

***Evaluation of Children's University,
effectiveness trial***

Evaluation Protocol

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-PROJECT TITLE	Evaluation of Children's University, effectiveness trial
DEVELOPER (INSTITUTION)	Children's University Trust
EVALUATOR (INSTITUTION)	National Foundation for Educational Research
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TRIAL DESIGN	Two-arm cluster randomised controlled trial with random allocation at school-level
TRIAL TYPE	Effectiveness
PUPIL AGE RANGE AND KEY STAGE	Age 9/10 (Year 5) (at baseline) and age 10/11 (Year 6) at follow-up, Key stage 2 (KS2)
NUMBER OF SCHOOLS	150
NUMBER OF PUPILS	Approximately 3,000
PRIMARY OUTCOME MEASURE AND SOURCE	KS2 maths and reading scaled scores as two separate outcomes (accessed via National Pupil Database (NPD)); Bonferroni corrected
SECONDARY OUTCOME MEASURE AND SOURCE	NFER survey that includes the following established scales: <ol style="list-style-type: none">1. Self-esteem and2. Goal and aspirations from Student Resilience scale (Cork, n.d.);3. Engagement scale and4. Valuing of School scale from Panorama SEL measure (Panorama Education, n.d.).

Protocol version history

VERSION	DATE	REASON FOR REVISION
V1	19/07/2022	Note, this study was commissioned pre-Covid-19, and was paused during the recruitment period due to school closures and Covid-related disruption. A draft protocol had been written pre-Covid. This protocol is the version for publication, with post-Covid-evaluation revisions including: an increased recruitment sample size to mitigate against any further disruptions/risk of schools dropping out due to ongoing Covid-related disruptions, an additional logic model refresher workshop, and interviews with the CU Trust central team.

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Study rationale and background

Children's University is a charity that works in partnership with schools to develop a love of learning in children aged 5 - 14. The Children's University network is made up of over 60 delivery partners in the UK who work with local communities, local authorities, national partnerships, schools and parents to deliver these opportunities to children. Children's University (CU) aims to improve the aspirations and attainment of pupils by encouraging participation in learning activities beyond the normal school day. Children's University centres support schools to provide a range of learning opportunities, such as after-school clubs, projects and enrichment activities, and visits to destinations such as libraries, sports clubs, historic centres, museums, or anywhere that offers structured learning activities for children. Pupils use a 'Passport to Learning' to record activities and hours, and these are rewarded by the collection of credits, certificates and graduations. This gives pupils the opportunity to develop character, self-esteem, resilience, motivation to learn, and life skills within and beyond the school curriculum. The development of these traits and skills is tied in with improving life chances, including good health and wellbeing, avoiding behavioural and social difficulties, and employability (Cullinane and Montecute, 2017; Clarke *et al.*, 2015).

Cummings *et al.* (2012) reviewed the evidence on whether changing aspirations and attitudes impacted academic attainment and this included reviewing interventions aimed at increasing out of school activities. They found that there was some evidence that extra-curricular activities were associated with better academic achievement, but concluded that there was not enough good evidence that attitude change (such as aspirations, motivation for learning or valuing school) mediated this impact. Tanner *et al.* (2016) examined whether out of school activities could close the education gap and found associations between extra-curricular activities and academic attainment, especially for disadvantaged children. This showed promising evidence, though the link could not be shown to be causal (Tanner *et al.*, 2016). Thus, there is some evidence for a potential link between the types of activities Children's University Trust offer and better academic attainment, but there is need for stronger causal evidence, and currently the mechanisms through which this might occur are not fully understood. That said, the CU programme has some particular features which support pupils' non-cognitive outcomes (e.g. the offer of a wide range of learning activities, the collection of stamps in the Passport to Learning, and recognition and celebration of achievement at graduations), including their self-esteem, their confidence to communicate, their motivation to learn within and beyond school, and their goals and aspirations (set out further in the Logic Model). This study aims to understand these 'outcome' areas and the mechanisms that might be involved in improving pupils' learning through taking part in CU.

It is encouraging that there is some evidence of an effect of extra-curricular learning activities on academic attainment and that disadvantaged children might benefit. However, as it stands, disadvantaged children are less likely to take up these activities (and to engage in social action projects (Southby and South 2016)). There are also key differences in levels of provision and access to such activities based on geographical differences such as urban/rural settings, the type, and the size of the school (Power *et al.*, 2009). The government's plan for improving social mobility through education (DfE, 2017), the Essential

Skills Programme in Opportunity Areas (2017 – 2019), Damian Hinds' announcement of five foundations for building character and a new advisory panel on character and resilience – all highlighted the importance of participation in extra-curricular and character-building activities in policy agendas. In particular, Hinds pledged that the government will work with a wide range of organisations to 'help every child access activities within each of these five foundations' (Hinds, 2019). He also relaunched the DfE Character Awards, which recognise innovative programmes in schools. The CU intervention sits firmly within that policy context. More recently, schools and pupils have coped with disruptions relating to the Covid-19 pandemic, and there is evidence that schools are focusing on pupils' wellbeing including wider activities as part of their learning recovery strategies (Nelson *et al.*, 2021; Rose *et al.*, 2021).

Between 2014 and 2017, CU was evaluated in an EEF funded efficacy trial. Sixty-eight primary schools from the north of England took part in the trial. The schools were randomised to intervention or control groups, stratified by geography. More schools were randomised to the intervention arm (36) than the control arm (32) as school numbers were lower than expected and the evaluation and delivery teams wanted a certain number of schools/pupils to receive the intervention. Pupils in Years 5 and 6 volunteered to take part during a baseline survey. The trial looked at academic outcomes using KS2 reading and maths scores and at non-cognitive and attitudinal outcomes relating to teamwork and social responsibility, using a bespoke pupil survey at baseline and follow-up after two years for the Year 5 pupils (and at one year for the Year 6 pupils as interim findings). Using gain scores from baseline to follow-up, the trial revealed that pupils in the intervention group made more progress in academic and non-cognitive outcomes than pupils in the control group. The gains (from KS1 to KS2) were larger for the academic outcomes, equivalent to two months additional progress, than for the non-cognitive items, which were small but positive. The trial had moderate security in the maths outcome and moderate-low security in the reading outcome. There was some imbalance between types of schools at randomisation where there were higher numbers of outstanding schools in the intervention group and the control group had more schools with higher proportions of pupils with free school meals eligibility (FSM). In addition to this, the intervention group was ahead on most measures at randomisation. Whilst the trial had these issues, there is still promising evidence that CU can improve pupil outcomes.

Overview of the integrated evaluation design

Evaluation of Children's University was scheduled to run during the academic years 2020-21 and 2021-22. Due to the Covid-19 pandemic, all schools in the UK were closed from 20th March 2020 to all pupils (except vulnerable children and the children of key workers). As a result, the evaluation activities were paused until September 2020. The school recruitment resumed in October 2020, and in order to allow sufficient time for schools to be recruited, signed up, and complete baseline activities with parents and pupils, it was agreed between NFER, EEF and Children's University Trust that randomisation would take place in October 2021 (rather than in summer 2021), with the second half of the autumn term in 2021 for 'on-boarding'. This means the intervention for pupils will start in schools in January 2022 and run until July 2023. This meant that the length of the intervention for pupils was reduced from six academic terms to five academic terms. It was decided in discussion with CU Trust including reflection on the Logic Model that a five term intervention would not unduly affect the experience of pupils and the potential for outcomes to be achieved. This protocol reflects these changes to the length of the intervention and the evaluation design.

This trial is an effectiveness trial funded by the EEF to test how this intervention performs at scale over two years. The trial will add to the findings from the efficacy trial. As a brief

overview, we will employ a school-randomised design. We will randomise 150 schools on a 1:1 basis into two arms: intervention and control, stratified by CU localities. The stratification will aid intervention delivery as each local CU delivery partner will have a fixed number of intervention schools to support (following the typical CU model).

Pupils volunteer themselves to take part in CU activities rather than the intervention being delivered to every pupil in a cohort. The opportunity to volunteer was therefore built in to the trial design and offered to all pupils in the cohort. In order for us to identify such 'eligible volunteers' from all participating schools, we will ask children and parents to express their interest in taking part in CU prior to randomisation. We will do this via parent expression of interest forms and pupil surveys at baseline. The group established this way would become the eligible volunteers to take part in CU and constitute the primary analysis cohort¹.

The primary outcomes for this trial will be KS2 maths and reading scaled scores accessed via the NPD. They will be analysed as separate outcomes with a Bonferroni correction (see impact evaluation section for further details). We will use existing age-appropriate measures in a bespoke pupil survey to assess non-cognitive secondary outcomes aligned with the logic model (see Figure 1), namely: increased positive identification with school; growth in pupils' self-belief/self-esteem; increased motivation to learn; and improved goals and aspirations for the future. The pupil survey will use existing reliable scales with published psychometric properties to evaluate constructs reflecting these outcomes, and will be administered at baseline and at endpoint. Further details can be found in the section on secondary outcome measures.

Other outcome areas in the logic model (in particular those relating to developing essential skills such as problem-solving and communication skills, for which existing standardised reliable measures are more limited), will be explored using self-report/perceptions in the survey and in the implementation and process evaluation (IPE). The implementation and process evaluation (IPE) will support the impact evaluation by exploring the number, range and types of activities that are offered across the 11 different local CUs (by schools and in the locality), and that are taken up by the trial volunteers. The number of activity hours that children take part in will also contribute to 'compliance' (akin to dosage) analyses. The IPE will complement the impact evaluation by exploring implementation facilitators and barriers in case-study schools where take-up is high, and implementation/engagement challenges where take-up is lower via telephone interviews with school senior leaders. The IPE will also explore any scaled up implementation features in this effectiveness trial, and whether the different funding arrangements for local CUs affect implementation. The IPE will involve exploration of CU online activity data, case studies, telephone interviews, a staff survey, usual practice pro-formas, and some IPE questions in the pupil survey.

Changes since the previous evaluation

The main changes between this effectiveness trial and the previous efficacy trial are summarised in Appendix 1. The effectiveness trial will be a larger trial with 150 primary schools, with equal randomisation to intervention and control, rather than 68 schools which were unequally randomised in the efficacy trial. The schools will be recruited from different regions than the ones involved in the efficacy trial. Only pupils due to be in Year 5 in the academic year 2021-2022 will be recruited to the effectiveness trial in order for the evaluation to measure an impact of two years. For secondary outcome measures, the efficacy trial used single items from the validated scales to create a pupil survey instrument. In this trial, we will use existing reliable scales (or valid subscales from an instrument) with

¹ This means, the primary analysis for the trial will include only the eligible volunteers.

published psychometric properties. We will create an instrument to include all constituent items from relevant subscales² so that we can measure the secondary outcomes specified for the trial; the instrument will also include a number of implementation and process evaluation questions. In the efficacy trial, the survey was administered three times (baseline, interim and end-point). Whereas, this trial will only assess pupil attitudes twice – once at baseline (prior to randomisation) and again at follow-up or end-point (i.e. two years after randomisation). Only end-point outcome measurement is planned to allow for the maximum effect of the programme to be measured. For this trial, the primary analysis will use KS2 reading and maths attainment measures rather than the KS2 progress scores.

