THE POLICY INSTITUTE
Evidence Development and Incubation Team
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RedSTART: Change the Game Evaluation Year 1

Full Report

Susannah Hume
Jack Summers
Gabrielle McGannon
Megan Liskey
Veronica Soon
Johnny Runge

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Executive Summary

Headlines

In the first year of our evaluation of the RedSTART: Change the Game financial literacy intervention, 45 schools and over 3,500 students in Years 2 and 3 (England) and Primary 3 and 4 (Scotland)[1] participated in the impact evaluation. The evaluation was a randomised controlled trial (RCT), with students in the treatment schools receiving Change the Game activities through the school year whilst the control cohort did not.

The impact evaluation found that Change the Game had a statistically significant, small-to-medium, positive effect on children's financial knowledge, as measured by a nine-item survey scale. It also found that the programme had a statistically significant impact on three out of four disaggregated outcomes: students' financial ability, financial mindset and financial connection were improved by the intervention. No significant effect was found on the fourth disaggregated outcome, financial behaviour, or on teacher-assessed maths attainment.

The implementation and process evaluation found that there was widespread buy-in to the programme from stakeholders. Teaching staff found the delivery model and resources to be high-quality, efficient, and relatively burden-free, indicating that the model could be sustainable and scaled.

The intervention

Change the Game is a novel financial education intervention for primary aged children, with activities delivered every year until the end of primary school. It was delivered in over 50 schools across the country in 2022/23. The delivery model is based around partnerships between RedSTART, schools, and volunteers, including from the financial sector. Together, they deliver game-based activities that introduce financial concepts and enable students to engage meaningfully with them. In the first year, the intervention consisted of three core parts:

- school-based activities delivered by teachers;

[1] For brevity, we will only use English year group naming conventions from here onwards.

- workshops in schools delivered by volunteers and RedSTART staff;
- ongoing support provided to teaching staff by RedSTART's regional managers.

A bank app is being rolled out to participating schools in the 2023/24 school year, in which pupils earn virtual money through maths games, manage their money in current and savings accounts, and spend them on real items in a physical shop.

The evaluation

Over 3,500 Year 2 and 3 students across 45 schools took part in the first year of the evaluation in the 2022/23 academic year. The impact evaluation, an RCT, has investigated the effect of Change the Game on pupils' financial knowledge. This approach was selected as, when they are completed to a high standard, RCTs provide robust causal evidence. The participating schools were randomly allocated into two groups – treatment and control – with the treatment schools receiving the intervention for Years 2 through 6 and the control schools only receiving the intervention in Year 6.

Year 2 and Year 3 students' financial knowledge was measured using a survey scale that was developed by the evaluation team for this research. Students completed the survey twice, either using a paper or online version: once before the intervention was delivered, and again afterwards. The average changes in these scores were compared between the treatment and control group to give an estimate of the effect created by the Change the Game programme.

Alongside the impact evaluation, we conducted an implementation and process evaluation (IPE) to understand how the programme is delivered, what factors have helped or hindered its implementation, and to answer broader questions around programme sustainability and scalability. Interviews and surveys were completed with school staff, and interviews were conducted with programme staff and volunteers who had supported programme delivery.

Findings

In this report we present preliminary analysis of the impact of Change the Game for the first year of delivery.

The impact evaluation found that Change the Game had a statistically significant, small-to-medium, positive effect on students' financial knowledge, as measured by the nine-item scale developed for this research. After one year of exposure to the treatment (which is intended to be a multi-year intervention) the average score for treated pupils had improved by 3.56%,

which is equivalent to an effect size[2] of 0.26. This effect size is in keeping with effect sizes of other financial education interventions with other cohorts; one metanalysis of 18 randomised controlled trials in the sector found interventions had an average effect size of 0.19[3] (Hedge's g) on financial knowledge.[4]

The intervention also had a small but statistically significant positive effect on three disaggregated outcomes. Pupils' financial ability, mindset, and connection were all improved, on average, by engaging with Change the Game. No significant impact was found on financial behaviours measured by the survey. We found no significant difference in teacher-assessed grades in maths between the treatment and control groups. Table 1, overleaf, summarises these findings.

The implementation and process evaluation found that the programme has strong support amongst all stakeholders. Teachers consistently indicated their satisfaction with RedSTART's resources, they found the year-round activities engaging and broadly accessible for students, and were generally impressed with the contributions of volunteers and RedSTART staff.

The buy-in from volunteers and teachers, and the reported ease of delivery, suggests that the programme will be sustainable in the schools that currently work with RedSTART. In particular, the volunteer-based model was championed as an efficient way to enhance the learning activities (by improving the staff-student ratio). The model also introduces students to adults from varied walks of life they may not otherwise engage with.

The intervention is organised and facilitated by a small, committed and highly competent team of RedSTART staff. If the programme was to expand to many more schools in its current form, additional staffing would be necessary, or the team structure may need development.

There are some limitations to be mindful of. The analysis for this report was done without access to the National Pupil Database (NPD). We expect to secure access in Spring 2024 and will then collect further attainment and demographic data of the participants, and provide an update to this report. This will include a more detailed sub-group analysis; for example, we can investigate whether the intervention has a differential impact on pupils from different

[2] Cohen's d, a standardised measure of effect size, calculated as the difference between the mean of the treatment group and the mean of the control group, divided by the pooled standard deviation.
[3] Hedge's g, similar to Cohen's d, but corrected for small samples.
[4] Kaiser, T., & Menkhoff, L. (2020). Financial education in schools: A meta-analysis of experimental studies. *Economics of Education Review*, *78*, 101930.

socioeconomic backgrounds or ethnic groups. The demographic data will also allow us to add more detailed controls into the primary analysis, adding greater validity to the findings.

Another potential limitation is that data was collected somewhat inconsistently as teachers, rather than the research team, collected primary data via surveys. Nonetheless, we are confident that the first year of the trial has been completed robustly and that the reported effects represent the actual impact of the Change the Game intervention.

Table 1: Summary of impact analysis findings

Outcome	Measure	Year 1 Impact
Financial knowledge	9 survey questions related to: • Understanding of role of money in society • Understanding of money management • Attitudes to money management • Skills to manage money well day-to-day • Aspirations and goals • Access to financial education resources	+3.56% Small-to-medium effect
Financial ability	2 survey questions related to: • Understanding of money management • Understanding of role of money in society	+3.16% Small effect
Financial mindset	7 survey questions related to: • Attitudes to money management • Confidence in maths skills • Aspirations and goals • General aspirations	+2.34% Small effect
Financial behaviours	2 survey questions related to: • Skills to manage money well day-to-day	No impact
Financial connection	1 survey question related to: • Access to financial education resources	+5.26% Small effect
Maths attainment	Teacher-assessed grades	No impact

Conclusions

Based on our findings, we have come to the following conclusions that are relevant to policymakers and practitioners in the financial education field.

1. Children between the ages of six and eight can engage meaningfully with financial education and can benefit from interventions that aim to improve their financial knowledge. In particular, our findings indicate that game-based activities can improve students' understanding of financial concepts and impact their attitudes towards money and its role in society.
2. External organisations seeking to deliver programmes in schools should prioritise reducing burden for teaching and leadership staff as far as possible. Because of the wide range of competing priorities on staff and student time, buy-in among school staff is crucial to the successful delivery of school-based interventions.
3. Accessible resources and varied activities, such as those used by RedSTART, are linked to more time-efficient interventions; evidence gathered here suggests that lower intensity programmes can yield results that are comparable to higher intensity programmes.
4. Leveraging the interest that finance organisations have in financial education to embed corporate volunteers into a delivery model is a pragmatic approach to create a well-resourced, engaging intervention.

Next steps

The trial is moving into a second phase in 2024. A new cohort of students, who are currently in Reception, are being onboarded into the research following expansion of Change the Game's delivery. We have onboarded 17 new schools (and will include 3 schools that had initially been unable to participate in the first year), for a total of 65 participating schools. Going forward, we will track this cohort throughout their primary school years to measure the impact of Change the Game across multiple years. We will also continue to track the two cohorts who have participated in the first year of the evaluation, who will continue to take part in Change the Game activities, with further outcome measures taken when they reach the end of Year 4 and Year 6.

Introduction

This report details the first year of the evaluation of RedSTART's Change the Game programme – a financial education intervention for primary aged children. The evaluation has been completed by researchers at the Policy Institute at King's College London. This report will be the first of a series of annual reports as we aim to track the impact of Change the Game over the next seven years.

Context

The evaluation has taken place at a time when the importance of financial literacy has been laid bare by the cost-of-living crisis, as individuals across the UK are having to deal with difficult financial decisions in an increasingly complex financial environment. There is evidence that financial literacy is linked to the financial outcomes of adults, and that financial education received as a child affects financial capabilities later in life.[5]

However, financial education is not equally accessed, with the worst-off less likely to access it than their wealthier peers.[6] School-based financial education varies considerably as schools are under little statutory obligation to provide meaningful financial education. Consequently, the young people that are growing up to face the greatest financial challenges are often the least well prepared to deal with them.

The corresponding evidence base is also patchy. There has been a range of work completed into the state of financial education in UK schools, but there is limited evidence on the long-term impacts of financial education delivered to primary-aged children. Meta-analyses show

[5] See, for example, Lusardi & Messy (2023), The importance of financial literacy and its impact on financial wellbeing. *Journal of Financial Literacy and Wellbeing*, 1(1) and LeBaron et al. (2020), Parental Financial Education During Childhood and Financial Behaviors of emerging adults, *Journal of Financial Counselling and Planning*

[6] MaPS (2023), UK Children and Young People's Financial Wellbeing Survey: Financial Foundations, Available at: https://maps.org.uk/en/publications/research/2023/uk-children-and-young-peoples-financial-wellbeing-survey-financial-foundations#Key-findings

that financial education programmes can be effective at improving financial literacy but there is lack of meaningful knowledge about what works in UK primary schools.[7]

This context has driven the salience of financial education, with policymakers across the spectrum increasingly seeking to address the gap that exists in provision and other organisations looking to grow the evidence base. The All-Party Parliamentary Group (APPG) on Financial Education for Young People has have recently published recommendations that seek to encourage the expansion of provision and evidence generation in the sector.[8] Work by the Education Select Committee has also focused on the issue and launched an inquiry at the end of 2023 to strengthen financial education's presence in the national curriculum.[9]

RedSTART's mission is responsive to this context. Not only do they want to deliver financial education in economically deprived areas, but they also aim to contribute to the evidence base of what works in financial education. As such, they commissioned this research in 2022 with the aim of measuring the impact of their intervention on primary school pupils, and to provide a blueprint for how these initiatives can be scaled up, particularly in schools in lower-income areas with a higher proportion of disadvantaged pupils. As such, RedSTART's mission responds directly to the recommendation by the APPG on Financial Education for Young People in their 2021 report to invest in longitudinal studies.

The Evaluation

The RedSTART team agreed to facilitate an RCT; this method, when well-executed, can provide extremely robust causal evidence and is therefore well suited to their aims. Baseline and endline measures of financial knowledge were gathered in treatment and control schools via a survey, whilst further administrative data was collected from schools. These outcomes will be compared to estimate the causal impact of Change the Game.

Concurrently, we completed a range of qualitative data collection activities as part of an implementation and process evaluation (IPE). In these interviews and surveys, we asked

[7] Kaiser, T., & Menkhoff, L. (2020). Financial education in schools: A meta-analysis of experimental studies. *Economics of Education Review*, *78*.
[8] APPG on Financial Education for Young People (2021), Inquiry on Primary-School aged Financial Education, Available at: https://www.young-enterprise.org.uk/wp-content/uploads/2021/07/Inquiry-on-primary-school-aged-financial-education-Report.pdf

[9]https://committees.parliament.uk/committee/203/education-committee/news/198489/education-committee-launches-inquiry-into-strengthening-financial-education/

teachers, volunteers, and delivery staff to explain how the programme had been delivered, what factors made this more or less difficult, what impacts they had observed, and their perceptions of the sustainability of the programme.

Taken together, we believe our evaluation and RedSTART's work can meaningfully contribute to the sector and play an important role in developing policy recommendations relating to best practice and delivery approaches.

Report Structure

This report will follow the structure outlined below to explain the context of the research, our methodologies, and the findings of the first year of the evaluation.

- **Chapter 1: Change the Game** details the different elements of the programme. The Theory of Change is also included in this chapter.
- **Chapter 2: Impact evaluation** details the evaluation design, the collection of pupil outcomes, and presents the impact evaluation findings.
- **Chapter 3: Implementation and process evaluation** outlines the approach to the qualitative and survey research with teachers, volunteers, and delivery staff, and presents the findings.
- **Chapter 4: Discussion of findings** combines the information from Chapters 2 and 3, to provide insights into how the intervention has created change, and to outline key takeaways generated by the first year of the evaluation.
- **Chapter 5: Next steps** explains the next steps in the evaluation process. Going forward, the evaluation will be expanded to include a new cohort of Reception students who we aim to track through all seven years of primary school.
- **Appendices:** The appendices contain a range of additional information relating to the impact and implementation and process evaluations.

Change the Game

Description of the intervention

Change the Game is a financial education programme, delivered by the financial education charity RedSTART Educate. In its first year (the academic year 2022/23), which is the focus of this report, the programme was delivered to primary school children in over 50 primary schools across the UK. The schools are located across regional hubs in England (North London, South London, Lowestoft, Bristol, North-East England), and Scotland (Edinburgh and the Scottish Borders). The programme (which is summarised in Figure 1) consists of workshops, school-based activities, and a bank app and shop. The activities are organised and facilitated by RedSTART regional managers who work with the schools within each regional hub.

Figure 1: Elements of Change the Game

Workshops

The workshops are delivered by volunteers, supported by RedSTART staff. Throughout primary school, pupils will attend four workshops: in Year 2, Year 3 and Year 5 in their school, and in Year 6 at an external location such as a corporate partner's office.

RedSTART recruits workshop volunteers through two main routes. First, they work with financial institutions to highlight links to their Corporate Social Responsibility (CSR) programmes. Staff are typically encouraged to use their corporate volunteering days to work with RedSTART. Second, RedSTART builds relationships with colleges and universities by highlighting volunteering as a unique opportunity for sixth form and undergraduate students. The volunteers in the first year of the programme came from more than 30 different financial institutions (many of whom had also provided funding to RedSTART to deliver the programme), and 3 colleges and universities.

In total, 522 volunteers helped deliver 151 workshops across participating schools during the first year of the programme. This included 502 volunteers from financial institutions and 20 from colleges and universities. Volunteers are provided with online training about the programme and on safeguarding, lasting one to two hours, and workshop materials, to equip them to run and deliver a workshop, with support from a RedSTART staff member.

In-class sessions

The in-class sessions are delivered by classroom teachers in the participating schools. RedSTART provides teachers with resources to deliver the sessions, and students are given take-home materials. In the first year of the programme, 122 in-class sessions were delivered.

The RedSTART bank app and shop

The bank app allows students to take part in maths quizzes, practicing their basic maths skills, such as addition, subtraction, and percentages, and reinforce learning from workshops through knowledge quizzes. Students earn virtual pounds through quizzes, and can practice financial behaviours by allocating their virtual pounds to current and savings accounts on the app. The app is connected to a physical shop set up in the school where pupils can spend their virtual pounds on real items, ranging from smaller, cheap items, to larger, expensive items that require pupils to save up. The bank app and shops are currently being rolled out in participating

schools in the second year of the programme, and were therefore not part of the first year, which is the focus of this report. However, the bank app and shop will be a key component of the programme in future years, and in subsequent evaluation reports.

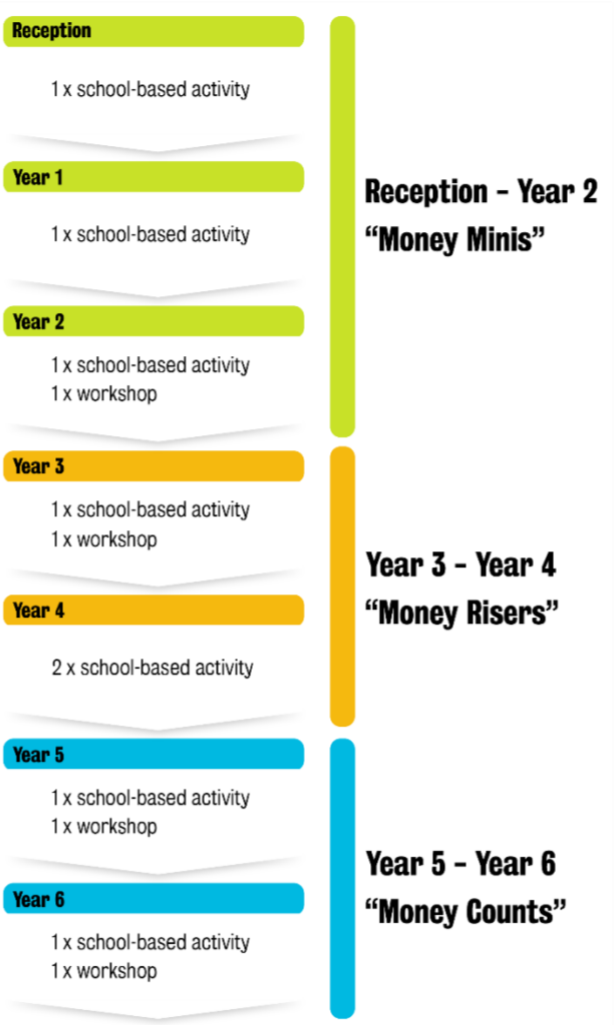
Support to schools

In addition to supporting schools in organising, delivering, and implementing the workshops, in-class sessions, and the bank app, RedSTART staff also support schools to understand the benefits of financial education, including supporting school leadership to explain the benefits of Change the Game to Ofsted inspectors.

Student journey

One of the unique features of the RedSTART programme is its length. The programme is delivered across several school years until the end of primary school in Year 6. Figure 2 shows the journey of a student who starts Change the Game in Reception, taking part in activities until the end of primary school in Year 6.

Figure 2. Change the Game student journey throughout primary school

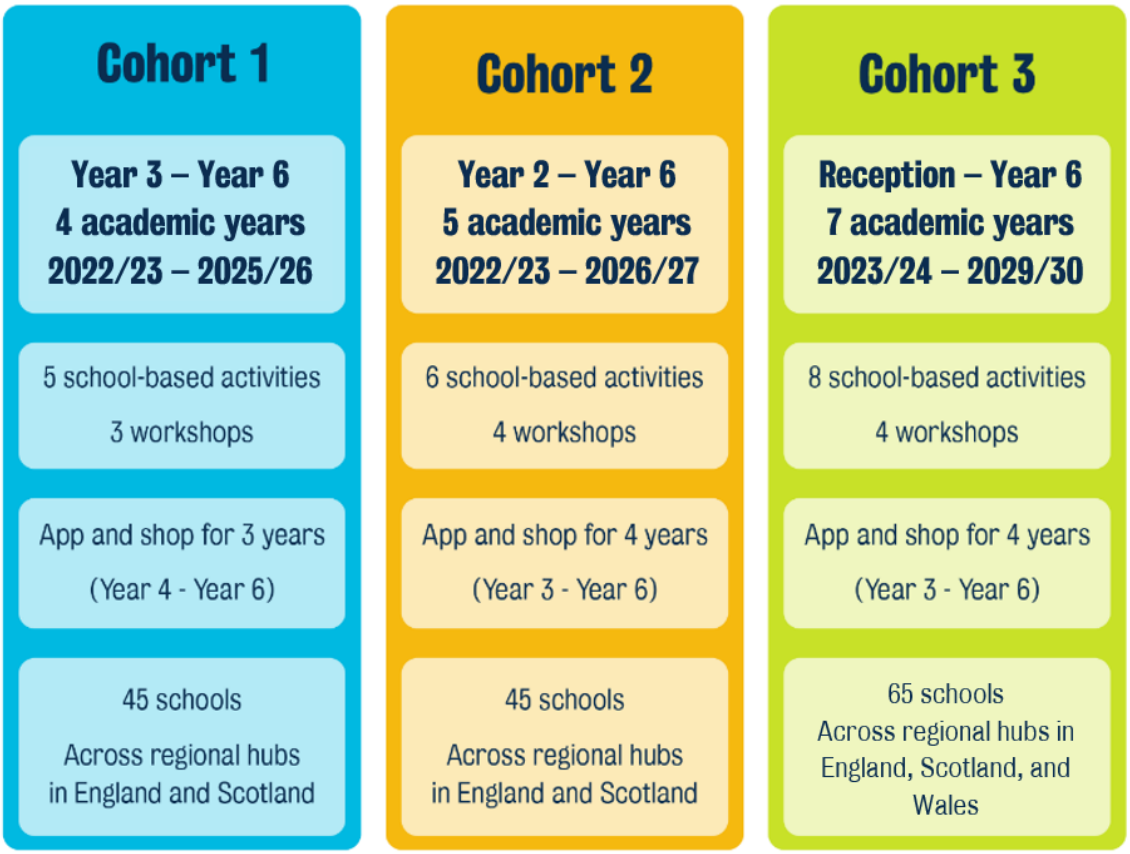


Evaluation cohorts

Because the evaluation is tracking students over a long period of time, there are three main cohorts of students included in the research. They are not all receiving the 'complete' seven-year Change the Game journey, from Reception to Year 6. The different cohorts are partly a result of practical considerations when implementing the trial, but it may also benefit the evaluation. Ultimately, we have three different cohorts of pupils, who will take part in different amounts of activities (dosage) and across different time periods (length).

