 0.9 or greater). The widely held belief that measurement error can be reduced by making respondents repeatedly answer the same question is an error (Gorard 2010).

The key consideration was that the items were measurable, malleable in individuals,² and deemed important by stakeholders – either in their own right or because they are linked to behavioural outcomes including attendance and participation at school. The instrument was also tested for suitability (such that all pupils could respond with minimal assistance), and as appropriate for the range of reading ages of Year 4 and 5 pupils (the year groups of the children at pre-test). The questionnaire was designed with mostly pre-coded tick-boxes for ease of completion. Some items were reverse coded to try and encourage pupils to focus on the meaning of each one. Two items were based on short stories (vignettes) in which the socially desirable responses were not as clear as in the scaled tick-box questions. One item asked respondents about the type of occupation they might like in the future, offering a list of possible jobs.

This trial period lasted for 24 months. After 12 months of the trial, we conducted an interim survey with all pupils, now ending their Years 5 and 6 (June). After one further year, again in June, we conducted a final survey with what were then Year 6 pupils; the original Year 6 had by that time moved to secondary school. For this reason, the interim survey has around twice as many respondents, but the two-year results are interesting because, like the attainment outcomes, they allow for a longer-term impact.

Administration of the pupil survey

The pupil survey forms were individualised with pupils' names and UPNs printed on them. The survey was conducted three times, once per year in three consecutive Junes (the pre-test was in the prior

² https://educationendowmentfoundation.org.uk/public/files/Publications/EEF_Lit_Review_Non-CognitiveSkills.pdf

school year). The pre-intervention survey was conducted with all pupils in the relevant year groups prior to randomisation of schools. We observed the process of conducting the survey in all schools in order to collect information on any challenges and barriers faced by schools staff members and pupils in completing the surveys.

The forms were delivered by couriers to schools two weeks before the surveys were to be conducted to allow teachers time to sort them out by classes. The survey packs included a survey administration protocol and all of the necessary information regarding completion of the survey form, return procedure, and allowing missing pupils a chance to complete their survey on their return. Members of the evaluation team went to all of the schools to supervise the administration of the survey and to collect the forms. This helped to ensure maximum return of the surveys, that the survey was conducted consistently across all schools and also to allow any intentional or incidental biases in the way the survey was conducted to be noted.

The printing and electronic scanning of the questionnaires were commissioned to TRAX, a commercial company. Once the surveys were electronically marked, the data files and scanned images of the surveys were returned to us. We re-checked the machine coding by matching each case with the scanned images of the surveys. This process was followed in order to ensure that the coding represented pupils' responses properly, where they used the open comments space and so provided important supplementary information.

Sample size

CU were funded to recruit 80 primary schools from the north of England. 68 primary schools accepted the invitation to participate in the trial. The initial survey included all pupils in the Years 4 and 5 cohorts – a total of 3,840 (2,166 in 36 treatment schools and 1,674 in 32 control schools). Because 68, rather than 80, schools were recruited the developers wanted slightly more schools to work with in the first stage, and this unequal division of the 68 was agreed with the evaluators and funders. See Figure 1 for the participant flow diagram, which shows the Year 5 cohort. The 68 schools recruited could be considered a small sample (in terms of degrees of freedom to allocate to two groups). However, the ability to detect any impact will be considerably enhanced by the large number of observations (pupils) taken for each school estimate, and the high correlation between pre- and post-test outcome scores. Also, the trial involved non-cognitive outcomes that are generally less structurally and socioeconomically stratified than attainment, and the effect sizes possible for wider outcomes are likely to be higher than for attainment (Gorard and Smith 2010).

Although the results are presented for all pupils as well (see Appendix B), the headline findings compare only those pupils in each group who had indicated on the baseline survey that they would be keen to volunteer to take part in CU or similar before randomisation. This aimed to improve the estimate of the effect on the outcomes since only some pupils in treatment schools actually participated and we cannot know which pupils in the control schools would have done so if given the chance. There were 1,452 'volunteers' in treatment schools and 1,151 in control schools at the outset based on the pre-randomisation survey response.

Table 2: Number of pupils by treatment group, year, volunteer status, and whether actually took part in CU

		Treatment	Control
Year 5 volunteers		670	588
	CU participants	370	0
Year 5 non-volunteers		330	252
	CU participants	154	0
Year 6 volunteers		782	563
	CU participants	377	0
Year 6 non-volunteers		394	257
	CU participants	157	0

Note: A further 168 pupils completed the initial survey and their results for the survey are included. However, their year group is unclear and they have no KS1 or KS2 results in the NPD.

Randomisation

Schools were recruited by the developer (CU) and then randomised to treatment group or waiting list control by the evaluators. Four regions participated in the study and in order to have school representation in the sample from all four regions, randomisation was conducted for Lancashire, Middlesbrough, Blackpool, and Blackburn with Darwen. The randomisation for all regions was conducted at the same time.

The procedure involved a set of playing cards with a number of odd and even cards, and one card per school. The cards were mechanically shuffled, and then dealt in turn to represent each school in that order in the list of 68 schools. Odd cards represented Phase 1, and even cards Phase 2. The names of schools with their allocated group were then sent to the CU lead managers who informed the schools about the outcomes of random allocation. The order of the cards was retained for a short time in case of queries. Randomisation was conducted in the presence of an independent staff member who observed the process for fairness. There were 28 treatment and 26 control schools in Lancashire, 5 treatment and 3 control schools in Middlesbrough, 1 control school in Blackpool, and 3 treatment and 2 control schools in Blackburn.

Analysis

All analyses are conducted only with those pupils in the treatment and control schools at the time of the first survey (pre-randomisation).

Primary analysis

The pre-agreed primary attainment outcomes were Key Stage 2 English and maths results for the initial 'volunteers' after 24 months of receiving the treatment (i.e. the original Year 5 cohort). This was subsequently changed to Key Stage 2 Reading and Maths (see discussion in section on Outcome measures above). The 'volunteers' are those who responded with interest to participating in something like CU in the first survey. The primary non-cognitive outcomes are similarly 'teamwork' and 'social responsibility' as assessed by pupil survey conducted after two years. The pre-intervention scores are always presented for comparison. All analysis was undertaken by the evaluator (blind to treatment).

The protocol highlights that the headline results for attainment will be the effect size for the post-test KS total points scores. However, analysis of baseline KS1 scores found considerable imbalance with the treatment group clearly ahead at the outset (see results section). Therefore, the headline results

are presented as progress from KS1 to KS2 scores for each subject (although both pre- and post-intervention 'effect' sizes are presented first). Because KS1 and KS2 scores used difference metrics, both were converted to standardised z-scores before gains were compared.

The EEF suggested that the headline results should be based on our regression models (see below), for example, using prior attainment and treatment group as the predictors and subsequent attainment as the dependent variable. However, simulations of large numbers of trials conducted as part of preparing this report show that the substantive results based on progress scores and R , R -squared or standardised coefficients from regression models are the same on all occasions (see also Xiao et al. 2016). This is so, as long as the correlation between pre- and post-intervention scores is high (as it is here at around +0.7) and similar across trials. If the pre/post correlation is volatile across trials, then the results from regression models can diverge from progress score 'effect' sizes because the latter is far less affected by the change in correlation. So, put simply, if the correlation is high and static (as here) it does not matter to the results which approach is used, and progress scores are preferred because they are easier to understand. If the correlation is low (or variable between trials) then progress scores are to be preferred. Nevertheless, we do present regression models as well for the primary attainment outcome.

Please note that none of the analyses include significance tests, confidence intervals or similar figures as these are inappropriate and completely misleading in this context (see, for example, Falk and Greenbaum 1995, Hubbard and Meyer 2013, Colquhoun et al. 2014, Gorard et al. 2017). Because standard errors are not relevant it follows that clustering is also not relevant. It has been shown in repeated comparative analysis that the actual headline effect sizes are unrelated to clustering. We have only one estimate for each 'effect' size, and so cannot provide a standard deviation for these, by definition. Anything else used as a purported measure of uncertainty, such as a 'standard deviation' formed by repeated sub-sampling of the full dataset, would merely be a complex way of portraying the scale of the difference, the variability of scores (both encapsulated in the 'effect' size already) and the scale of the study (N for each treatment group, as already reported).

Subgroup analysis

We present headline figures on each outcome for those pupils reported as EverFSM-eligible pupils in the NPD data, in order to assess the impact on disadvantaged pupils and the poverty gradient in results. We also present additional analyses of the major results for boys and girls.

Secondary analysis

We present results for 'volunteers' in the initial Year 6 after only one year, which is less time to find a difference. Other attitudinal outcomes, including occupational aspiration, have also been analysed.

The funders provided free places on CU activities for 20 pupils per participating school. This means that each school either had to select 20 pupils or use their own funds to permit all to take part. Of the initial 36 treatment schools, six did not actually pursue the intervention from the outset, 16 used only the 20 funded places, and 14 used the whole year groups. We conducted a simple analysis comparing the progress in maths, reading, and attitudes of four groups of pre-specified 'volunteer' pupils:

- (1) The 'volunteers' in the control schools
- (2) Those 'volunteer' pupils in the treatment schools who did not actually participate in CU
- (3) Those 'volunteer' pupils known to be participating in the intervention
- (4) Those 'volunteer' pupils from the 6 treatment schools that withdrew from the intervention as it started.

If the intervention were effective we would expect the full participants (group 3) to have better outcomes than the 'volunteers' from the control (group 1) and dropping out schools (group 4). All were willing to take part in CU, but did not ultimately receive the intervention. The same could also be said of group 2, but here they may be influenced indirectly by the youth social action undertaken by others in their classes.

Where the outcome measures are real numbers, or can be treated as real numbers (such as with the 11 scaled attitude items – see Appendix D), any differences between the two groups are converted into a Hedge's effect size. Where the outcomes measures are frequencies, the two groups are compared in terms of *post hoc* odds ratios (a different form of 'effect' size for categorical or frequency data). For a table with four cells representing two treatment groups and two possible outcomes, the odds ratio of the first outcome for the intervention group compared to the control group is the first cell multiplied by the last cell, divided by the second cell multiplied by the third cell.

All key results are presented with a simple sensitivity analysis – the number of counterfactual cases needed to disturb the finding, or NNTD (Gorard and Gorard 2016). This can be computed by multiplying the achieved 'effect' size by the number of cases in the smallest group, and then comparing it to the number of missing cases. If the answer is clearly greater than the number of missing cases, then the finding cannot be due to biased missing data. The larger the answer is the more secure the finding is.

Many of the supplementary analyses are in Appendix A. None is a substitute for the simple headline results.

Implementation and process evaluation

The process evaluation provided formative evidence on all phases and aspects of the intervention from the selection and retention of schools, through the training of teachers, to testing the eventual outcomes. This was used to help assess fidelity to treatment, implementation issues, and the perceptions of participants, including any resentment or resistance. It also enables us to identify the features of successful implementation as well as highlighting potential barriers. We conducted the process evaluation in co-operation with the CU managers and school leaders who were mainly in charge of the intervention delivery in their respective regions and schools.

The process evaluation covers the following aspects of the programme:

- The introductory CU workshop for all participating schools
- Consultation meetings with the CU management group
- Informal interviews with pupils and parents
- Observations of the out-of-school hours activities and CU graduation ceremony
- Interviews with the CU managers, head teachers, and teachers in CU schools and as well as schools in the control group
- Analysis of the CU website to understand the objectives of the programme, and their regular updates on the features and activities followed.