Intervention

Intervention name

Children's University (CU)

Why? (Theory and rationale)

Children's University is an intervention that works in partnership with primary schools and local providers to encourage, track and celebrate participation in learning activities both in and out of school beyond the normal school day. The programme is overseen by Children's University Trust and managed on a local level by local CU centres and managers.

As outlined in the previous section, there is evidence that extra-curricular activities can positively impact on attainment, as well as on non-cognitive outcomes such as positive identification with school, improved self-confidence/self-belief, and increased motivation to learn. However, around 37 per cent of young people do not take part in any extra-curricular activities, and these mainly come from lower-income families³.

Children's University Trust aims to create a level playing field of opportunity, and open access to extra-curricular learning activities for children of all backgrounds, to broaden participation and access to all children, improve attainment in learning at school, and reduce differences in social and cultural capital.

Who? (Recipients)

In the intervention schools, Children's University will be available for Year 5 pupils who have volunteered for Children's University (via parental expression of interest and a pupil survey at the beginning of Year 5). These pupils will be able to access local Children's University validated activities for five terms, when they are in Years 5 and 6 – January 2022 to July 2023.

A total of 150 primary schools will be recruited to the trial from 11 local CUs, and these schools will be randomly allocated to either the intervention or control group.

It is expected that approximately 20 pupils per school will volunteer to take part in the CU trial (although there is no limit on the number who can volunteer, and in smaller or rural schools this figure may indeed be smaller)⁴. Schools in disadvantaged areas, and pupils eligible for free school meals, will be encouraged by their local CUs to take part in the trial. Schools will be asked to encourage and assist pupils' access to in-school activities.

² Including all constituent items from a subscale ensures that the psychometric properties of the subscale is retained.

³ <https://www.suttontrust.com/our-research/life-lessons-workplace-skills/>

⁴ There is an additional budget allowance for a greater number of children volunteering

What? (Materials)

Pupils will be able to choose from a range of validated activities that are available both in school (at least some during school hours), and outside school, and involve some form of structured learning.

The Children's University Trust Passport to Learning is distributed to children (via schools) for recording their participation and collecting completed activity 'stamps'. Participating schools and children also receive logins for CU Online (digital platform) and support to access their personal dashboards and school management information. Schools and learning providers can access the platform to add learning activities in and out of school, and downloadable holiday challenges are provided by Children's University Trust. Children and families can access the Learning Activity search facility through CU Online.

Activity stamps are linked to an awards system. Awards are given as Children's University Trust certificates at annual graduation ceremonies. Intervention schools will receive a Children's University Trust Learning Destination plaque for public display.

What? (Procedures)

Local Managers will support intervention schools with set-up and prepare activities to embed Children's University Trust across the school, and encourage momentum. This support will be delivered through a combination of face-to-face and remote methods, and will include information sessions for staff and parents, and assemblies for pupils. Training will be given to intervention schools by local CU centres/managers on providing and validating in-school activities and on school- and pupil-level tracking via CU Online. Intervention schools will also receive half-a-day's training on intervention management, monitoring and delivery provided by local CU centres/managers.

Intervention schools will be asked to nominate a CU coordinator to oversee the programme in school, and support participating pupils with access to Passports and CU online.

Ongoing support throughout the intervention will be provided by local CU centres/manager. Local managers will source and validate (and in some cases, create) public learning activities and promote activities to schools and families. Learning providers use online validation processes for approval of learning activities via CU Online. Children's University Trust sources and validates activities from national providers.

The local CU Manager will arrange an annual graduation ceremony for participating pupils.

Who (Providers)

The following stakeholders are involved in delivering the intervention:

- Children's University Trust
- Local Children's University teams, which are delivered through licensed managing organisations, and are managed by local CU Managers and Administrators. CU Membership organisations vary, some are run within Universities, whereas others are run within a school.
- Schools/in-school CU Coordinator

- Local and national learning providers. For example, local libraries, museums, national partners such as Forestry England⁵.

How? (Mode of delivery)

Participating children will have access to a range of learning activities, both in and outside of school, face-to-face or online. They are encouraged to attend/complete a range of extra-curricular activities, for which they receive a 'stamp' in their Children's University Passport to Learning. One stamp generally equates to one hour of participation in structured learning. There is a cap of 10 hours' worth of stamps per single activity per term (children can continue to attend these activities within a term, but can only receive a maximum of 10 hours' stamps).

These 'stamps' are logged online via their personal dashboard and tagged with categories and skills. The school CU lead will help with this, with support from local CUs (further details of support provided are in the 'How well planned?' section below). In-school training will include best practice suggestions on CU Online Children accumulate stamps which equate to awards ranked from 30 hours activity to 1,000 hours activity (see Appendix 2 for details). Awards are given as certificates at annual graduation ceremonies celebrating their commitment to learning beyond school.

Where? (Location)

In-school and out-of-school learning activities/destinations in the locality and online.

Graduation ceremonies take place in local further/higher education institutions and civic buildings or, in a small number of cases, at participating schools.

When and how much? (Duration and dosage)

The intervention takes place for five academic terms over a two-year period (when the pupils are in Years 5 and 6) – January 2022 to July 2023.

Awards are given to pupils for a minimum of 30 hours participation. Children are allowed to attend activities for however long they wish to but they will not be given additional stamps beyond 10 hours' participation per single activity per term. This is intended to encourage participation in a variety of activities. Once a child has amassed a certain number of hours, they will be eligible for receiving certificates as set out in Appendix 2.

Tailoring (Adaptation)

Pupils will have access to a range of different activities, depending on what is available in their area and school. For example, local sports clubs, community assets like libraries and museums, STEM activities and music sessions.

Local CU Managers may promote their own seasonal challenges to schools and promote their own validated activities organised as part of their managing organisation's initiatives (for example, outreach activities at a higher education institution).

Local CUs may offer participation in Children's University to other pupils in the intervention schools in addition to the cohort of Year 5 (in 2021-22) eligible volunteers. Although these pupils will not form part of the primary analysis cohort, schools must decide how to fund this and capacity is managed by local CU Managers outside of this trial. (Data about the Year 5

⁵ For the evaluation, we will collect data from the Children's University Trust, participating Children's Universities and schools. We will not collect any data from local and national learning providers except for children's CU participation (via CU Online Platform).

non-eligible volunteer pupils, may however be used in potential further analysis to determine any undiluted non-causal association between actual CU participation and outcomes – see section on potential further analysis.)

How well planned?

In order to ensure that the intervention is implemented effectively, a range of strategies will be in place:

- Schools are expected to demonstrate support and commitment from senior leaders for Children's University, through the signing of a Service Level Agreement between the school and local CU partner (this is part of usual CU practice; note in addition, schools will need to sign an MoU for the trial during school recruitment).
- A school CU coordinator is expected to be allocated for the lifetime of the intervention to oversee the programme and support participating pupils (particularly those eligible for free school meals). Their role is to encourage variety and quantity of participation, (including in school time), and to support children in attending validated external activities, and the graduation ceremony. Local CUs will support the school CU coordinator in ensuring CU Online is kept up to date - logging activity on CU Online and in pupils' Passports. Learning providers issue codes for students to log hours online, codes are set to a limited number of hours per activity.
- Staff training is provided by the local CU Manager each year, and schools are expected to allow the local Manager to hold an in-school information session each year. The local CU Manager will also support schools in validating all relevant in-school activities.
- Regular information on Children's University Trust and opportunities available in school and passed on to families. Regular updating of downloadable activities and holiday challenges to CU Online. Commitment from learning providers to 'stamping' passports, supported by local Manager.

Costs

Intervention Group

Each intervention school will be asked to contribute £300 in recognition of local management and passport costs for eligible volunteers included as part of delivery with an exception of two areas where the funding arrangement with the local authorities is different. Intervention schools that are part of the Wolverhampton and Westminster Children's University areas will not pay £300 contribution as the schools in these areas can access CU outside the trial free of cost. This is expected to be an average of 20 pupils per school however we have allocated an additional budget allowance for a greater number of children volunteering.

Control Group

Schools in the control group will not be able to participate in the Children's University programme during the duration of the trial (although it is acknowledged that individual pupils in these schools may participate in extra-curricular activities that happen to be validated by Children's University Trust, such as a local library reading challenge or a local gymnastics class). Control schools will be required to complete two short surveys/pro-formas about their current practice in relation to extra-curricular activities, and allow test administrators to visit their school to administer a follow-up pupil survey in summer term 2023. Schools in the control group will be offered £500 compensation for their involvement in the trial, payable at

the end of the study after completing a current practice survey/pro-forma and the follow-up pupil survey.

Logic Model

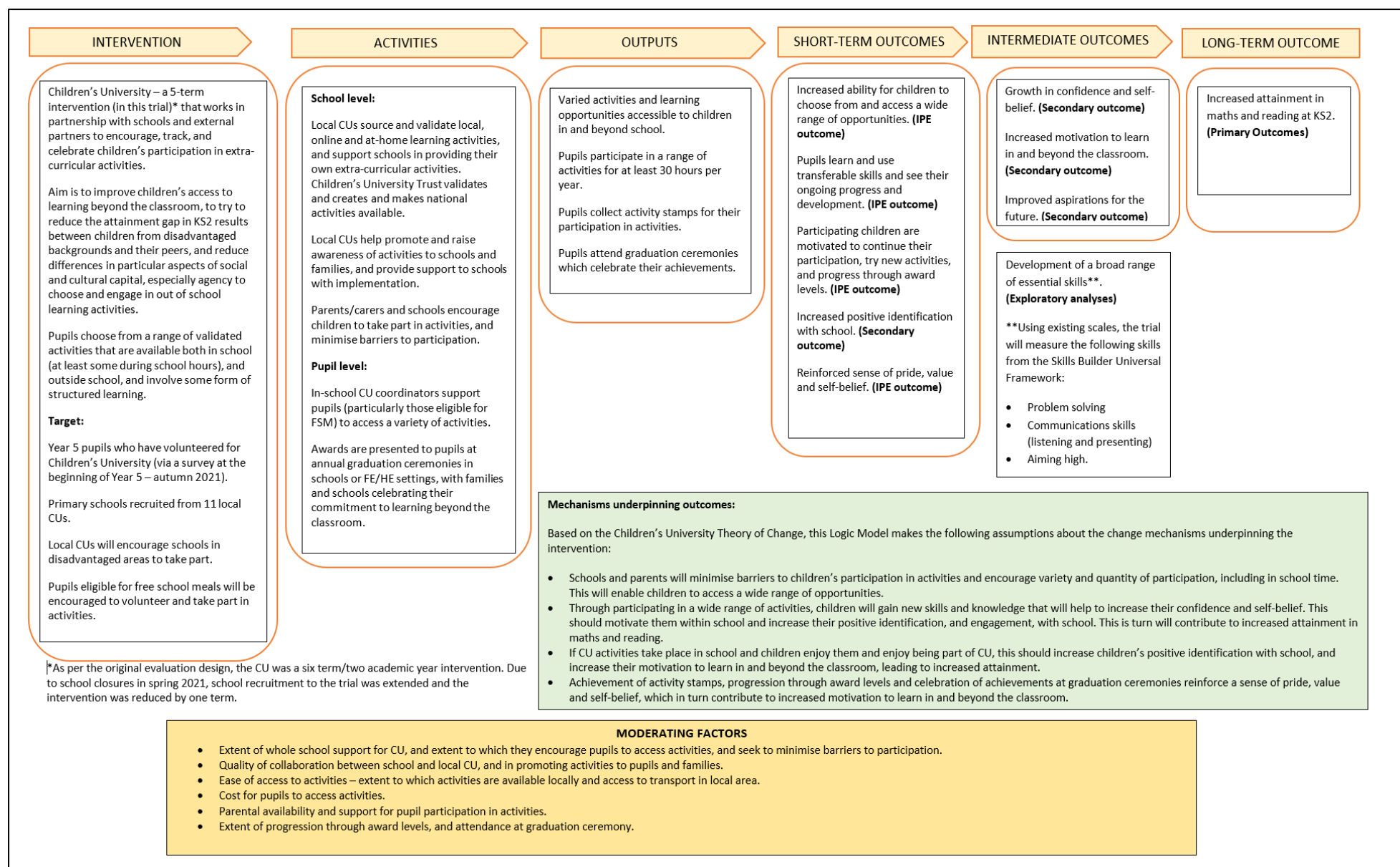
An initial logic model for the intervention was developed during the trial set-up stage between NFER, Children's University Trust and EEF. Following a delay to the trial due to school closures as a result of COVID-19, a refresher IDEA workshop was carried out in May 2021, and the logic model was revised in July 2021 to reflect small changes to the delivery of the programme (Figure 1) .