This first report is focused on Cohort 1 (who started the intervention in Year 3 in 2022/23) and Cohort 2 (who started the intervention in Year 2 in 2022/23). Cohort 3 (who started the intervention in Reception in 2023/24) is not covered in this report. Figure 3 below shows how each of the cohort differs in terms of the number of academic years, activities they will complete, and number of participating schools. A fuller description of the activities that Cohort 1 and Cohort 2 received in 2022/23 is included in Appendix 1: Activities in 2022/23.

Figure 3: Evaluation cohorts



Theory of Change

We developed a Theory of Change model for the programme in partnership with RedSTART. A Theory of Change model is a comprehensive description and illustration of how and why a desired change is expected to happen (Figure 4).

Figure 4: Theory of Change

Situation

Income inequality is rising in the UK, while financial literacy is falling. The COVID-19 pandemic exposed the financial precarity that many families live with: 25 per cent of children as young as six said they are more anxious about money because of the pandemic (The Centre for Financial Capability, 2021). 50 per cent of adults with debts experience mental health problems (Royal College of Psychiatrists, 2017). Early intervention is crucial, as research suggests that children may start forming money habits by as young as seven (MAS, 2013). However, despite evidence also showing the increased effectiveness of early interventions, there is currently significantly more research available for interventions in secondary schools (MAS, 2018).

Aims

To provide financial education that transforms the life chances of young people across the UK.

Inputs	Activities	Outputs (Change the Game first year: 2022/23)	Outcomes	Impact
Process			**Impact**	
• Funding (corporate partners, fundraising) • Staff time • Volunteer training materials • Volunteer time • Workshop materials • Materials for teachers • School/teacher time • Take-home resources • IT support • Materials for programme workshops • Development and maintenance of RedSTART Bank app	• **Working with financial institutions** to engage them in the delivery of financial education through highlighting clear links between financial education and CSR interests • **Building and maintaining mutually beneficial relationships with universities and colleges** through highlighting volunteering as a unique opportunity for sixth form and undergraduate students, and the potential for participation to encourage a more diverse range of applicants in the future • **Relationship building with schools** to allow multi-year delivery • **Schools engage** with Change the Game through regional hubs across the UK **Not delivered in 2022/23, but will be delivered in future years** • RedSTART Shop set up in each primary school	• **Money Minis programme** delivered to Year 2 students. Year 2 students learn the key financial concepts of earning and saving. • **Money Risers programme** delivered to Year 3 students, and Year 4 students. They experience earning, saving and budgeting money, and learn key concepts around prioritising financial needs and wants • **Money Counts programme** delivered to Year 5 students, and Year 6 students. They learn key concepts around influences on saving and spending, the value of money, borrowing, and emotional links to money • **Children take home resources** to share with their parents/guardians • Teachers deliver **in-class sessions** to young people • Volunteers deliver **workshop sessions** to young people • Schools receive **briefing packages** on the programme for Ofsted inspections **Not delivered in 2022/23, but will be delivered in future years** • Children **engage with the RedSTART Bank app** • Children **practice basic maths skills** such as addition, subtraction and percentages through maths quizzes on the Bank app • Children reinforce knowledge learnt in workshops through **knowledge quizzes** on the Bank app • Children **practice spending and saving behaviours** through earning, allocating and spending money on the Bank app	**Outcomes for children:** *Ability* • Improved maths attainment at primary school • Improved understanding of the role of money in society • Improved understanding of money management *Mindset* • Improved general aspirations • Improved money efficacy • Improved confidence in their maths skills • Improved aspirations and goals • Improved attitudes to money management *Connection* • Increased access to financial education resources *Behaviour* • Improved skills to manage money well day-to-day **Outcomes for adults:** • Primary school teachers and volunteers are more confident in delivering financial education • Volunteers and teachers learn and adopt more beneficial financial behaviours	**Impacts for children and young people:** • Children and young people have the knowledge and skills required to understand risk and make sound financial decisions • Children and young people have raised aspirations which facilitate social mobility later in life **Impacts for the education sector:** • The primary school workforce has increased skills and confidence in delivering financial education, and believe in the benefits it can bring for children **Policy impacts:** • There is a clear blueprint for the delivery of effective, evidence-led financial education in primary schools • All children in primary schools in the UK receive high quality, age-appropriate financial education

Rationale & Assumptions

- Continuous, early-years financial education will improve young people's long-term financial security
- App-based activities will encourage engagement
- Delivering the programme to children with the highest needs (in schools of deprivation level 5 or below) will create the greatest impact
- The lack of financial education in the English national primary school curriculum creates a need for external programme delivery

Impact evaluation

Introduction

To evaluate the impact of Change the Game, the King's College London research team is running a two-armed RCT, with randomisation occurring at the school level. This approach was selected as, when they are conducted to a high standard, RCTs are an extremely robust method for estimating the impact of an intervention. This is because when certain conditions are satisfied – such as the trial having a sufficient sample size and balance checks being completed – we can be confident that any differences that are observed post-intervention between the treatment group and the control group are a result of the intervention as, on average, the two groups are otherwise very similar.[10]

Initially 49 schools were randomised, of which 45 schools ultimately participated in the first year of the evaluation. All schools had a pre-existing relationship with RedSTART and are based in areas with high scores on the index of multiple deprivation. Of these, 22 are in the control group and 23 form the treatment group. Pupils in Year 2 and 3 are in scope for the trial. In the first year of the trial, the treatment condition for a school was the delivery of Change the Game activities to all students from Years 2 to 6 and the control condition was Change the Game activities for Year 6 students only.

The primary outcomes of interest are general financial knowledge and behaviours and maths attainment. The former was captured via surveys (see Appendix 2: Outcomes survey) designed specifically to measure students' understanding across a range of domains related to financial literacy, whilst the latter is collected via the NPD or directly from schools. Survey data collection took place before and after the intervention was delivered in the 2022/23 school year.

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[10] Roberts, C., & Torgerson, D. (1998), Randomisation methods in controlled trials. *BMJ (Clinical research ed.)*, *317* (7168)

In most schools, staff chose to use an opt out consent process. That meant students were excluded from the trial if their parents opted them out of the study after receiving information about the processes involved. In a sub-set of schools, staff chose to use an opt in consent process, where students were included only if their parents actively consented to their participation. The vast majority of in-scope students were included in the study.

We then analysed the data collected at baseline and endline, comparing the changes in scores in the treatment and control group, to estimate the causal effect of the programme on the primary outcomes.

This chapter outlines the design of the impact evaluation and then explores the findings.

Methodology and considerations

This section outlines the research questions, the research design, provides information on sampling, explains our data collection approach, and provides an overview of the analytical strategy that has been used to address the research questions.

Research Questions

The impact evaluation of Change the Game aims to answer two primary research questions that are linked to financial literacy. These questions were devised in collaboration with the RedSTART team following a review of their Theory of Change.

Primary research questions:

- What impact does participating in Change the Game have on pupils' general financial knowledge and behaviours?
- What impact does participating in Change the Game have on pupils' maths attainment in primary school?

In our analysis, we also explore the impact that participating on Change the Game has on pupils' financial ability, financial mindset, financial behaviours, and financial connection; these outcomes are the disaggregated outcomes that form the general financial knowledge and behaviours outcome when combined.

Design

Rationale

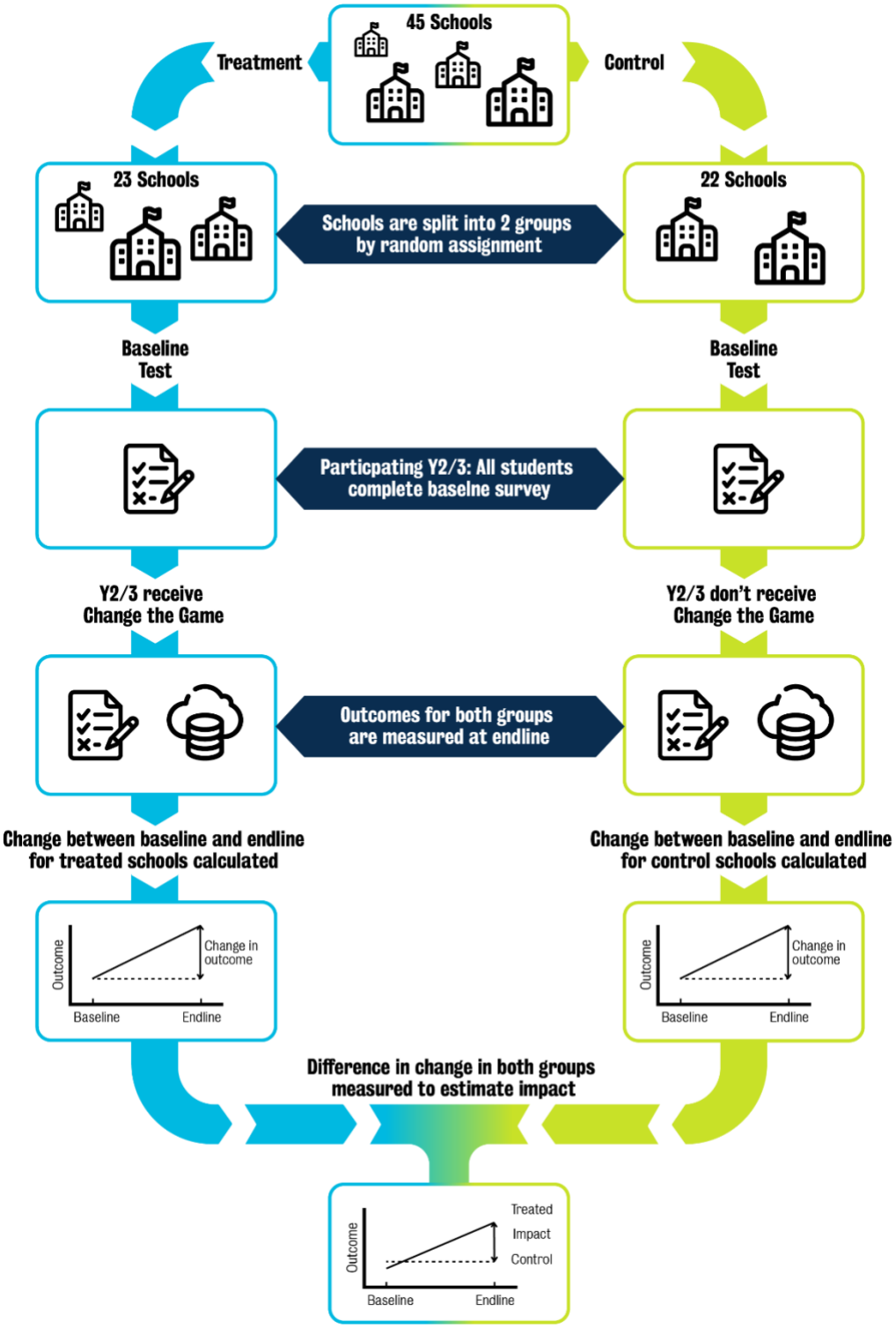
The central problem in estimating the impact of an intervention is that once an intervention has been delivered, we can no longer know what would have happened to the treated individuals if they had not participated. Simply measuring their outcomes or abilities before and after an intervention is insufficient because there could be multiple confounding factors that impact on the outcomes of interest aside from the intervention itself. For example, in the RedSTART context, ageing by one year and completing an additional year of maths education will probably affect students' understanding of financial concepts and their numeracy skills. Therefore, to accurately estimate the impact of an intervention it is necessary to create a counterfactual, that is, a measure of what would have happened to the treated group had they not been treated.

One way of creating a counterfactual is to measure the outcomes of a group before the intervention has taken place, then randomly allocate the treatment to half of the group, and then compare the changes that have occurred in both groups. If there is a sufficient sample size, the randomness of the allocation should ensure that the only meaningful difference between the treatment and control group is the intervention itself, meaning that any differences in the changes that each group experiences can be attributed to the intervention. This approach is well-known and has a long history in medical sciences and is increasingly common in social sciences.

Change the Game was a good candidate for an RCT as it fulfils several crucial criteria: RedSTART is delivering in enough schools to create a sufficient sample size, it is possible to collect reliable outcomes data, and (crucially) there is buy-in from key stakeholders.

An outline of the RCT process is visualised in Figure 5, overleaf.

Figure 5: The RCT Process



The study sample

The participating primary schools are all in areas with high levels of deprivation. There are some key differences between schools involved in Change the Game and the broader population of schools in England (see Table 2).

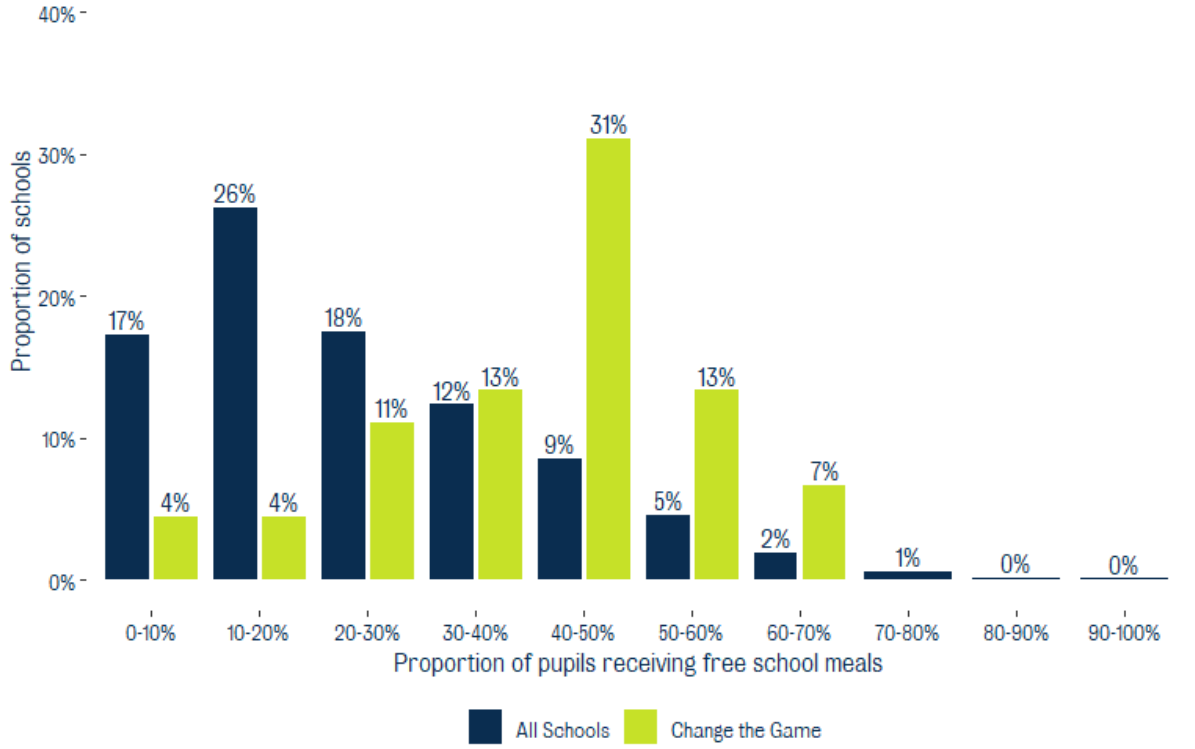
Table 2: Differences between schools included in Change the Game to all English schools

Variable	Estimate	P Value	Confidence Interval	Significance
Average number of pupils: all English Schools	283.83	0.00	281.18 - 286.48	
Average number of pupils: difference for CTG schools	66.62	0.01	13.99 - 119.25	*
Percentage of pupils eligible for Free School Meals: all English schools	22.55	0.00	22.34 - 22.75	
Percentage of pupils eligible for Free School Meals: difference for CtG schools	21.69	0.00	17.54 - 25.84	***

Change the Game schools include Scottish schools. Source: DfE Schools Census, Scotland Schools Census.

Schools involved in Change the Game are, overall, slightly larger than the average primary school in England. The average English primary has 284 pupils, while Change the Game schools (including Scottish schools) have, on average, 67 more pupils, resulting in an average size of 351. Likewise, Change the Game schools have a higher proportion of pupils eligible for Free School Meals; the average across English primary schools is 22.5%, while Change the Game schools have closer to 44.2%. Figure 6 illustrates this difference. This discrepancy is by design as Change the Game focuses on supporting schools in disadvantaged areas.

Figure 6: Distribution of pupils receiving free school meals for Change the Game vs. other schools



Note: excludes Scottish schools.

In this first year of the evaluation, the study sample was drawn from Year 2 and Year 3 in these participating schools. This cohort was chosen for several reasons. Firstly, we and RedSTART want to conduct a longitudinal study that tracks pupils' progress throughout primary school, making it logical to include the youngest pupils that were receiving Change the Game at the time in the research. Secondly, by only including the youngest pupils, Change the Game activities could be offered to the oldest students in the control schools without significantly increasing the risk of spillover effects affecting the research. This was seen as beneficial as it would secure the ongoing buy-in from the control schools, which is crucial for the study. Lastly, we decided to include two year groups to ensure a robust sample size was achieved.

School leaders were given the option to select an opt in or opt out guardian consent process. In schools that have selected opt out, pupils whose parents chose to opt them out were excluded. On the other hand, in schools that selected opt in, pupils whose parents did not provide explicit consent were excluded. There are no other exclusion criteria.

For this cohort, we estimated the available sample across 49 schools to be approximately 2,400 pupils in total. However, this has proven to be an underestimate; over 3,000 students participated in the first year of the evaluation, even though only 45 schools ultimately

participated in data collection. This larger sample size means we are powered to capture a small-sized effect. For a detailed discussion of the sample size and power calculations, please refer to the trial protocol.[11]

Randomisation

Approach

The trial is a clustered RCT, with randomisation occurring at the school level. This level of randomisation was selected because Change the Game is a school-wide intervention, meaning randomising at the individual, class, or year group level within schools raised unacceptable risk of spillover effects between treated and control groups, and would have been practically difficult for RedSTART and schools to implement. All schools that consented to participate were randomised, with randomisation occurring in the Autumn term of the 2022/23 school year. Randomisation was stratified based on schools' chosen consent process – that is, the approach ensured that opt in schools were spread throughout the treatment and control groups, as we anticipated this would affect the sample size and characteristics of participants. However, some schools had not indicated their preference at the time of randomisation; as a result, there are more opt in schools in the treatment than control condition.