The nature of the CU intervention is not strictly structured in terms of delivery. Regional factors play a role in the choice of activities, access to resources, and the opportunities created by schools for pupils' social action. However, standard procedures for logging the activities in the Passport to Learning allowed us a chance to see a broad range of implemented activities. The CU managers from the participating four regions shared the data on activities followed in each school. The CU managers were also asked to provide us with their feedback on each school's participation level at the interim and later stages of the evaluation. This information gave us a general idea about the factors that could be a barrier to implementation of school-based social action activities. The evaluators closely worked with the CU managers in assembling formative information about the participating schools.

The CU managers were the primary contact with the participating school so the data for pupils' attendance in the intervention activities was collected by them and shared with us for our information and analysis. Further formative data from pupils and teachers was collected by the evaluation team members. Observations were first recorded as hand-written field notes by the evaluation team member who conducted the school visit. After each visit the evaluator team member developed a report of the visit that included the detailed descriptions of the field notes, teachers' feedback and comments and details about conversations with the pupils. All visit reports were shared and read by the evaluation team members and important themes and issues were extracted and synthesised for reporting.

We made over 200 visits to the 68 schools in both groups, mostly to deliver, administer or collect surveys. On each occasion we took any available opportunities to talk to staff and pupils, or to observe a relevant session. In addition, we observed 12 different CU activities in 10 treatment schools, attended three training events and two graduation ceremonies, and interviewed 6 CU managers, 16 school staff members including 2 head teachers, 6 parents and 30 pupils.

Costs

The cost information was collected from the central CU office in Manchester. They provided the information as a total cost of the programme over three years. The cost break-down included administrative costs of the programme, and per child and per school costs

Timeline

Table 3: Outline of timeline

Date	Activity
March 2014	Pupils survey for the non-cognitive measures was designed
April 2014	The survey was piloted, pupil data was collected for the survey printing
June 2014	First pupil survey conducted in all 68 schools
10th July 2014	Randomisation was conducted by the evaluators at Durham University
14th July 2014	CU managers were informed about the randomisation results
July 2014	CU introduction and school staff training on record-keeping conducted
September 2014	Parental consent letter sent out by the schools
September–October 2014	Intervention plans and resources were set up by the CU managers
November 2014–June 2015	Intervention conducted in treatment schools, evaluators conducted observation visits in schools, collected pupil-level data needed for analysis. KS2 tests were conducted in May 2015.

July 2015	Second round of survey conducted in all 68 schools
August–September 2015	Received coded survey data from Trax, cleaned the data files and produced interim results
October–May 2016	School visits for process evaluation
June 2016	Third round of survey conducted
January 2017	Validated KS2 results obtained via the NPD

Impact evaluation

Participants

The analysis was intention-to-treat. Therefore for the second and third round of the surveys we followed pupils to their new schools where possible. We found 20 such pupils who successfully completed the surveys, to be included in the final analysis.

Some dropout can be expected in a study lasting over two years. According to the existing evidence, in England non-compulsory pupil mobility between schools is 3%, and this is higher among pupils in primary schools. During Key Stage 1 years 6% pupils change schools, and nearly 5% change school during Key Stage 2 years (Machin et al. 2006). On this basis, the dropout of around 2% for attainment, and 9% for attitudes after two years, in this study is less than would be expected even if no trial had taken place.

Figure 1: Participant flow diagram for pupils after two years

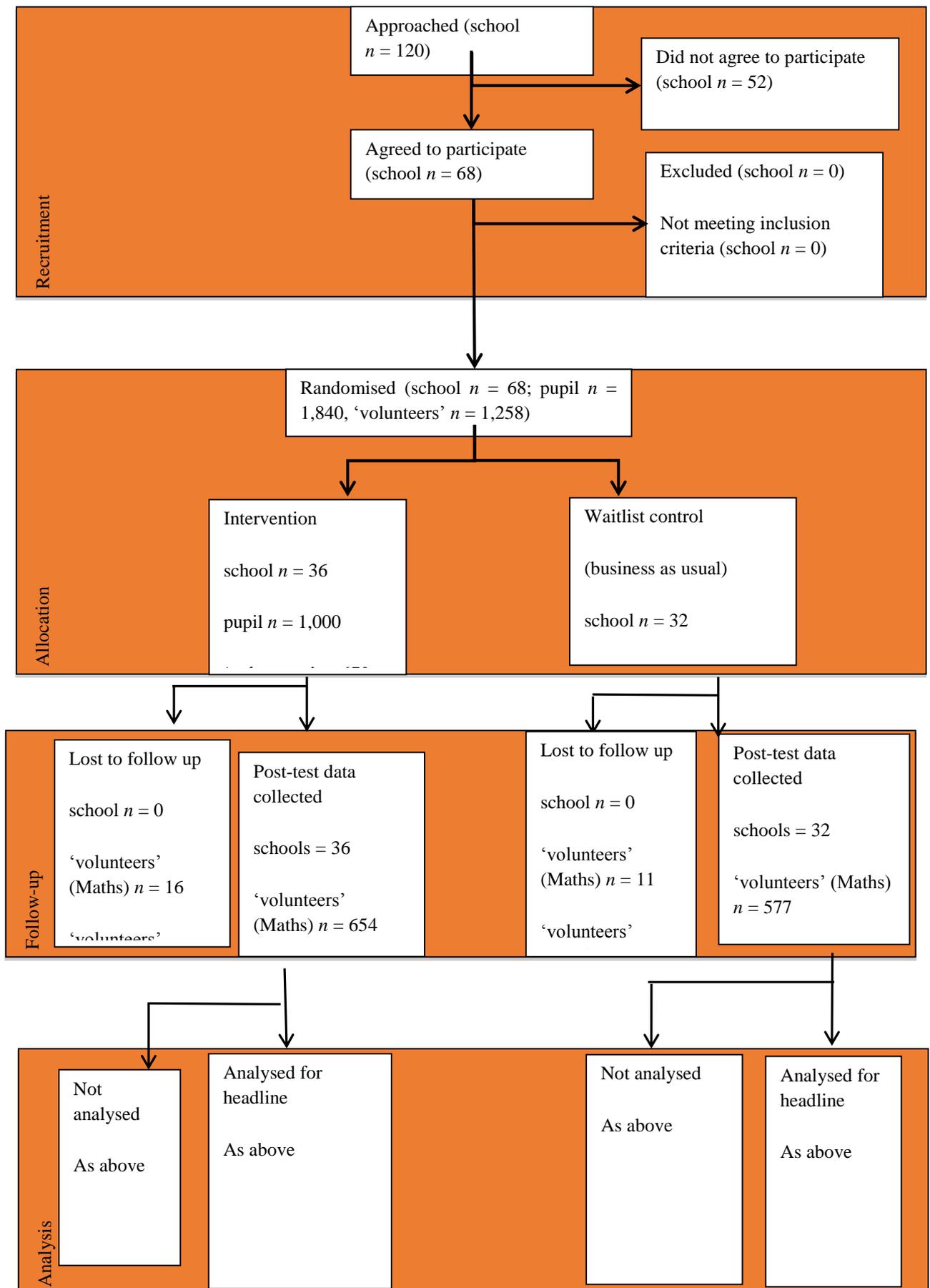


Table 4: Characteristics of attainment measures

Stage	<i>N</i> [schools/pupils] (<i>n</i> = intervention; <i>n</i> = control)	Correlation between pre-test (+other covariates) & post- test	ICC
Analysis (i.e. available pre- and post-test)	68 (36:32)	Maths 0.75 Reading 0.69	Maths 0 Reading 0

Note: ICC is relevant only for estimating a design effect in order to try and estimate the 'standard error'. Since neither of the headline analyses (for volunteers and EverFSM-eligible pupils) involve cases actually randomised as such, there is no standard error. Even for the analyses involving all pupils (in the Appendix), over 5% of scores are missing and so again there can be no standard error by definition.

Pupil characteristics

The schools in this study are all state-maintained primary schools. Ofsted has developed a data dashboard for school characteristics that ranks schools into five quintiles where each quintile represents 20% of the data. A school in the highest quintile is in the top 20% of schools for that characteristic in comparison to all other schools. Table 5 describes characteristics of the participant schools according to the Ofsted data dashboard and annual school-level census (SLASC). No schools withdrew from the evaluation. The treatment group has slightly more 'Outstanding' schools with overall higher attendance, and the control has more FSM-eligible and SEN pupils. These factors may be reflected in the higher prior outcome scores for the treatment group (described elsewhere).

Table 5: Baseline comparison

Variable	Intervention group		Control group	
School-level	<i>n/N</i>	Percentage	<i>n/N</i>	Percentage
School characteristics				
Ofsted rating				
Outstanding	11/36	31	7/32	22
Good	21/36	58	20/32	63
Inadequate	0/36	0	1/32	3
Requires improvement	3/36	8	3/32	9

Ofsted rating not available	1/36	3	1/32	3
FSM eligibility				
Highest quintile	6/36	17	10/32	32
2nd quintile	5/36	14	5/32	16
3rd quintile	5/36	14	6/32	19
4th quintile	7/36	19	7/32	22
Lowest quintile	14/36	39	6/32	19
Proportion of pupils on measures of SEN at school level				
Highest quintile	4/36	11	4/32	13
2nd quintile	10/36	28	8/32	25
3rd quintile	9/36	25	6/32	19
4th quintile	2/36	6	7/32	22
Lowest quintile	11/36	31	6/32	19
Not available			1/32	3
Overall rate of pupils' attendance at school level				
Highest quintile	12/36	33	6/32	19
2nd quintile	6/36	17	11/32	34
3rd quintile	6/36	17	3/32	9
4th quintile	7/36	19	5/32	16

Lowest quintile	5/36	14	7/32	22
Pupil characteristics				
Pupil-level	n/N (missing)	Percentage	n/N (missing)	Percentage
Eligible for FSM	1258/7641	16.5	1452/7026	20.7
Boys	4062/7641	53.2	3961/7026	52.5

Average KS2 points scores		15.4		14.7
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Note: The NPD did not provide data on pupil-level SEN for this study (and so the published quintiles are used above).

Note: These figures are for the schools involved in the evaluation. The characteristics and prior attainment of the pupils actually in the treatment and control groups are detailed in the results section.

Missing cases

Those missing from the control group have lower attainment, but only to the same extent as for pupils in the control group for whom there is KS2 data (as the treatment group was ahead at the outset, see below). There is no reason to assume that dropout is unbalanced by prior attainment (Table 6). The data missing from attainment scores could not be matched in the NPD due to reasons such as errors in UPN details, pupils absent on the Key Stage 2 assessment days, or movement in or out of England.

Table 6: KS1 scores for those in initial survey missing KS2 scores

	<i>N</i>	Reading progress	Standard deviation	Maths progress	Standard deviation
Treatment	96	16.1	4.0	16.0	3.5
Control	39	15.6	4.0	15.8	3.7
Overall	135	15.8	4.0	15.9	3.6

Impact evaluation

Outcomes and analysis

Headline findings for 'volunteer' pupils after 2 years

It is clear that due to the vagaries of randomisation, the treatment group was ahead of the control group in terms of KS1 scores for both English and maths (Tables 7 and 8). The prior KS1 'effect' sizes computed from Tables 7 and 8 are +0.10 for maths and +0.16 for reading. This means that, although there is also a positive post-intervention 'effect' size for both subjects, a post-intervention-only analysis as presented in Tables 7 and 8 would be misleading as it would not take account of the groups' starting points.