The logic model describes the intervention activities, and illustrates the causal mechanisms underpinning the intervention, and the anticipated short-term, intermediate and longer-term outcomes. The model describes how by raising awareness of activities to schools and families, and minimising barriers to participation (intervention inputs/activities), children are more likely to take part in extra-curricular activities (outputs). Children will be encouraged to participate in new activities and progress through award levels (intervention inputs/activities/outputs). Through participating in a wide range of activities, children will gain new skills, knowledge and motivations (short term outcomes), which will help to increase their self-confidence/self-belief, positive identification with school, motivation to learn in and beyond school, and widened future aspirations (short-term and intermediate outcomes). They will also develop a broad range of essential skills including problem-solving and communication skills⁶. Participation in Children's University and commitment to learning beyond the classroom will be further celebrated by their family, school and community through an annual graduation ceremony, and it is expected that this will reinforce a sense of pride and self-belief among pupils (i.e. reinforcing these short-term and intermediate outcomes). It is expected that these positive non-cognitive outcomes will then lead to increased attainment in maths and reading at Key Stage 2.

The inputs required for the intervention, and the causal mechanisms underpinning the outcomes, are also illustrated in the Children's University Trust Theory of Change diagram in Appendix 3. Note that the Theory of Change is included for reference only, the evaluation will focus on the logic model only.

⁶ Children's University Trust refers to the Skills builder Partnership (2020) which is a framework to define and measure essential skills.

Figure 1: Logic model for the trial (developed collaboratively by NFER and Children's University Trust)



*As per the original evaluation design, the CU was a six term/two academic year intervention. Due to school closures in spring 2021, school recruitment to the trial was extended and the intervention was reduced by one term.

Impact evaluation

Research questions

The primary research questions for this trial are:

1. What is the impact of Children's University on pupils' maths attainment as measured by KS2 scaled scores?
2. What is the impact of Children's University on pupils' reading attainment as measured by KS2 scaled scores?

These will be answered as two separate research questions and as per EEF guidance, they will be corrected for multiple testing (Bonferroni corrected).

Secondary research questions for this trial are based on key constructs in the logic model for CU relating to short-term and intermediate outcomes: growth in pupils' confidence and self-esteem; improved goals and aspirations; increased motivation to learn and increased positive identification with school (see Figure 1). These outcomes will be measured using existing reliable scales with published psychometric properties in a bespoke age-appropriate pupil survey. Confidence and self-esteem will be measured by the 'Self-esteem' subscale from the Student Resilience scale (Cork, n.d.); improved goals and aspirations will be measured by the 'Goals and aspirations' subscale from the Student Resilience scale (Cork, n.d.); increased motivation to learn will be measured by the 'Engagement scale' from the Panorama SEL measure (Panorama Education, n.d.); and increased positive identification with school will be measured by the 'Valuing of School' scale from the Panorama SEL measure (Panorama Education, n.d.).

The secondary research questions for this trial are:

3. What is the impact of Children's University on pupils' self-esteem as measured by a pupil survey?
4. What is the impact of Children's University on pupils' goals and aspirations as measured by a pupil survey?
5. What is the impact of Children's University on pupils' engagement as measured by a pupil survey?
6. What is the impact of Children's University on pupils' valuing of school as measured by a pupil survey?

Design

Table 1: Trial design

Trial design, including number of arms		Two-armed cluster randomised controlled trial (RCT)
Unit of randomisation		School
Stratification variables (if applicable)		CU Locality
Primary outcomes	Variables	KS2_MATSCORE KS2_READSCORE
	measures (instrument, scale, source)	KS2 maths score, 0-100, NPD KS2 reading score, 0-100, NPD Bonferroni corrected.

	variable(s)	To be confirmed in the Statistical Analysis Plan
Secondary outcome(s)	measure(s) (instrument, scale, source)	<p>NFER survey that includes following established scales:</p> <ol style="list-style-type: none"> 1. Self-esteem and 2. Goal and aspirations from Student Resilience scale (Cork, n.d.); 3. Engagement scale and 4. Valuing of School scale from Panorama SEL measure (Panorama Education, n.d.). <p>Scales to be confirmed in the Statistical Analysis Plan, bespoke NFER survey</p>
Baseline for primary outcome	Variable measure (instrument, scale, source)	<p>KS1_MATH_OUTCOME KS1_READ_OUTCOME</p>
Baseline for secondary outcome	variable measure (instrument, scale, source)	Secondary outcome(s) measured via baseline pupil survey

This is an effectiveness trial to evaluate an impact of Children's University at scale over two years. The randomisation will be at school-level as the intervention is offered to a cohort of pupils in a school. We will randomise 150 schools on a 1:1 basis into two arms: intervention and control, stratified by CU localities. The stratification will aid intervention delivery as each local CU delivery partner will have a fixed number of intervention schools to support (following the typical CU model). Pupils volunteer themselves to take part in CU activities rather than the intervention being delivered to every pupil in a cohort. The opportunity to volunteer was therefore built in to the trial design and offered to all pupils in the cohort. In order for us to identify such 'eligible volunteers' from all participating schools, we will ask children and parents to express their interest in taking part in CU prior to randomisation. The primary outcomes for this trial will be KS2 maths and reading scaled scores accessed via the NPD. They will be analysed as separate outcomes with a Bonferroni correction. We will use existing age-appropriate measures in a bespoke pupil survey to assess non-cognitive secondary outcomes aligned with the logic model. The secondary outcomes are: increased positive identification with school; growth in pupils' self-belief/self-esteem; increased motivation to learn; and improved goals and aspirations for the future.

Randomisation

In this trial, schools will be randomised into two arms, intervention and control, on a 1:1 basis. Randomisation will be carried out by NFER statisticians using R Code, which will be stored for reproducibility and transparency. The statistician will not be blinded to group allocation. They will pass this information over to NFER's Research and Product Operations team who will liaise with schools. Randomisation will be stratified by CU Locality (Bexley, Devon & Cornwall, East London, Elevate (covering Sefton and Lancashire areas), Enrich (covering area?), Essex & Suffolk, Peterborough, Rotherham, Wakefield, Westminster and Wolverhampton). Stratifying by locality will ensure that each local CU manager has to support half the number of schools recruited in their local area.

Participants

Children's University Trust, along with their local CU centres will be responsible for recruiting 150⁷ primary schools into the trial. They will do so via a variety of methods such as email, direct contact and promotional events. Schools will sign up to the trial via the headteacher signing the Memorandum of Understanding (MOU) and they will nominate a key contact person who will act as a CU coordinator if allocated to the intervention.

Once the school is signed up, the Children's University Trust will send school names and key contact persons' details to NFER. As part of the baseline data collection, NFER will contact these schools to distribute parent letters/parent information sheets, collect pupil data, carry out a baseline pupil survey and parent expression of interest. The pupil survey and parent expression of interest will establish eligible volunteers. Once this data has been collected, NFER will randomise the schools to intervention or control group.

School eligibility

Maintained primary schools that are state-funded and in the selected Children's University Trust localities (as above) who are not already offering CU and have not offered it in the last three years will be eligible to take part. If the schools are allocated to the intervention group, they must be willing to make a £300 contribution⁸ to Children's University Trust to take part in its activities for two academic years. After this, each intervention school can receive CU passports for all eligible volunteers (see section on pupil eligibility) to take part in CU activities.

Control schools will receive £500 as a gesture of appreciation for their participation in the trial for relevant data collection. Data collection in Summer/Autumn 2021 includes distribution of the parent information sheet for pupils who will be in Year 5 in academic year 2021-22, distribution of parent expression of interest forms, collection of pupil administrative data from schools, and completion of current practice surveys and pupil surveys. Data collection at endpoint (Spring/Summer 2023) includes administration of pupil surveys and completion of usual practice proforma. Control schools will not be able to access CU for the trial duration.

Pupil eligibility

Pupils who will be in Year 5 in the academic year 2021-22 will be eligible to take part in the trial.

Once the schools are recruited to the trial, NFER will send a parent information sheet and parent withdrawal forms. The information sheet will explain the trial in detail including data collection, storing and processing. At this stage, parents will be able to withdraw their child from any data collection for the trial by signing the withdrawal forms and sending it to their child's school. Excluding these pupils, schools will send pupil administrative data to NFER. This will include pupil names, date of birth, their Unique Pupil Number (UPN) and confirm their year groups. Schools will then be asked by NFER to distribute the parent 'Expression of Interest' (EOI) forms. These forms will include brief information about Children's University Trust, and the types of CU activities offered in and outside school; their child will only be able

⁷ Due to covid-19 related uncertainty and school closures in 2020-21, there was a greater risk of schools withdrawing from baseline data collection (e.g., schools sign up to the trial but not provide pupil data or complete baseline pupil surveys). Therefore, the recruitment target was increased to 200 schools with a view to randomising at least 150 schools.

⁸ With the exception of Wolverhampton Children's University and Westminster Children's University areas (see section on Costs under Intervention).

to access these activities if their school is randomised to intervention; and they will need to arrange for transport if they wish their child to attend activities outside the school. NFER will send guidance to teachers in order for them to encourage parents and pupils to discuss the opportunity to participate in these activities with the children. After a week or so, schools will be asked by NFER to distribute pupil surveys. In addition to measuring the secondary outcomes, the pupil surveys at baseline will also ask children to indicate whether they would like to take part in extra-curricular activities such as the ones offered by CU. Responses from parent EOIs and pupil surveys will determine eligible volunteers. This needs to occur before randomisation to ensure that we have identified the control group pupils who would have participated in the intervention had they been assigned to it.

The child will be considered an eligible volunteer if the parent and child both express interest to take part in CU. The child will also be considered a volunteer if they express an interest in CU activities but their parent did not respond to the EOI form. This way, the child is still able to take part in within-school activities, which does not require transport. Similarly, the child will be considered a volunteer if they did not respond to the volunteering question in the baseline survey but their parents expressed an interest for them to take part in CU activities. Please note that the parent EOI is introduced at this stage in order to encourage dialogue between the parent and the child so that the child can make an informed indication to take part in CU activities. Parent consent is not our legal basis for processing personal data. Instead, the parent EOIs are administered for the purpose of supporting volunteering and on an ethical basis. Please see the section on Data Protection for further details.