The schools consented to participate in an RCT on the condition that the control schools would still receive Change the Game for older years that were out of scope for the evaluation. Given the age gap, it was agreed that delivering Change the Game to control school Year 6 students was unlikely to create spillover effects that would undermine the study. This approach was viewed as critical to ensure the continuing buy-in of the control schools. Consequently, as the tracked cohort moves through the control schools, other year groups will also receive the Change the Game intervention.

Once all schools had returned a consent form agreeing to the treatment/control conditions described above, and had completed necessary data sharing paperwork, they were randomly allocated to treatment and control groups.

[11] Available at: https://osf.io/6rpt7

Figure 7: Treatment and control conditions

Balance checks

The analysis uses data from 45 schools, of which 23 are allocated to receive Change the Game. This section provides a summary of the participating schools, split by randomised assignment. In total, 49 were randomised. Of these, 4 withdrew from Year 1 of Change the Game post-randomisation (2 were in control and 2 in treatment); however, they may rejoin the research in subsequent years, so are not classed as withdrawn from the research entirely.

Balance was checked on number of pupils, proportion of the cohort who are female, and proportion of the school eligible for Free School Meals (see Table 3).

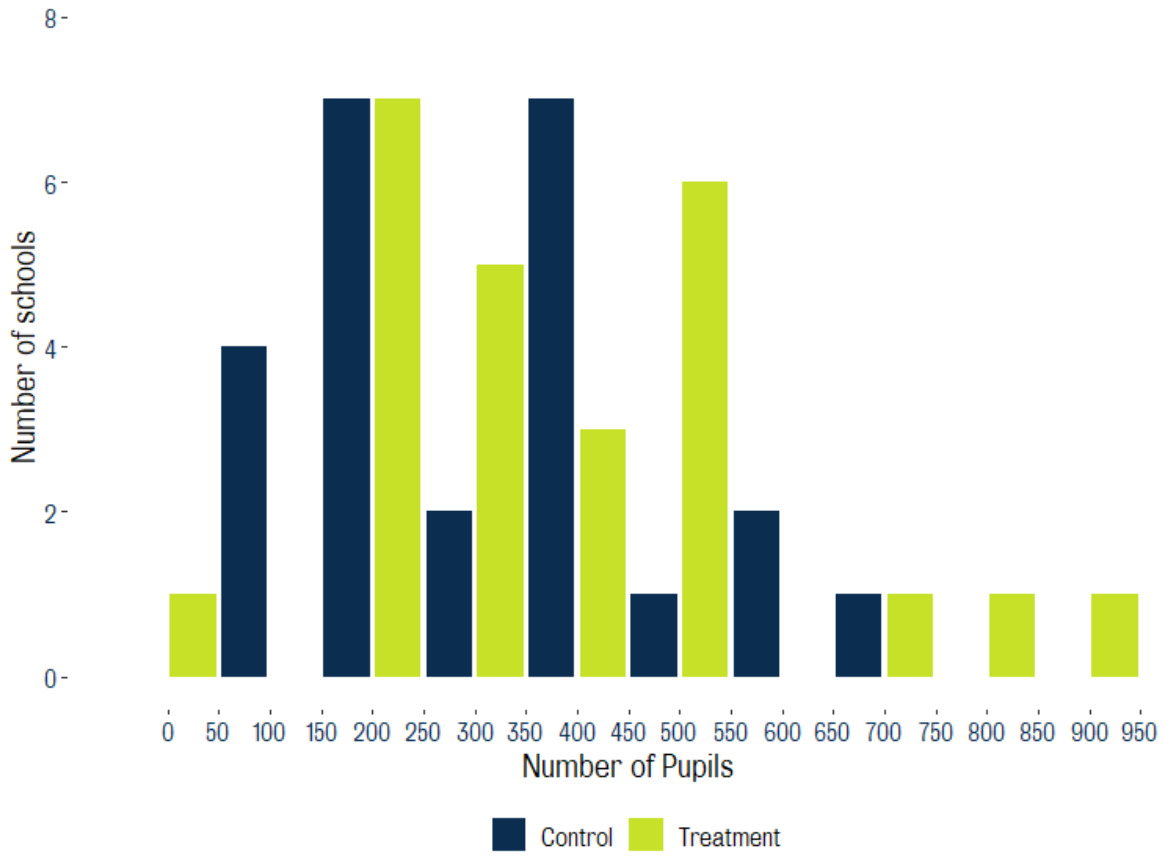
Table 3: Differences between treatment and control schools

Characteristic	Control	Treatment
Pupils (number)	319.3	388.9
Female pupils (%)	49.4	49.4
FSM eligibility (%)	41.4	44.9

Source: DfE Schools Census, Scotland Schools Census.

The most notable difference between treatment and control schools is that treatment schools are, on average, about 70 pupils larger across the whole school (see Figure 8).

Figure 8: Distribution of school size by control vs treatment schools



In addition, we look at other potential differences between the two groups of schools, including Ofsted rating (English schools only), whether they chose to use an opt in consent or opt out assent procedure, and whether they used paper, Qualtrics or both to administer the surveys.

Table 4 provides some comparisons of the treatment and control groups, by geography, choice of opt in vs opt out consent, and choice of paper or online surveys.

Table 4: Comparison of treatment and control schools (number of schools)

Characteristic	Control	Treatment
Scotland	3	4
England	19	19

Characteristic	Control	Treatment
Outstanding	4	2
Good	13	15
Requires improvement	2	1
Not applicable/Not inspected	3	5
Opt in	1	5
Opt out	21	18
Baseline: Paper	7	10
Baseline: Qualtrics	13	8
Baseline: Both	2	5
Summer 2023: Paper	11	12
Summer 2023: Qualtrics	10	9
Summer 2023: Both	10	9

Comparisons are by region, Ofsted rating at last inspection, choice of opt in vs opt out consent procedure, and choice of survey medium at baseline. Excludes withdrawn schools.

Outcomes and outcome measures

In collaboration with RedSTART and following a review of their Theory of Change and programme materials, the following primary outcomes of interest were selected for the first year of the evaluation. They are presented in Table 5 with their corresponding measures.

Table 5: Primary outcome measures

Primary outcome	Variable	General financial knowledge and behaviours
	Measure(s) (instrument, scale)	Nine-item financial literacy survey - see Appendix 2
Primary outcome	Variable	Teacher Assessed Grades in Maths

	Measure(s) (instrument, scale)	Each pupils' teacher assessed grades in maths in the form used by each participating primary school. Sourced from the NPD or from schools.

As stated in their Theory of Change, RedSTART aims to affect the financial ability, behaviours, mindset, and connection of participants. We therefore sought to capture these disaggregated outcomes in the survey. They are summarised Table 6 below.

Table 6: Disaggregated outcome measures

Disaggregated outcome	Variable	Financial ability
	Measure(s) (instrument, scale)	Two items in financial literacy survey - see Appendix 2, questions 1-2
Disaggregated outcome	Variable	Financial behaviours
	Measure(s) (instrument, scale)	Two items in financial literacy survey - see Appendix 2, questions 11-12
Disaggregated outcome	Variable	Financial mindset
	Measure(s) (instrument, scale)	Seven items in financial literacy survey - see Appendix 2 questions 3-9
Disaggregated outcome	Variable	Financial connection
	Measure(s) (instrument, scale)	One item in financial literacy survey - see Appendix 2, question 10

Survey development

The survey, which can be found in full in Appendix 2, was developed specifically for this evaluation. The scale draws heavily on previous work completed by the Money and Pensions Service (MaPS) and Young Enterprise UK.

To create the survey, we first identified the core elements of financial literacy that Change the Game aimed to impact through Theory of Change development workshops. From this, we established that we wanted to measure financial literacy as an aggregate outcome compiled of financial ability, financial behaviour, financial mindset, and financial connection.

As we aimed for a scale that measured meaningful outcomes and would produce data that was comparable to other research, we referred to other existing scales and available guidance to

inform our design. Prominent in the space is work completed by MaPS and Young Enterprise UK. After desk-based research, we identified MaPS Children and Young People and Parents Outcomes Framework and Question Bank (which was developed for the Financial Capability Strategy for the UK)[12] and Young Enterprise UK's Financial Education Planning Framework[13] as suitable sources from which to develop the scale. The former provided considerable inspiration as this question bank directly addressed the mindset, ability, behaviour, and connection concepts that were central to RedSTART's intervention.

Questions from these resources were adapted to make them age appropriate and suitable for our data collection approach, which included teacher-led, classroom-based surveys. We went through several rounds of drafting in collaboration with researchers based at MaPS. Their expert insights allowed us to convert the questions to suit the needs of the evaluation whilst maintaining their underlying meaning and validity.

A final draft of the survey was then shared with a small selection of teachers who had relationships with RedSTART for feedback. Additionally, it was trialled with the target cohort outside the sample to ensure the terms and concepts were comprehensible. Minor changes were made following these steps, leading to the finalised survey in Appendix 2.

Teacher assessed grades in maths

Maths grades were collected directly from schools. As Year 2 and 3 students do not complete standardised tests at the end of each year, we used teacher assessed maths grades. Each school uses a different grading system, meaning we had to devise a system to make the grades comparable.

We opted to create a binary measure of maths attainment giving students a score of 1 if they were working at or above the level expected, or a 0 if they were working below the level expected of them. By liaising with teachers, it was relatively straightforward to convert schools' grading systems into this binary system.

[12] Money and Pensions Service (2018), Financial capability outcomes framework for children, young people and parents, Available at: https://www.fincap.org.uk/en/articles/children-young-people-and-parents-outcomes-framework

[13] Young Enterprise UK (2020), Financial Education Planning Frameworks, Available at: https://www.young-enterprise.org.uk/teachers-hub/financial-education/resources-hub/financial-education-planning-frameworks/

We believe the simplicity of the scoring system removed subjective judgement from the process as far as was possible, thus allowing us to convert a range of grades into comparable scores. The system also lends itself to simple and easily interpretable analysis and reporting; students moving from a below expectations to meeting or above expectations is comprehensible to people with limited knowledge of primary school grading systems.

Data collection

As discussed, for the impact evaluation, we collected outcome data via surveys and administrative datasets. The surveys were administered in class, by school staff, either on paper or online according to the school's preference. The research and RedSTART teams provided training and support to school staff where necessary. Research staff also attended some primary schools to support data collection.

The surveys took approximately 30 minutes per class to complete. The physical surveys were collected by couriers and returned securely to King's. The online surveys were completed on a King's hosted online survey platform that the research team could access directly.

After surveys were completed in Summer 2023, we collected administrative data directly from schools, including teacher assessed grades in maths and the necessary details to access the NPD. We will access the NPD to collect further attainment data and demographic data of the participants and will provide an update to this report with analysis including NPD data when it is completed. For the Scottish schools, it has been necessary to gather this information directly from the schools; this decision was taken after conversations with the Scottish government's data services suggested that it would be less onerous to approach schools directly than use the data request service which has been undergoing changes in recent years and was therefore not suitable for our needs.

We managed to collect data from over 90% of the randomised schools, with only four unable to complete the data collection in this year of the evaluation. Three of these were Scottish schools for whom we were unable to get the necessary permissions from their local council to complete a data sharing agreement in time. The other school dropped out of the RedSTART programme altogether.

Table 7 provides an outline of the data collection for the first year of the evaluation.

Table 7: Data collection 2022/23

Data item	When	Data collector
Baseline student survey	December 2022 – January 2023	Participating schools
Endline student survey	June – July 2023	Participating schools
Attainment data	September 2023	Participating schools
Administrative data	Ongoing	Department for Education/Participating schools

Analytical Strategy

Impact analysis was conducted in the data analysis software package R. Researchers were not blinded to treatment allocation when conducting the analysis, as the independence of the researchers from the project funder and the schools provided sufficient safeguards against motivated researcher intervention in analysis. The approach to impact analysis is summarised below; for further detail see the pre-registration.[14]

The primary analysis estimates the Intention to Treat (ITT) effect, which measures the impact on the primary outcomes when a student is enrolled in a school that is assigned to receive Change the Game. This approach does not distinguish between those students in the treatment schools who received all the Change the Game sessions and those who did not (e.g. because they were absent). In the real world, an intervention would rarely be successfully delivered to all pupils on roll, and therefore this approach gives an accurate estimate of the average impact of the intervention as would be experienced if implemented outside the context of the research.

The analysis proceeds per the following specification:

$$Y_{ict} = \alpha + \beta_1 D_c + \beta_2 A_i + \beta_3 Y_i + \beta_4 M_{0i} + \beta_5 M_{1i} + \epsilon_c$$

Where:

- Y_{ic} is the post-treatment score on the outcome (see above) for a pupil i, in cluster c.

[14] Available at: https://osf.io/6rpt7

- D_c is the treatment assignment of cluster c, coded as 1 if the cluster (school) is assigned to treatment and 0, otherwise.
- A_i is the individual i's baseline score on the outcome (if relevant).
- Y_i is individual i's year group, either Year 2 or Year 3.
- M_i is the method by which pupil i completed the survey at time 0 (baseline) and 1 (Summer '23).
- ϵ_c is a cluster-robust standard error.

The outcome for maths grade is a binary; hence we run the above specification as a linear probability model, and A_i is excluded as past attainment is not available.

We therefore estimate if there is a statistically significant difference on the outcomes between Year 2 and 3 students in schools that received the treatment compared to students in schools assigned to the control.

Ethical considerations

Carrying out research that is ethical and sensitive to the needs of participants is central to the research team's approach to all trials – all our work is reviewed by King's College London College Research Ethics Committee (CREC) and is only signed off once they are satisfied that rigorous processes have been developed to safeguard participants and their data.

The central ethical issue that impacted the research was appropriate consent processes. For research involving young people who are unable to provide informed consent for themselves, the default position of the CREC is that opt in consent from parents or guardians must be sought. The research team were concerned this could significantly reduce the sample size, create additional burden for schools that may result in attrition, and also bias the final sample as research has shown that certain groups are harder to reach to gain opt in consent and therefore are under-represented in studies such as this.[15] Given the demographics of the participating schools, we anticipated this could be a significant issue in this research and therefore argued that forcing schools to adopt an opt in consent process could fatally undermine the research.

[15] Sanders, Herneis, Hume, McGannon and Summers (2023), Consent, assent and randomised evaluations, Evidence and Policy, 19(4).

In order to approve an opt out assent process, CREC asked the research team to produce a paper on the ethics of opt out assent and the impacts on research of using opt in consent. Members of the team subsequently contributed insights from this process to an academic publication to inform future school-based trials.[16] In addition, we conducted co-design sessions with teachers and parents in schools to understand the acceptability of opt out assent and how to do this ethically. Consequently, the CREC Social Sciences, Humanities and Law Research Ethics Subcommittee agreed that school leaders could select an opt in or opt out process as they deemed appropriate.

A majority of schools selected an opt out process, with approximately 15% deciding to gather opt in consent from parents. Where opt out processes were used, parents were given multiple reminders that the research was taking place and given multiple chances and mediums to opt their children out of the associated activities. These processes have required significant work from the research team, RedSTART staff, and school staff and have ensured that ethical standards have been met.

Pupils themselves were given the opportunity to opt out of individual instances of data collection as well, with active assent sought from all pupils before surveys took place.

[16] Ibid.

Findings

In this section we provide initial analysis of the impact of the first year of Change the Game delivery on the outcomes of Year 2 and 3 pupils.

Outcomes analysed

In this analysis, we report on Change the Game's impact on the following outcomes derived from the survey:

- Financial knowledge (primary outcome): an aggregate of nine items from the survey covering financial ability, behaviours, connections and mindset.
- Ability: an aggregate of two items from the survey relating to financial understanding, both of which are also included in the primary outcome.
- Behaviours: an aggregate of two items from the survey relating to financial behaviours, both of which are also included in the primary outcome.
- Connection: a single item from the survey measuring the extent to which pupils have access to financial education and resources, which is also in the primary outcome.
- Mindset: an aggregate of seven items from the survey relating to general and financial mindsets, four of which are included in the primary outcome, while the other three relate to confidence in maths skills and general aspirations.

For more information about items included in each of these outcomes and how they are coded, refer to Appendix 2.

In addition, we report on maths attainment, using teacher assessed grades reported by the schools. As schools report in-year achievement very differently, we undertook a translation exercise to make them broadly comparable. Each school supplied an explainer of each of the assessment codes, and we used that to generate a key referring to whether a particular code indicated a pupil was meeting the expected level in maths for their year, which was coded as 1 if they were and 0 otherwise. This means that our outcome here measures the proportion of pupils in the treatment vs control group that are at or above the standard for their year.

Findings

Table 8 gives the estimated impact of Change the Game on the outcomes of interest. In this section we use p-values to indicate the statistical significance of an observed difference. The p-value measures the probability of observing the difference we're seeing if no difference actually exists. For this purpose, + refers to a p-value < 0.1; * p < 0.05 (the conventional threshold for statistical significance); ** p < 0.01; *** p < 0.001. Full regression tables are provided in Appendix 4.

Table 8: Impact estimates

Variable	Estimate	P Value	Confidence Interval	Significance
Financial Knowledge (summer 2023, primary outcome)	0.90	0.01	0.29 - 1.5	**
Ability (summer 2023)	0.19	0.08	-0.03 - 0.41	+
Behaviour (summer 2023)	0.07	0.64	-0.23 - 0.37	
Connection (summer 2023)	0.18	0.01	0.05 - 0.32	*
Mindset (summer 2023)	0.41	0.01	0.1 - 0.72	*
Mathematics grade	-0.04	0.45	-0.15 - 0.07	

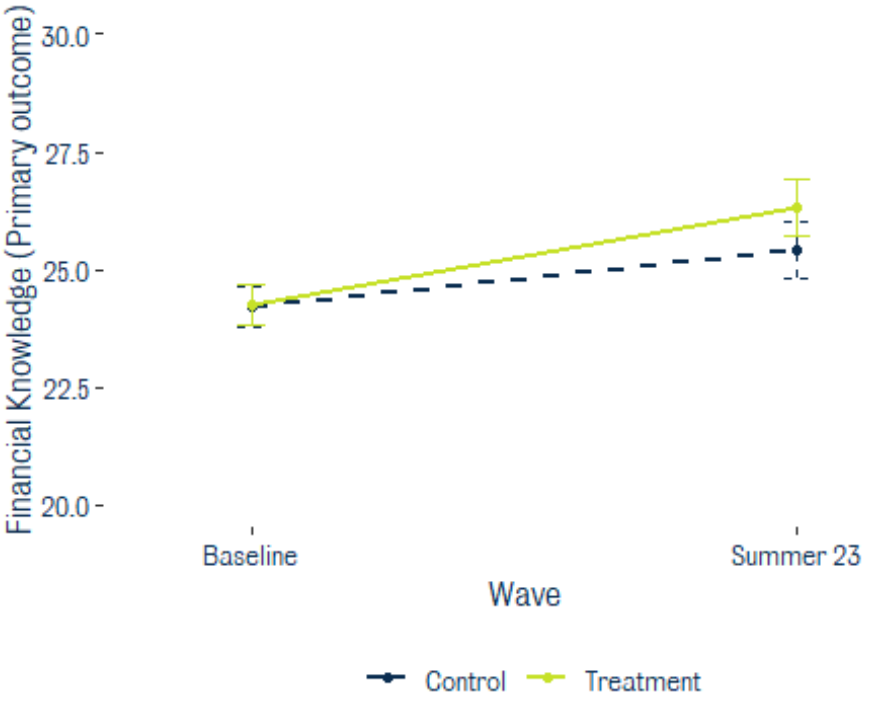
Financial knowledge, aspirations, financial attitudes and mathematics confidence collected via survey; mathematics grade provided by school. Controls for method of survey completion at baseline and summer '23 and year group. See Appendix 4 for full regression tables. P-values under 0.05 are statistically significant at conventional levels.