Table 7: Post-intervention analysis of KS2 outcomes in maths after two years, 'volunteer' pupils

Group	N	KS1 maths points	SD	Pre-'effect size'	KS2 maths score	SD	Post-'effect size'
Treatment	654	16.23	3.25	–	103.49	6.58	–
Control	577	15.88	3.59	–	102.17	6.68	–
Overall	1,231	16.07	3.42	+0.10	102.87	6.65	+0.20

Table 8: Post-intervention analysis of KS2 outcomes in reading after two years, 'volunteer' pupils

Group	N	KS1 reading points	SD	Pre-'effect size'	KS2 reading score	SD	Post-'effect size'
Treatment	650	16.44	3.67	–	103.28	8.43	–
Control	574	15.84	3.97	–	101.24	7.85	–
Overall	1,224	16.15	3.82	+0.16	102.32	8.22	+0.25

Therefore, Tables 9 and 10 present the results in terms of pupil progress (their gain scores) from KS1 to KS2 for each group. These are treated as the headline figures, and it is possible to conclude from these that the intervention has had a slight benefit in terms of academic outcomes. The 'effect' sizes in Tables 9 and 10 are smaller than in corresponding Tables 7 and 8 because they take into account that the treatment group was ahead at the outset. The number of counterfactual cases that would be needed to disturb the effect size in maths (NNTD) would be 87, and the NNTD for reading would be 64. Both results are therefore reasonably robust. But because these NNTD figures are of the same order of

magnitude as the number of missing cases, it is possible that the headline findings are partly created by missing data.

Table 9: KS1–KS2 progress in maths after two years, ‘volunteer’ pupils

Group	N	Maths gain z-score	SD	‘Effect size’
Treatment	654	+0.049	0.74	–
Control	577	–0.062	0.77	–
Overall	1,231	–0.003	0.76	+0.15

Note: In this table and all that follow, because the treatment group was ahead at the outset, this gain score positive result cannot be due to regression to the mean.

Table 10: KS1–KS2 progress in reading after two years, ‘volunteer’ pupils

Group	N	Reading gain z-score	SD	‘Effect size’
Treatment	650	+0.048	0.77	–
Control	574	–0.051	0.83	–
Overall	1,224	+0.001	0.80	+0.12

In addition to academic outcomes, there are 11 attitude responses, and the full results for all of these are in Appendix A. Of these, ‘teamwork’ and ‘social responsibility’ were pre-selected, and agreed with developers and funders, as the headline items. As with the attainment outcomes, the treatment group was slightly ahead of the control from the outset in terms of teamwork (+0.06), but not social responsibility. This may be partly responsible for the small positive post-intervention outcomes (Tables 11 and 12).

Table 11: Post-intervention analysis of attitude to teamwork after two years, 'volunteer' pupils

Group	N	Pre-survey	SD	Pre-'effect size'	Post-survey	SD	Post-'effect size'
Treatment	625	6.86	2.95	–	7.00	2.62	–
Control	529	6.68	3.15	–	6.67	2.77	–
Overall	1,154	6.78	3.05	+0.06	6.85	2.70	+0.12

Note: Based on 'I can work with someone who has different opinions'. Only includes cases with pre- and post-intervention results.

Table 12: Post-intervention analysis of attitude to social responsibility after two years, 'volunteer' pupils

Group	N	Pre-survey	SD	Pre-'effect size'	Post-survey	SD	Post-'effect size'
Treatment	628	8.23	2.65	–	7.67	2.53	–
Control	528	8.28	2.70	–	7.45	2.61	–
Overall	1,156	8.26	2.67	–0.02	7.57	2.57	+0.09

Note: Based on 'I want to try and make my local area a better place'.

Therefore, the attitude results are also presented as gain scores from pre- to post-intervention (Tables 13 and 14). For both outcomes the treatment group were slightly ahead in terms of progress. Given that the results were always going to be muted because only around 50% of the initial volunteers actually took part in CU (and that other attitudes show progress as well), these findings may be an indication of slight benefit from the treatment.

Table 13: Progress in teamwork after two years, 'volunteer' pupils

Group	Progress	SD	'Effect size'
Treatment	+0.13	3.47	–
Control	+0.00	3.84	–
Overall	+0.07	3.64	+0.04

It is interesting to note that, although the progress score shows a positive effect of the treatment on social responsibility, both treatment and control groups' scores declined from the pre-test. Normal decline in certain attitudes during childhood has been reported in other studies (Washburn et al. 2011).

Table 14: Progress in social responsibility after two years, 'volunteer' pupils

Group	Progress	SD	'Effect size'
Treatment	-0.55	3.29	-
Control	-0.82	3.48	-
Overall	-0.68	3.38	+0.08

The number of counterfactual cases that would be needed to disturb the effect size in teamwork (NNTD) would be 21, and the NNTD for reading would be 42. The first result is not very robust. The second is better. But because both NNTD figures are at or below the order of magnitude of the number of missing cases, it is possible that the headline findings are partly created by missing data.

Headline findings for FSM-eligible pupils

As with the volunteer pupils, the outcomes for EverFSM-eligible pupils were better after two years in the CU group for both maths and English (Tables 15 and 16). And again, this is at least partly because these pupils were ahead at the outset (by +0.09 for maths and +0.13 for reading).

Table 15: Post-intervention analysis of KS2 outcomes in maths after two years, EverFSM-eligible pupils

Group	N	KS1 maths points	SD	Pre-'effect' size	KS2 maths score	SD	'Effect' size
Treatment	219	14.89	3.01	-	100.74	6.41	-
Control	278	14.58	3.74	-	99.89	6.72	-
Overall	494	14.72	3.44	+0.09	100.26	6.59	+0.13

Table 16: Post-intervention analysis of KS2 outcomes in reading after two years, EverFSM-eligible pupils

Group	N	KS1 reading points	SD	Pre- 'effect' size	KS2 reading score	SD	Post- 'effect' size
Treatment	216	14.96	3.82	–	100.36	8.32	–
Control	277	14.43	4.21	–	98.94	7.86	–
Overall	493	14.66	4.05	+0.13	99.56	8.09	+0.18

This difference pre-intervention is taken account of in Tables 17 and 18. The progress scores suggest a very small benefit linked to the intervention for EverFSM-eligible pupils in maths and reading.

Table 17: KS1–KS2 progress in maths, after two years, EverFSM-eligible pupils

Group	Maths gain score	SD	'Effect size'
Treatment	–0.07	0.76	–
Control	–0.11	0.78	–
Overall	–0.09	0.77	+0.05

Table 18: KS1–KS2 progress in reading, after two years, EverFSM-eligible pupils

Group	Reading gain score	SD	'Effect size'
Treatment	–0.08	0.82	–
Control	–0.10	0.89	–
Overall	–0.09	0.86	+0.03

The difference for EverFSM-eligible pupils in teamwork results especially, but also social responsibility, is positive after two years (Tables 19 and 20). But as with the other outcomes the two groups were not balanced at the outset.

Table 19: Post-intervention analysis of teamwork, EverFSM-eligible pupils, two-year result

Group	N	Pre-survey	SD	Pre- 'effect' size	Post-survey	SD	Post- 'effect' size
Treatment	206	6.43	3.35	–	6.90	2.79	–
Control	247	6.11	3.50	–	5.85	2.97	–
Overall	453	6.26	3.44	+0.09	6.33	2.93	+0.36

Table 20: Post-intervention analysis of social responsibility, EverFSM-eligible pupils, two-year result

Group	N	Pre-survey	SD	Pre- 'effect' size	Post-survey	SD	Post- 'effect' size
Treatment	206	8.10	2.91	–	7.60	2.71	–
Control	247	8.04	3.02	–	7.15	2.86	–
Overall	453	8.07	2.97	+0.02	7.35	2.80	+0.16

Therefore, the safest estimate of the impact comes from the progress scores in Tables 21 and 22. Both are positive, and slightly higher for these EverFSM pupils than overall.

Table 21: Progress in teamwork after two years, EverFSM-eligible pupils

Group	Progress	SD	'Effect size'
Treatment	0.47	3.68	–
Control	–0.20	4.07	–
Overall	0.11	3.91	+0.17

Table 22: Progress in social responsibility after two years, EverFSM-eligible pupils

Group	Progress	SD	'Effect size'
Treatment	-0.53	3.68	-
Control	-0.92	3.95	-
Overall	-0.74	3.83	+0.10

Overall, with the other results in Appendix A, the impact findings suggest promise for both academic outcomes and a variety of non-cognitive outcomes, and for reducing the poverty gap in the attitude results.

Additional findings for on-treatment 'effects'

One way of assessing this further is to consider the results only for those in treatment schools who actually took part in CU. There are four 'volunteer' groups to compare: those in the control, those participating in CU activities, those in treatment schools but not participating, and those whose schools were randomised to treatment but withdrew from the intervention. Pupils taking part in CU had higher post-test and gain scores than the control for all four headline outcomes (Tables 23 to 26). Pupils taking part in CU had the highest gain scores for reading and teamwork of all four groups (including those withdrawn or not participating in treatment schools). However, those pupils in schools that withdrew or who otherwise did not participate in CU had gain scores for all four outcomes that were similar to and sometimes higher than those pupils who did participate. Of course, the schools dropping out from the intervention were not random and so may have been on a course to higher outcomes anyway. Nevertheless, this finding should merely act as a slight caution about whether any of the impact findings are caused by actual participation in CU or simply being in the same cohort as those assigned to participate in CU.

Table 23: KS2 results after two years by level of actual participation, 'volunteers'

	N	KS1 maths	SD	Pre- 'effect' size	KS2 maths	SD	Post- 'effect' size	Maths gain score	SD	Gain 'effect' size
Control	563	15.85	3.59	-	102.14	6.69	-	-0.12	0.74	-
Not participating	218	16.06	3.39	+0.06	103.20	6.94	+0.16	-0.02	0.79	+0.14
Withdrawn	78	16.38	3.20	+0.16	103.86	6.30	+0.26	-0.02	0.71	+0.14
Participating	357	16.36	3.18	+0.15	103.61	6.41	+0.22	-0.03	0.67	+0.12
Overall	1,209	16.11	3.39	-	102.97	6.57	-	-0.07	0.73	-

Table 24: KS2 results after two years by level of actual participation, 'volunteers'

	<i>N</i>	KS1 reading	SD	Pre-'effect' size	KS2 reading	SD	Post-'effect' size	Reading gain score	SD	Gain 'effect' size
Control	560	15.80	4.0	–	101.16	7.82	–	–0.17	0.80	–
Not participating	218	16.21	3.62	+0.11	102.78	8.28	+0.20	–0.06	0.79	+0.14
Withdrawn	78	16.85	4.31	+0.27	104.04	8.29	+0.35	–0.07	0.82	+0.13
Participating	353	16.54	3.54	+0.19	103.50	8.55	+0.28	–0.05	0.72	+0.15
Overall	1,209	16.15	3.82	–	102.32	8.22	–	–0.11	0.78	–

Note: All 'effect' sizes are in relation to the control group.

For the two headline attitude results, those in the treatment group *not* participating in the intervention had outcomes as good as or better than those participating, and both had better outcomes than the control (Tables 25 and 26).