The parent letter and parent EOI will outline that the CU activities are for *all* children. However, we will include guidance notes for teachers that they should engage children and parents from disadvantaged backgrounds during the baseline pupil survey and parent EOI period. We rely on schools to encourage disadvantaged pupils to apply. CU activities which do not require parental transport and those in/near school times (lunchtimes/straight after school) will be available in order not to exclude disadvantaged pupils.

Sample size calculations

Table 2: Sample size calculations

		OVERALL	FSM*
Minimum Detectable Effect Size (MDES)		0.19	0.26
Pre-test/ post-test correlations	level 1 (pupil)	0.65	0.65
Intracluster correlations (ICCs)	level 3 (school)	0.18	0.18
Alpha		0.025 ⁹	0.025
Power		0.8	0.8
One-sided or two-sided?		2	2
Average cluster size		20	3.14
Number of schools	Intervention	75	75
	Control	75	75
	Total	150	150

⁹ Bonferroni correction applied for two primary outcomes

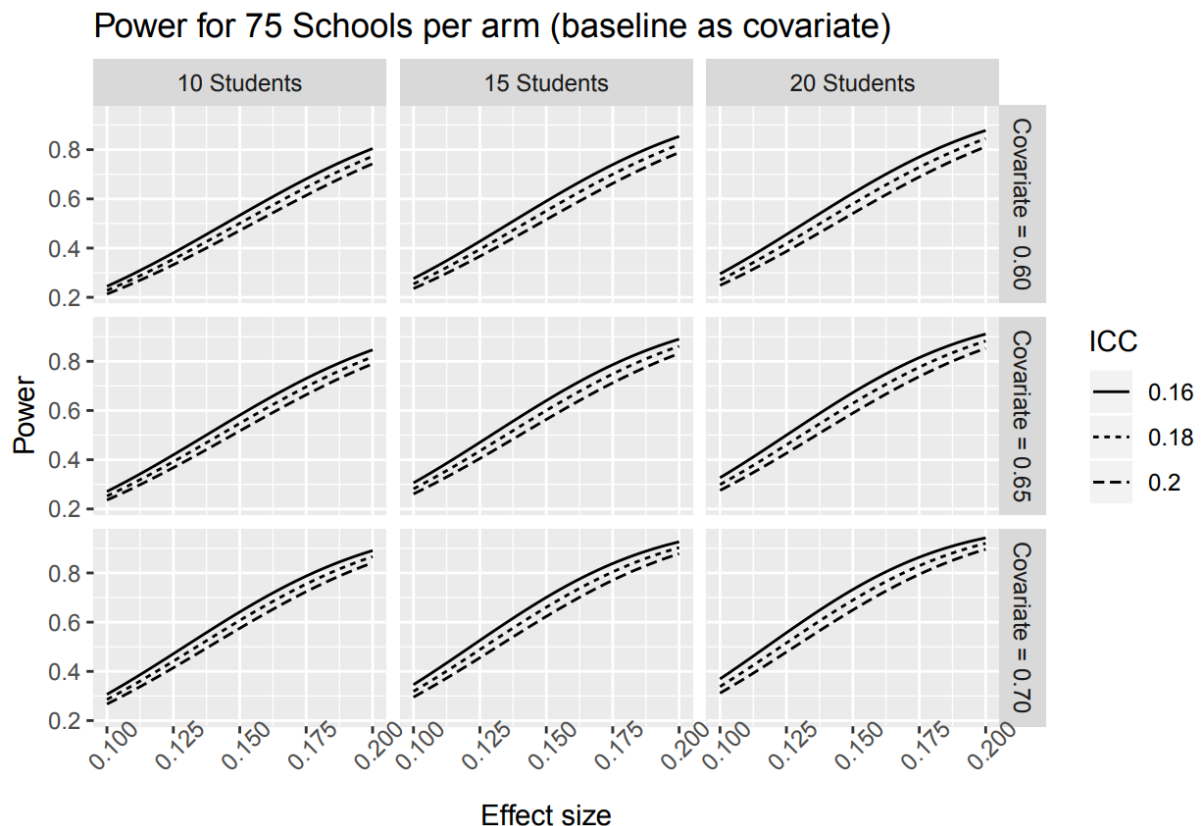
		OVERALL	FSM*
Number of pupils	Intervention	1500	235
	Control	1500	235
	Total	3000	470

*This trial is not powered for FSM

The following graphs present the statistical power for a number of designs for this trial. The number of schools was kept constant at 75 per arm. A Bonferroni probability correction for multiple comparisons was applied to all calculations since the effectiveness of the intervention will be tested for reading and maths separately. Looking at recently funded EEF studies, statistical power has been calculated assuming the correlation between KS1 and KS2 could range between 0.60 and 0.70 points and the ICC between 0.16 and 0.20 points. Moreover, the size of the effect is plotted for a range of values between 0.10 and 0.20 units. The efficacy trial demonstrated an effect size of 0.23 for reading and 0.20 for maths (Higgins et al archive analysis) so, although the plotted range is conservative, adequate power is still achieved with the proposed design. Table 2 presents one such scenario with assumed pre-post correlation to be 0.65 and ICC of 0.18. The figures in the table also assume that approximately 20 pupils per school volunteer to take part in CU activities. With these parameters, we achieve a power of more than 0.8 for an MDES of 0.19. With the same parameters and with an assumption that 15.7% of the volunteers are ever FSM pupils¹⁰, the MDES increases to 0.26 for this sub-group.

¹⁰https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/826252/Schools_Pupils_and_their_Characteristics_2019_Accompanying_Tables.xlsx

Figure 2: Power calculations



Outcome measures

Baseline for primary outcome

We will use KS1 mathematics and reading outcomes as baseline measures which will also be obtained from the NPD and linked to pupil data and added into the models as covariates. These will be fully described in the SAP.

Primary outcome

The dual primary outcomes will be KS2 scaled scores in reading and maths, which both had indications of positive effects in the efficacy trial, with a Bonferroni correction for multiple testing. These will be accessed through the NPD linked to the pupil-level data provided to us from schools as a randomisation requirement. From the logic model, the intervention is expected to raise the attainment in reading and in maths and thus this outcome measure addresses the first research question of whether CU intervention has an effect on the academic achievement.

Secondary outcomes

The secondary outcomes measured via the pupil survey will be 'Self-esteem' and 'Goals and aspirations' scales from the Student Resilience scale (Cork, n.d.), and 'Engagement' and 'Valuing of School' scales from the Panorama SEL measure (Panorama Education, n.d.). These are the most appropriate and reliable sub-scales (with minimum 0.7 Cronbach's Alpha) from existing instruments and incorporated into one age-appropriate survey instrument. These sub-scales were used in validation studies previously and there were no restrictions in using sub-scales separately. See Table 3 for further details and references on the sub-scales and validation studies. There will be one survey instrument (administered at baseline and at follow-up). Each sub-scale will be analysed separately as an outcome,

provided the Cronbach's Alpha at baseline reaches at least 0.7. The Cronbach's Alpha will be reported in the Statistical Analysis Plan.

The baseline pupil survey will be delivered by school staff and is a requirement of the randomisation procedure. No school will be randomised unless it has provided baseline survey data. At follow-up, NFER will use experienced test administrators to visit schools and deliver the survey. This increases participation levels and reduces staff burden within schools.

Additional analyses

In addition to the secondary outcomes, the logic model also highlights "development of a range of essential skills". We will explore some of these essential skills using items from existing established scales included in the pupil survey. These are: pupils' perceptions of their problem solving skills using the 'Problem-solving' scale from Student Resilience scale (Cork, n.d.); pupils' self-reported confidence to communicate as measured by the 'Personal Report of Communication Fear (PRCF)' scale (McCroskey *et al*, 1981) and pupils' future aspirations as measured by 'Future life' questions from The Children's Society Household panel 2019 (The Children's Society, 2019). Even though these are established scales, they measure pupils' perceptions about these skills rather than assessing skills themselves. Hence, the analyses will be exploratory in nature. Other short term/intermediary outcomes and mediating factors will be explored through perceptions in the IPE.

Survey instrument development and piloting

In spring term 2020, NFER researchers piloted a pupil survey that encompasses items from the existing scales described above. This survey also included some questions which asked pupils about extra-curricular activities that they take part in. Subsequently, NFER researchers undertook cognitive interviewing with Years 4 – 6 children in two primary schools in England, (one in the North and another in the South), to ensure that children were able to access the wording of the items and able to answer the questions independently. Cognitive interviews were structured, with 21 children being asked to complete the questionnaire, comment on the clarity, wording and suggest improvements to three elements of the survey: instructions; questions and items; response options. We asked teachers to select boys and girls, with a range of abilities, and to include FSM and EAL children. No named personal data was collected about these children. Schools needed to use their own local policies for informing parents of this research activity; a short information sheet was made available as to the purpose of this exercise. As a result of the interviews, NFER researchers made a series of small amendments to the standardised survey items. In most cases, these changes were: replacing a word or a phrase from the item statement, labelling the response categories or rewording some of the response categories. Table 3 lists all validated existing scales that will be included in the pupil survey.

Table 3: Psychometric properties for the validated scales used in the pupil survey

Secondary outcomes	Source	No. of items in scale	Validation study	Psychometric information (validation)			
				Sample size	Age-group	Year of validation	Reliability (Cronbach's Alpha)
Self-esteem	Student Resilience Scale (Cork, n.d.)	Full sub-scale used; 3 items (from a block of 14 items in total)	Lereya <i>et al.</i> (2012)	7358 (UK)	11-15 ¹¹	2015	$\alpha = 0.80$
Goals and aspirations	Student Resilience Scale (Cork, n.d.)	Full sub-scale used; 2 items (from a block of 14 items in total)	Lereya <i>et al.</i> (2012)	7324 (UK)	11-15	2015	$\alpha = 0.73$
Engagement	Panorama*	Full sub-scale used; 5 items	Panorama Education, 2016	7219 (USA)	8-18	2014	$\alpha \geq 0.70$
Valuing of school	Panorama*	Full sub-scale used; 4 items	Panorama Education, 2016	7219 (USA)	8-18	2014	$\alpha \geq 0.70$
Problem-solving	Student Resilience Scale (Cork, n.d.)	Full sub-scale used; 3 items (from a block of 14 items in total)	Lereya <i>et al.</i> (2012)	7314 (UK)	11-15	2015	$\alpha = 0.83$
Personal Report of Communication Fear (PRCF) scale ¹²	McCroskey et al (1981)	Not a full scale (8 out of 14 items used in the survey)	McCroskey et al (1981)	462 (USA)	9-12	1981	$\alpha = 0.79$
Items on future life	Children's society	One item	The Children's Society, 2019	Not available	10-15	2019	Not available
Future aspiration ¹³		Not a full scale (5 out of 8 items used)					

¹¹ Note that the items from the SRS scale have been used for a survey aimed at children as young as eight years' old in Australia.

¹² The PRCF scale has 14 items, some of which are presented in two separate items- one positively worded and the other negatively worded. In order to keep the pupil survey to a minimum length, only eight of these 14 items were included in the pupil survey.

¹³ The survey items relating to 'future aspirations' are aimed at 10 to 15-year-olds. Therefore, only age-appropriate items from the scale will be included and will appear only in the follow-up pupil survey.