The following charts map each outcome in turn.

Figure 9 overleaf plots the effect of one year's participation in Change the Game. We find that being a Year 2 or Year 3 pupil in a school that participated in Change the Game increased pupils' financial knowledge between the beginning and end of the year. Pupils in treated schools had financial knowledge levels 0.9 higher at the end of the year than pupils in control schools, holding constant year group and method of survey completion. The mean score on

this outcome in the control group was 25.3, so this represents an increase of 3.56%. This is equivalent to an effect size (Cohen's d) of 0.26, a small-to-medium effect.

Figure 9: Impact of Change the Game on financial knowledge (primary outcome)



Bars represent the 95% confidence interval. Controls for method of survey delivery

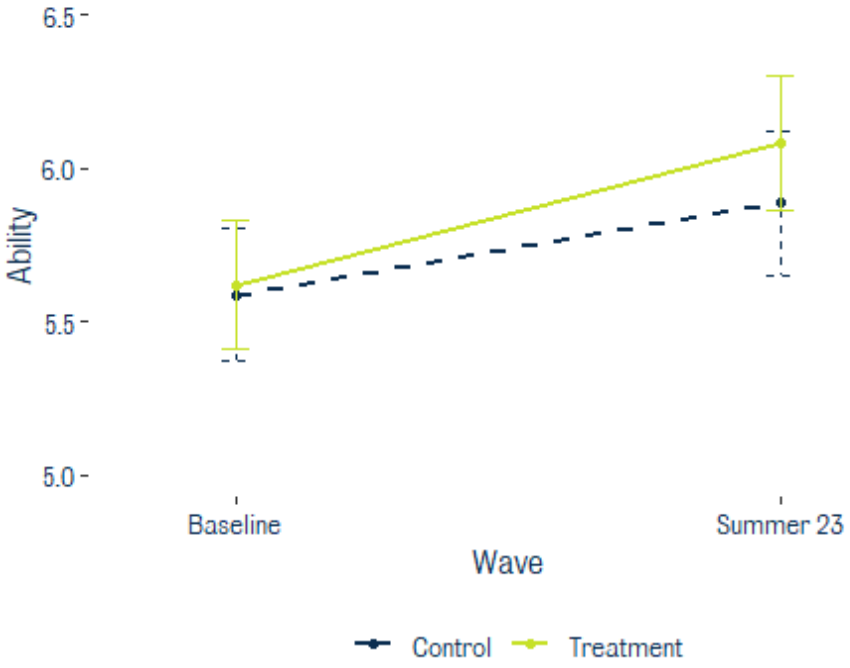
Pupils in treated schools had financial ability levels 0.19 higher at the end of the year than pupils in control schools (see Figure 10, overleaf). The mean score on this outcome in the control group was 6.01, so this represents an increase of 3.16%. This is equivalent to an effect size (Cohen's d) of 0.13, a small effect.

Pupils in treated schools had financial behaviour levels 0.07 (3.16%) higher at the end of the year than pupils in control schools (see Figure 11, overleaf). The impact of Change the Game on this outcome is not statistically significant.

Pupils in treated schools had financial connection levels 0.18 higher at the end of the year than pupils in control schools (see Figure 12, page 38). The mean score on this outcome in the control group was 3.42, so this represents an increase of 5.26%. This is equivalent to an effect size (Cohen's d) of 0.2, a small effect.

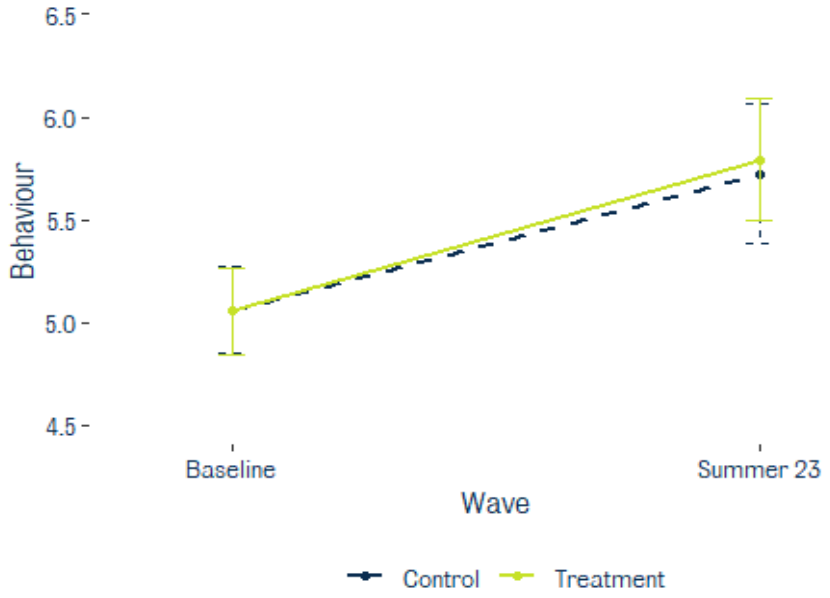
Pupils in treated schools had mindset levels 0.41 higher at the end of the year than pupils in control schools (see Figure 13, page 38) The mean score on this outcome in the control group was 17.51, so this represents an increase of 2.34%. This is equivalent to an effect size (Cohen's d) of 0.17, a small effect.

Figure 10: Impact of Change the Game on financial ability



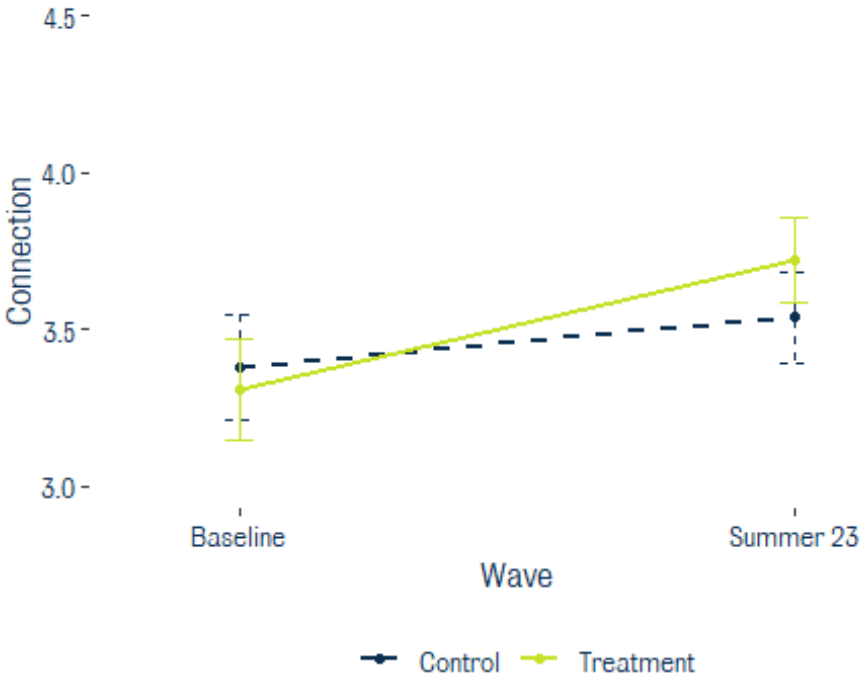
Bars represent the 95% confidence interval. Controls for method of survey delivery

Figure 11: Impact of Change the Game on financial behaviours



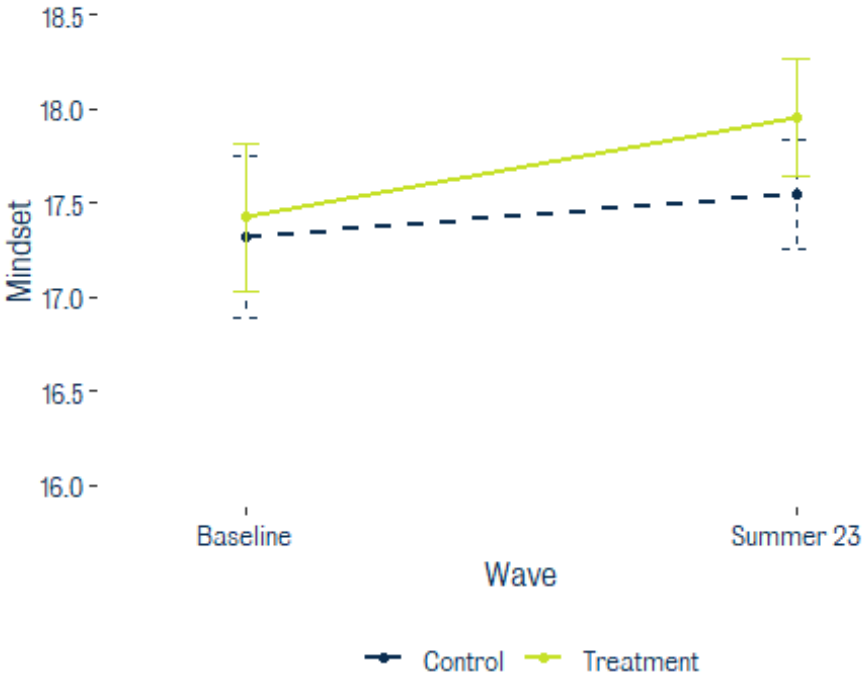
Bars represent the 95% confidence interval. Controls for method of survey delivery

Figure 12: Impact of Change the Game on financial connection



Bars represent the 95% confidence interval. Controls for method of survey delivery

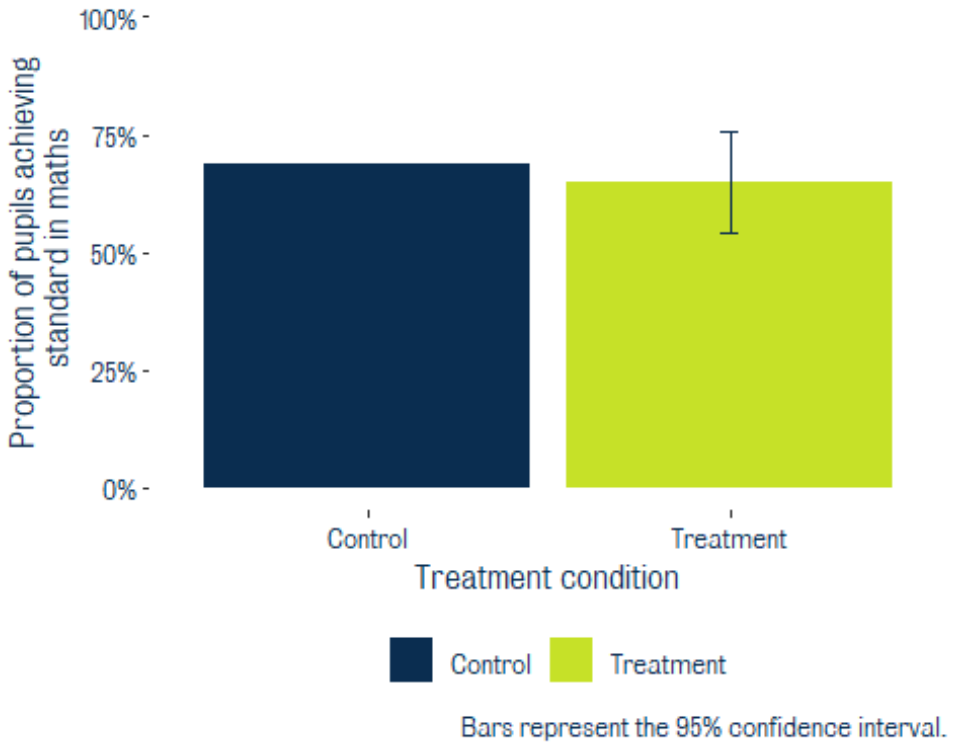
Figure 13: Impact of Change the Game on financial mindset



Bars represent the 95% confidence interval. Controls for method of survey delivery

In treated schools 65% of pupils were at or above the expected standard in maths, compared to 69% in control schools (see Figure 14). The impact of Change the Game on this outcome is not statistically significant.

Figure 14: Impact of Change the Game on maths grade



Limitations and future analysis

Participating schools

As noted, the Change the Game group of schools are on a bit larger than the average across England, and have higher levels of disadvantage, as measured by the proportion of pupils receiving Free School Meals. This should be borne in mind when thinking about which schools Change the Game is likely to be effective for.

Design

Whilst we believe the design of the RCT itself is robust, there are several limitations it is important to be mindful of.

Firstly, the control condition risks some spillover. To ensure buy-in from control schools, it was agreed that older pupils who were not participating in the trial would receive Change the Game activities. The Year 2 and 3 teachers who teach pupils in the tracked cohorts would not have directly delivered the activities, but it is plausible that the introduction of the programme into the school could lead to them including aspects of financial education into their teaching that they normally would not have. Furthermore, if children in the study sample had siblings in older years, contamination could have occurred in conversations at home or outside the classroom. Given the unstructured and infrequent way in which control pupils would have interacted with the intervention, we do not consider the risk of contamination to be significant. If spillovers have occurred, they would reduce the measured impact of the programme by improving outcomes in the control group, so if anything, it would mean that we underestimate the causal effect of the programme.

Secondly, there has been attrition, with four schools initially randomised not ultimately taking part in the evaluation. These schools were split evenly across treatment and control so the consequences for the causal estimate are limited. At this stage we anticipate that several of these schools will rejoin the evaluation in subsequent years; however it will be important to continue monitoring attrition of schools over the course of the programme, and to understand whether particular types of school (e.g. size, geography) are more likely to withdraw, as this impacts the extent to which the findings from Change the Game can be generalised to other schools. In addition, although withdrawal in this first year of the evaluation was not correlated with treatment condition, we will need to monitor to ensure that over time attrition isn't correlated with treatment assignment.

Lastly, current analysis suggests that a slightly lower proportion of pupils from treatment schools completed the survey. This is particularly the case looking at the sample of summer 2023 surveys matched to school data, which will be our sample for the subsequent analysis conducted using the NPD. Although this attrition is not significant at conventional levels, we will continue working with schools to try and identify whether any of the remaining 123 unmatched summer surveys can be matched to school data, and where there are schools with particularly low response rates, we will work closely with RedSTART and the schools to maximise retention in subsequent waves of data collection.

Quantitative data collection

There are difficulties inherent to collecting data from a cohort of young children and there were also points where it was necessary to be pragmatic about data collection to adapt to the requirements and pressures on schools.

The survey scale was developed for the purpose of this research and this was its first use at scale. Whilst the scale is derived from existing validated scales, the alterations we made to make it age appropriate could plausibly result in less reliable or valid measures of the concepts we aimed to capture. Analysis of the survey results showed they were balanced across the treatment and control groups and responses generally showed a sensible distribution (see Appendix 3), but we will explore this further over time, particularly as we get access to pupil demographics via the NPD. Because we are interested in the difference between treatment and control groups, unless any issues with reliability or validity were correlated with treatment assignment, we could still be confident in the treatment effect. It does, however, mean that it is necessary to be more cautious about interpreting the absolute levels of responses on the outcomes, and particularly on the single items underlying the outcomes, as the reliability and validity of each single item has not been extensively tested.

As survey measures were collected in classrooms by teachers, it is highly likely that they were not delivered consistently across schools. Teachers were given guidance by the research team, and most children completed the surveys without additional support, but we were not able to control delivery entirely. Children with weaker English language skills or additional learning needs will have received support which may have influenced their answers and teachers may have also guided whole classes through the survey contrary to the guidance they received. Although this may affect the validity of some pupils' individual responses, it should not affect the treatment estimate, as schools and pupils whose response are affected should be distributed across the treatment and control conditions. We have no reason to believe that control schools differed systematically from treatment schools in either the number of pupils who may have needed additional support or the likelihood of teachers leading the class through the survey.

Schools also had the option to complete the survey online or on paper. There is some evidence that this choice may have altered how children responded to the questions: choice of survey medium is correlated with some of the outcomes (behaviours specifically; see Appendix 4), and there was some imbalance in which survey medium treatment vs control schools chose. We have managed this by controlling for survey medium in the main analysis. It is not practical to require schools to use either paper or Qualtrics surveys exclusively, so we will monitor the extent to which survey medium affects responses and manage this analytically going forward.

The process of matching the surveys to the administrative data provided by schools was also complex, as pupils sometimes used different names to those they were recorded as in the school data or wrote incomplete or different dates of birth to the school data. Through a combination of an iterative matching process using R software and manual matching (where researchers worked through un-matched individuals and identified matches, see Appendix 3)

we were able to successfully match over 97% of summer 2023 surveys to a student in the administrative data. Our lowest match rate was 80% and for three quarters of schools we matched over 99% of summer surveys to school data. This is a very high rate of successful matches for a study of this type, and we inspected the data at every stage for false matches or match failures. However, there remain some unmatched surveys, and it is impossible to completely eliminate the risk of false matches without reviewing every line of data. As above, it is unlikely that false matches, if they exist, would be correlated with treatment assignment, so we do not believe that this would impact the treatment estimates presented in this report. However, we will continue to work with schools to maximise the rate of successful matches.

As discussed, we transformed teacher assessed grades in maths to create a binary score – working below expectations or at and above expectations – that would mean grades across schools were comparable. This involved interpreting a range of diverse, and at times idiosyncratic, grading systems. We liaised with teachers to assist the judgements involved. We are confident that the resulting scores are representative of actual maths attainment but, as a degree of subjective interpretation was involved in the creation of these scores, we cannot be certain that this outcome measure is entirely reliable. As with the above considerations, this means that the difference between treatment and control schools is more relevant than the absolute levels in either group.

Future analysis

In this report we have provided the main analysis that is possible with the data currently available. We will rerun the above analysis incorporating a vector of time-invariant covariates (such as gender, and ethnicity) once we have access to this data. In future years we will analyse the cumulative effect of the programme alongside within-year effects. For details of these analyses, refer to the pre-registration.[17]

[17] Available at: https://osf.io/6rpt7

Implementation and process evaluation

Introduction

Alongside the impact evaluation, a light-touch implementation and process evaluation (IPE) has been completed. We conducted interviews with teachers, volunteers and delivery staff, and a survey with school staff to understand programme delivery and experiences. This data provides important context to better understand how and why the programme creates impact, or not.

This chapter explores the IPE design and its findings.

Aims

The IPE has the following core aims:

- To identify factors that facilitate or hinder the successful implementation of Change the Game, and to inform future delivery of the programme.
- To understand how school staff experience the programme and which elements they believe are particularly important or significant to the intervention and its outcomes.
- To explore levels of engagement and perceived impacts, including how this may vary between different schools across varied contexts.

Research Questions

The research questions for the IPE are:

1. To what extent is Change the Game delivered as intended?
2. To what extent is Change the Game different from business as usual?
3. What are the experiences of teachers and volunteers?
4. How do pupils engage with the workshops and school-based activities?

5. Do teachers perceive any impact on their pupils' financial knowledge, attitudes and behaviours, and maths skills?
6. Do teachers and volunteers perceive any impact on their own behaviours and skills, including on teachers' confidence in and knowledge of delivering financial education?
7. What are the key facilitators and barriers to successful implementation of Change the Game, and how can the programme be run more efficiently and effectively?

Methodology

Data collection

We conducted online interviews and surveys with programme staff, volunteers, and school staff, and collected administrative data from RedSTART. Table 9Table 9 provides an overview of the data collected for the first year of the project as part of the IPE.