Table 25: Teamwork results after two years by level of actual participation

	<i>N</i>	Pre-teamwork	SD	Pre-'effect' size	Post-teamwork	SD	Post-'effect' size	Teamwork gain score	SD	Gain 'effect' size
Control	520	6.66	3.17	–	6.68	2.78	–	0.03	3.85	–
Not participating	216	6.82	3.09	+0.05	6.95	2.85	+0.10	0.12	3.70	+0.02
Withdrawn	68	7.04	2.97	+0.12	7.06	2.68	+0.14	0.01	3.18	–0.01
Participating	350	6.87	2.85	+0.07	7.00	2.47	+0.12	0.11	3.37	+0.02
Overall	1,154	6.78	3.05	–	6.85	2.70	–	0.07	3.64	–

Table 26: Social responsibility results after two years by level of actual participation

	<i>N</i>	Pre-social responsibility	SD	Pre- 'effect' size	Post- social responsibility	SD	Post- 'effect' size	Social responsibility gain score	SD	Gain 'effect' size
Control	519	8.29	2.71	–	7.47	2.60	–	–0.82	3.50	–
Not participating	216	8.06	2.80	–0.09	7.64	2.67	+0.07	–0.39	3.30	+0.13
Withdrawn	68	7.93	2.78	–0.13	7.71	2.71	+0.09	–0.22	3.28	+0.18
Participating	353	8.39	2.51	+0.04	7.66	2.43	+0.07	–0.72	3.27	+0.03
Overall	1,156	8.26	2.67	–	7.57	2.57	–	–0.68	3.38	–

Both of these attitude findings should again add slight caution as to the extent that any improvements noted are the result of actual participation in the intervention itself.

Additional analyses

In addition to the analyses reported above, analyses were conducted for the interim findings for pupils after one year, for all pupils, not just volunteers, and for boys and girls separately. Furthermore, a regression analysis was carried out in line with current EEF guidance. The results for all of these analyses can be found in Appendix A.

Costs

The immediate cost for participation in the CU programme is a standard per pupil (£6) that is paid by the schools or individual parents. This covers the cost of the Passport to Learning, that is £5 (this is not annual but paid each time a new passport is required) and an e-passport licence (annual) of £1. The maximum cost to a child participating through their school is £6 per passport, and schools have the option to absorb this cost or pass it on to the families.

Staff must be prepared to commit extra time to the intervention (not included as a cost here). And outside organisations, including universities for graduation ceremonies, provide time and resources as in-kind contributions. There are several other costs, as presented in Table 27, as averaged for the 29 schools who completed the intervention. Figures are estimates provided by the developers, and costs are estimated over three years for comparability across EEF projects. If a school were to deliver this intervention over three years, the cost increases in the Graduation events because these events would have the maximum number of children completing successfully in the third year of the project. In the 1st and 2nd years, schools/children were not all ready to receive the CU certificates. The cost for travelling to CU destinations, activities and material estimates also increased because the intervention was more mature and involved more children in each activity as compared to the first year.

Table 27: The average cost of CU per school

Expense	Year 1	Year 2	Year 3	Details
Average CU membership fee for large primary	£350	£500	£ 500	Membership fees vary significantly depending on local funding arrangements/proportion subsidised by local CU
Travel to graduation events	£300	£450	£600	Pupils and staff attending: coach transport
Travel to validation training for school coordinator	£25			Depending on size of school, more than one teacher plus volunteers/TAs, and proximity to schools
Photocopying, materials, printing	£125	£187	£250	Handbooks and information material
Total	£800	£1,137	£1,350	

The true cost for the CU activities may be more, and will vary according to the school, region where the school is located, size of the school, resources available, and staff members engaged in the organisation and management of the activities. Some examples of the CU activities and their direct costs, not counting staffing costs, are shown in Table 27. If CU costs £3,287 in total over three years, and assuming 25 volunteering eligible pupils per school across two year groups, the average cost per pupil per year is around £45 (including the £6 CU membership fee, as above). This is considered 'low'. Outside of this trial, CU is usually offered on a whole-school basis, which could lower the cost per pupil from the figure reported here.

Process evaluation

Implementation

Many of the participating schools already had OFSTED-recognised after-school clubs that mainly gave working parents some support by keeping children in schools, while providing pupils with study support, and offering them a broader range of experiences and interests. However, the purpose of out-of-hours activities offered by CU is to extend reward-based learning to the out-of-school context. Many of the participating schools already had existing after-school clubs but CU honed these by motivating the schools to regulate activities through Passports to Learning and providing an opportunity for pupils to participate in a graduation ceremony wearing gowns and mortarboards. The newest element for some schools was the CU social action modules, that they did not already have comparable clubs for.

The level of school participation varied across treatment schools and was largely observed to be dependent on school leadership and challenges or targets faced by schools. CU could only recruit 68 schools, even though it was offered free to 20 pupils in each school, and after the group allocation and initial training, six schools from the treatment group dropped out from participation in the CU (and another one later). Not all of the control schools expressed interest in pursuing CU once the trial was over. This may be indicative of a lack of interest in what CU offers that is additional to what schools already do (or believe that they do). All schools that had signed the MoU and were randomised continued to provide data and cooperate with the evaluation process.

Ten teachers involved in the intervention schools questioned the lack of financial support or other benefits to schools for organising after-school activities, visits to Learning Destinations (such as historical places, museums, libraries, hospitals, botanical gardens, and science labs), and exploring ideas and opportunities of social action. Some of the teachers also showed mild resentment at the increased workload involved in monitoring pupils' participation, logging individual pupils' activities and spending time on each activity.

A teacher said:

If all children got was a 'graduation ceremony' at the end of the year, what would be the benefit for the schools and teachers to complete all the paperwork and 'force' the creation of new clubs?

Several school leads raised the point that their schools were already engaged in social action activities, school visits to museums, libraries, and historic places. Participation in CU was not considered essential but rather an additional cost for staff time and engagement.

However, not all school leaders perceived participation in the CU in the same way. Some were eager to participate because they wanted to establish after-school clubs and social action activities for the first time and participation in the project was seen as beneficial for involving parental support. Some schools already had established activities and wanted these endorsed by the CU project. The CU endorsement allowed schools to improve school profile for Ofsted inspections and parental engagement. Reward-based out-of-school hours participation was considered important for pupil motivation. It was also reported by a headteacher that participation in what they termed a 'recognised' programme (CU) helped their school to justify the expenditure of pupil premium funds.

According to one regional CU manager, school leadership played a key role in implementing out-of-school learning and supporting disadvantaged pupils through outreach activities. If the school leadership does not consider pupil participation in social action or after-school activities beneficial for pupils, they are less likely to fully engage. Sometimes there are also restrictions such as lack of time or

priority, due to major academic improvement targets set by Ofsted. In some cases, schools cannot afford having extra staff time for taking the responsibility for tasks done in out-of-school hours.

The CU regional staff member also reported that the implementation of social action activities could face challenges due to the geographical location of the schools. Schools in urban centres had various opportunities to engage with partnerships or approach Learning Destinations with low travel costs. However, schools in rural areas needed more resources to create wider engagement opportunities for pupils.

Parental support and involvement could be a factor in pupils' full engagement in the after-school activities. One teacher provided her feedback on parental support, saying that it is sometimes really hard to engage parents from the most disadvantaged backgrounds. In several cases, the school expects parental engagement in the form of sending prompt consent for their children's participation in an activity, visiting schools on club events and community days to support their child's participation, attending school ceremonies and celebrations, supporting children in providing prompt pick-and-drop services, and arranging social and outdoor activities for a wider experience of their children. School leaders often mentioned that some parents do not cooperate with schools. One teacher said that it is sometimes a challenge to effectively communicate with some parents even regarding important activities in which their child needs to participate.

There has been a very little parental support. Some parents really do not engage with us and we find this a most challenging part of the programme. It is difficult to raise children's aspiration unless parents are involved with us.

Another teacher commented:

A number of children have been very enthusiastic about CU. Parental support has varied across the board but some parents have been keen to have their children graduate from a university.

The CU managers also gave their views on the importance of parental support and cooperation in meeting the objectives of out-of-school learning opportunities and engagement in social actions. The CU manager reported that some parents are eager and keen to support schools and pupils and it has been observed that in several areas with dense populations of disadvantaged communities, social actions can be well supported by parents. One CU manager said that some of the events and the CU Graduation ceremony are highly appreciated by families from poor backgrounds. Attending a graduation ceremony in a university campus is sometimes an inspiration for children and their parents to progress further in education.

The evaluation team visited intervention schools to collect information on the CU activities. A general observation was that after-school clubs and out-of-school activities were popular and well attended by pupils. However, the social action activities themselves were not always so frequent or fully integrated with out-of-hours activities. This may have been because they were the newest element of CU (and so perhaps less well developed). The schools provided various opportunities for children to participate in various sports, arts and crafts, singing and drama, cookery, sewing, board games, and photography. According to one CU manager, such after-school clubs and out-of-school activities are easier to conduct safely where school staff have control. However, social action activities often require preparatory work such as risk assessments and protocols for pupils' health and safety checks, and parental consent. All of the intervention schools completed some sort of social action as a necessary requirement of completing 15 hours per term. Details of some of the social action projects observed during schools visits are given below.

Charity and fund-raising activities

The CU recommended that all intervention schools utilise the time of existing after-school clubs and out-of-school activities and develop further activities that could integrate with community

events. One school had a gardening activity as an after-school club, where pupils were helped to grow vegetables. The school arranged community days to sell the vegetables grown in the garden and raise money for donations to a cancer research foundation. A few schools organised community days to sell cupcakes and raised funds to support a children's hospital. Another school helped pupils in making and selling arts and crafts items and donations were made to a local home for elderly people. Such activities were first introduced in the school assemblies and information was also provided to parents for supporting the cause. The pupils were given passport credit stamps for the time that they spent in preparation and execution of these activities.

Several schools organised after-school sessions making packs for donations to food banks for the homeless or disadvantaged. Pupils were asked to collect items that were not used in their homes, such as clothes, utensils, and toys. The message introduced to pupils in these activities was to help communities who need help and that sharing is better than wasting. The schools donated items to organisations such as Oxfam and the Red Cross. The CU managers worked closely with the schools in providing general support and helping teaching staff in giving credits for pupils' participation.

Some schools selected a charity support cause such as health, pets, nature, or people with disabilities. These choices were guided by the CU managers, with teacher and pupil input. A school leader gave the following comments on pupils' participation in social action:

The children had an opportunity to look at and share with family members an information booklet published by the kidney for life charity. We chose this charity because it supported a young family in our school community through a difficult time. Looking at families less fortunate than themselves, the children were able to discuss how thankful they are for their own good health and family. Having raised money for this charity the children were keen to further their efforts to include other families who needed support. They decided on supporting a local food bank. Working as a whole group developed their leadership skills and empathy for others.

Another teacher made the following comments:

All activities encouraged children to respond to a local need recognising that some families are not so lucky as their own. The activities also allowed children to recognise their own leadership qualities, organising, speaking publicly to other class members, encouraging group members.

Pupils also participated in charity and fund-raising activities with help and support provided by parents, family, and community members. These activities included participation in charity events and collection services in the local Church and participating in awareness walks. The CU recognised these activities as pupils' participation in social action and teachers were asked to award credits to pupils' individual efforts.

Another teacher commented:

We raised a total of £72.06. Feedback from parents has been very positive, praising their children's effort and their response to those less fortunate than themselves. The children enjoyed working as a group, raising money and were thrilled that their efforts could make a difference. We collected over 100 items for the local food bank.