Compliance

For the purposes of CACE analysis, we will define compliance in terms of participation at the pupil level as: a minimum of 30 hour of activities per year, with no additional stamps given for more than ten hours' participation per single activity per term. Number of hours participation will be an incremental number and therefore, we will measure compliance at the end of the trial. This variable will likely be a binary measure. In addition to this, we will also investigate number of hours' participation in CU activities as a continuous variable. Detailed quantifiable compliance measures will be included in the Statistical Analysis Plan.

Analysis

Our primary and secondary analyses will be intention-to-treat on all who volunteer pre-randomisation and will follow the EEF analysis guidance, including for sub-group analyses.

Primary outcome analysis

The primary outcomes will be KS2 reading and maths scaled scores with the Bonferroni corrections for multiple tests applied. The p-value indicating statistical significance will be equal to the alpha value of 0.05 divided by the number of tests. In this case, it will be $0.05/2 = 0.025$. This means, a result will only achieve the threshold of being statistical significant if the p-value is less than 0.025. This is a cluster-randomised design, so analysis will use a multilevel model with two levels: school and student. Comparisons will be made between the intervention and control groups at follow-up controlling for prior attainment by including baseline performance as a covariate. KS1 maths and reading outcomes will form the covariate in the analysis of KS2 maths and reading respectively. A geographical stratifier will also be included as school-level covariate.

Secondary outcome analysis

The secondary outcomes will be measured via the pupil survey. As we plan to use existing reliable scales, we will only check whether they are still reliable to create secondary outcomes. We will class the scale as reliable if they have a Cronbach's alpha of 0.7 or above at baseline. These measures will be entered into multilevel models (one model for each subscale) exploring the differences between control and intervention groups at follow up using their scores at baseline as a covariate. A geographical stratifier will also be included as school-level covariate. Further details on these measures will be included in the Statistical Analysis Plan.

Sub group analysis

Any effects of the intervention on everFSM-eligible pupils, will be carried out through the use of FSM as an interaction term in the models as well as a separate sub-group analysis model. This will be done for the primary outcomes only. Although we do not anticipate high levels of attrition due to our use of NPD, the FSM sub-group is likely to have a smaller sample size. Note that the trial is not powered to detect an effect on FSM sub-group, we will perform this analysis as per EEF analysis guidelines. Full details of the analysis will be included in the Statistical Analysis Plan.

Additional analyses

We have refined the volunteering process in this trial (see pupil eligibility). This process will boost the numbers of eligible volunteers who are, then, likely to go on to take part in the intervention. Children's University will only give CU passports to eligible volunteers from the intervention schools. However, many of these activities will be hosted in schools and therefore attendance may not be limited to volunteers only. However, children will be able to collect CU stamps only if they have CU passport. Therefore, it is less likely that a large proportion of non-volunteers will have stamps and be recorded on CU Online. NFER will be able to ascertain this via accessing the CU (Online) participation data. If the CU participation data suggests that a large proportions of non-volunteers accessed the programme, it may be possible to run additional analysis on these non-volunteers by comparing them with the non-volunteers from control group schools. This will be only possible for pupils who are on NFER's pupil list at the start of the trial, i.e. those in Year 5 in the academic year 2021-22. Precise criteria of when this analysis will be required and the method will be discussed in the Statistical Analysis Plan.

We will also undertake additional analysis to explore the impact of the range and types of activities and whether they have attended a graduation ceremony or not on pupil outcomes.

CACE Analysis

We will conduct CACE analysis using compliance measures developed from the CU passport data. The compliance measures are described in the compliance section above. We will undertake this analysis for the primary and secondary outcomes as the theory of change links CU participation with these outcomes. The proposed CACE analysis will be fully described in the Statistical Analysis Plan.

Effect Size

We will follow EEF's Statistical analysis guidance to calculate appropriate effect sizes for each analysis. The numerator for the effect size calculation will be the coefficient of the intervention group from the multilevel model. The effect sizes will be calculated using the total variance without covariates, as the denominator i.e. equivalent to Hedges' g. Confidence intervals for each effect size will be derived by multiplying the standard error of the intervention group model coefficient by 1.96. These will be converted to effect size confidence intervals using the same formula as the effect size itself. We will include further details in the Statistical Analysis Plan.

Longitudinal follow-ups

No longitudinal follow-ups are planned for this study at this time.

Implementation and process evaluation

Guided by EEF's latest **IPE guidance** at the time of writing, the IPE will focus on compliance, fidelity and usual practice, as well as responsiveness, quality and adaptation from the other dimensions and implementation factors in (Humphrey et al., 2016). We have chosen to focus on these so that we can cover issues relating to volunteering/participation, implementation support/characteristics, and where possible, any variation in the different local offers across the 11 CUs. The IPE will monitor the range of CU intervention activities, identify where participation is high and explore reasons for this success, and examine any implementation/participation challenges and the reasons for these. It will provide insights into the implementation outcomes for schools, such as increased amount and range of extra-

curricular provision, and perceived outcomes for pupils' learning and wider development (as per the logic model, and particularly those outcome areas that will not be explored in the secondary outcome survey). The IPE will explore the following research questions:

Research questions

- 1) To what extent was the programme implemented as intended? (See Appendix 4: with implementation expectations including those that will be monitored). (Dimensions: fidelity, implementation). In particular:
 - Were the training sessions, information sessions, validation of activities, access to passports and CU online, and graduations implemented as intended (see monitoring of activities in Appendix 4)?
 - What range of validated CU activities were offered – by schools, in the locality? What activities were most common; and what variations were there between local CU areas? Were any new activities offered/validated, and why?
- 2) What was the extent of pupil participation? Which types of activities did children take part in and how often? How many children graduated? And which children? (Dimensions: compliance, fidelity, dosage, reach, responsiveness).
- 3) What are the facilitators to implementation (including local CU support to schools, validation support, local offer, use of CU online, graduation support, school promotion of activities, school support to pupils, parental support, funding arrangements). What are the barriers/challenges? Were there any adaptations and why? (Dimensions: quality, adherence, programme and implementation support factors). In particular:
 - To what extent was the programme well supported – by local CUs, by schools, by parents? To what extent did schools and parents engage with CU?
 - How were children from disadvantaged backgrounds encouraged and enabled to take part?
 - To what extent were any differences in the funding arrangements facilitators/barriers to implementation (including schools' engagement and fidelity)?
 - Were there any barriers to implementation? Any support challenges? Were there any adaptations and why?
- 4) What are the facilitators, barriers and features of delivering at scale (e.g. centralised support to local CUs)? How effective are these felt to be? What are the implications for further scaling? (Dimensions: programme implementation, scale-up).
- 5) How well do participants feel the intended outcomes are being achieved – for children (learning outcomes, personal, social and future aspiration outcomes) (with a focus here on outcomes not being explored through the secondary outcomes survey)? (perceived outcomes; using the logic model as a guide).
- 6) What happened in the control group? What was Business as Usual (BaU)? And what extra-curricular participation is usual for pupils in the intervention and control groups? (Dimensions: monitoring the control group; usual practice)

IPE methods overview

Table 4 summarises the research and data collection methods and analyses that will be used to address the IPE research questions.

Table 4: IPE methods overview

Research methods	Data collection methods	Timing	Participants/ data sources (type, N)	Data analysis methods	Research questions addressed	Implementation dimensions/logic addressed
IDEA workshop	TIDIER framework; logic model	Autumn 2019 Spring 2021 (refresher)	CU team, NFER team	Descriptive analysis	RQ1, RQ2, RQ3	Context
Programme telephone interviews	Semi-structured telephone interviews	Summer 2022	One CU manager at each of the local CU centres (up to 11 in total)	Deductive coding; thematic analysis	RQ1, RQ2, RQ3	Quality Implementation support Responsiveness
Programme telephone interviews	Semi-structured telephone interviews	Summer 2023	As above	Deductive coding; thematic analysis	RQ3, RQ4; RQ5	Quality Implementation support Scale up Perceived outcomes
CU Trust interviews	Semi-structured	Summer 2022 and Summer 2023	Central CU Trust intervention lead	Deductive coding; thematic analysis	RQ3, RQ4	Quality Implementation support Scale-up
CU online data (school level)**	Data export from CU online (intervention schools and control group pupils*)	Summer 2022 & Summer 2023	Data from all intervention schools (number and types of activities)	Basic frequencies; descriptive analysis	RQ1	Fidelity
CU online data (pupil level)**	Data export from CU online (intervention pupils)	Summer 2022 & Summer 2023	Approx. 1,500 intervention pupils (activity and dosage per pupil)	Descriptive analysis and CACE analysis for compliance measures	RQ2	Compliance Fidelity Dosage
Survey (CU school leads)	Online questionnaire intervention	Summer 2023	75 CU school leads	Descriptive statistics	RQ1, RQ3, RQ5, RQ6	Usual practice Responsiveness Quality, implementation support Perceived outcomes
Case studies	Semi-structured interviews – in schools where pupil participation is high	Autumn 2022 - Spring 2023	Up to 6 schools ; interview CU lead, headteacher & up to 2 focus groups 4–6 children in each.	Inductive /deductive coding; thematic analysis	RQ1, RQ2, RQ3, RQ5	Responsiveness Quality, implementation support Adaptation Perceived outcomes
	Document analysis	Autumn 2022	School websites (11); CU promotion materials	Within-case analysis; context analysis	RQ3	Context; usual practice

Research methods	Data collection methods	Timing	Participants/ data sources (type, N)	Data analysis methods	Research questions addressed	Implementation dimensions/logic addressed
Telephone interviews CU school leads	Short semi-structured – where pupil uptake is low	Autumn 2022	Up to 10 CU school leads	Thematic analysis	RQ1, RQ2, RQ3	Implementation support
Usual practice pro-forma	Short form	Autumn 2021	Baseline – 150 schools	Descriptive analysis	RQ6	Usual practice
Usual practice pro-forma	Control end-point usual practice forma	Summer 2023	End-point – 75 control schools	Descriptive analysis	RQ1; RQ6	Usual practice (Contamination)
Pupil survey (process Qs)	Baseline and end-point questionnaire	Autumn 2021 Summer 2023	3000 pupils (150 schools)	Basic frequencies	RQ3 & RQ5 (intervention); RQ6 (int'n & control)	Implementation Perceived outcomes Usual practice

* if an individual control group pupil has CU passport, we will monitor their online data

** will require school ID and pupil UPNs to be used within the CU system.

Data collection methodology

This section provides further details of the IPE data collection methods outlined in Table 4 – set out at programme level, intervention school level, sub-sample level, and with control schools.

Programme level

- An IDEA workshop was held to co-construct and agree the TIDieR framework; further develop the intervention logic model; examine materials; and agree the format for data sharing of CU Online and e-passport data. A refresher workshop was held in May 2021, and the logic model was revised to reflect slight changes in the delivery of the programme.
- Telephone interviews will be conducted with the manager of each of the 11 participating CUs in summer 2022, on support provision and short-term implementation outputs; and at the end of 2022/23 exploring more sustained implementation outcomes, as well as implementation quality, successes and challenges. The data from the telephone interviews will be analysed using a deductive coding approach, to test the findings against the theory of change.
- We will also conduct a telephone discussion with the CU Trust intervention lead(s) in the summer of 2022 and again in summer 2023, to explore where centralised programme support has been implemented in this programme at scale, and any perspectives on sustainability/further scale up.