Table 9: IPE data collection timeline

Sample	Method	Delivery	Time
Programme staff (n=3)	Interviews	Video call	January 2024
Volunteers (n=8)	Interviews	Video call	January - February 2024
School staff (n=10)	Interviews	Video call	January - February 2024
School staff (n=188)	Survey	Online	June – July 2023
N/A	Administrative data	RedSTART	February 2024

Interview research

We conducted a total of 21 semi-structured interviews with school staff (10 interviews), volunteers (eight interviews) and programme staff (three interviews). All topic guides can be found in Appendix 5.

Semi-structured interviews with school staff

We interviewed school staff who had participated in some capacity in the delivery of the programme. This included classroom teachers, but also leadership staff who coordinated the programme. Across the interviews we discussed:

- Barriers and facilitators to implementing the programme.
- How pupils engaged with the programme.

- Perceived impacts of the programme on pupils and staff.
- The time and resources required to implement the programme and how activities interacted with the existing curriculum.

Interviews lasted approximately 30 minutes. School staff were sampled from all regions involved in the research.

Semi-structured interviews with volunteers

Similar interviews were held with volunteers who supported delivery of workshops. These interviews covered:

- How RedSTART supported volunteers to engage with Change the Game.
- Experiences of delivering workshops with pupils, including any barriers and facilitators experienced.
- Perceived impacts of the programme on pupils and volunteers themselves.
- The time and resources required to engage with the programme.

Interviews lasted approximately 20-30 minutes. Volunteers were sampled from all regions involved in the research.

Semi-structured interviews with programme staff

We also interviewed RedSTART's regional managers after the first year of programme delivery. Across the interviews we explored:

- The barriers and facilitators to implementing the programme.
- Experiences of delivering the programme, including reflections on successes and challenges of the intervention.
- Perceived impacts of the programme on pupils and schools.
- The time and resources required to implement the programme.
- The sustainability of the intervention in schools and more broadly.

Interviews lasted approximately 45 minutes and were conducted by research staff who had not previously worked with the RedSTART staff to ensure existing relationships did not impact the data collection.

Survey research

Survey with teachers

Staff at both treatment and control schools were invited to participate in an online survey at the end of the first year, lasting around 10 minutes. The survey collected data on:

- Skills and confidence in delivering financial education
- Experiences of delivering the programme, including levels of satisfaction and pupil engagement
- Perceived impacts on pupils' financial knowledge, attitudes, behaviours and maths skills.

In total, the survey was completed by 188 respondents, including 110 (59%) from treatment schools and 78 (41%) from control schools. The respondents included 122 classroom teachers, 40 leadership staff, 15 teaching assistants (TA), seven special education needs (SEN) support staff, and four staff in other roles. Some questions were skipped or were not applicable to all staff members meaning the number of respondents varies by question – the number of respondents is indicated where necessary in the following section.

The online survey was designed in Qualtrics. The full survey questionnaire is included in Appendix 6.

Administrative data

The following administrative data was collected from RedSTART to understand alignment of programme implementation with the Theory of Change.

- Number of school-based activities and workshops delivered.
- Number of attendees at training sessions and type of attendee (e.g. teacher, financial institution volunteer, undergraduate volunteer, sixth form volunteer).
- Number and timing of sessions delivered.

Analysis

Interviews

Interviews were recorded and transcribed in full by a professional transcription service. Transcripts were then entered in NVivo 14 for content analysis. Interview transcripts were

analysed using a case-and-theme based framework approach. This approach has allowed us to identify commonalities and differences in the diverse qualitative data we collect and create descriptive categories and explanatory concepts.[18]

Surveys with teachers

Responses to closed questions have been analysed descriptively in R to summarise teachers' views. Where appropriate, findings have been visualised for easy interpretation. Responses to open questions in the surveys were imported into NVivo for analysis. These responses were then analysed using a case-and-theme based framework approach to identify any trends and build insights of teachers' experiences of the programme.

Administrative data

RedSTART administrative data has been analysed descriptively to capture the volume and nature of activities undertaken as part of the programme.

Limitations

Interviews

While steps were taken to ensure that participants included a variety of delivery contexts, such as by region, the sample is still a small proportion of all participants, and may be biased towards staff who were motivated to provide feedback, such as those with positive experiences of the programme. The findings therefore may not necessarily reflect the views of the wider population. The strength of the qualitative data is that it provides insights into a range and diversity of views and experience of participants. The interview findings should be considered with these strengths and limitations in mind.

Survey

The survey was distributed to all participating schools but was not compulsory. Responses to the survey are therefore likely biased towards staff who were motivated to provide feedback; those respondents may have had more positive experiences of the programme than average.

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[18] Gale, N., Heath, G., Cameron, E., Rashid, S. & Redwood, S. (2013) *Using the framework method for the analysis of qualitative data in multi-disciplinary health research*. BMG Medical Research Methodology. 13.

As such, the results cannot be generalised to the whole population of teachers in control and treatment schools.

It's also important to note that respondents in control schools may have been involved in delivering the programme to Year 6 students. Therefore, any comparison between control and treatment schools may not be a meaningful comparison between participants and non-participants. Generally, comparisons between treatment and control schools are only provided for illustrative purposes, and cannot provide evidence of causality. Since we cannot compare changes between control and treatment participants with baseline scores, we cannot conclude with confidence that Change the Game has had an effect as any differences could have also existed before RedSTART started working with these schools.

Nevertheless, the survey provides detailed insights from staff in treatment schools about their experiences of taking part in the programme, and their perceptions of impacts so far, which we will seek to track over the coming years.

Findings

To what extent is Change the Game delivered as intended?

Change the Game has been delivered as intended in the first year of the programme. RedSTART staff supported teachers and volunteers to deliver the intended number of workshops and school-based activities across all treatment schools, as outlined in the Theory of Change. As planned, the final element of the programme – the bank app and shop – will be rolled out in subsequent years. Importantly, we have not observed any delivery in control schools in the year groups tracked as part of the evaluation.

Delivery from the perspective of teachers and schools

Across the interviews, it was clear that teaching staff in primary schools generally face pressures to deliver the requirements of the existing curriculum, as well as additional activities that they and the school want to provide for their students. This represents a potential challenge for an intervention like Change the Game. However, teachers indicated that the delivery model is efficient and relatively easy to fold into business-as-usual activities in the school. In the survey, 91% of teachers involved in the programme said it had been straightforward to run the programme. School staff were happy to find the time to deliver

Change the Game, as many felt it was important to deliver financial education in primary schools, especially in the context of the cost-of-living crisis and high levels of deprivation among pupils.

'[A lot of our families] are on the breadline. Families are using our foodbank regularly. So, we felt that as a school it was important to prioritise this financial education for our pupils.'

In the survey, almost all staff across treatment and control schools (98%) agreed that it is important to deliver financial education in primary schools, and that children need to develop positive money habits from a primary school age.

The strong buy-in amongst school staff was critical to the smooth delivery of the programme, as it meant sufficient space was created for delivery. One interview respondent highlighted how the busy, yet flexible nature of primary school life meant the programme was easy to fit in but only because there was buy-in across all levels of staff – space could be made because they wanted to make it.

'To be fair, it was really easy just to sit back and say, right okay, this is all done for us, it's planned, it's resourced, we just have to make sure we deliver it in the right way and the children then know a bit as well.'

Moreover, several respondents argued that Change the Game actively complemented their curriculum and enhanced other learning that was going on in maths, PSHE (Personal, Social, Health and Economic education) and geography lessons; this made the decision to give up timetable space to RedSTART activities easier.

'So when we're talking about our geography, or any history topic links [...] the concept of money does come up. So, you know, you're making those links with the wider curriculum.'

Whilst there was some apprehension prior to the programme about the potential workload facilitating Change the Game might create, teaching staff reported that there was no significant additional work created by engaging with the programme. Training was quick, only taking staff approximately 30 minutes, and the resources and lesson plans were organised by the RedSTART team so that they could be picked up and used by teachers with relative ease.

'It's straightforward, and that's what teachers like. You know, it is an additional workload [...] it's something else to add to our role. But...it's manageable, and it was fine.'

Physical resources were delivered ahead of the sessions. Many teachers emphasised that small things, such as the resources arriving in one single bag but grouped by activity, made their job easier and increased their enthusiasm for the programme. That said, implementation did put some pressure on leadership staff who led the delivery of Change the Game in their schools, but even this additional burden was not seen as problematic. Nonetheless, teachers did emphasise how highly valued and guarded their time is, so implementation going forward should be wary of creating additional burden.

Generally, there appears to be a consistent effort made by RedSTART to make school staff's engagement as straightforward as possible. Respondents frequently commented that the overall organisation of the programme was exceptional. They found RedSTART staff easy to communicate with and volunteers (who are organised and trained by RedSTART) arrived in schools ready to contribute successfully.

'Having [the RedSTART staff] to touch base with has been fantastic. And with us, it meant that we had an additional pair of hands, an expert who we could ask certain questions to, and we found that worked really well.'

Delivery from the perspective of volunteers

RedSTART recruited enough volunteers to deliver workshops during the first year of the programme. In total, 522 volunteers helped deliver 151 workshops.

For corporate volunteers, who comprised most of our interview sample, the programme was feasible to deliver, and the training and support enabled them to deliver the workshops effectively.

Most volunteers that we interviewed described a similar process of getting recruited into the programme and had similar experiences of the onboarding and training process. Usually, their employer had circulated the opportunity through an all-staff email. Volunteers then attended an introductory talk lasting around one hour, where RedSTART provided information about the programme and what to expect as a volunteer. The subsequent sign-up process was described as simple. It involved spending less than an hour on an online self-learning portal, including completing safeguarding training and reviewing the programme materials. The training was described as easily accessible, as it was a standard format for online training.

Furthermore, on the day, prior to the children arriving, a RedSTART staff member would run through all activities and explain what they were trying to teach children. This would be repeated another time when the RedSTART staff member introduced children themselves to the activities at the beginning of the session.

All the volunteers we spoke to said it was "easy to pick up" and they felt "well-prepared" and "well-equipped" to deliver the session. Some admitted they had been nervous before the first session, and that they had not necessarily known what to expect after the online training, but the instructions on the day had resolved any questions, and the RedSTART staff member was supportive and available to answer questions. Often, people highlighted that it was easier to learn by doing, and those who had done several sessions said it was much easier to pick up the second time:

> *'I learn better when I get there in terms of seeing it in action. It's just how my brain works. So, as much as I did the training, I felt like I learned more in the 15 minutes before the session, I'd say, than actually doing the [online] training.'*

Another potential barrier for volunteers is the time commitment required to attend workshops themselves, including the ability to use working hours for RedSTART activities. The volunteers that we spoke to did not encounter meaningful barriers to committing the time. Some had used their volunteering days, formally or informally, while others had simply blocked the time in their diary. They explained that they had very flexible working arrangements, and their employers supported the project. Scheduling had proven tricky for some respondents, who had avoided workshops that clashed with important meetings. Many noted, however, that they knew the dates further in advance during the second year of the programme, which had made scheduling easier. Finally, some said that travelling could be time consuming when delivery occurred in schools, especially when going by public transport.

It should be noted that these observations are based on the experiences of a small subset of volunteers who were partly chosen because they had attended workshops, and in some cases more than one. It is likely that further barriers exist. In future research with volunteers, we aim to explore these and any potential learnings to reduce barriers and increase up-take among potential volunteers.

To what extent is Change the Game different from business as usual?

Overall, it is clear from our survey and interview research that Change the Game is very different from the financial education that is usually delivered in primary schools. Two open-ended questions in our online survey gave a snapshot of the patchwork of financial education that currently exists in primary schools across the UK. In contrast to Change the Game, which is a structured programme of activities across many academic years and organised by an external organisation, a lot of activities described by teachers were ad hoc. Parents or local banks might come in to give talks, or teachers use their initiative to fold financial education into other aspects of the curriculum, such as teaching about using cash in maths lessons.

Financial education was also more formally included in the PSHE programmes offered at some schools. There was also one example of a teacher putting in additional time to create an elaborate role-playing game in which their students participated in a classroom economy, and gained money through tasks which could be spent on physical goods and "renting" their chair. What was clear from responses is that there is no standard offer – pupils from different primary schools in different areas are getting vastly different financial education experiences, ranging from in-depth role-playing games to nothing at all.

The open-ended questions also explored what school staff thought was needed to make financial education in schools a success. Most responses focused on resources: staff time, access to digital and physical resources, and financial resources to continue delivering financial education. Time seemed to be the most crucial of these resource constraints, as several teachers highlighted how it would be difficult to fit in financial education into "bloated" curriculums. However, as we have already seen, Change the Game has managed to secure buy-in from teachers and schools.

Overall, there was a clear appetite for external support and input to facilitate delivery of financial education – staff seemed to believe that this sort of support could help them overcome the resource difficulties they would otherwise have.

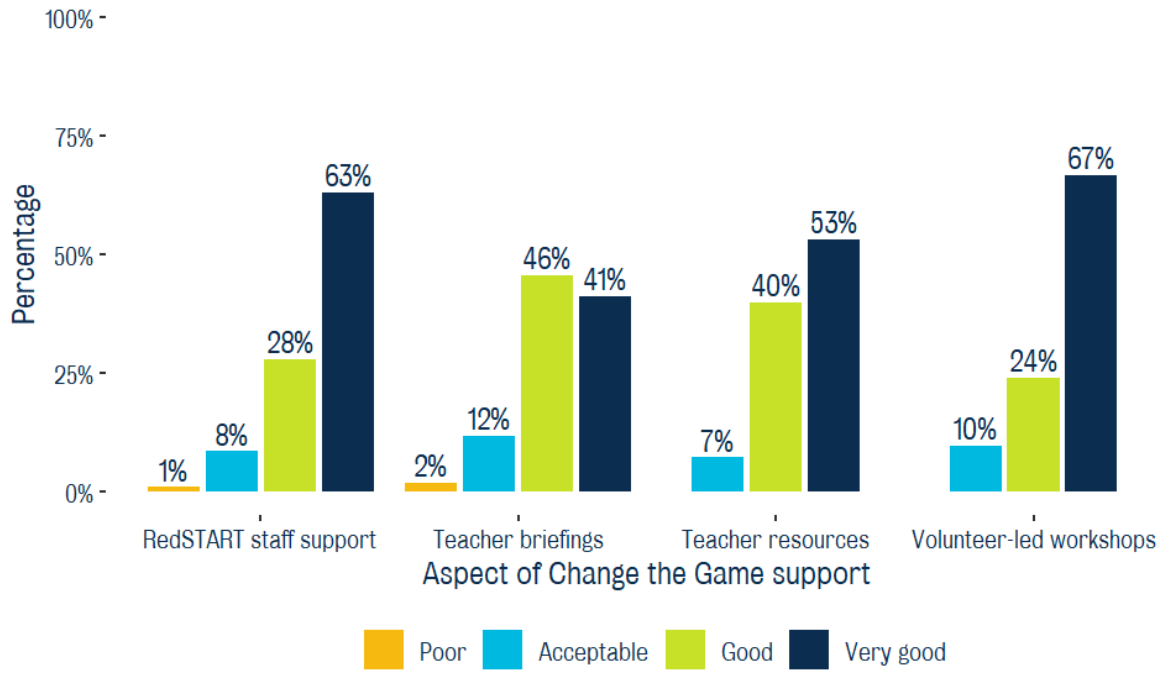
What are the experiences of teachers and volunteers?

Teachers and volunteers are very positive about their experiences of taking part in and delivering Change the Game.

Experiences of teachers

Overall, 98% of school staff surveyed said they would recommend other schools to sign up for the programme. A very high proportion of school staff enjoyed running the activities (90%) and felt supported to fit the programme into the curriculum (84%). They rated the different elements of the programme highly, as shown in Figure 15.

Figure 15: Teachers' views of aspects of RedSTART's support for Change the Game



Experiences of volunteers

Similarly, the volunteers we spoke to had enjoyed taking part, and were all planning to take part in further workshops in the future. They said it felt "worthwhile", "fulfilling", "exciting" and "enjoyable", and felt it was a nice change of pace to their usual working activities.

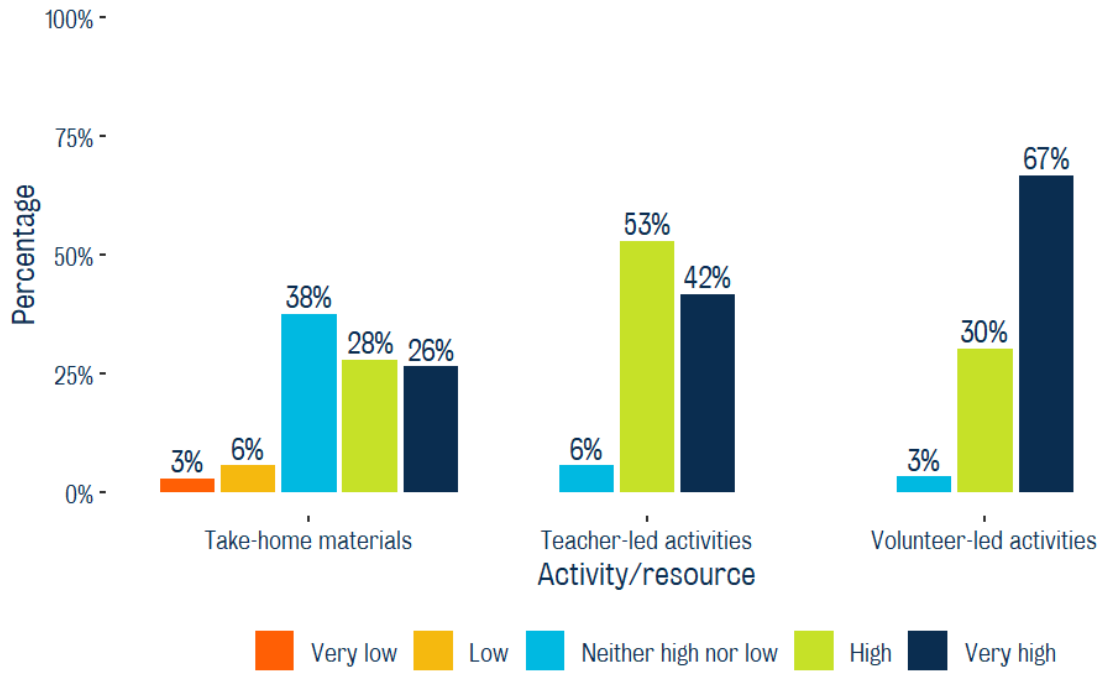
'I just love it. I've loved every minute of it. I love watching the children learn in a different way.'

How do pupils engage with the workshops and school-based activities?

Pupil engagement in workshops and school-based activities

In the survey, most staff reported high levels of student engagement in Change the Game activities. Almost all respondents reported that their students had "very high" or "high" engagement in both teacher-led (95%) and volunteer-led activities (97%). Engagement with take home materials was lower, but a majority of teachers still reported engagement was high. This is shown in Figure 16.

Figure 16: Teacher-reported levels of pupil engagement with Change the Game activities/resources



In interviews, school staff and volunteers reported that engagement was consistently strong. They said that pupils "loved it" and highlighted that the game-based activities ensured that the children were engaged and having fun first, and the learning outcomes came naturally as a result. Staff reported that the resources were reasonably well differentiated, and the quality of delivery was high, precipitating high engagement even among children with lower abilities.

'I've got a very low class ability wise this year and a lot of EAL children but they really, really loved it.'

More survey respondents (67%) reported students having "very high" engagement in volunteer-led activities than teacher-led activities (42%). In interviews with teachers, the volunteer led model was also sighted as a particular benefit of the project. Teachers explained that pupils valued the different insights and life experiences that volunteers gave to pupils.

Teachers and volunteers were also complimentary of the expertise and competency displayed by RedSTART staff in facilitating the workshops, and they valued their hands-on approach and their proactivity during delivery. This, the teachers argued, was reflected in student engagement.

'They really looked forward to it, and really engaged with it well, and they had a great relationship with [the staff and volunteers], as well, which they really enjoyed.'