Some pupils also commented on fund raising:

I helped in Macmillan charity and gave money to brother (sic) so that he could go to Kenya and build houses for poor people.

I participated in a ballet show for raising charity. It was good to help people for raising money for homeless and poor people.

Volunteering and community work

The schools developed opportunities for volunteer work in out-of-school hours. Pupils were encouraged to participate in school councils and volunteer to provide support to staff and peers. Some pupils participated in peer support programmes during lunch breaks and out-of-school hours. This required them to help peers who needed support in reading, maths or writing. In one school, pupils gained credits for helping reception staff during lunch breaks by handling phone calls. Another school was observed where pupils volunteered to support the local library during weekends and pupils attained reward credits by helping the library staff arrange books, clear tables and make labels for the book shelves.

A pupil in Year 6 said:

We help younger children in our school learn new games in the playground. It is real fun and we like helping them to learn exciting games.

A pupil also reported that in the summer holidays he volunteered to participate in local beach area cleaning activities. Volunteering in the community and religious spaces was encouraged by CU managers. Some pupils said that in order to achieve the required points in their Learning Passports they volunteered to help in Sunday Church gatherings. A group of pupils in a school volunteered to organise a choir service for people in a local hospice that was highly appreciated and they said that they would continue doing this every term.

Pupils further commented on volunteering and community work as follows:

I volunteered to help in a local library and it gave me a chance to meet new people. I also learned about books and how to place them in the book-shelves.

I volunteered to help organising a show for St John hospice. It was a competition for the disabled. It was so great to help people who were helping others.

I like to volunteer. I volunteered helping a local youth group who arranged for litter picking from the streets.

I volunteered to help in a farmhouse. It was fun to look after animals and to help people who work so hard to keep animals healthy.

What are the necessary conditions for success of the intervention?

The process evaluation suggested that the intervention was generally well run and popular with a wide range of pupil participants. The major problem found was schools dropping out early on, or being unable to provide staff time for the full programme.

School leaders played an important role in making a success of social action and learning in after-school activities. The activities need school resources, time, and staff and parental engagement but where school leaders and teachers support the idea of pupils' learning in out-of-school hours the challenges are easier to tackle.

School leaders repeatedly claimed that rewarding pupils' engagement in activities other than academic performance through credits had been very effective. Several school leaders gave anecdotal evidence on pupils' improvement in behaviour and often in academic performance once they achieved credits for participation in sports or art and crafts. However, a subset of teachers and school leaders also expressed their resentment at following the procedures of recording reward credits and giving stamps, because they doubted it was an effective way of increasing pupils' motivation in doing the tasks. Some teachers also said that collecting credits or stamps is not as important as participation in the activities themselves. A teacher also said that if CU gave some real value to the Learning Passports, such as reduced prices on school uniforms or books, then participants would be more motivated by them.

Graduation ceremonies in the university campuses were key events in the CU programme. The children in general enjoyed receiving a certificate of achievement in a formal ceremony. Parental participation in the graduation ceremonies was encouraging for pupils. The CU management ensured that the event was a special occasion for pupils, and that the focus was on pupils' achievement in the form of their participation in out-of-school-hours activities rather than performance in classroom. Pupils enjoyed wearing gowns and mortarboards and being photographed with their CU achievement certificates in their hands.

A pupil reported:

*It is really so great. I felt so proud in wearing the graduation gown and scholar's hat.
This has made me want to come to university for studies in the future.*

In the survey, pupils were given the opportunity to report their aspirations for their future career choice. In the open comments box pupils wrote numerous options for their future careers. The most frequently reported career choices were professions in sports (athlete, footballer, swimmer, cyclist), technology (game designer, 'YouTuber', computer programmer, graphic designer, space technology scientist), science (biologist, archaeologist, astronomer, forensic science expert), medicine and veterinary (surgeon, dentist, midwife, vet, zoo keeper), and arts (actor, dancer, writer, film maker).

Barriers to delivery

The schools that dropped out after training and before the intervention cited pressures of other activities. They also suggested that the intervention was not what they envisaged, and that for them CU would be largely badging activities they already provided.

The location of the schools in rural areas could be a challenge, as the choices for activities are more limited in these settings. One CU manager stated that schools in rural areas are more enthusiastic about after-school clubs that involve activities related to agriculture and farming. These interests are more relevant to their local area and school population.

The local CU managers were dependent on the participation of school leaders for regular activities. Changes in staff and school leadership in some schools affected the implementation of activities. These changes could lead to slow implementation of the process but usually local CU managers would take control and work as replacements for the school leaders in this respect.

Some schools not keen on participation reported that they had problems with allocating staff time. The activities required the use of their staff in out-of-school hours, and this generally required them to make some new appointments. One of the school leaders also reported that the new challenges in the curriculum demand more time and focus on direct teaching rather than extra-curricular activities. Schools that are under pressure for improvement in attainment cannot focus on extra-curricular projects. Several school leaders said that pupils in Year 6 need preparation for their Key Stage 2 exams

and it is difficult to engage the last year of primary school in activities other than the main achievement targets.

Parental lack of support was also reported as an occasional barrier to the engagement of pupils from disadvantaged families. Some activities required parents' participation in the form of parental consent and even their attendance to accompany their child to events such as graduation. It was a challenge to reach some parents and engage them in the activities and, according to teachers, this was most common among parents from disadvantaged backgrounds.

Is the intervention attractive to stakeholders?

In general, pupils reported that CU activities were fun and that they enjoyed participation in after-school clubs, social action activities, and visiting learning destinations. Some reported that the activities were promised to be in out-of-school hours but sometimes teachers used their breaks from lessons and lunchtime for these activities. Pupils wanted to have more hours spent out-of-school rather than attending lessons in classrooms. In several schools, CU was offered as a priority to pupils eligible for FSM, and this meant that some pupils who were not participating wanted to take part in the CU activities along with their friends. This showed that CU was popular among all pupils but schools with limited resources for disadvantaged pupils could not provide the chance to all. One of the pupils said:

My friend does these after-school clubs in which they learn sewing and knitting and they do other art activities. I also wanted to do but Miss... said I can't do it this year.

The activities involve extra expenditure and if not funded for all then many pupils could lose the opportunity of participation and enjoyment. This could affect pupils from families who are just on the threshold of low-income status or those who are potentially eligible for pupil premium but not recorded as such for some reason.

Schools were interested in implementation of CU after-school clubs and social action ideas. Some school staff members were very keen on engagement with local providers, museums, and learning destinations. The schools in general supported the aims of the project and said they were likely to continue CU membership and social action activities. A few school leaders also commented that they have used pupil premium funds for enrichment activities and if school leadership is interested in the extra-curricular activities then they would arrange them even without CU participation. However, the school leaders also stated that participation in CU increases networking with other schools and providers, that allows implementation of innovative ideas and share resources.

The evaluation team members interviewed parents during the school visits and in graduation ceremonies. Obviously, those who were present on these occasions could be considered as already engaged with schools. Their feedback was very positive about the schools providing opportunities to their children for learning in out-of-school activities. Parents appreciated the idea of school visits to museums, visits to places of worship for different religions, and social action projects for the communities. The parents also commented that learning could be the aim but most important is that the children enjoy the activities, and that if schools support these activities then it is helpful to parents.

Fidelity

Delivery of the intervention

Schools were randomised into two groups and half received the intervention while the rest waited until after the trial period to receive it. There was little chance of diffusion between the schools because the evaluators carefully monitored the participation of schools in the CU programme. We also visited

schools on the waiting list regularly for the three surveys, and ensured that none participated in the CU intervention.

At the school level, the intervention delivery was monitored by the local CU managers and their team members. Local CU managers and school leaders decided their own action plans and strategies to meet the aims of the programme. All schools that remained in the intervention group validated the after-school clubs and learning destinations. Pupils participating in the intervention earned reward points based on the CU criteria and this was closely monitored by the local CU managers. The schools might have organised different after-school activities and involved various partners for social actions but all schools fulfilled the criterion that participating pupils must complete 30 hours of out-of-school learning out of which 15 hours must be dedicated to social action. The graduation ceremonies were conducted only when a CU staff member was assured that the pupils had completed 30 hours of learning and social action.

There was variation across the regions and schools in implementing activities. (Precise figures of the CU activities implemented are not possible to report here as the process evaluation took place in 10 case study schools only). In general, all schools observed participated in social action but the nature differed and was dependent on factors such as local area, time of the academic year, and relevance to what pupils were taught in the curriculum. Flexibility for schools to conduct their own social action and out-of-school activities was the core element of the CU programme, that was appreciated by the school leaders. In a sense, CU is a template for an intervention.

Participation in CU formalised the pre-existing engagement of schools and pupils in extra-curricular activities to some extent. Implementation of activities was closely monitored by the CU regional staff managers through regular school visits and participating with schools in conducting the activities. The control schools were not stopped from conducting other enrichment activities or social actions. As far as we know, the schools in the control group did not implement an equivalent programme.

Outcomes

Perceived outcomes of the intervention

There were several outcomes attributed to the CU activities. All schools in general agreed that out-of-school activities are enrichment activities that cost staff time, pupil learning time, and financial resources. The school leaders and parents who were interviewed during the project agreed that volunteering and other youth social action projects should be recognised as an important part of learning via schools, as this supports pupils' character building and inspires them to achieve for a better future.

Participation

According to the school leaders, the participation of pupils from disadvantaged families was perceived as the most successful outcome of the programme – in some schools this was deliberate, and in others it occurred naturally. The school leaders believed that pupil premium funds used in these activities were perhaps the first chance for some pupils to participate in exciting after-school clubs such as swimming, karate, and coaching for their favourite sports activity. Some schools purchased sport kits for pupils, that encouraged them to attend the after-school sports clubs regularly. The arrangement was supported by the school leaders, as they had the knowledge about some children whose parents had severe financial constraints and could not manage to spend on enrichment activities. The school leaders perceived visits to different learning destinations as highly beneficial for their disadvantaged pupils.

Participation from parents, local universities, museums, libraries, and other learning resource centres contributed greatly to the successful implementation of the CU programme. Some parents also helped schools run after-school clubs. In one school we found that a gardening club where pupils learned about

plants and grew vegetables and herbs in the school garden was run by a parent. The vegetables grown in school were sold in the market to raise money for charity.

Local universities participated in organising graduation ceremonies for the pupils who completed their target of 30 CU hours. The ceremonies were attended by the university staff members, school leaders, and parents. The parents who attended the ceremony reported that their children's participation had made them feel very proud.

Aspirations

Pupils believed that the activities inspired them to think about studying in a university and choosing a profession. Some schools held lectures by science professionals, and arranged visits to science museums and laboratories. These activities were perceived to have an impact on pupils' aspirations to pursue careers in science.

Several groups of pupils in various schools were asked about their future careers, and during this conversation they reported that their school had done community and social action projects with providers called 'Be the Change' and in doing this project they were given a lot of information about social work that inspired some pupils to seek a professional degree in this field. In another school, where pupils completed a project on building schools in a developing country, they were given a lot of information about the humanitarian crisis and need for education in war zones. Some pupils also commented that these social action projects made them think about working for organisations such as the Red Cross.

A group of pupils showed keen interest in animal welfare. Pupils seemed very interested in research conducted for the welfare of animals and some even said that this inspired them to become a researcher in animal sciences. Working in occupations related to animal welfare was the most commonly identified future career in the survey open comment box for pupils' aspirations.