All intervention settings

- Usual practice baseline pro-forma
- Analysis of school-level CU online data – to explore the range of activities offered, and any variation in this regionally/by school/by local CU funding arrangement. Initially, this will be carried out at the end of 2021/22, to check the nature of the data

and to inform the case-study selection. This will be repeated at the end of 2022/23 to inform the analyses of how the range and types of activities might affect pupil outcomes (as discussed in additional analyses section). Depending on the take-up and variety of CU activities, it may be possible to summarise them in groups of activities for example. This will enable us to explore whether a certain mix of activities are associated with the outcomes. Note that this will not be pre-specified and will be exploratory in nature.

- Analysis of pupil-level CU online data – to explore the amount and nature of individual-level participation, including data on the number of graduations and award levels (see Appendix 2 for details of CU Award Levels and no. of hours involved). Exploratory analysis will also be undertaken which explores the engagement and participation of pupils eligible for FSM, compared with non-FSM pupils (e.g. the type of activities they participate in; in-school or out-of-school activities).
- School CU Coordinator survey – to explore perceptions of CU support, their role as school CU lead, how they have managed their offer, direct costs involved against a range of activities offered, and perceived outcomes for their children and the school. The survey will include questions which explore which sub-groups of pupils schools encouraged to take part in CU and how pupils eligible for FSM and their parents engaged with the programme. The survey will be administered online, and will take respondents approximately 15-20 minutes to complete.

Sample of intervention settings

- Up to six case-study visits will be carried out in intervention schools where pupil participation has been high (. Given the interest in increasing participation in this effectiveness trial, rather than select case studies at random, case-study schools will be sampled from those with higher levels of pupil participation and a range of local offers. We will use an interim download of CU online data and schools' baseline survey responses to guide our sampling strategy, in order to select case studies to illustrate a range of CU experiences (note, given the small number of case studies, the sample will not be representative of all schools involved). We will sample from different CU areas, urban/rural schools, as well as schools that have high and low levels/range of extra-curricular activity at baseline. Our sampling strategy will also be informed by any themes highlighted in CU Manager/CU Trust interviews in the summer term 2022 relating to how schools have managed their CU offer. The case-study visits will also explore how pupils eligible for FSM and their parents engaged with CU, any barriers and facilitators to their participation, and whether there is any perceived impact on these pupils. CCase-study schools will be selected in September 2022.
- Case-study visits will take place between Autumn 2022 and Spring 2023, and will involve an interview with the school CU coordinator, the headteacher, or a senior leader, and up to two focus groups with 4–6 children in each group.
- Short telephone interviews will also be carried out with up to 10 school CU leads in schools where there has been low(er) pupil uptake, to explore the challenges and barriers faced by these schools.
- Data from the case-study schools will be analysed thematically, using a mixture of inductive and deductive approach.

Control settings

- Completion of a baseline (all schools), and an end-point business-as-usual (BaU) proforma – to ascertain what extra-curricular activity the school has offered its Year 5/Y6 cohort during the trial period.

IPE analytical approaches

We will map data from the IPE to the logic model through both inductive and deductive analytical approaches – drawing on the qualitative and quantitative data collected. We will explore the hypothesised mechanisms and moderating factors and relationships between perceived outcomes (using participants' perceptions and deductive approaches) (as per the logic model). In particular, we envisage exploring a number of mechanisms and moderating factors that are prominent in the logic model, namely, participants' perceptions of how the celebration/graduation events benefit the children, and how well schools and local CUs support activities that all children can access especially children from disadvantaged backgrounds (FSM). We will explore any new features/factors relating to delivery at scale.

We will also use inductive approaches to explore the IPE data from the ground, in order to uncover any unexpected factors or unexpected perceived outcomes that may occur at scale.

We will analyse perceived outcomes using rating scales, drawing on the pupil survey secondary outcome data, and interviewees' attitudes/views. .

We will also explore implementation fidelity to CU – at programme, school and pupil-level. Appendix 4 outlines the minimum expectations about CU delivery and implementation. These activities will be explored in terms of 'fidelity' in the implementation/process evaluation for the trial. This will help researchers to explore the consistency/variation/adaptation in the way that CU is offered and taken up locally.

Cost evaluation

We plan to collect information on the pre-requisite, set-up and ongoing costs to schools of being involved in CU. Where possible, we will collect these directly from Children's University Trust or via CU programme manager interviews. For a sample of schools, we will also collect costs to schools to train, prepare and deliver CU programme. Over the two academic years, we will collect this data from 25 schools via three online school cost proformas. NFER will design the proforma and analyse the data whereas local CUs will be responsible to collect the completed proformas from the schools. Cost questions that are low-burden but may have high variability across schools will be included in the school-lead survey against a pre-populated range of activities; with further explanatory detail provided through school lead and CU manager interviews. We will particularly need to know the costs of the different activities provided by schools. This will inform what we know about the relative cost effectiveness of different activities/local menus and potential roll-out/scale up.

We would also collect Business as Usual (BaU) data on the costs of any extra-curricular activities planned or provided to the Year 5 or Year 6 during the trial period. This will be done via baseline proforma (for all schools before randomisation) and end-point school proformas (for control group schools). This will illustrate how CU compares to usual extra-curricular spend.

While collecting and reporting the cost data, as far as possible, we will follow EEF's latest cost evaluation guidance¹⁴.

¹⁴https://educationendowmentfoundation.org.uk/public/files/Evaluation/Setting_up_an_Evaluation/Cost_Evaluation_Guidance_2019.12.11.pdf

Briefing webinars

We will organise and run two webinars to support CU recruitment and understanding of evaluation data collection requirements. The first will be in October 2020, to brief Children's University Trust and local CU managers and teams about the trial and any issues to consider in recruitment. The second will be held in November/December 2021, to brief Children's University Trust and local CU managers and teams about the evaluation data collection timetable and requirements, any Do's and Don'ts for the trial, and their role in the evaluation. The webinars will be recorded if possible.

Ethics and registration

The trial will be designed, conducted and reported to CONSORT standards (<http://www.consort-statement.org/consort.statement/>) and registered on <http://www.controlled-trials.com/>.

The evaluation will be conducted in accordance with NFER's Code of Practice, available at http://nfer.net.nfer.ac.uk/media/3029/code_of_practice_final_march_2019.pdf. NFER, Children's University Trust and EEF will work together to ensure each organisation's policies can be applied in practice. Ethical agreement for participation within the trials will be provided by the headteacher or the senior leader of the school via signing an MoU. Before requesting schools to share the pupil data, NFER will ask the schools to distribute a parent information sheet and parent withdrawal forms. This will enable parents to withdraw their child out of the data processing for the trial (which will encompass pupil data, CU online activity data should their school be randomised to the intervention group, pupil survey data, pupil KS1, KS2 and background NPD data). Schools will not share pupil data for the children whose parents withdrew them at this stage.

In addition, parents will be asked to express their interest in their child volunteering for CU, to help establish eligible volunteers prior to randomisation. This is an expression of willingness/ability to support their child to take part in a range of activities if possible. Where a parent expressly says this is not possible, their child will not form part of the eligible volunteers' list.

Data protection

All data gathered during the trial will be held in accordance with the data protection framework created by the Data Protection Act 2018 and the General Data Protection Regulation 2016/679, and will be treated in the strictest confidence by the NFER, Children's University Trust and EEF. No individual or school will be identified in any report.

NFER and Children's University Trust are joint Data controllers. The local CU centres will be the data processors on behalf of Children's University.

The legal basis for processing personal data is covered by:

GDPR Article 6 (1) (f) which states that 'processing is necessary for the purposes of the legitimate interests pursued by the controller or by a third party except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of the personal data'. We have carried out a legitimate interest assessment, which demonstrates that the evaluation fulfils one of NFER's core business purposes (undertaking research, evaluation and information activities) and it has broader societal benefits. Therefore, it is in our legitimate interest to process and analyse personal data for the administration of this RCT.

NFER, Children's University Trust, and EEF have signed a Data Sharing Agreement that sets out the roles and responsibilities for this trial. This includes a description of the nature of the data being collected and how it will be shared, stored, protected and reported by each party. In addition, Children's University Trust will provide a memorandum of understanding to schools, explaining the nature of the data being requested of schools, teachers and pupils, how it will be collected, and how it will be passed to and shared with NFER. Two separate Privacy Notices are available: one for CU local centres and schools¹⁵ and another one for parents¹⁶.

For the purposes of the trial, Children's University Trust (via their local CU centres) will collect names, role and contact details of a key contact person at schools when they are recruited. They will share this data with NFER using NFER's secure data portal. In summer term 2021, NFER will contact the participating schools asking them to distribute parent information letters and withdrawal forms to parents of all Year 4 pupils. The schools will, then, provide pupil data to NFER via a secure online portal. This will include pupil names, date of birth and UPNs for all Year 4 pupils (enrolled in 2020/21) and where parents have not withdrawn their child from data collection. NFER will use this information to match individual baseline pupil survey with a parent EOI form to determine the CU volunteers for the trial.

NFER will share the above pupil information (pupil names, date of birth, year group, UPN and whether a child is a volunteer or not) as well as schools details for the intervention schools with the Children's University Trust. This will enable Children's University Trust to upload this data about each pupil taking part in Children's University on the CU Online platform. This will also enable the CU local centres to issue CU passports to each volunteer. Pupils (and parents) in the intervention group will use the CU online platform to log the CU activities they take part in. The data will also enable Children's University Trust and their local CU centres to track participation of each intervention child on the above list in CU activities via an online CU platform.

At the end of the trial, Children's University Trust will share with NFER, the CU participation data for all intervention pupils (volunteers, and those who did not volunteer but who went on to participate). This will include names, date of birth, Unique Pupil Number (UPN), year group, school details, number and range of CU activities taken part in and hours spent for each activity; certificates and levels of CU graduation.

To obtain the information from the NPD, NFER will provide the Data Sharing Team at the DfE with the names of the pupils, their dates of birth, year group and UPNs, allowing a match to NPD. NPD data used for this trial will be de-identified Pupil Match Reference, the month and Year of birth, FSM eligibility, KS1 and KS2 attainment variables.

NFER will visit schools as part of the process evaluation to observe and interview key staff members and pupils. All staff visiting schools will have up-to-date DBS checks. All data gathered during interviews will be stored securely. No names of individuals will be used in any report arising from this work.

Within three months of the end of project, NFER will send school and pupil data to EEF's data archive partner. This will include school names, ID and intervention group variable, pupil data from CU online platform, pupil data from NPD and pupil survey data. At this point, EEF's data archive partner will keep a copy of the data and EEF will become the Data

¹⁵ https://www.nfer.ac.uk/media/3869/eecu_schools_and_cu_privacy_notice.pdf

¹⁶ https://www.nfer.ac.uk/media/3868/eecu_parents_privacy_notice.pdf

Controller. Data will also be shared with the DfE, the Office for National Statistics (ONS¹⁷) and, in an anonymised form, potentially with other research teams. Further matching to NPD and other administrative data may take place during subsequent research.

NFER and Children's University Trust will retain personal data for one year after report publication in case there are any queries about the report. One year after the report publication, all personal data will be securely deleted.

