



Education  
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# Discover Summer School

Evaluation Report and Executive Summary

May 2014

Independent evaluators:

THE UNIVERSITY *of York*



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

We aim to raise the attainment of children facing disadvantage by:

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

The EEF was founded in 2011 by lead charity The Sutton Trust, in partnership with Impetus Trust (now part of Impetus – The Private Equity Foundation), with a £125m grant from the Department for Education. With investment and fundraising income, the EEF intends to award as much as £200m by 2026. Together, the EEF and Sutton Trust are the Government-designated What Works Centre for Improving Education Outcomes for School-Aged Children.



## Literacy Catch-up Round

This study was funded by the Education Endowment Foundation as one of 23 projects funded through a themed funding round on literacy catch-up at the primary-secondary transition. Projects funded within this round aimed to identify effective ways to support pupils who do not achieve Level 4 in English by the end of Key Stage 2. The project was one of three funded with a particular focus on writing.

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## About the evaluators

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Professor David Torgerson, Director of the York Trials Unit, joined the Centre for Health Economics at the University of York in 1995 and became the Director of the York Trials Unit in 2002. Originally a health economist, he is a trial methodologist and has published widely on the design and conduct of randomised controlled trials including the book *Designing Randomised Controlled Trials in Health, Education and the Social Sciences* (Palgrave Macmillan, 2008). David has over 200 peer-reviewed publications.

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## Executive summary

### The project

The Discover Summer School was a four-week programme which aimed to improve the reading and writing skills of children during the summer between Year 6 and Year 7. The programme was targeted at pupils who had been predicted to achieve below Level 4b in English by the end of Key Stage 2.

The programme involved morning workshops focused on writing and poetry delivered by trained teachers, professional authors and poets, and enrichment activities provided in a four-week summer school. Pupils meeting the eligibility criteria for the study, and due to transition from Year 6 to Year 7 in 2013, were recruited through 29 primary schools in proximity to the Discover Children's Story Centre in Stratford, London in July and August 2013. The study involved 124 pupils from 29 local schools, of whom 76 were randomly selected to attend the summer school; the remaining 48 formed a comparison group.

The evaluation was funded by the Education Endowment Foundation as one of 23 projects focused on literacy catch-up at the primary-secondary transition. It was one of two summer school programmes funded, and one of three programmes with a particular focus on writing.

### What impact did it have?

The evaluation sought to compare the literacy skills of pupils who attended the summer school with similar pupils who did not attend the summer school. The indicative effect sizes detected were 0.24 in writing and 0.21 in reading. This can be envisaged as saying that pupils who participated in the project made approximately three additional months' progress compared to similar pupils who did not participate. However, the effect sizes were not statistically significant, which means that the differences between the pupils who attended the summer school and those who did not could have been down to chance.

The conclusions which can be drawn from this study are severely limited due to the small number of families who agreed to participate in the trial, and to subsequent problems with testing, detailed further below. The low pupil numbers also meant that it was not possible to conduct a separate analysis of the impact of the programme on students eligible for free school meals.

Though the evaluation was primarily focused on measuring attainment, the observations which took place suggested that most children were engaged by and enjoyed the summer school. Staff were supportive and children were encouraged to think creatively about their writing. The interactive approach in poetry sessions in particular appeared to motivate pupils.

Group	Number of pupils	Effect size	Estimated months' progress	95% confidence interval (CI)*	Evidence strength**
All pupils (Writing)	124	+0.24	+3	-0.42 to 0.92	
All pupils (Reading)	124	+0.21	+3	-0.41 to 0.83	
*Effect sizes with confidence intervals that pass through 0 are not 'statistically significant', which means the difference could be due to chance.					
**For more information about evidence ratings, see Appendix 11.					

### How secure is this finding?

This evaluation was set up as an efficacy trial. Efficacy trials seek to test evaluations in the best possible conditions, but they do not seek to demonstrate that the findings hold at scale in all types of schools.

An individually randomised controlled trial design was employed to compare outcomes for pupils attending the summer school with outcomes for pupils in a 'business as usual' comparison group who did not attend. Eligible and consenting pupils were randomised on an individual basis to either the intervention or comparison group. At the end of the intervention period all trial pupils were asked to complete the Progress in English test developed by GL Assessment, with the primary outcome measure being based on two extended writing tasks. Pupils in the comparison group were offered additional reading and writing support delivered on one Saturday in the autumn term of 2013.