School leaders perceived CU activities as a great source of aspiration for children. A school leader commented that this allowed pupils to think about joining new professions rather than just having limited examples of their parents' professions. She said that schools should give more exposure to children on various work interests and options that can inspire them to think beyond traditional professions.

Empathy and social responsibility

Social action projects were perceived by many stakeholders to have had an impact on pupils' sense of empathy and awareness about other people's feelings. The school leaders said that sponsoring charities had given pupils a lot of information on causes such as water-aid for developing countries, animal welfare, homelessness, and cancer research. In the school assemblies these issues were discussed for pupils' awareness and participation.

During school visits we asked pupils about the reasons for their participation in social action. It seemed that in general they had a good idea of the reasons for participation and meaningful social actions are those that have a cause and benefits for the communities who need help. The pupils gave these comments:

We know we can't see children living in countries where there is war but we can at least collect money for the charity so they can buy food and clothes for children in need.

My school is very nice. Teachers are very nice. We play and do a lot of fun activities. We have raised funds for school buildings in Uganda so that children go to schools like mine.

The schools also adopted social actions that were focused on the needs of local community. Pupils were asked about these social actions and they said:

We want our streets to be clean and no litter around. We want no graffiti on the walls. We have made these posters so that people should see that we care about our area.

During play time in the ground we see younger children bullied by the older ones. We have done a project and we will talk about this in our school assembly so that older children should know that bullying is bad.

Friendship

Pupils reported that after-school clubs was a time to do 'fun' things together with their friends. A few also reported that when they are on visits or in school clubs they can make new friends. They said that in classrooms there is not much activity that they can do together and whatever they do out of classroom involves friends.

School leaders reported that participation in the social actions and after-school clubs had given some pupils a lot of confidence to talk. Some school leaders reported that children took up different tasks such as charitable activities themselves and this helped develop their leadership skills. As the tasks are group projects school leaders felt that it strengthened pupils' friendship bonds. A few comments by school leaders were:

We see children in completely different roles when they are doing these activities. They enjoy more and you can see they have skills to do things that we otherwise don't notice.

In these activities teachers are there to support and children lead their own social actions. It gives a lot of confidence to these children when they see any task successfully accomplished and they can actually own it in the end. This is what helps their self-esteem.

Children see things achieved by themselves. They work in groups and develop more trust and friendship when they do things on their own.

Formative findings

According to the developers, school recruitment and engagement over more than two years is a challenge. The school leaders that chose to withdraw from the treatment were more concerned with targeted attainment outcomes. Schools under pressure to show academic improvement may not be able to fully participate and regularly engage in activities that do not address their academic achievement directly. The literature (see Background evidence section above) shows more disadvantaged pupils as having lower average access to opportunities for enrichment, and such decisions by schools may tend to reinforce this.

Schools implement enrichment activities, after-school clubs, and social action projects in different ways, whether they are part of CU or not. Participation in the CU programme is not the only means to conduct these activities and some schools also commented that the CU procedures and recording protocols of activities and pupils engagement require school staff time. Although the CU programme had attempted to make these procedures less cumbersome by developing an online system for recording the pupil data, some school leaders perceived signing up to be an extra job to do. The benefits reported by the teachers and school leaders from signing up with CU were networking with other school partners and providers, sharing innovative practice and most importantly having a validation from a recognised organisation for the activities that the schools are doing anyway. School leaders also said that it is

something that the school can flag-up during Ofsted inspection and this reflects that the school is addressing the education of pupils as a whole rather than just focusing on academic goals.

The CU local centres extend a lot of support in validation of outdoor activities. This involves addressing health and risk assessments and checking needs when schools organise visits to various destinations. There are 15,000 destinations that have achieved CU validation for access to schools and pupils. The schools sometimes have to align their plans and activities with the CU validation process and procedures. The process is fully supported by the local CU teams but it can take time as the number of learning destination sites is always increasing. Google Maps now recognises CU validation of the sites and shows the CU logo as the validated site that helps schools and parents to make their plans for activities.

After-school clubs and learning destination visits were found to be more regularly implemented than social action. The reasons could be that the schools needed more support and networks for social action as a large number of social action activities require health and safety checks. The CU organisation focused on social actions only as part of this project and in future they need to increase the options for social action activities so that the schools can benefit from other partnerships, welfare centres and charities.

Pupils reported a myriad of interests in professions as their future career. Although a lot of pupils' choices and options for careers will depend on other academic factors, they have great aspirations to take up jobs that are challenging and innovative. The schools need to cater for pupils' interests in professions and provide regular opportunities about the requirements and knowledge in professions. Several pupils reported that before this project they had never been asked about future jobs and careers. Some pupils said that just being asked about future professions made them think about what they want to choose for a career.

Control group activity

The control schools were on the waiting-list to implement the CU programme once the trial period ended in 2016. However, the schools were not stopped from conducting activities, that could be other enrichment activities or social action. As far as we know, the schools in the control group did not implement enrichment or social action activities similar to those offered by CU. The validation and reward system followed by CU was only followed by the schools in the treatment group. Some control schools were permitted by the developer and funders to implement CU in younger year groups after one year. This may have muted the 'effect' sizes if there was diffusion to the older cohorts (but we have no evidence on this).

Conclusions

Key conclusions

1. Children in the CU schools made 2 additional months' progress in reading and maths compared to children in the other schools. The finding for maths has moderate security, and the finding for reading has low to moderate security.
2. Children in CU schools made small gains in 'teamwork' and 'social responsibility' compared to children in the other schools. The finding for social responsibility has moderate security and the finding for teamwork has low to moderate security.
3. Children ever eligible for Free School Meals (FSM) made 1 additional month's progress in maths, no additional progress in reading, and small gains in 'teamwork' and 'social responsibility' compared to ever FSM children in the other schools. The smaller number of ever FSM pupils means these results are less secure than the results for all pupils.
4. Compared to pupils in the control group, those in the treatment group were more likely to select professional occupations as their future aspiration, and to report higher levels of communication, empathy, self-confidence, resilience, and happiness, after the intervention.
5. The intervention was feasible to run with support from school leaders. However, 7 schools decided not to implement the intervention despite receiving the training because of pressures to meet performance targets, and limited time.

Participation in CU out-of-school activities and social action is linked to small gains in maths and reading, and 'teamwork' and 'social responsibility' after two years. Pupils eligible for free school meals (EverFSM6) generally showed slightly lower levels of benefit from the intervention in attainment terms, but more benefit in terms of attitudes. The results for EverFSM-eligible pupils tend to be more volatile because of the smaller number of cases involved.

There are some further promising results for pupils' aspirations, awareness of feelings for others, and other attitudes not pre-selected as headline outcomes. Compared to pupils in the control group, those in the treatment group were more likely to select professional occupations as their future aspiration, to have greater empathy, and to report higher levels of communication, self-confidence, resilience, and happiness. This enjoyment and increased esteem could be reasons in their own right for pursuing this kind of intervention.

The intervention proved feasible to run, and many activities were seen as enjoyable by pupil participants, who were especially appreciative of the graduation event. Some treatment schools did not implement the intervention even after agreeing to be randomised and being allocated to the treatment group. As this happened mostly after the training, it suggests that it is not popular with all schools, perhaps because of the costs involved compared to the actual benefits for schools already hosting a programme of extra-curricular activities.

Interpretation

These findings suggest that schools solely interested in improving attainment might have more effective options. However, given that the activities may also have intrinsic merit, and offer the possibility of gains in *both* academic and attitude outcomes, there is promise in this intervention and perhaps others like it. This is especially so as the design adopted by necessity may tend to mute the impact of the intervention. The main limitation is that the number of missing cases needed to disturb some of these findings is small.

The intervention may have had a positive impact on pupils' aspirations for professional occupations. This finding is aligned with existing research as well, that shows that pupils' engagement in after-school activities and social actions are associated with their aspirations for professional careers (Goodman and Gregg 2010). The evidence collected through the process evaluation also showed that the pupils who received the intervention wanted to know more about pathways towards professions of their interests. There were several other improved scores for non-cognitive aspects – other than those pre-selected as the headline figures. As the intervention clearly does no damage to overall outcomes, and may improve pupil enjoyment, schools may wish to continue with such activities for their own sake.

The participation level in CU varied across schools, dependent on school leadership and the challenges or targets faced by schools. The school recruitment rate was lower than the intended target. CU could recruit only 68 schools from a target of 80, and even some of these showed early signs of losing enthusiasm and interest when the CU introduction workshops were conducted. Six schools from the treatment group dropped out immediately (from the treatment but not from the trial) after the first training session (and another one later). They had signed the MoU, so they continued to cooperate with the evaluation itself.

In terms of the feasibility of implementing out-of-school activities including youth social action for primary schools, it is quite clear that pupils take an interest in these activities and that schools can run these programmes well in cooperation with external providers. As reported by school leaders, the major constraints could be funds because the most exciting external programmes can be costly in terms of utilising resources and staff time. Participation of external providers and other local resources can reduce the cost to some extent but not all.

Limitations

The evaluation is a reasonably large-scale trial in terms of the number of schools and pupils involved. The time scale adopted was two complete calendar years, which is a substantial amount of time for an educational trial that allowed the intervention to be implemented fully. However, this may still be too short a period for the kind of impact sought by the developers, and the Year 6 were not followed to their new secondary schools for the final survey.

The study has many strengths. There was no school dropout from the evaluation. The KS1 and matched KS2 results are from the National Pupil Database and include all initial volunteer cases for which there are records (98%).

Although attrition was kept to a minimum for the pre and post pupil survey results and all cases of missing data were pursued vigorously, the fact that around 9% of all pupils and volunteers in Year 6 did not complete the survey again after one year, and around 9% of all pupils and volunteers in Year 5 did not complete the survey again after two years, means that these specific results must be interpreted with some caution.

Attempting to capture changes in non-cognitive outcomes via self-report is perhaps the best that can be done, but it is not without problems (Gorard et al. 2017).

The main limitation of the evaluation stems from the design in that the funder and developer required that schools, rather than pupils, were randomised, and that not every child in treatment schools undertook the intervention – thus reducing the likely estimate of the impact of the intervention. The idea was to assess whether youth social action activities could influence others in the year group not actually participating. The two groups in the trial were unbalanced to some extent on most pre-test indicators from the outset. This must reduce the security of the findings slightly.

Future research and publications

The CU programme was a combination of several components that included after-school clubs, learning destination visits, and social action. A future research project can assess the academic impact of individual components of the programme. It might be possible that the CU intervention can modify some components to specifically benefit the academic attainment of disadvantaged pupils. Future research could focus on the long-term impact of the intervention, and the social action modules once they are more mature. These programmes receive less time compared to the time given for more usual school-based interventions and therefore the 'effect' might appear in later academic outcomes such as Key Stage 4 results. However, in terms of the outcomes used here, it is likely that there are more fruitful avenues for future research and development.

We consider that the long-term outcomes of this intervention could be overall well-being and readiness during academic transition stages, enhanced opportunities for university, and subsequent access to the employment sector. These wider outcomes are aligned to the aims of CU programme and there is existing evidence that shows positive associations between children's participation and learning in out-of-school hours with social and emotional well-being and access to successful pathways at later stages in life.

We intend to publish these findings in a peer-reviewed journal. For wider dissemination of the findings, we will mention this report in our other published work and conference presentations.