Personnel

Evaluation Team

Pippa Lord will be the Trial Director. She is a senior member of NFER's Education Trials Unit. Trials she has led using similar designs to this one include Families and Schools Together (volunteering was not possible pre-randomisation), and Philosophy for Children (measures the whole cohort). Pippa will also direct the process evaluation. She has extensive experience in designing and undertaking implementation and process evaluations of enhancement and enrichment programmes across a range of areas including for evaluations of Philosophy for Children for the EEF, In Harmony (an orchestral music programme funded by Arts Council England) and Chemistry for All (for the Royal Society of Chemistry).

Palak Roy will lead and manage the trial on a day-to-day basis and oversee the impact evaluation. Palak is a Senior Trials Manager in NFER's Education Trials Unit with considerable experience of leading and managing trials. She has led several EEF trials including the Catch Up Literacy effectiveness trial and Generation STEM with similar designs to the one in this trial. Palak is also a highly experienced analyst and has led statistical analysis for a number of evaluations including randomised controlled trials. Currently, Palak is also leading the Teacher Choices trials funded by the EEF.

Lisa O'Donnell will lead the initial stages of Implementation and Process evaluation. Lisa is an experienced researcher and project manager, proficient in a wide range of quantitative and qualitative research methodologies. Kelly Kettlewell will lead the implementation of the process evaluation. She is an experienced researcher and project manager, and previously led the process evaluation of the Philosophy for Children trial.

Kathryn Hurd will be the research operations' lead. Kathryn has considerable experience in designing and implementing response maximisation and attrition minimisation strategies for evaluations, supported by NFER's Telephone Unit and specialist survey administration software. She has led these aspects for many EEF projects, including: Catch Up Literacy efficacy trial, Literacy Octopus trials, Philosophy for Children trial, Helping Handwriting Shine trial, Evaluation of Accredited Reader.

Delivery Team

The developer team will be led by Helen O'Donnell (CEO and Director of Partnerships at Children's University Trust), and supported by Liam Nolan (Head of Communications and

¹⁷ ONS is scheduled to host the EEF archive from 2020.

Stakeholder Engagement at Children's University Trust) and Sukie Duhra (Evaluation and Quality Manager).

Local delivery will be managed by ten local CU Centres and their managers/administrators.

Risks

Risk	Assessment	Controls, countermeasures and contingencies
Insufficient schools recruited to the trial	Likelihood: moderate Impact: high	NFER will provide input into the recruitment documentation. NFER can assist CU with recruitment, if required, through a separate grant agreement.
School, teacher attrition	Likelihood: moderate Impact: moderate	Clear initial and ongoing communication with schools re expectations. Schools sign MoU with clear identification of requirements. Reduced testing burden through use of NPD. NFER test administrators for follow-up survey to maximise response rates, limit burden and limit bias. Weekly updates during follow-up testing. One key contact per setting. Termly keep in touch re update of any changes in contact and to keep schools informed of next steps
Ensuring sufficient volunteers participate in CU	Likelihood: moderate Impact: moderate	Encourage schools to create in school activity. Local CUs/Project manager to assess local activities available and ease of travel – before and during the Summer. Parental engagement/support, CU-school meetings, Schools to use their usual routes to help children/families that do volunteer but who are finding it financially challenging to take part; schools to be aware of any low uptake amongst volunteers and re-promote in term two or three. Ask schools to at least offer some within school activities, so that children/families who would find it difficult to attend/travel after school/at weekends, can participate in some CU activities.
Intervention is not implemented well	Likelihood: low Impact: moderate	Clear information provided to schools explaining the principles of the trial and expectations. Good communication with delivery team to provide strong implementation. Process evaluation will monitor implementation. Both 'intention-to-treat' and CACE Analyses will be used.
Changes to the project team due to sickness, absence or staff turnover	Likelihood: moderate Impact: moderate	NFER has a large research department with numerous researchers and research associates experienced in evaluation who could be redeployed. Clear and accurate project documentation would support continuity in the event of any team Changes.
CU online data (activities and participation) not completed sufficiently/ correctly	Likelihood: moderate Impact: high	NFER will need to share the following with Children's University Trust so that data matching can be carried out: pupil administrative data (excluding NPD) and NFER unique pupil ID.
Data attrition from the trial (i.e. incomplete secondary	Likelihood: low Impact: moderate	NFER and Children's University Trust along with local CUs will engage intervention schools and send regular communication to encourage response to pupil surveys. Financial compensation provided to control group schools will support completion of this data.

Risk	Assessment	Controls, countermeasures and contingencies
outcomes data)		

Timeline

Dates	Activity	Staff responsible/leading
July-Sept 2019	Set up meetings	EEF/ NFER/ CUT
October 2019 – December 2019	IDEA workshop, Protocol writing	CUT/NFER
	Secondary outcome survey development	NFER
January 2020-March 2020	Briefing webinar 1	CUT/NFER
	Finalise secondary outcome pupil survey	NFER
April-September 2020	Trial activities paused (school closures as a result of Covid-19 pandemic)	CUT/NFER
October 2020	Resume trial activities	CUT/NFER
	Briefing webinar 1 (second run)	
November 2020-May 2021	School recruitment Schools sign MoU	CUT
May 2021	Refresher IDEA workshop	CUT/NFER
June-July 2021	Schools provide pupil data	NFER
Sep-Oct 2021	Baseline survey data collection	NFER
	Parent expressions of interest Randomisation	CUT/NFER
Nov 2021	Inform schools and CU of randomisation	NFER
	Briefing webinar 2 Confirm CU online data specification	CUT/NFER
Nov 2021	Delivery of Intervention starts in intervention schools CU Online data records start	CUT
Jan 2022	School cost proforma (set-up costs, sample of schools) Collect set-up costs from local Children's Universities	
May 2022	Devise CU manager interview schedules	NFER
June 2022	Telephone interviews with local CU managers	NFER
July 2022	School cost proforma (Y1 costs, sample of schools) Collect Y1 costs from local Children's Universities	NFER/CUT
August 2022	Devise case-study interview schedules Interim exploration of CU Online data (school and pupil level)	NFER
Sept 2022	Selection of case-study schools	NFER
October 2022 – February 2023	Case-study visits and telephone interviews	NFER
March 2023	Devise staff survey and control BaU proforma	NFER

Dates	Activity	Staff responsible/ leading
May-July 2023	Follow-up survey of CU school coordinator and Year 6 pupils	NFER
June 2023	Follow-up telephone interviews with local CU managers School cost proforma (Y2 costs, sample of schools) Collect Y2 costs from local Children's Universities	NFER
July/early August 2023	Export of CU Online data (school and pupil level)	NFER/CUT
Aug - Nov 2023	NPD request and data analysis	NFER
Jan 2024	Draft report to EEF	NFER

References

- Child Outcomes Research Consortium (CORC) (n.d.). *Student Resilience Survey* [online]. Available: <https://www.corc.uk.net/outcome-experience-measures/student-resilience-survey/> [27 February, 2020].
- Clarke, A. M., Morreale, S., Field, C. A., Hussein, Y., and Barry, M. (2015). *What Works in Enhancing Social and Emotional Skills Development during Childhood and Adolescence? A Review of the Evidence on the Effectiveness of School-Based and out of School Programmes in the UK* [online]. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/411492/What_works_in_enhancing_social_and_emotional_skills_development_during_childhood_and_adolescence.pdf [10 December, 2019].
- Cullinane, C. and Montecute, R. (2017). *Life Lessons: Improving Essential Skills for Young People* [online]. Available: https://www.suttontrust.com/wp-content/uploads/2017/10/Life-Lessons-Report_FINAL.pdf [10 December, 2019].
- Cummings, C., Laing, K., Law, J., McLaughlin, J. Papps, I., Todd, L. and Woolner, P. (2012). *Can Changing Aspirations and Attitudes Impact on Educational Attainment? A Review of Interventions* [online]. Available: <https://www.jrf.org.uk/sites/default/files/jrf/migrated/files/education-attainment-interventions-full.pdf> [10 December, 2019].
- Department for Education (2017). *Unlocking Talent, Fulfilling Potential: a Plan for Improving Social Mobility through Education* [online]. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/667690/Social_Mobility_Action_Plan_-_for_printing.pdf [10 December, 2019].
- Hinds, D. (2019). Education Secretary sets out five foundations to build character [online]. Available: <https://www.gov.uk/government/speeches/education-secretary-sets-out-five-foundations-to-build-character> [27 February, 2020].
- Lereya, S.T., Humphrey, N., Patalay, P., Wolpert, M., Bohnke, J.R., Macdougall, A. and Deighton, J. (2016). 'The student resilience survey: psychometric validation and associations with mental health', *Child and adolescent psychiatry and mental health*, 10, 44, (whole issue) [online]. DOI 10.1186/s13034-016-0132-5
- McCroskey, J. C., Andersen, J. F., Richmond, V. P., & Wheelless, L. R. (1981). Communication apprehension of elementary and secondary students and teachers. *Communication Education*, 30(2), 122-132 [online]. Available: <http://www.jamescmccroskey.com/publications/095.pdf>
- Nelson, J., Lynch, S. and Sharp, C. (2021). *Recovery During a Pandemic: the ongoing Impacts of Covid-19 on Schools Serving Deprived Communities*. NFER. Slough
- Panorma Education (n.d.). *Panorama Social-Emotional Learning Survey* [online]. Available: <https://www.panoramaed.com/social-emotional-learning-sel> [27 February, 2020].
- Panorama Education (2016). *Reliability and Validity of Panorama's Social-Emotional Learning Measures* [online]. Available: [SEL-Validity-Report.pages \(panorama-www.s3.amazonaws.com\)](https://www.s3.amazonaws.com/SEL-Validity-Report.pages) [30 March, 2022].

Power, S., Taylor, C., Rees, G., and Jones, K. (2009). 'Out-of-school learning: variations in provision and participation in secondary schools', *Research Papers in Education*, **24**, 4, 439–460 [online]. DOI 10.1080/02671520802584095.

Rose, S., Badr, K., Fletcher, L., Paxman, T., Lord, P., Rutt, S., Styles, B., Twist, L. and Donkin, A. (2021). Impact of school closures and subsequent support strategies on attainment in Key Stage 1. NFER: Slough.

Skills builder Partnership (2020). *One universal framework for all essential skills*. [online]. Available: [The Skills Builder Partnership](#) [30 November, 2021].

Southby, K., and South, J. (2016). *Volunteering, Inequalities and Barriers to Volunteering: A Rapid Evidence Review* [online]. DOI 10.1007/s11266-019-00119-2.

Tanner, E., Chanfreau, J., Challanan, M., Laing, K., Paylor, J., Skipp, A. and Todd, L. (2016). *Can Out of School Activities Close the Education Gap?* [online]. Available: https://eprints.ncl.ac.uk/file_store/production/232457/E00032E1-A958-4A93-8B61-80E21D906A83.pdf [10 December, 2019].

The Children's Society (2019). *The Good Childhood Report* [online]. Available: [the good childhood report 2019.pdf \(saphna.co\)](#) [30 March, 2022].