Variation in pupil engagement

Most teachers agreed that the resources were appropriate and inclusive, and often helped lower-ability students engage as the activities were interactive and "concrete" which enabled them to grasp different concepts. Teachers also reported that ad hoc differentiation and additional scaffolding where possible allowed them to extend Change the Game learning to all pupils.

However, some teachers also noted that engagement with the activities was not uniform across all pupils. For students with English as an additional language, or special educational needs, some teachers reported that some resources were difficult to engage with.

'The area we work in as well we've got a lot of like EAL children [...] I think some of them find it quite hard to access.'

This wasn't seen as problematic, per se, but teachers did note that their inclusion required increased effort from teachers and other staff. Similarly, engagement was more challenging for more reserved students who were apprehensive around new adults. Again, this didn't entirely preclude their participation, but some teachers felt that these students did benefit less from the programme activities. For some students, teachers felt that some language and concepts were difficult to engage with because of their background. However, they noted that this reinforced the purpose of the programme as it introduced new concepts to them.

'Some of them probably see their parents try to scrape together change to buy something in the shop. So yeah, I definitely think it will affect them in different ways.'

Pupil and family engagement in take-home activities

Following each school-based activity and workshop, parents are sent a 'postcard' from RedSTART with suggestions of activities to do with their children. While it is difficult for teachers to tell, their impression was that engagement with home learning was lower than in-school activities and workshops, as shown in Figure 16. In interviews and open-ended survey responses, some teachers suggested it would be useful to involve parents and home learning more in the programme going forward. In addition to the postcards, some suggested to actively involve parents in some workshops to ensure engagement continued beyond the school gate. The RedSTART team are currently exploring ways to engage parents, and future waves of the evaluation research may involve qualitative research with parents and pupils.

Perceptions of Impact

Teachers' perceptions of Change the Game's impact on pupils

We asked staff in the online survey if they had perceived any impact among their students due to the programme (see Figure 17). Many staff reported impacts of the intervention at this early stage. More than three quarters reported seeing improvements among pupils in financial knowledge and attitudes. Under half of respondents reported seeing improvements in numeracy skills and confidence in numeracy skills.

Figure 17: Teachers' perceptions of the impact of Change the Game on pupils

In interviews, school staff and volunteers explained they had observed students' attitudes and behaviours towards money shift during sessions, with many highlighting that a desire to save and consider spending choices was developed through the activities.

'But through the activities, you know, it made them realise that 'oh, you know, this is important, we need to save.'''

Students' command of subject-specific vocabulary and confidence in various financial concepts also grew through the sessions, according to interviewees.

'You could see the realisation on some of their faces after each session… by the end of the session you could hear them talking freely about it, so you could tell that they'd taken it on.'

Some teachers also thought the programme was having an impact on numeracy, given the adding and subtracting that is inherent to the activities, but others did not believe the relatively infrequent sessions had impacted on more general maths skills.

Whilst some effects were being felt by teachers, a common reflection amongst interviewees was that real impact would take more time. School staff believed that the RedSTART intervention was meaningful but consistency and commitment to the programme would be required for students to experience lasting benefits.

'I think it probably needs a couple more years and it needs to be built up, but I think the conversations we were having during lessons were really interesting […] I think it will have a bigger impact, but at the moment it's just more within the lessons.'

Some interviewees suggested that the Year 1 delivery model, where students only interact with RedSTART activities once a term (at most), was too limited to create real impact, especially on maths attainment. But this was a minority view, with most staff arguing that the high levels of engagement amongst their students were contributing to positive outcomes and indicating that they expect the impact of the programme to grow over time.

Teacher's and volunteers' perception of impact on their own behaviours and skills

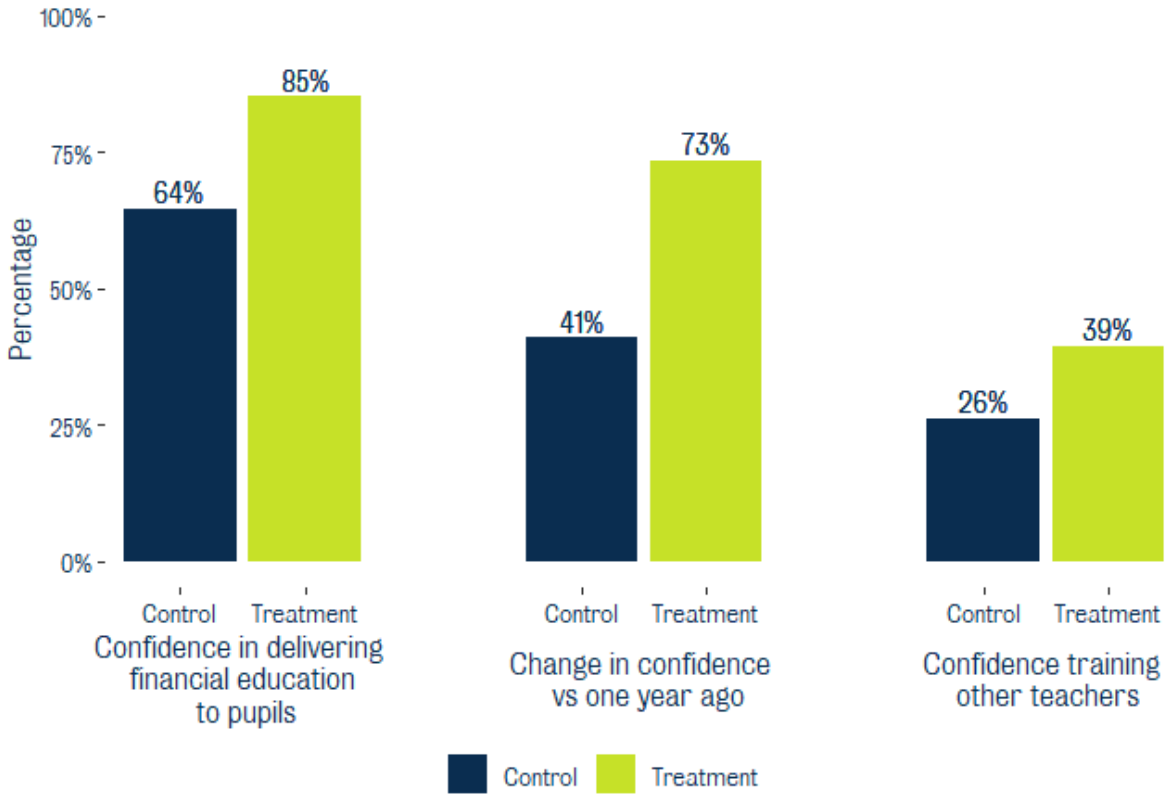
We also asked respondents whether the programme had impacted their own skills and confidence in relation to financial literacy and in delivering financial education.

Three quarters (76%) of school staff felt Change the Game had enhanced their own knowledge about financial concepts, and 85% said they felt more confident in how to deliver financial education lessons to their students.

This led to school staff in treatment schools having a high and increased level of confidence in delivering financial education, especially compared to staff in control schools. In the

treatment group, 85% of respondents were "somewhat" or "very" confident in delivering financial education, compared to 64% in the control group (Figure 18).

Figure 18: Confidence in delivering financial education, treated vs control teachers



In interviews, teachers gave many examples of how the programme had positively impacted their practices, from using more age-appropriate financial terminology, to adapting approaches to planning and delivering lessons after seeing the engagement and enthusiasm that RedSTART's approach achieved.

'Particularly that first session we did last year, it was really eye opening for me to think, oh okay I can change my teaching to adapt it to make it more real world for the children, to make it more understandable.'

The volunteers frequently spoke about how the workshops had brought them out of their "bubble" and made them reflect upon their own privilege. Volunteers said it had been an "eye-opener" to see the deprivation of some children and described the experience as "humbling". Many said that the workshops were tiring and made them respect the work of teachers enormously:

'I tip my hat off to teachers, honestly'.

Mostly, volunteers felt good for doing it and described the experience as "inspiring" and "rewarding". They often recalled moments from the sessions, including how wonderful children are, how knowledgeable they can be, and that they felt the workshops had helped the children:

> *'By the time you leave, you are all beaming. They're just smiling, you're laughing, you're recalling, you know, memories of things that have happened through the day that are just funny... I was really surprised about the level of intellect that comes out of these children at such a young age.'*

Some volunteers from financial organisations also reflected that the experience had made them more aware of the need to communicate in an accessible and engaging manner to customers and consumers. For instance, one respondent said their organisation had a big drive to make their materials more accessible. This was not necessarily driven by Change the Game, rather it had been one of their motivations to sign up to Change the Game in the first place, as helping deliver the workshops felt like a natural part of this ambition.

How can the programme be run more efficiently and effectively?

While participants were overwhelmingly positive during interviews and in survey responses, they also offered suggestions for how the programme could be further improved. However, it should be noted that these suggestions may not necessarily be supported by most, or even the majority, of participants but rather have only been suggested by some.

More activities

One of the most common suggestions was to increase the amount of Change the Game activities on offer and more frequently throughout the year. Some respondents thought, in particular, that more volunteer-led input could be beneficial. Other respondents thought sessions could be longer, for instance allowing more time for reflections and learning at the end of sessions after the completion of activities. It should be noted that Change the Game activities will be expanded in subsequent years, not through additional workshops and school-based activities every year, but through the rollout of the bank app and shop.

More inclusive resources

There was some indication that further differentiation of resources and content could be useful in engaging the full range of pupils. Some teachers suggested that SEN inclusivity could be improved and that a wider range of real-world examples could engage students from different backgrounds.

More focus on home-based learning

Some teachers suggested that interaction with parents and children's home lives would be an important part of any intervention that aimed to improve financial literacy, because this is where financial habits are displayed to children.

> *'You know, they need to be given change, they need to be doing it practically at home. There's only so much we can do in school because we're not the ones who have the money.'*

Some teachers suggested to involve parents and incorporate home-learning more in the programme. In addition to the current provision of home learning resources, some teachers suggest involving parents actively in the workshops, to ensure the engagement continued beyond the school gate.

Ensure that all teachers are active during workshops

Volunteers described how teachers, in the vast majority of cases, were active during workshops, including by controlling and dealing with any behavioural issues, helping children with support needs, and selling the importance of the programme to their pupils. However, a few volunteers also provided examples of teachers who "sat at the back of the class". They said the session was still good, in part because of the skill of the RedSTART facilitator who often had a teaching background, but they emphasised that pupil engagement was better when teachers were engaged and took part.

Discussion of findings

Exploring overall impact

The statistically significant positive findings from the first year of the evaluation were somewhat unexpected given the multi-year nature of the programme. That Change the Game has had an impact on participating students after just one year of delivery, is a positive signal that the intervention will be impactful in its full multi-year form.

The size of impact we measured is analogous to other school-based financial education interventions, but Change the Game appears to represent a time-efficient approach to improving children's financial literacy, as it is relatively less intensive than programmes that achieve similar sized impacts.[19] The total time delivered to pupils who attended all activities was 2.5 hours for Year 3 students and 3 hours for Year 2 students.

Evidence gathered in the IPE can provide insight into how this outcome has been achieved. Surveys and interviews with teachers and volunteers consistently revealed that pupil engagement in the activities was very strong. Intuitively, the more that students were invested in the activities, the higher the likelihood that the learnings would be embedded. This may have been compounded by the excitement students felt towards Change the Game and the subsequent prominence of the programme within the treatment schools – because students wanted to talk about it beyond the sessions themselves, the activities may have had a more significant impact than more intensive, but less engaging, models.

It seems that the delivery model itself could have contributed to this as several teachers commented on how the use of external volunteers and engaging physical resources had raised the profile of Change the Game amongst their students. This led to ongoing conversations and repetition of the concepts, knowledge, and behaviours in students' day-to-day lives.

Some teachers also reported that they sought to embed some of the learnings into the wider curriculum which may have furthered the impact of the programme. The IPE indicates that this level of buy-in and engagement amongst school staff was made possible by the ongoing

[19] Kaiser, T., & Menkhoff, L. (2020). Financial education in schools: A meta-analysis of experimental studies. *Economics of Education Review*, *78*, 101930. https://doi.org/10.1016/j.econedurev.2019.

work of the RedSTART team. The programme was relatively burden free for teachers through a combination of careful planning and clear communication from RedSTART's regional managers.

The impact of the programme may also be explained by the high quality of the materials and the sessions themselves. Teachers and volunteers consistently praised the standard of the lessons they engaged with. Materials were largely accessible to students, and the physical activity and interaction at the centre of the sessions were viewed as effective tools for imparting knowledge to children with a wide range of abilities and previous knowledge.

Exploring each of the outcome measures

Our knowledge of the programme and the data collection approach can help explain the varied impact of the programme on the disaggregated outcomes.

Positive impact on the financial connection of students

We found a positive impact of Change the Game on the financial connection of students. This was measured by asking students to indicate where they've learned about money and their connection to financial education. Given that the treatment students had been actively exposed to a financial education intervention that was delivered in school, along with take-home elements, it is perhaps not surprising that there was improvement in this measure.

Positive impact on the financial mindset of students

The questions that measure financial mindset are focused on savings behaviours and attitudes towards financial management. We know that this is a prominent focus of the Change the Game sessions so the positive impact on this measure is an encouraging sign for RedSTART and their approach.

Positive impact on the financial ability of students

Similarly, our IPE activities indicated that a lot of the conversations during the sessions focused on the role of money in society, and these conversations often seem to have continued beyond the sessions. This is reflected in the positive impact on financial ability, which is measured by questions that focus on how money operates in society.

No impact on the financial behaviour of students

The lack of statistically significant impact on financial behaviour is potentially surprising as getting students to consider their spending and saving behaviours is a core part of the Change the Game activities. The questions in the survey that cover this outcome ask students to indicate how they would spend or save in different scenarios. Whilst we cannot offer conclusive analysis on this, the formulation of these questions may have had an impact on the findings. These questions, in comparison to the questions that measure the other disaggregated outcomes, are conceptually difficult. They ask students to imagine situations and then describe how they would act within them. This level of abstraction is not present in other questions. It may be, therefore, that difficulty in comprehending the question has contributed to the lack of impact measured as students may have been answering more randomly than elsewhere. Of course, it could also be the case that the intervention just did not affect this outcome amongst the participants. This would be consistent with other experimental studies in the field which generally find more significant impacts of school-based financial education on financial knowledge than financial behaviours.[20]

No impact on maths attainment of students

The lack of impact found on maths attainment is understandable in the context of the evidence gathered in the IPE. Respondents to surveys and interviews highlighted that any impact on maths attainment would likely take longer to emerge as the numeracy elements of the intervention were limited in comparison to the time dedicated to maths throughout the primary school year. Teachers did not think this was a weakness of the programme, but rather that numeracy was just not a key focus of the sessions. Going forward, the intervention is

[20] Kaiser, T., & Menkhoff, L. (2020). Financial education in schools: A meta-analysis of experimental studies. *Economics of Education Review*, *78*,

expanding to include a bank app that students will regularly use to complete maths quizzes and earn coins which they can save and invest. RedSTART staff are hopeful that this will lead to impact on maths attainment.

Potential differential impacts for different groups of students

Whilst the initial findings show the positive impact of Change the Game, the additional sub-group analysis that we will complete once NPD data is available will be important in understanding whether this impact is experienced equally by different groups of students. There is some evidence in the IPE that we may expect English as an Additional Language and Special Education Needs and Disability learners to be less impacted by the programme, as several teachers suggested that children with these characteristics struggled to fully engage with the activities at times.

Sustainability and scalability

There were positive signs for programme sustainability in the IPE. A key factor that limits the sustainability of interventions in school settings is often the availability of staff time and the burden placed upon teachers by additional activities and programmes. This did not appear to be an issue for Change the Game as teaching staff consistently reported that accessing training and delivering the sessions added little to no burden to their day-to-day work. The model of delivery, which relies on RedSTART staff and volunteers leading sessions, was crucial to this, as was the careful curation and development of resources for the sessions that staff are given. As the programme expands and develops, maintaining this high level of staff buy-in will be crucial to sustainability.

The engagement of teaching and leadership staff is also important when considering scalability. Because it is relatively straightforward for schools to facilitate Change the Game, there are few barriers to new schools joining the programme. However, scaling the intervention is contingent on the resources that allow the current model of delivery to thrive. Most critical is the availability of volunteers and capacity of RedSTART regional managers who, between them, are responsible for much of programme delivery. Currently, the regional manager team works hard to deliver the service to schools so additional staffing would likely be necessary to reach more students. In many cases, the regional managers are also highly

skilled, often having previously worked as teachers, and further scaling up will have to ensure effective recruitment and training.

Similarly, more volunteers would also have to be approached and trained to scale the intervention. The intervention is largely delivered in urban areas which have a relatively high concentration of organisations related to the finance world which RedSTART rely on for volunteers. If there was a desire to scale the programme to more rural areas, it could be more difficult to secure the appropriate staffing. Additional travel costs could also be incurred which could further impact scalability.

Conclusion

Overall, the evidence gathered in the first year of the evaluation suggests that Change the Game is an impactful intervention that can improve children's financial literacy. Our findings also support RedSTART's belief that early intervention in financial education is appropriate – children as young as six can meaningfully engage with the relevant material and improve their understanding of varied aspects of financial literacy.

Data collected from various stakeholders also indicates that RedSTART have developed an efficient delivery model that secures buy-in from teachers and leadership staff at school. There is good reason, therefore, to be optimistic about the ongoing long-term impacts of the programme as delivery is expanded and the intervention develops over the coming years.

Based on our findings, we have come to the following conclusions that are relevant to policymakers and practitioners in the financial education field.

1. Children between the ages of six and eight can engage meaningfully with financial education and can benefit from interventions that aim to improve their financial knowledge. In particular, our findings indicate that game-based activities can improve students' understanding of financial concepts and impact their attitudes towards money and its role in society.

2. External organisations seeking to deliver programmes in schools should prioritise reducing burden for teaching and leadership staff as far as possible. Because of the wide range of competing priorities on staff and student time, buy-in among school staff is crucial to the successful delivery of school-based interventions.

3. Accessible resources and varied activities, such as those used by RedSTART, are linked to more time-efficient interventions; evidence gathered here suggests that lower intensity programmes can yield results that are comparable to higher intensity programmes.

4. Leveraging the interest that finance companies have in financial education to embed corporate volunteers into a delivery model is a pragmatic approach to create a well-resourced, engaging intervention.

Next steps

Accessing the National Pupil Database

As part of the project, we have secured consent from parents and guardians to access their children's data in the NPD. Accessing the NPD has proven to be a lengthy process and we are still in discussion with the Department for Education who control the database about access arrangements. Once we have secured the data, we will incorporate it into our analysis and publish a follow-up report, detailing any changes to the findings as appropriate. We will gather the following data from the NPD about each participant:

- Sex;
- Ethnicity;
- If they speak English as an additional language;
- If they are eligible for Free School Meals;
- If they have any special educational needs.

This demographic data will allow us to complete more detailed sub-group analysis; for example, we can investigate whether the intervention has a differential impact on pupils from different socioeconomic backgrounds or ethnic groups. Given the aim of the project is to increase financial literacy in areas with high levels of deprivation, this analysis will be crucial.

The demographic data will also allow us to add more detailed controls into the primary analysis, adding greater validity to the findings. Whilst we have no reason to believe the randomly allocated treatment and control groups are systematically different, analysis of this data will allow us to be more confident that other factors, such as the proportion of students with special educational needs in each group, are not the reason that we see differences between the treatment and control groups.

In future years, we will also collect attainment data (where applicable) from the NPD, to track longer term impacts of the programme. The ambition is that we can track the impact of Change the Game through a students' entire school journey, beyond primary school. We

expect to secure access to the NPD in Spring 2024 and will publish a follow-up to this report shortly after access is secured.