However, the intervention and evaluation suffered a number of substantial setbacks. The initial recruitment target of 250 pupils was not achieved by Discover, with only 124 eligible pupils agreeing to take part in the intervention and evaluation. The length of the summer school and the timing of the recruitment phase made recruitment more difficult: many parents had already booked holidays or made alternative plans for the summer by the time they were invited to participate. In addition, a large proportion of pupils in both the intervention and comparison groups did not complete the tests. These problems made it impossible to detect a statistically significant effect size and increased the possibility of bias as the pupils who sat the tests may have been systematically different from those who did not. As a result, the evaluation findings are insecure.

### How much does it cost?

The cost of the programme is estimated at £1,750 per pupil. This estimate includes venue hire, food and travel (estimated at £635 per pupil), direct salary costs of staff (£773), promotion and contingency (£94) and management and overheads (£288). This estimate is based on 125 pupils attending a summer school on a single site.

### Key conclusions

1. The evaluation was unable to provide a secure estimate of the programme's impact on reading or writing attainment, due to the low number of pupils who took part and the problems with testing.
2. The programme was relatively expensive compared to other literacy catch-up approaches delivered in the normal school year.
3. Given the relative cost of the programme, even if the indicative impact which was detected had been secure, as a way of improving academic outcomes other approaches are likely to be more cost-effective.
4. Participating pupils enjoyed the programme and were engaged by the literacy workshops and the enrichment activities.
5. The specific challenges of pupil recruitment, attendance and test completion experienced should be considered prior to undertaking any further evaluations of summer schools.

## Introduction

The Discover Summer School consisted of a range of literacy-based and enrichment activities delivered to children over a four-week period in the summer between the end of Year 6 and the start of Year 7. Further information about the intervention can be found in the Methods section of this report.

## Background evidence

In the 'Moving English Forward' report, Ofsted highlighted persistent problems with attainment in English at Key Stage 2 (KS2) level, including weaker attainment in English amongst pupils who are eligible for free school meals (FSM) (Ofsted, 2012). Attainment overall has remained static, with 79% of pupils achieving Level 4 or above in 2005 and a slight rise to 82% in 2011; however, standards in writing have reduced over time (Ofsted, 2012).

There has been increasing focus over recent years to improve the 'transition' period for pupils moving from the final year of primary school (Year 6) to the first year of secondary school (Year 7). In a review exploring the effects of transition, McGee et al. (2004) highlight a breadth of international literature demonstrating a decline in academic attainment following transition. Furthermore, research which surveyed children about their experiences of transition from primary to secondary schools suggests that children with low socioeconomic status may have less positive transitions (Evangelou et al., 2008).

Summer school programmes have been identified as a potential means through which pupils' transition to secondary schools can be eased. In 2011, the UK government provided £50m funding to support a summer schools programme for disadvantaged pupils, specifically those eligible for FSM and those cared for by local authorities for periods of six months or more, which aimed to make the transition from primary to secondary school more successful (Day et al., 2013). Literacy-focused summer schools for Year 6 children have also been identified recently, alongside other activities, as a strategy for English teachers to use to ease this transition (Ofsted, 2012).

Despite this investment in summer schools over recent years, there is a lack of evidence from rigorously designed evaluations to establish their effect on pupil attainment. Sainsbury et al. (1998) and Day et al. (2013) describe the findings of cohort studies which surveyed pupils before and after attending summer schools. In 2012, the University of York and Durham University were funded by the Education Endowment Foundation (EEF) to evaluate independently the Discover Summer School as delivered by the intervention developers based at the Discover Children's Story Centre, a charitable organisation based in Stratford, London.

The evaluation was funded by the Education Endowment Foundation as one of 23 projects focused on literacy catch-up at the primary-secondary transition. It was one of two summer school programmes funded, and one of three programmes with a particular focus on writing.

## Evaluation objectives

The objective of the independent evaluation was to test the effectiveness of the Discover Summer School compared with a 'business as usual' control group, on the reading and writing abilities of participating children.

## **Project team**

The evaluation team, jointly comprising staff from Durham University and the University of York, was responsible for the design, conduct, analysis and reporting of the independent evaluation.

We thank Dr Taeko Becque for her contribution to writing the statistical analysis plan used in this evaluation.

## **Implementation Team**

Staff at Discover Children's Story Centre were responsible for school recruitment and ongoing relationships with schools, informing parents and pupils, intervention development (including writing a detailed description of the intervention to allow others, if necessary, to be able to replicate the intervention in other areas), baseline data collection and intervention delivery.

## **Ethical review**

Ethical approval was obtained for this study from Durham University School of Education Ethics Committee. Opt-in consent was sought from the parents of all participants.