Appendix 1: Changes since the previous EEF evaluation

	Feature	Efficacy	Effectiveness
Intervention	Intervention content	No changes; although note 'social action' (e.g. volunteering or doing charitable work) was an emphasis in the efficacy trial as that was part of a funding round related to social action.	Social action is not an emphasis in the effectiveness trial.
	Delivery model	Changes to the way pupils volunteer. Only pupils, and not parents or teachers, were asked to indicate whether they would like to volunteer to take part in a programme like CU.	In this trial, the aim is to boost the number of volunteers who are likely to go on to take part in the intervention by involving teachers and parents in the recruitment, to identify pupils with an interest in CU activities. In addition to the pupil surveys, parents were also sent expression of interest forms to encourage dialogue between the parent and the child so that the child can make an informed indication to take part in CU. Teachers were sent a guidance document at the same time to encourage children to respond to the volunteering question in the pupil survey.
	Intervention duration	No change:	
Evaluation	Eligibility criteria	<p>Participating schools were from the north of England (Lancashire and Middlesbrough).</p> <p>Two cohorts took part in this trial (Year 5 and Year 6). The trial looked at academic outcomes using KS2 reading and maths scores and at non-cognitive and attitudinal outcomes relating to teamwork and social responsibility using a bespoke pupil survey at baseline and follow-up after two years for the Year 5 pupils (and at one year for the Year 6 pupils as interim findings).</p>	<p>This trial will include 11 CU localities from different regions than that of the efficacy trial, spread across the UK.</p> <p>This trial will only have one cohort. We will only follow the Year 5 (2021 cohort) through to their Year 6 as this enables the local CUs to support schools in targeting activities at a single year group and the evaluation to measure an impact of CU participation over two years rather than only one year.</p>
	Level of randomisation	No change: school-randomised trial.	

	Outcomes and baseline	<p>Primary outcomes remain the same</p> <p>Secondary outcomes were teamwork and social responsibility. These were each measured by single items from a bespoke pupil survey developed by the efficacy evaluator in collaboration with developer(s) and the EEF, especially for use in a number of trials. The instrument contained a set of single-item questions scored on a scale of 1–10, covering 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.</p>	<p>Secondary outcomes in the effectiveness trial are based on validated sub-scales from published instruments, in order to measure a range of concepts relevant to the logic model.</p> <p>They are existing validated sub-scales from published instruments, incorporated into one survey instrument. They are:</p> <p>Confidence and self-esteem, and improved goals and aspirations, as measured by the ‘Self-esteem’ and ‘Goals and aspirations’ subscales from the Student Resilience scale (Cork, n.d.); and increased motivation to learn, and increased positive identification with school, as measured by the ‘Engagement’ and ‘Valuing of School’ sub-scales from the Panorama SEL measure (Panorama Education, n.d.).</p>
	Control condition	Control condition remains business-as-usual.	

Appendix 2: Children's University award levels

Children collect 'stamps' when they participate in CU validated structured learning activities. One stamp generally equates to one hour of participation in structured learning. There is cap of 10 hours' worth of stamps per single activity per term (children can continue to attend these activities within term, but can only receive a maximum of 10 hours' stamps). Once a child has amassed a certain number of hours, they will be eligible for receiving certificates, as set out below.

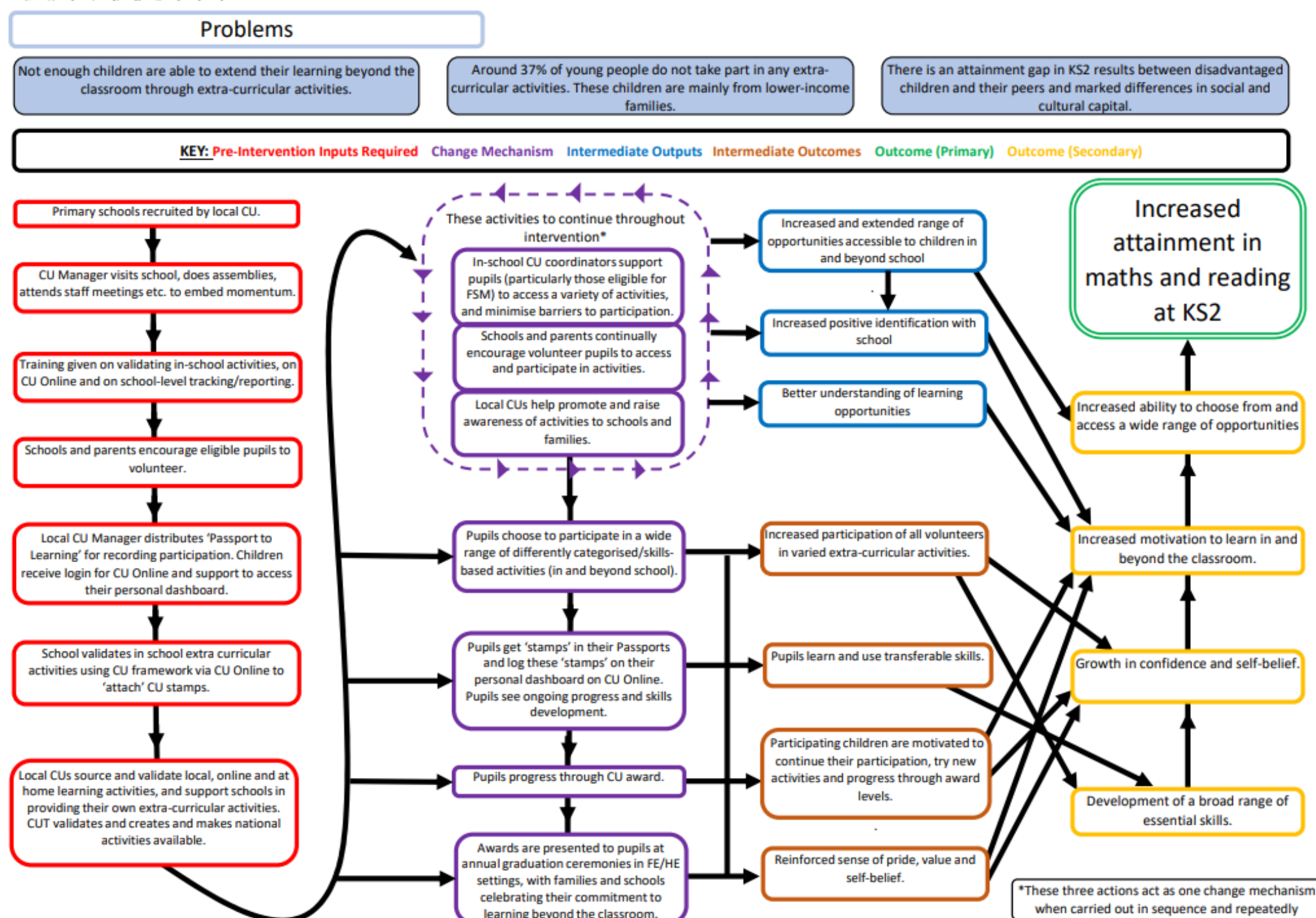
Award Name	Bronze Level Hours	Silver Level Hours	Gold Level Hours
Undergraduate Awards	30	65	100
Undergraduate Certificates	130	165	200
Undergraduate Diplomas	230	265	300
Undergraduate Degrees	330	365	400
Postgraduate Awards	430	465	500
Postgraduate Certificates	530	565	600
Postgraduate Diplomas	630	665	700
Postgraduate Masters Degrees	730	765	800
Doctorates	830	865	900
Fellowships	930	965	1000

Information source: Children's University Trust

Appendix 3: A theory of change for Children's University



Theory of Change for Children's University



Appendix 4: Implementation expectations¹⁸

Children's University Trust Level

- sign MOU with Children's University Trust agreeing to project terms and milestones
- organising one graduation (minimum) at the end of each of the two school years
- *sharing all graduation data with NFER*
- validating and promoting public learning opportunities
- working with schools to validate all relevant in-school activities
- utilising *Children's University Online* alongside the paper Passports to Learning
- *focussing their school recruitment and Children's University delivery on disadvantaged areas*
- *supporting schools to encourage FSM children to volunteer for the intervention and ensure they are encouraged and able to access in-school activities*
- limiting children to collect no more than 10 hours per single activity per term
- going into participating schools to deliver basic training to teachers and an assembly/information session to pupils each year
- providing ongoing school support during the trial
- sharing and promoting Children's University Trust's national learning partnerships and seasonal challenge sheets
- *taking part in two webinars and phone calls with NFER*
- maintaining an ongoing relationship and meeting with Children's University Trust's EEF Project Manager

School Level

- School Senior Leader to sign Service Level Agreement with local CU and allocate a member of staff as the key contact for CU in the school (should they be allocated to the intervention group), and *to act as the key contact for the trial (intervention and control) who NFER and Children's University Trust will liaise with.*
- *Share a letter with parents/carers (provided by NFER) sharing with them full information about the evaluation and their right to withdraw their child from the data sharing.*
- *Provide pupil data once signed up to the study for all children in Year 4 for the 2020/2021 academic year (pupil's first name, surname, date of birth, UPN and Year group).*
- *Share and collect parents' Expressions of Interest forms, in Autumn 2021.*
- *Administer the baseline pupil questionnaire to all Year 5 pupils in Autumn 2021, before randomisation. Encourage FSM children to volunteer to take part in Children's University (should their school get randomly allocated to receive the intervention). The administration of the questionnaires will be a condition for the school to be randomised and take part in the trial.*
- *Complete a school baseline pro-forma; a short online survey about usual practice in relation to extra-curricular activities.*
- *Allow NFER Test Administrators to come into school and administer the endpoint pupil questionnaire to all Year 6 pupils in Summer 2023.*

Additionally, schools that are **randomly allocated to the intervention group** will be expected to:

- *Make a £300 contribution to the cost of the programme (The regional CU may pay on behalf of the school)*

¹⁸ This section also includes the evaluation requirements. These are italicised to distinguish them from the implementation expectations.

- allocate a school-coordinator to manage Children's University for 2 years (named above in the MoU).
- participate in initial local staff training with Children's University Trust.
- participate in in-school staff training from their local Children's University Manager each year.
- allow the Children's University Manager to promote Children's University via an in-school assembly/information session each year.
- provide a range of extra-curricular activities, including in-school time (e.g. lunchtime)
- validate all relevant school activities.
- provide information about extra-curricular activities to participating pupils and their parents
- ensure all participating volunteers are able to access in-school activities, by:
 - supporting participating pupils to attend the Children's University graduation event at the end of each year;
 - encouraging pupils to log activity on Children's University Online and in their passports;
 - encouraging variety and quantity of participation, including in-school time e.g. lunchtime, and supporting students to attend validated external activities.
- ensure FSM children are able to access in-school activities and/or activities that do not require personal transport costs.
- ensure Children's University Online is kept up to date – local CUs will support the school coordinator to upload a list of pupils who are taking part in CU activities and after this encourage pupils and parents to log each activity.
- *complete a staff survey in Summer 2023– to be completed by the school co-ordinator for Children's University.*
- *some schools will be invited to take part in case studies involving interviews with staff and discussion groups with pupils, and/or telephone interviews with staff.*

Schools that are **randomly allocated to the control group**

- *receive £500 gesture of appreciation payable at the end of the study.*
- *not be able to sign up to Children's University outside of the study until after July 2023*
- *complete a school pro-forma in Summer 2023 about their extra-curricular activities during the trial period.*

Pupil level

- Pupils to participate in CU validated activities beyond the school day when they are in Years 5 and 6.
- Pupils to record their participation in their Passports and on CU Online via 'stamps'.

Implementation to be monitored:

NFER will obtain data on the following activities from CU Trust if available:

- Half-a-day's training delivered by local CU and received by school
- One in-school information session delivered by local CU each year
- Validated CU activities provided in-school and locally
- Graduation ceremonies available each year
- Access to passports and CU online