Cohort 1 and 2: Second year and onwards

The cohorts that have participated in the evaluation this year (whilst they were in Year 2 and 3) will continue to participate in the study until the end of primary school. They will complete surveys two more times before the end of primary school, once when they reach the end of Year 4, and once when they finish Year 6. Yearly reports will be published analysing the impact of the intervention across this period. When Cohort 1 and Cohort 2 finish primary school, they will have received four and five years of Change the Game activities, respectively. The Change the Game intervention is expanding to include a bank app which students will use during class time, for 15 minutes per week. In the app, they complete maths and financial literacy quizzes to earn virtual money, which can then be saved and invested, and subsequently spent on real items. This will increase the amount of time spent on Change the Game activities by students in treatment schools.

The evaluation and intervention activities that each cohort will participate in is detailed in Table 10 below (SBA are 'school-based activities' delivered by teachers):

Table 10: Cohort 1 and 2 Evaluation and Change the Game Activities

Cohort	2022/23 (completed)	2023/24	2024/25	2025/26	2026/27
Cohort 1 (Year 3 in 2022/23)	Baseline survey Year 3 survey	Year 4 survey	No evaluation activities	Year 6 survey	N/A – finished primary school
	1x workshop 1x SBA	2x SBA Bank app	1x workshop 1x SBA Bank app	1x workshop 1x SBA Bank app	N/A – finished primary school
Cohort 2 (Year 2 in 2022/23)	Baseline survey Year 2 survey	No evaluation activities	Year 4 survey	No evaluation activities	Year 6 survey
	1x workshop 1x SBA	1x workshop 1x SBA	2x SBA Bank app	1x workshop 1x SBA Bank app	1x workshop 1x SBA Bank app

Cohort 3: Reception

In the second year of the evaluation (2023/24 academic year) we are also onboarding a new cohort. Cohort 3 is comprised of Reception students, taking part in Change the Game throughout all seven years of primary school - we aim to follow Cohort 3 for the entire period until they leave primary school. We have onboarded 17 new schools (plus three schools that initially had been unable to take part in the first year), for a total of 65 participating schools. We expect the research sample for Cohort 3 to be approximately 2,000-3,000 students. This expansion is an extremely exciting opportunity to complete a longitudinal study on a scale that is uncommon in school based RCTs.

Cohort 3's engagement with the research and programme activities will follow a similar pattern to Cohorts 1 and 2. It is summarised in Table 11 below.

Table 11: Cohort 3 Evaluation and Change the Game Activities

Cohort	2023/24	2024/25	2025/26	2026/27	2027/28	2029/30	2030/31
Cohort 3 (Reception in 2023/24)	Baseline survey in Reception	No evaluation activities	Year 2 survey	No evaluation activities	Year 4 survey	No evaluation activities	Year 6 survey
	1x SBA	1x SBA	1x workshop 1x SBA	1x workshop 1x SBA	2x SBA Bank app	1x workshop 1x SBA Bank app	1x workshop 1x SBA Bank app

We have developed an innovative survey to measure Cohort 3's financial literacy in Reception. The development of this survey will be explained in detail when the second-year report is published in Autumn 2024. In this report, we will also present an analysis of Cohort 3's baseline responses and impact analysis for Cohort 1, who will have undergone two years of the intervention by then and completed a third survey in summer term 2024.

Appendices

Appendix 1: Activities in 2022/23

Cohort 1

Cohort 1 started the programme when the pupils were in Year 3. In the first year (the focus of this report), they completed one school-based activity and one workshop, lasting around three hours in total.

- The **school-based activity**, lasting around an hour, aims to show children that people have different feelings and attitudes towards saving and spending their money. In the first activity, pupils play the Money Motions boardgame, in which they think about how certain characters might feel in certain financial situations. In the second activity, pupils play a drama game where they take turns to pretend to be a character from the board game when imagining different scenarios related to saving and spending priorities. After the session, parents receive a digital postcard with suggestions for a game where the family think through how different money scenarios would make them feel.
- The **workshop activity**, lasting around two hours, aims to engage children in the cycle of earning money, spending, and saving priorities, keeping track of money, budgeting, and then prioritising financial needs and wants when spending. During the session, pupils go between different stations, where they can earn money by completing jobs as builders, sports coaches and police detectives; they manage their money when receiving their bank statement and updating their balance; and they spend the money when designing a sandwich and when they go shopping. After the session, parents receive a digital postcard with suggestions for family activities, including children helping parents spot the best deals when shopping in the supermarket, or planning their spending for their next shopping trip.

Cohort 2

Cohort 2 started the programme when the pupils were in Year 2. In the first year (the focus of this report), they completed one school-based activity and one workshop, lasting around 2.5 hours in total.

- The **school-based activity**, lasting around an hour, focused on enabling children to talk about the differences between needs and wants. The first activity centred on a story about Octavia the Octopus, which was used to facilitate a discussion about needs and wants. In the second activity, the children were asked to draw or write their own needs and wants for a family celebration, followed by a discussion about what their actual needs would really be. After the session, parents were sent a digital postcard, suggesting setting up a play shop as a family activity, using coins and notes.
- The **workshop activity**, lasting around 90 minutes, aimed to teach pupils about how to keep track of money, and how to make choices about spending. In the first activity, pupils play a board game where the aim is to avoid running out of money, and pupils need to keep a financial record of money spent and earned in the game. In the second activity, pupils design clothes and accessories for their superhero, while trying to stay within their budget. In the third activity, children are asked to think about what they would like to save up for themselves, and they start thinking about the relative costs of different items. This is followed by a discussion where children share and discuss what they are saving up for. After the session, parents receive a digital postcard with suggestions to talk to their child about different types of job, budgeting, and savings.

Appendix 2: Outcomes survey

Table 12: Survey scale items and coding

Higher-level outcome	Lower-level outcome	Question	Coding	Included in primary outcome?
Ability	Children have an improved understanding of money management	Which of these things do you think cost your parents or carers money?	One point each for circling: - Heating and lighting your home - Making phone calls - Using water to have a shower or bath And for not circling: - Playing in the park - Seeing a doctor - Borrowing books at a library	Y
Ability	Children have an improved understanding of the role of money in society	Adverts on TV or online are trying to make you buy something.	1 - I don't agree at all 2 - I agree a little 3 - I agree a lot 1.5 - I don't know	Y
Mindset	Children have improved aspirations and goals	How important is it to learn to be good at saving and spending money?	1 - Not important at all 2 - A little important 3 - Really important 1.5 - I don't know	Y
Mindset	Children have improved aspirations and goals	I would like to be good at looking after money when I grow up.	1 - I don't agree at all 2 - I agree a little 3 - I agree a lot 1.5 - I don't know	Y

Higher-level outcome	Lower-level outcome	Question	Coding	Included in primary outcome?
Mindset	Children have improved attitudes to money management	How important do you think it is to know how much money you have?	1 - Not important at all 2 - A little important 3 - Really important 1.5 - I don't know	Y
Mindset	Children have improved attitudes to money management	It's good to look after money	1 - I don't agree at all 2 - I agree a little 3 - I agree a lot 1.5 - I don't know	Y
Mindset	Confidence in maths skills	How confident do you feel at taking away numbers?	1 - Not confident at all 2 - A little confident 3 - Really confident 1.5 - I don't know	N
Mindset	Confidence in maths skills	How confident do you feel at adding numbers?	1 - Not confident at all 2 - A little confident 3 - Really confident 1.5 - I don't know	N
Mindset	General aspirations	When I think about growing up, I feel happy.	1 - I don't agree at all 2 - I agree a little 3 - I agree a lot 1.5 - I don't know	N
Connection	Children have increased access to financial education resources	Have you learnt to look after money from any of these people or places?	4 - At school 4 - A bank 3 - Parents 3 - Other family members 2 - The internet 2 - Friends 2 - Television 1 - I haven't learned about looking after money 1 – I don't know	Y

Higher-level outcome	Lower-level outcome	Question	Coding	Included in primary outcome?
Behaviour	Children have improved skills to manage money well day-to-day	If you were going to buy something for yourself, which of these would you do?	One point each for: - Look in different places to compare prices - Think about if it is good value for money - Think about if I need it now or if it can wait - Check if I have enough money	Y
Behaviour	Children have improved skills to manage money well day-to-day	Imagine someone gives you £10. How much would you spend and how much would you save for later?	1 - Spend all of it 2 - Spend more than half 3 - Spend about half 4 - Spend less than half 5 - Spend none of it 3 - I don't know	Y

Appendix 3: Cleaning and preparing the survey data

Description of the data and cleaning process

The data comprise three datasets:

1. Administrative data from participating schools, in which they provide the first name, surname, Unique Pupil Number (UPN), year group and teacher-assessed grade in mathematics for all pupils in the tracked cohorts (Year 2/P3 and Year 3/P4 in the 2022/23 academic year).
2. Data from the baseline survey, which was conducted in December 2022 and January 2023, prior to commencement of delivery of Change the Game. Schools elected to complete the baseline survey either on paper or via Qualtrics.
3. Data from the Summer 2023 survey, which was conducted in June 2023, once delivery was complete. As with the baseline, schools had the option to complete the survey either on paper or via Qualtrics.

The data were processed in the following way.

Each dataset was cleaned and variables coded in parallel, according to the Trial Protocol. In each dataset, we had the pupil's first and last name, date of birth (DOB), year group and school. However, there were multiple inconsistencies in the datasets, particularly as pupils self-entered their details for the surveys, and, for example, used different versions of their first or surnames, and either didn't provide or were incorrect in their birthdate.

Therefore, iterated matching was used to try and maximise the match rate. Taking the data supplied by schools as the spine, we first matched the summer 2023 survey results in using the iteration procedure outlined in the next paragraph. Once that was complete, we then conducted the same procedure to match in the baseline surveys. Each baseline survey was attempted to be matched to the school data first, and if that failed then they were attempted to be matched to a summer survey, within each iteration.

The iteration procedure was as follows. First, pupils were matched on first name, surname, DOB, school year and school. Then, unmatched pupils were matched of iterations of this, with the rules getting increasingly permissive as the set of unmatched pupils got smaller. After each merge we checked for false matches, and once we started observing false matches we

stopped iterative matching and attempted to identify the remaining pupils manually, via inspection of the data and querying schools. Any pupils at the end of this process who had not been matched to both a baseline and summer '23 survey were treated as missing for the unmatched survey wave. Overall the success rate on matching was high, with 97% of summer surveys matched to school data and therefore used in the main analysis. Table 13 provides the number of pupils who were fully matched in each matching iteration.

Table 13: Pupil surveys matched to the school data, by matching iteration

Matching iteration	Pupils matched from school data to summer survey	Pupils matched from baseline to school data and/or summer survey
1FLDYS	1,857	1,661
2FLYS	696	692
3FDYS	237	343
4FLS	100	62
5FiLYS	157	148
6FLiYS	119	157
7FiLiYS	27	10
8FLlYS	27	36
9FDS	9	8
Manual	177	265
Unmatched	123	172

F = first name, Fi = First two letters of first name, L = last name, Li = first two letters of last name, Ll = last two letters of last name, D = date of birth, Y = year group, S = school

In addition, there were 109 instances of duplicate responses, where the same pupil completed a survey wave multiple times. In this instance, the most complete response set was used; if there was not a uniquely complete response set, then the most recent response was used.

Description of the analytical dataset

Sample size and attrition

In this section we provide descriptive statistics for the dataset being used in this analysis. Please note we are limited in our demographic information for this analysis as this will be provided via the National Pupil Database (NPD).

In the data provided by schools we have 3825 pupils. This is all pupils in the tracked cohorts whose parents either opted in, or chose not to opt out, of the research. This is therefore our population. Of these, we have 3551 baseline surveys, and 3529 Summer 23 surveys. The analysis in this report uses all pupils who have a matched pair of baseline and summer 20-23 surveys; this comprises 3098.

Table 14: Summary of match status

Data supplied by schools: 3826	Summer 2023 surveys: 3529	Baseline surveys: 3554
	Summer surveys matched to school data: 3406	Baselines matched to school/summer data: 3380
		Complete matches: 3070

Missing data

In the final analysis, pupils for whom we have data from the school and the summer survey but who are missing from the baseline survey will have values for the baseline survey imputed using Multiple Imputation with Chained Equations. However, in order to do this analysis we require access to covariates via the NPD.

Table 15 checks for asymmetric attrition by regressing the likelihood of missing data on treatment condition. This suggests that overall a lower proportion of treatment group pupils completed a survey in Summer 2023, but this is not significant at conventional levels. The first row refers to the proportion of pupils for whom a matched pair of baseline and summer 2023 surveys are available. This is the group used in the analysis in the current report.

Table 15: Missing summer surveys by treatment condition

Variable	Estimate	P Value	Confidence Interval	Significance
Summer 23 + Baseline	-0.04	0.31	-0.11 - 0.04	
Summer 23 + school data	-0.04	0.10	-0.09 - 0.01	+

The second row refers to pupils for whom both school data (which includes the Unique Pupil Number) and a Summer 2023 survey are available. This will be the group on which final analysis is conducted due to imputation of baselines. Although not currently significant at conventional levels, it will be important to monitor differential attrition going forward and to try and take steps to address this.

Sample and treatment group characteristics

We will provide complete information about sample and treatment group characteristics once demographic information is available.

Balance achieved across treatment and control group

In this section we provide balance checks on items currently available in the data. We will conduct further balance checks once demographic information is available.

Table 16: Balance checks by score on outcome, and choice of survey completion method.

Variable	Estimate	P Value	Confidence Interval	Significance
Financial Knowledge (primary outcome, baseline)	0.28	0.25	-0.21 - 0.76	
Ability (baseline)	0.06	0.58	-0.15 - 0.27	
Behaviour (baseline)	0.06	0.64	-0.21 - 0.33	
Connection (baseline)	0.00	0.96	-0.16 - 0.17	

Variable	Estimate	P Value	Confidence Interval	Significance
Mindset (baseline)	0.14	0.39	-0.19 - 0.48	
Survey collected online (baseline)	-0.28	0.00	-0.32 - -0.25	***
Survey collected online (summer 2023)	-0.04	0.01	-0.07 - -0.01	*

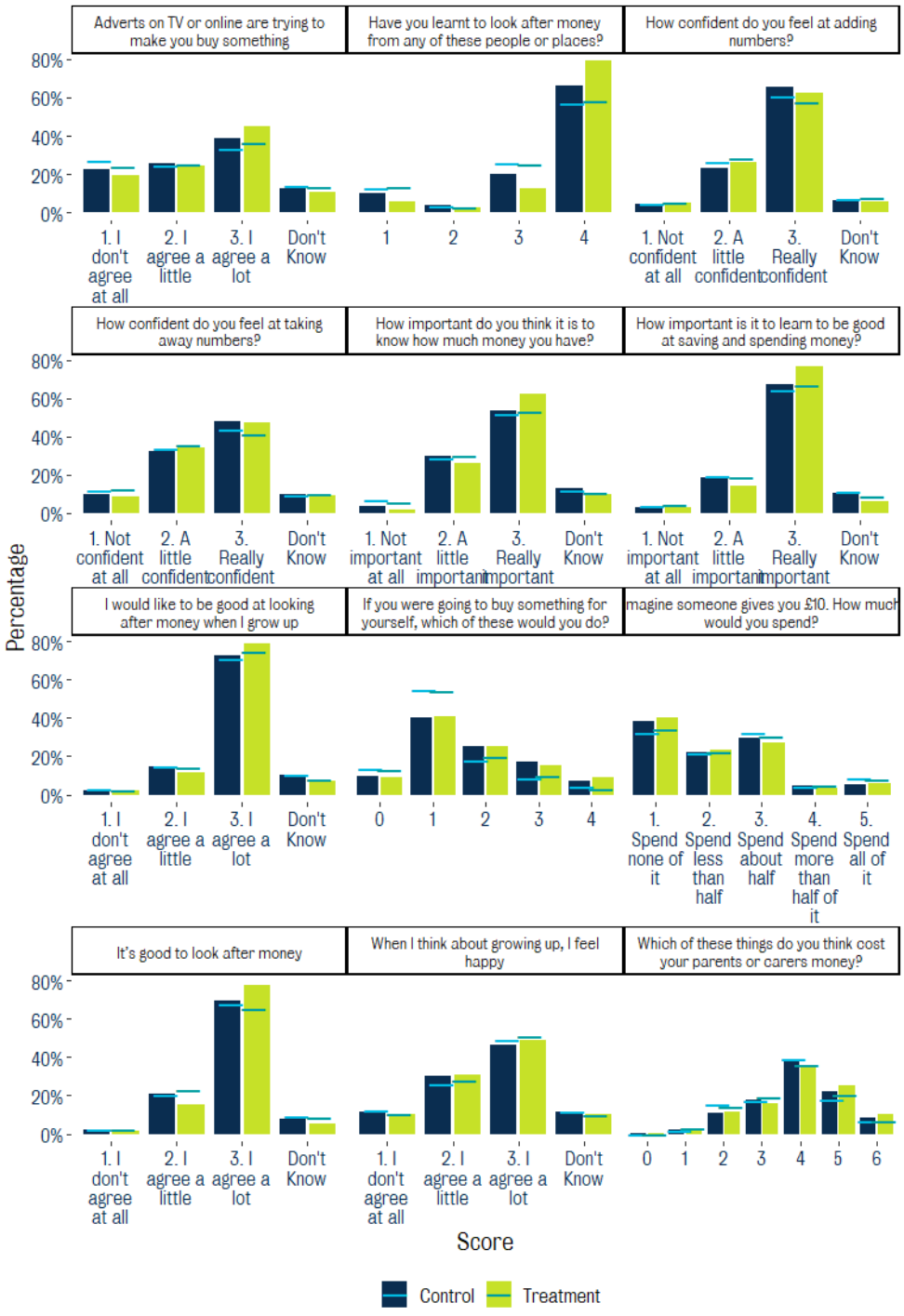
Excludes pupils for whom a complete set of baseline and summer 2023 surveys is unavailable, as these pupils are not included in the present analysis.

Overall, the sample displays good balance between treatment and control conditions (see Table 1616); there are no significant differences by treatment assignment on baseline scores of any of the outcome domains. However, significantly fewer surveys were collected online from schools in the treatment condition, at both baseline and in summer 2023. To ensure this doesn't bias treatment estimates, we include this as a covariate in the analysis of outcomes.

Distribution of responses to survey questions

In this section we provide some description of the data arising from the outcomes survey. Figure 19 shows all questions in the outcomes survey and the distribution of responses at baseline and in Summer 2023, following ear 1 of delivery. The lines show the responses at baseline, and indicate a good level of comparability in distribution of responses across the treatment and control groups. The bars show the distribution in Summer 2023.

Figure 19: Distribution of responses to all survey questions



All surveys. Lines refer to the proportion giving that response at baseline, while bars refer to the proportion giving the response in Summer 2023.

Appendix 4: Regression tables

Table 17 provides the full regression outputs for the impact analysis. For each survey outcome two models are given: the first controls for the mode of survey completion, and the second does not, per the analytical specification in the pre-registration.