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Appendix A: Further analyses

This appendix presents additional but important analyses including the figures after one year, for all pupils, for all other wider outcomes, and for boys and girls separately. It includes four simple regression models.

Attainment outcomes

'Volunteer' pupils, one year

As with attainment after two years (the headline figures), the CU group starting in Year 6 was ahead at the end of that year in both maths and reading. And as with the two-year figures, this group was already ahead at the outset, making post-intervention scores potentially misleading. At KS1 the treatment group was ahead by +0.09 in maths, and +0.14 in reading (Tables A1 and A2). The gain scores take this initial difference into account with the result that the outcomes are slightly positive after one year for maths and slightly negative for reading.

Table A1: KS2 post-intervention result for maths after one year, 'volunteers'

Group	N	KS1 maths points	SD	Pre-'effect' size	KS2 maths fine points	SD	Post-'effect' size	Gain score	SD	Gain 'effect' size
Treatment	695	15.96	3.58	–	4.94	0.82	–	0.04	0.64	–
Control	520	15.62	3.82	–	4.84	0.80	–	0.01	0.80	–
Overall	1,215	15.82	3.69	+0.09	4.90	0.81	+0.12	0.02	0.71	+0.05

Table A2: KS2 post-intervention result for reading after one year, 'volunteers'

Group	N	KS1 reading points	SD	Pre-'effect' size	KS2 reading fine points	SD	Post-'effect' size	Gain score	SD	Gain 'effect' size
Treatment	695	15.95	4.06	–	4.86	0.66	–	0.02	0.74	–
Control	520	15.33	4.53	–	4.79	0.64	–	0.06	0.86	–
Overall	1,215	15.68	4.28	+0.14	4.83	0.66	+0.11	0.04	0.79	–0.05

All pupils by sex, two years

The tables below present results for all Year 5 pupils, regardless of their 'volunteer' status or participation in CU, split by sex. This gives an indication of the average impact of being in a school

doing CU for all Year 5 pupils, versus a school not doing CU. The results for boys and girls have the same pattern as all other findings with the CU group ahead at the outset and after the intervention, but boys made slightly clearer progress in maths and reading (Tables A3 to A6).

Table A3: KS2 result for maths, after two years, all male pupils

Group	N	KS1 maths points	SD	Pre- 'effect' size	KS2 maths score	SD	Post- 'effect' size	Maths gain score	SD	'Effect' size
Treatment	522	16.46	3.35	–	104.12	6.73	–	0.01	0.72	–
Control	416	15.80	3.73	–	102.12	7.12	–	–0.12	0.78	–
Overall	938	16.17	3.54	+0.19	103.23	6.98	+0.29	–0.05	0.75	+0.17

Table A4: KS2 result for reading, after two years, all male pupils

Group	N	KS1 reading points	SD	Pre- 'effect' size	KS2 reading scores	SD	Post- 'effect' size	Reading gain score	SD	'Effect' size
Treatment	516	16.26	3.67	–	103.30	8.11	–	–0.01	0.80	–
Control	416	15.23	4.06	–	100.47	7.79	–	–0.11	0.81	–
Overall	932	15.80	3.90	+0.26	102.04	8.09	+0.35	–0.05	0.81	+0.13

Table A5: KS2 result for maths, after two years, all female pupils

Group	N	KS1 maths points	SD	Pre- 'effect' size	KS2 maths fine points	SD	Post- 'effect' size	Maths gain score	SD	'Effect' size
Treatment	441	15.99	3.11	–	103.02	6.49	–	–0.03	0.70	–
Control	401	15.92	3.50	–	102.16	6.27	–	–0.14	0.72	–
Overall	842	15.95	3.30	+0.02	102.61	6.40	+0.13	–0.08	0.71	+0.15

Table A6: KS2 result for reading, after two years, all female pupils

Group	N	KS1 reading points	SD	Pre- 'effect' size	KS2 reading fine points	SD	Post- 'effect' size	Reading gain score	SD	'Effect' size
Treatment	440	16.59	3.63	–	103.54	8.52	–	–0.07	0.71	–
Control	401	16.34	3.82	–	102.16	7.70	–	–0.17	0.79	–
Overall	841	16.47	3.72	+0.07	102.88	8.16	+0.17	–0.12	0.76	+0.13

Wider outcomes

'Volunteer' pupils, one and two years

Table A7 shows the effect sizes for all 11 of the scaled attitude items, after both one year and two years. The pre-selected headlines items are in bold, and it is clear that these portray some of the least benefit from the intervention. The CU group are ahead in terms of communication, self-confidence, resilience or determination, and happiness. This enjoyment and increased esteem could be reasons, in their own right, for pursuing this kind of intervention.

Table A7: 'Effect' size of gain scores for attitude items, 'volunteer' pupils

Item	One-year	Two-year
I am good at explaining my ideas to other people	+0.16	+0.18
I like meeting new people	0	+0.01
I can work with someone who has different opinions	–0.05	+0.04
I can do most things if I try	+0.10	+0.06
Once I have started a task I like to finish it	+0.07	+0.14
I want to try make my local area a better place	+0.03	+0.08
<i>I like to be told exactly what to do</i>	–0.01	+0.15
<i>I am often afraid to try new things</i>	+0.03	+0.10

<i>I feel happy most days</i>	+0.02	+0.14
I try to understand other people's problems	0	+0.01
I know where to go for help with a problem	+0.10	+0.04

Note: Positive scores for items in italics are deemed to portray negative impact.

The CU group became clearly more empathetic/generous in resolving the issue in the vignette about whether they were happy for others to receive help at their expense (Table A8).

Table A8: Odds ratios for outcomes of vignette on generosity/empathy (Jacinta), 'volunteer' pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	40.3%	1.00	46.7%	1.25	47.8%	1.23
Control	40.3%		41.2%		42.7%	

Note: In tables A8 to A11 and A17 to A20 the percentage represents those agreeing with the social desirable outcome.

The responses to the vignette on social responsibility were so positively skewed (and this was not picked up in the pilot) that this item is hard to judge for changes over time (Table A9).

Table A9: Odds ratios for outcomes of vignette on social responsibility (Jon), 'volunteer' pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	92.3%	1.00	94.6%	1.24	93.8%	0.88
Control	92.4%		93.4%		94.5%	

The CU group became clearly more likely to report wanting a professional occupation in the future in resolving the issue in the relevant vignette (Table A10).

Table A10: Odds ratios for professional aspirations, 'volunteer' pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	45.1%	1.00	60.6%	1.25	63.0%	1.23
Control	45.0%		55.1%		58.0%	

The treatment group reported less charitable or other social action over time (other than in CU), perhaps because their CU activities replaced them to some extent (Table A11).

Table A11: Odds ratios for charity or other social action, 'volunteer' pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	75.5%	1.10	72.3%	1.43	35.6%	0.99
Control	73.7%		64.6%		35.9%	

Attainment outcomes

All pupils, one and two years

As might be expected, the attainment results considering all pupils in both groups are similar to the headline figures for 'volunteers'. As with the overall results, the CU group had been ahead from the outset (Tables A12–A15). The CU schools are ahead for both maths and reading, after one year (original Year 6) and two years (original Year 5), and make more progress from KS1 to KS2 in both subjects.

Table A12: KS2 post-intervention result for maths after one year, all pupils

Group	N	KS1 maths points	SD	Pre-'effect' size	KS2 maths fine points	SD	Post-'effect' size	Maths gain score	SD	'Effect' size
Treatment	1,010	15.97	3.59	–	4.94	0.82	–	0.04	0.66	–
Control	770	15.56	3.74	–	4.81	0.79	–	0.00	0.76	–
Overall	1,780	15.79	3.66	+0.11	4.88	0.81	+0.16	0.02	0.70	+0.05

Table A13: KS2 result post-intervention for reading after one year, all pupils

Group	N	KS1 reading points	SD	Pre- 'effect' size	KS2 reading fine points	SD	Post- 'effect' size	Reading gain score	SD	'Effect' size
Treatment	1,010	15.92	4.03	–	4.85	0.66	–	0.02	0.73	–
Control	768	15.29	4.32	–	4.77	0.66	–	0.06	0.85	–
Overall	1,778	15.65	4.17	+0.15	4.81	0.66	+0.12	0.04	0.78	+0.04

Table A14: KS2 result for maths after two years, all pupils

Group	N	KS1 maths points	SD	Pre- 'effect' size	KS2 maths score	SD	Post- 'effect' size	Maths gain score	SD	'Effect' size
Treatment	963	16.25	3.25	–	103.62	6.65	–	–0.01	0.71	–
Control	817	15.86	3.62	–	102.14	6.71	–	–0.13	0.75	–
Overall	1780	16.07	3.43	+0.11	102.94	6.71	+0.22	–0.06	0.73	+0.16

Table A15: KS2 result for reading after two years, all pupils

Group	N	KS1 reading points	SD	Pre- 'effect' size	KS2 reading score	SD	Post- 'effect' size	Reading gain score	SD	'Effect' size
Treatment	956	16.41	3.67	–	103.41	8.29	–	–0.04	0.76	–
Control	817	15.78	3.98	–	101.30	7.79	–	–0.14	0.80	–
Overall	1773	16.12	3.83	+0.16	102.44	8.13	+0.26	–0.09	0.78	+0.14

Wider outcomes

All pupils, one and two years

The following results are for all pupils in the relevant year groups, regardless of whether they volunteered initially to take part in CU or similar. Because so few of them actually took part, the effect sizes should be more muted, unless there is a clear cohort effect. Table A16 leads to mostly the same

substantive conclusions as Table A1. After two years, pupils in the CU schools are ahead in terms of communication, self-confidence, determination, and happiness.

Table A16: 'Effect' size of gain scores for attitude items, all pupils

Item	Interim	Two-year
I am good at explaining my ideas to other people	+0.07	+0.12
I like meeting new people	-0.04	+0.01
I can work with someone who has different opinions	-0.05	+0.04
I can do most things if I try	+0.07	+0.11
Once I have started a task I like to finish it	+0.02	+0.13
I want to try make my local area a better place	-0.04	+0.04
<i>I like to be told exactly what to do</i>	-0.09	+0.10
<i>I am often afraid to try new things</i>	+0.02	+0.10
I feel happy most days	-0.03	+0.12
I try to understand other people's problems	-0.03	-0.05
I know where to go for help with a problem	+0.05	+0.01

Note: Items in italics are deemed negative.

Similarly, they are more empathetic (Table A17) and more professionally aspirational (Table A19), but less likely to report charity or volunteering outside CU activities (Table A20).

Table A17: Odds ratios for outcomes of vignette on generosity/empathy (Jacinta), all pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	38.8%	0.98	47.0%	1.28	48.6%	1.24
Control	39.2%		41.0%		43.2%	

Table A18: Odds ratios for outcomes of vignette on social responsibility (Jon), all pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	90.4%	0.92	93.5%	1.10	93.8%	0.93
Control	91.1%		92.9%		94.2%	

Table A19: Odds ratios for professional aspirations, all pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	41.9%	0.96	59.0%	1.13	62.0%	1.13
Control	42.9%		56.0%		59.0%	

Table A20: Odds ratios for charity or other social action, all pupils

	Pre-intervention	Odds ratio	Interim	Odds ratio	Post-intervention	Odds ratio
Treatment	71.6%	1.23	68.7%	1.47	34.3%	1.05
Control	67.1%		59.8%		33.1%	

Simple regression models

Four two-step regression models were created with post-intervention scores as the outcomes (for maths, reading, teamwork, and social responsibility), and prior attainment in the relevant subject, or prior attitude as predictors in the first step, and treatment group as predictor in the second step. The analyses involve initial volunteer pupils in both groups after two years, and had the same number of cases as in the headline findings.