Table 17: Full regression tables

	Financial knowledge	Financial knowledge^	Ability	Ability^	Behaviour	Behaviour^	Connection	Connection^	Mindset	Mindset^	Maths grade^
(Intercept)	17.80 (0.73) ***	17.37 (0.78) ***	4.26 (0.15) ***	4.27 (0.13) ***	4.42 (0.22) ***	4.26 (0.21) ***	3.27 (0.09) ***	3.15 (0.08) ***	11.41 (0.47) ***	11.27 (0.52) ***	0.73 (0.04) ***
Treatment	0.90 (0.29) **	0.91 (0.33) **	0.19 (0.11)	0.17 (0.10)	0.07 (0.14)	0.10 (0.15)	0.18 (0.07) *	0.22 (0.06) ***	0.41 (0.15) *	0.43 (0.17) *	-0.04 (0.05)
Baseline	0.31 (0.03) ***	0.32 (0.03) ***	0.28 (0.02) ***	0.28 (0.02) ***	0.26 (0.03) ***	0.26 (0.02) ***	0.08 (0.02) ***	0.09 (0.02) ***	0.35 (0.03) ***	0.36 (0.03) ***	
Year 3 (P4)	0.52 (0.20) *	0.36 (0.23)	0.30 (0.11) **	0.29 (0.11) *	0.05 (0.09)	-0.03 (0.11)	-0.02 (0.05)	-0.04 (0.05)	0.19 (0.14)	0.14 (0.13)	-0.04 (0.03)
Summer survey: Qualtrics	-1.24 (0.41) **		-0.17 (0.14)		-0.64 (0.14) ***		-0.13 (0.08)		-0.37 (0.22)		
Baseline survey: Qualtrics	0.34 (0.40)		0.13 (0.14)		0.11 (0.14)		-0.08 (0.08)		0.06 (0.21)		
R^2	0.16	0.14	0.11	0.11	0.10	0.07	0.04	0.03	0.16	0.15	0.00
Adj. R^2	0.16	0.14	0.11	0.10	0.10	0.07	0.04	0.03	0.15	0.15	0.00
Num. obs.	2779	2779	2906	2906	2913	2913	2950	2950	2745	2745	3505
RMSE	3.10	3.14	1.39	1.40	1.56	1.58	0.86	0.86	2.17	2.17	0.46
N Clusters	45	45	45	45	45	45	45	45	45	45	43

Appendix 5: Interview topic guides

Teacher and volunteer interviews

Key:

- Blue text is for teachers
- Red text is for volunteers
- Black text is for both groups

Introduction (2 minutes)

I'm _____, and I work for King's College London. We're evaluating RedSTART's Change the Game to understand if it can impact on pupils' financial literacy as well as other outcomes, like maths attainment. Alongside measuring student outcomes, we want to speak to staff in order to better understand how programme delivery operates so we can understand a range of perspectives and draw conclusions about the scalability and sustainability of interventions like Change the Game. I'd like to hear from you about your experience of the programme, and your perceptions around any impacts it's had on pupils. There are no right and wrong answers, if you don't want to answer a question, just say and we can move on. Similarly, you can stop the interview at any time if you don't want to continue, just let me know.

[Verbally reaffirm consent and confirm recording]

Before we discuss the project, it would be good to get to know a little more about you.

- What year group are you currently teaching? Do you have any other roles in the school?
- Generally, how was the previous school year?
  - Compared to previous years
  - Changes to their role
- Where are you currently working and what is your role there?
- What has your involvement with the project been?
- Was your role consistent over the last year?

Experience of delivery for teachers (10 minutes)

- In broad terms, can you describe the process of delivering Change the Game in your school last year?
  - How easy or difficult have you found implementing the programme?
  - Has it been enjoyable to deliver the programme?
- What have been the barriers to implementation?
- What has made delivery easier?

Probe for:

        - Time
        - Support from RedSTART and volunteers
        - Resources
        - Pupil engagement
        - Evaluation activities
        - Scheduling/timetabling
        - Competing priorities
        - Staff buy-in
        - Parental buy-in
        - Restricted by curriculum
        - Training
- Has the implementation required additional input from you/your colleagues? How much?
    - If yes, how have you managed fitting these additional tasks in to your schedule?
- How has Change the Game fit in with the rest of the curriculum?
    - Does it link in with other areas of the curriculum?
    - Has delivering Change the Game prevented other aspects of the curriculum being delivered?
    - What lessons/theme days have Change the Game activities replaced? How would you describe this trade-off? Do you think the programme is a good or bad use of time?
- How would you describe your working relationship with RedSTART staff?
    - What have been positive/negative aspects of the working relationship?
        Probe for:
        - Support offered
        - Communication
        - Paperwork
        - Evaluation activities
    - What, if any, changes would you like RedSTART to make going forward?
- If you have delivered other financial education, how did this compare to RedSTART?

<u>Experience of delivery for volunteers (15 minutes)</u>

- In broad terms, can you describe the process of delivering change the game sessions this year?
    - What training was offered before you delivered the session(s)?
        - Was this adequate?
    - How easy or difficult did you find engaging with Change the Game?
    - Has it been enjoyable to deliver the programme?
    - How confident were you when delivering sessions?
- What have been the barriers and facilitators to engaging with Change the Game activities?
        Probe for:
        - Time
        - Support from RedSTART

        - Resources
        - Pupil engagement
        - Scheduling
        - Competing priorities
        - Interactions with teachers
        - Adequate knowledge/preparation
- Has engaging with the programme required additional input from you/your colleagues?
    - If yes, how have you managed fitting these additional tasks in to your schedule?
- How would you describe your working relationship with RedSTART staff?
    - What have been positive/negative aspects of the working relationship?

        Probe for:
        - Support offered
        - Communication
        - Formality of arrangement
    - What, if any, changes would like RedSTART to make going forward?
- Anything that could have been done differently to make your engagement easier/better?

Impacts on pupils (5-10 minutes)

- Have you noticed any impacts on the students who have taken part in the Change the Game activities?

    If yes, probe for:
    - Understanding of specific financial concepts
    - Understanding of the role of money/finance in society
    - Confidence in numeracy
    - Changing attitudes towards money/finances
    - Changing behaviours towards money/finances

    [If yes]
    - Are there any specific aspects of Change the Game that you think contributed to those impacts?
    - Do you expect there to be the longer-term impacts? What? Can you explain why you think this?
    - Are these impacts being felt equally by all pupils?
        - If no, what are the differences?

        [if no]
    - Do you expect there to be impacts in the future?

    if they do expect future impact, probe for:
        - Understanding of specific financial concepts
        - Understanding of the role of money/finance in society
        - Confidence in numeracy
        - Changing attitudes towards money/finances
        - Changing behaviours towards money/finances
- Other than the intervention, have there been any other factors that influenced pupils' financial literacy this year?

Impact on teachers (5 mins)

- Has participating in Change the Game had any impact on you and your teaching practice?
  If yes, probe for:
  - Confidence delivering financial education
  - Own understanding of financial concepts
  - Understanding of pupils' financial literacy
  - Understanding of pupils' lives
  - Workload
  - Views towards financial literacy and the curriculum
- Do you think these changes will be long term? Why/Why not?
- Has participating in Change the Game had any broader impacts on your school?
- Which specific aspects of delivering Change the Game do you think has the biggest impact on you/your school?

Impact on volunteers (5-10 mins)

- What, if any, impact has working with RedSTART had on you?
  If yes, probe for:
  - Confidence working with children
  - Own understanding of financial concepts
  - Understanding of pupils' financial literacy
  - Understanding of different perspectives
  - Views towards financial education and understanding of issues around financial education
- Have there been any particular positives or negatives to working on Change the Game?
- Has working with RedSTART had any broader impacts on your workplace?
- Which specific aspects of delivering Change the Game do you think has the biggest impact on you/your organisation?

Reflections (5 minutes)

- What, if anything, do you think has worked really well about Change the Game this year?
- What, if anything, do you think needs improvement in future delivery of Change the Game?
- Do you think the Change the Game approach is an effective way of delivering financial education? If yes, why? If no, why not?
- Would you recommend other primary schools to sign up for the programme? Why/why not?

Closing (5 minutes)

- This is the end of the interview. Thank you for participating.
- Is there anything I haven't asked about that you would like to add? Any further reflections of the implementation or impacts of Change the Game?
- Do you have any questions?

Programme staff interviews

Introduction (2 minutes)

I'm _____, and I work for King's College London. As you know, we're evaluating RedSTART's Change the Game to understand if it can impact on pupils' financial literacy as well as other outcomes, like maths attainment. We're also interested in understanding how the programme is implemented so we can answer questions around scalability and sustainability. I'd like to hear from you about your experience of the programme, and your perceptions around any impacts it's had on pupils and schools. There are no right and wrong answers, if you don't want to answer a question, just say and we can move on. Similarly, you can stop the interview at any time if you don't want to continue, just let me know.

[Verbally reaffirm consent and confirm recording]

Before we discuss the project, it would be good to get to know a little more about you.

- Can you describe your role in the project?
- Has your role changed or developed over the last year?
- What is your background? To what extent do you think that equipped you for this role?

Programme delivery (15-20 minutes)

- **Can you describe the process of getting Change the Game to happen in a school?**
- Please start by explaining how schools are approached to take part and explain how they go from this stage to Change the Game actually happening in classrooms.
    - *May want to tell them to describe different version of this, i.e. a version where things go well and a version where it is more difficult*
- Where it has been more difficult to get the programme moving, what have been the main barriers to implementation?
- Where it goes well, what has made delivery easier?
    If they are struggling, can probe for:
    - Time
    - Buy-in from teaching staff
    - Buy-in from leadership staff
    - Resources
    - Pupil engagement
    - KCL evaluation activities
    - Scheduling/timetabling
    - Competing priorities
    - Parental buy-in
    - Developing the materials
- Have things been easier this year in comparison? If yes, why?
- To what extent did you feel prepared to carry out your role last year?

        - Workshop delivery
        - Organising delivery
        - Developing resources
        - Dealing with schools
        - Confidence in financial literacy education
        - Training teaching staff
- What training/support was provided to help you carry out your role?
- How would you describe your working relationship with school staff?
    - What factors lead to positive working relationships?
    - What factors can make working relationships more difficult?
- Has the implementation required you to work beyond contracted hours? How much?
    - If yes, why has this happened? Could anything be changed in order to alter this situation?
    - What aspects of the work take more time?

Impact on pupils (5 minutes)

- Have you noticed any impacts on the students who have taken part in the Change the Game activities?

    If yes, but struggling for specifics, probe for:

    - Understanding of specific financial concepts
    - Understanding of the role of money/finance in society
    - Confidence in numeracy
    - Changing attitudes towards money/finances
    - Changing behaviours towards money/finances

    [If yes]

    - Are there any specific aspects of Change the Game that you think contributed to those impacts?
    - Do you expect there to be the longer-term impacts? What? Can you explain why you think this?
    - Are these impacts being felt equally by all pupils? If no, what are the differences?

    [if no]

    - Do you expect there to be impacts in the future?

    if they do expect future impact, probe for:

        - Understanding of specific financial concepts
        - Understanding of the role of money/finance in society
        - Confidence in numeracy

- Changing attitudes towards money/finances
- Changing behaviours towards money/finances

Impact on schools (5 minutes)

- Do you think participating in Change the Game has an impact on the teachers you work with or the schools more generally?

  If yes, but struggling for specifics, probe for:

  - Confidence delivering financial education
  - Own understanding of financial concepts
  - Understanding of pupils' financial literacy
  - Understanding of pupils' lives
  - Workload
  - Views towards financial literacy and the curriculum
- Do you think these changes will be long term? Why/Why not?
- Which aspects of delivering Change the Game do you think has the biggest impact on teaching staff/the schools?

Reflections and sustainability

- What, if anything, do you think worked really well about Change the Game last year?
- What, if anything, do you think needs improvement in future delivery of Change the Game? Have these changes been made for this year of delivery?
- What are the key factors that need to be considered if RedSTART is going to continue being successful?

Closing (5 minutes)

- This is the end of the interview. Thank you for participating.
- Is there anything I haven't asked about that you would like to add? Any further reflections of the implementation or impacts of Change the Game?
- Do you have any questions?

School leaders interviews

Introduction (2 minutes)

I'm _____, and I work for King's College London. We're evaluating RedSTART's Change the Game to understand if it can impact on pupils' financial literacy as well as other outcomes, like maths attainment. Alongside measuring student outcomes, we want to speak to staff in order to better

understand how programme delivery operates so we can understand a range of perspectives and draw conclusions about the scalability and sustainability of interventions like Change the Game. I'd like to hear from you about your experience of the programme, and your perceptions around any impacts it's had on pupils. There are no right and wrong answers, if you don't want to answer a question, just say and we can move on. Similarly, you can stop the interview at any time if you don't want to continue, just let me know.

[Verbally reaffirm consent and confirm recording]

Background and involvement with RedSTART (5 minutes)

Before we discuss the project, it would be good to get to know a little more about you.

- Can you describe your role at the school? What does it involve?
- What has your involvement with the RedSTART project been?
- Why did you decide to get involved with RedSTART?
- Were there any strategic reasons for getting involved beyond improving pupils' financial literacy?

Intervention delivery (10 minutes)

- How has the process of implementing Change the Game been this past year?
    - What have been the costs and benefits associated with delivering it?
- What have been the barriers to implementation?
- What has made delivery easier?
- Has the implementation required additional input from you/your colleagues? How much?
    - If yes, how have you/your staff managed fitting these additional tasks in to your schedule?
- How has Change the Game fit in with the rest of the curriculum?
    - Does it link in with other areas of the curriculum?
    - Has delivering Change the Game prevented other aspects of the curriculum being delivered?
    - What lessons/theme days have Change the Game activities replaced? How would you describe this trade-off? Do you think the programme is a good or bad use of time?
- How would you describe your working relationship with RedSTART staff?
    - What have been positive/negative aspects of the working relationship?

        Probe for:

        - Support offered
        - Communication
        - Paperwork
        - Evaluation activities
    - What, if any, changes would you like RedSTART to make going forward?

Impact on pupils (5 minutes)

- Have you noticed any impacts on the students who have taken part in the Change the Game activities?

    [If yes, probe for:]

    - Understanding of specific financial concepts
    - Understanding of the role of money/finance in society
    - Confidence in numeracy
    - Changing attitudes towards money/finances
    - Changing behaviours towards money/finances
      [If yes]

    - Are there any specific aspects of Change the Game that you think contributed to those impacts?
    - Do you expect there to be the longer-term impacts? What? Can you explain why you think this?
    - Are these impacts being felt equally by all pupils?
        - If no, what are the differences?
          [if no, probe for]
    - Do you expect there to be impacts in the future?
      if they do expect future impact, probe for:
        - Understanding of specific financial concepts
        - Understanding of the role of money/finance in society
        - Confidence in numeracy
        - Changing attitudes towards money/finances
        - Changing behaviours towards money/finances
- Other than the intervention, have there been any other factors that influenced pupils' financial literacy this year?

Impact on teachers (5 minutes)

- Has participating in Change the Game had any impact on your staff/school yet?
- Do you think these changes will be long term? Why/Why not?
- Which specific aspects of delivering Change the Game do you think has the biggest impact on your staff/your school?

Reflections (5 minutes)

- What, if anything, do you think has worked really well about Change the Game this year?
- What, if anything, do you think needs improvement in future delivery of Change the Game?
- Do you think teaching financial literacy through primary school is important? Why?
- Do you think the Change the Game approach is an effective way of delivering financial education? If yes, why? If no, why not?
- Would you recommend other primary schools to sign up for the programme? Why/why not?

Closing (5 minutes)

- This is the end of the interview. Thank you for participating.
- Is there anything I haven't asked about that you would like to add? Any further reflections of the implementation or impacts of Change the Game?

Appendix 6: School staff survey

Questionnaire

Section 1: Demographics

1. Which school do you work at?
    a. Drop down list of participating schools
2. What is your role?
    a. Classroom Teacher
    b. Teaching Assistant
    c. SEN Support
    d. Leadership **(skip next question if selected)**
    e. Other (please specify)
3. Which year group do you work with? **(filter applied so English schools see Year X and Scottish schools see Primary X)**
    a. Reception/Primary 1
    b. Year 1/Primary 2
    c. Year 2/Primary 3
    d. Year 3/Primary 4
    e. Year 4/Primary 5
    f. Year 5/Primary 6
    g. Year 6/Primary 7

Section 2: value of financial education **(all respondents)**

How much do you agree or disagree with the following statements?

1. Children need to develop positive money habits from primary school age to ensure that they can make informed money management decisions in adulthood.
    a. Strongly agree
    b. Agree
    c. Neither agree nor disagree
    d. Disagree
    e. Strongly disagree
    f. Don't know
2. It's important to deliver financial education in primary schools.
    a. Strongly agree
    b. Agree
    c. Neither agree nor disagree
    d. Disagree
    e. Strongly disagree
    f. Don't know

Section 3: Knowledge of financial education **(all respondents)**

How much do you agree or disagree with the following statement?

1. The intended outcomes of teaching financial education to primary school children are clear to me.
    a. Strongly agree
    b. Agree
    c. Neither agree nor disagree
    d. Disagree
    e. Strongly disagree
    f. Don't know

Section 4: Confidence **(all respondents)**

1. How confident do you feel in delivering financial education to your pupils?
    a. Very confident
    b. Somewhat confident
    c. Neither confident nor unconfident
    d. Somewhat unconfident
    e. Very unconfident
    f. Don't know
2. How confident do you feel training other primary school staff to deliver financial education?
    a. Very confident
    b. Somewhat confident
    c. Neither confident nor unconfident
    d. Somewhat unconfident
    e. Very unconfident
    f. Don't know
3. Compared to one year ago, how much more or less confident are you in delivering financial education?
    a. Much more confident
    b. More confident
    c. Neither more nor less confident
    d. Less confident
    e. Much less confident
    f. Don't know

Section 5: Exposure to other financial education resources **(all respondents)**

1. Have your students received any financial education in school this year?
    a. Yes – only Change the Game
    b. Yes – Change the Game and another kind of financial education
    c. Yes – not Change the Game, but another kind of financial education
    d. No – my students have not received any financial education in school this year

[if b or c]:

2. Other than Change the Game, what was the format of the financial education? Please select all options that apply.
    a. Financial education developed and delivered by a third party
    b. Financial education resources developed by a third party, but delivered by school staff
    c. Financial education resources developed within your school and delivered by school staff
3. Please briefly describe the financial education that your students received. If you remember the name of the programme, please specify.
    a. Open

Section 6: Experiences of Change the Game **(only respondents from treatment schools AND staff in control schools who work with Y6/P7 or are in Leadership)**

1. Thinking of the different elements of Change the Game you've been involved in, how would you rate your experience of each element? If you have not been involved in a particular element, please select N/A.

	Very good	Good	Acceptable	Poor	Very poor	N/A
Teacher briefings						
Resources for teacher-led activities						
Volunteer-led workshops						
Support from RedSTART staff						

2. Overall, how would you rate your students' engagement with the different elements of Change the Game? If you have not been involved in a particular element, please select N/A.

	Very high	High	Neither high nor low	Low	Very low	Don't know	N/A
Teacher-led activities							
Volunteer-led workshops							
Take-home materials for pupils							

3. How could Change the Game improve student engagement?
    a. Open

4. How much do you agree or disagree with the following statements about your experience of Change the Game? If you have not been involved in a particular element, please select N/A.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	N/A
It has been straightforward to run Change the Game in my school this year						
I have enjoyed running Change the Game activities with my students						
I have received the support I need to fit Change the Game into the curriculum						
I have enhanced my own knowledge about financial concepts						
I have a better understanding of how to deliver financial education lessons to students						
I am more confident in delivering financial education lessons to students						
I would be confident to be a champion in my school to train other staff members on how to deliver financial education						

5. How much do you agree or disagree with the following statements about Change the Game's impact on your students?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know
My students have a better understanding of how to manage their money						
My students have improved their attitudes on how to manage their money						

My students have a better understanding of the role of money in society						
My students have more positive expectations for their futures						
My students have better access to financial education resources						
My students seem to be having more conversations about money at home						
My students have improved confidence in their numeracy skills						
My students have improved numeracy skills						

6. From your perspective, what are the main strengths of Change the Game?
    a. Open
7. What improvements would you make to Change the Game?
    b. Open

Section 7: Final reflections **(all respondents)**

1. One of the ambitions of Change the Game is to ensure that financial education becomes part of the primary curriculum. If this were to occur, what support would your school need to deliver financial education to your students?
    a. Open

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