As already indicated by the headline findings, being in the treatment group here makes a small difference to outcomes for reading and maths, over and above KS1 attainment (Table A21). For both reading and maths, the coefficient 'effect' sizes of being in the CU group are small (0.08 and 0.07) as seen in Table A22. However, it is well-established that such regression modelling is not well-suited for establishing the results of employing a straightforward design as here or overcoming deficiencies in the design (Shadish et al. 2002, Gorard 2013). Gain scores are considered by the evaluators to be simpler

and less prone to error propagation. This result therefore does not replace the headline figures, but the low increase for R in Step 2 may be seen as a slight caution about their precise strength.

The same is true for teamwork and social responsibility, even though prior attitude is less important than prior attainment (as evidenced by the lower R scores). As with the headline gain score results, the coefficients here portray a small benefit linked to being in the CU treatment group.

Table A21: Variation explained (R) by prior attainment/attitude and being in treatment group, volunteer pupils

	R reading	R maths	Teamwork	Social responsibility
N	1,224	1,231	1,154	1,156
Step 1: Prior score	0.678	0.715	0.197	0.163
Step 2: Treatment group	0.682	0.719	0.204	0.169

Table A22: Standardised coefficients ('effect' sizes) for Step 2 of model in Table A21

	Reading	Maths	Teamwork	Social responsibility
Relevant KS1 score	0.67	0.71	–	–
Relevant prior attitude	–	–	0.20	0.16
CU group	0.08	0.07	0.05	0.05

Appendix B: Padlock security ratings

Maths

Rating	Criteria for rating			Initial score	Adjust	Final score
	Design	Power	Attrition			
5	Well-conducted experimental design with appropriate analysis	MDES < 0.2	0 – 10%			
4	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11–20%	4		
3	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21–30%		Adjustment for Balance [-1]	3
2	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31–40%		Adjustment for threats to internal validity [0]	
1	Comparison group with poor or no matching (e.g. volunteer versus others)	MDES < 0.6	41–50%			
0	No comparator	MDES > 0.6	>50%			

- **Initial padlock score:** lowest of the three ratings for design, power and attrition = 4  based on MDES in protocol of 0.28
- **Reason for adjustment for balance** (if made): the experimental and control groups were not balanced (effect sizes of 0.1 for maths) which EEF guidance suggests should result in a drop of an additional 1 padlock
- **Reason for adjustment for threats to validity** (if made): none
- **Final padlock score:** initial score adjusted for balance and internal validity = 3 

Reading

Rating	Criteria for rating			Initial score	Adjust	Final score
	Design	Power	Attrition			
5	Well-conducted experimental design with appropriate analysis	MDES < 0.2	0 – 10%			
4	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11–20%	4	<p>Adjustment for Balance</p> <p>[-2]</p> <p>Adjustment for threats to internal validity</p> <p>[0]</p>	
3	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21–30%			
2	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31–40%			2
1	Comparison group with poor or no matching (e.g. volunteer versus others)	MDES < 0.6	41–50%			
0	No comparator	MDES > 0.6	>50%			

- **Initial padlock score:** lowest of the three ratings for design, power and attrition = 4 based on MDES in protocol of 0.28

- **Reason for adjustment for balance** (if made): the experimental and control groups were not balanced (effect sizes of .16 for reading) which EEF guidance suggests should result in a drop of an additional 2 padlocks
- **Reason for adjustment for threats to validity** (if made): none
- **Final padlock score:** initial score adjusted for balance and internal validity = 2 🗝️

Teamwork

Rating	Criteria for rating			Initial score	Adjust	Final score
	Design	Power	Attrition			
5	Well-conducted experimental design with appropriate analysis	MDES < 0.2	0–10%			
4	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11–20%	4	Adjustment for Balance [-1] Adjustment for threats to internal validity [-1] 	
3	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21–30%			
2	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31–40%			2
1	Comparison group with poor or no matching (e.g. volunteer versus others)	MDES < 0.6	41–50%			
0	No comparator	MDES > 0.6	>50%			

- **Initial padlock score:** lowest of the three ratings for design, power and attrition = 4

- **Reason for adjustment for balance** (if made): the experimental and control groups were not balanced (effect sizes of .05 for teamwork) which EEF guidance suggests should result in a drop of an additional 1 padlock
- **Reason for adjustment for threats to validity** (if made): one quality marker issue associated with the bespoke measures used to understand non-academic outcomes. There is no published validity or reliability metrics available for this measure.
- **Final padlock score:** initial score adjusted for balance and internal validity = 2 🗝️

Social responsibility

Rating	Criteria for rating			Initial score	Adjust	Final score
	Design	Power	Attrition			
5	Well-conducted experimental design with appropriate analysis	MDES < 0.2	0 – 10%			
4	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11–20%	4	<p>Adjustment for Balance</p> <p>[0]</p> <p>Adjustment for threats to internal validity</p> <p>[-1]</p>	
3	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21–30%			3
2	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31–40%			
1	Comparison group with poor or no matching (e.g. volunteer versus others)	MDES < 0.6	41–50%			
0	No comparator	MDES > 0.6	>50%			

- **Initial padlock score:** lowest of the three ratings for design, power and attrition = 4
- **Reason for adjustment for balance** (if made): None. The experimental and control groups were well balanced.

- **Reason for adjustment for threats to validity** (if made): one quality marker issue associated with the bespoke measures used to understand non-academic outcomes. There is no published validity or reliability metrics available for this measure.
- **Final padlock score:** initial score adjusted for balance and internal validity = 3 🔒

Appendix C: Parental Consent Letter

Date<<>>

Subject: Parental consent for participation

Our school has been asked to take part in an exciting project for our Year 5 and Year 6 children. We will be working with the Children's University™, Cabinet Office and Education Endowment Fund.

I am enclosing some information on the work of the Children's University for you. If, with your permission, your child takes part in the project our school will be part of the programme. Your child will have the opportunity to take part in a range of supervised *Learning Activities* outside of the normal school day. Many of the *Learning Activities* will be designed to benefit the community as well, of course, as capturing your child's interests.

The children will record the time they spend taking part in these *Learning Activities* in their own CU *Passport To Learning* and online in their own CU *E-Passport To Learning*.

Once your child has completed at least 30 hours of *Learning Activities* they will be invited, with guests, to receive a Children's University Award at a CU Graduation Ceremony.

As part of our school involvement, children will be asked to complete some short survey questionnaires before the end of the last academic year. Children will also be asked to complete further questionnaires whilst they are taking part and at the end of the school year.

These survey questionnaires will be sent to the University of Durham who are looking at whether taking part in these *Learning Activities* helps the personal development and achievement of children.

The University of Durham will have access to certain information held on the National Pupil Database. The name of your child or the name of our school **will not** be identified in any report written.

<<Name>> will be coordinating the project in school and will be happy to answer any questions you may have.

I am sure your child will enjoy being part of the programme, but if you would prefer them not to take part, please inform their class teacher.

Headteacher signatures

<<School name>>

<<School address>>

Appendix D: The survey



00003



How do you see your future?

Primary School

School URN :

Name :

UPN .

(Please do not complete a survey form that has someone else's Name or UPN printed on it)

Please ask a teacher to fill in the grid below if your UPN is not printed above

UPN:	P	8	8	9	2	5	1	5	0	9	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9

Instructions

- This is a **survey** to find out about your views on things that are important to young people. There are no right or wrong answers to the questions
- What you say here will not be told to your school or your family
- Please complete **all** questions
- Use only **pencil** to mark the answers. If you make a mistake use the rubber to rub it out
- Mark the boxes as shown

Like this:



NOT like this:



Student Survey

	Yes	No	Don't Know	Other (comment below)
1. In the last year, have you been part of any activities or groups like those listed below. DO NOT INCLUDE SPORTS OR SPORTS CLUBS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Children's University
- Brownies, Girlguiding, Cubs, Scouts, Rainbows or Beavers
- Sea Scouts, Army Cadet Force, Boy's Brigade
- St. John's Ambulance, Police Cadets, Fire Cadets

Other similar activity, not one of the answers above (please write here):

Sea cadets

In the last year, have you been part of any activities like those listed below? Do not include sports or sports clubs

	Yes	No	Don't Know	Other (comment below)
2. In the last year, have you been part of any activities or groups like those listed below? DO NOT INCLUDE SPORTS OR SPORTS CLUBS.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Volunteered to help in a local group, club or place of worship
- Helped raise money for a charity (e.g. doing a sponsored walk)
- Done any activities that help other people

Other similar activity, not one of the answers above (please write here):

3. Please read the story below and then mark the box next to the statement that you agree with the most:

Jon notices that there is a lot of litter in the school playing fields. What is the best thing he could do?

Mark ONE Box

- Ignore the mess and take his friends to play in an area that is cleaner.
- Help to clean up the playing fields.
- Complain to his friends that no one cares about the mess.



4. Please read the story below and then mark the box next to the statement that you agree with the most:

Jacinta has difficulty reading and finds it hard to keep up in class. The teacher has to spend a lot of time helping Jacinta. Sometimes the other children have to wait for the teacher to stop helping Jacinta before helping them.

Mark ONE Box

- Jacinta needs extra help so it is fair that the teacher should spend more time helping her, even if the other pupils have to wait.
- Jacinta should work harder to keep up with the rest of the class.
- Jacinta should be taught in a separate class.

5. Please say how much you agree with the following statements from "not at all true" (0) to "completely true" (10). Draw a line through only ONE box in each row.

	0	1	2	3	4	5	6	7	8	9	10
a. I am good at explaining my ideas to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. I like meeting new people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. I can work with someone who has different opinions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. I can do most things if I try	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Once I have started a task I like to finish it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. I want to try and make my local area a better place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. I like to be told exactly what to do	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. I am often afraid to try new things	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. I feel happy most days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. I try to understand other people's problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. I know where to go for help with a problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Which group contains jobs that are most like the one you would like to do in the future?

Mark ONE Box

- Hairdresser, postman/postwoman, factory worker, cleaner, caretaker, farm worker, waiter/waitress, security guard, fitness instructor .
- Doctor, scientist, lawyer, vet, teacher, nurse, journalist, artist, pilot, author, architect, musician, businessman/businesswoman, professional sports person, computer programmer/web designer
- Policeman/policewoman, fire officer, secretary, nursery school teacher, office worker, electrician, builder, childminder, car mechanic, clothes designer .
- I don't know what job I want
- Other (please mark this box and write the job below)

If there is a job that you really want to do that is not like any of these, please write it down here:

Youtuber/twitch streamer

Thank you very much for completing this questionnaire. We value your help greatly.

If you have any further comments on the issues raised by these questions then please write them below:

Appendix E: Photos

Art and craft club



Attendance at a lecture by the Archbishop of York



Social action club activity: Training for first-aid



Graduation ceremony



Children's University Passport to Learning



Appendix F: Cost rating

Cost ratings are based on the approximate cost per pupil per year of implementing the intervention over three years. More information about the EEF's approach to cost evaluation can be found [here](#). Cost ratings are awarded as follows:

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.

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