# Methodology

## Trial design

An individually randomised controlled trial design was employed to compare outcomes for pupils attending the Discover Summer School with outcomes for pupils in a 'business as usual' control group who did not attend the summer school. Eligible and consenting pupils were randomised on an individual basis to either the intervention or control group. Further details of these processes and the interventions are found below.

The trial was designed, conducted and reported to CONSORT standards (Altman et al., 2011) in order to minimise all potential threats to internal validity, such as selection bias and a range of post-randomisation biases (Cook and Campbell, 1969; Shadish, Cook and Campbell, 2002; Torgerson and Torgerson, 2008). As a result, unbiased estimates of the impact of the intervention should be provided if attrition and missing data are relatively low. Due to data restrictions relating to the eventual small sample size in this trial, analyses presented differ to those planned in the protocol (Appendix 1) and statistical analysis plan (Appendix 2).

## Recruitment

School recruitment took place during the development phase of the intervention (between March and May 2013) and was assisted through information leaflets for schools (Appendix 3) that were developed by the evaluation team. Discover recruited primary schools that fed into local secondary schools that had agreed to undertake outcome testing in the autumn term of 2013. Schools were asked to sign an 'Agreement to Participate Form' (Appendix 4 and 5) to ensure they agreed to all trial-related procedures.

Parental information sessions were held by the implementation team (Discover) to raise awareness of the trial amongst parents of eligible children. Parents of eligible pupils were provided with information letters about the study, explaining the nature of randomisation to either control or intervention groups, the use of outcome testing and pupil data (Appendix 6). Parents were asked to return consent forms to confirm that they were willing for their child to take part in the study (Appendix 7) and following this, participating primary schools then shared consenting pupils' data with the evaluation team (including pupil name, unique pupil number (UPN), date of birth (DOB), free school meals status (FSM), and predicted Key Stage 2 (KS2) English based on teacher assessment).

## Eligibility

**School inclusion criteria:** Primary and secondary schools were eligible to take part in the trial if they agreed to all trial procedures, including: identifying pupils meeting the inclusion criteria for the study, informing parents, provision of pupil data and implementation of the outcome testing.

**Pupil inclusion criteria:** Pupils were eligible if they were going to be attending a participating secondary school, if they were predicted to achieve Level 3c, Level 3b, Level 3a or Level 4c in English by the end of Key Stage 2 (based on teacher assessment) and if their parent/guardian consented for them to take part.

**School exclusion criteria:** Schools were excluded from participating in the trial if they did not agree to all points listed in the 'Agreement to Participate Form' and primary schools were excluded if they did not feed into one of the secondary schools that had agreed to administer the outcome testing.

**Pupil exclusion criteria:** Pupils were excluded from individual randomisation if they were not attending a participating secondary school or were expected to achieve below Level 3 or above Level 4c. Those predicted to achieve below Level 3 were excluded from testing as it was thought the post-testing could have caused undue anxiety.

## Intervention

The Discover Summer School was delivered through a four-week summer programme for children in transition from Year 6 to Year 7. The intervention aimed to improve children's reading and writing skills, specifically those who were less able writers. The programme included a variety of workshops, including poetry and literacy sessions, in which children had the opportunity to engage with professional poets and writers. A range of enrichment activities was also provided including drama, sports activities and trips around London, such as West End performances and visits to the Olympic Park. The summer school was delivered by trained 'Story Builders' from Discover, as well as teachers and volunteers including trainee teachers, and was designed to follow the patterns of a usual school week (9am-3pm, Monday to Friday, with a breakfast club open from 8.30am). In order to encourage greater attendance, free transport arrangements were provided from multiple collection and drop-off points for pupils attending the summer school.

The control group was a 'business as usual' group, with pupils undertaking usual activities over the summer period. In this respect, this evaluation examines the potential efficacy of a supplementary intervention delivered in the summer holiday between Year 6 and Year 7 (i.e. supplementary to normal school experience) rather than an alternative core intervention delivered during the normal school day. It is possible that the control condition may have involved attendance at another summer school in the area hosted, for example, by the receiving secondary school. As an incentive to increase recruitment and avoid disappointment, the control group was offered a secondary school-based reading and writing intervention delivered on one Saturday in the autumn term 2013. This secondary school-based intervention did not form part of the evaluation as it took place after the outcome testing.

## Outcomes

The Progress in English (PiE) 11: Second Edition Long Form (LF) Test, GL Assessment, was the main literacy outcome. The test included both narrative and non-narrative exercises and assessed both reading and writing skills including areas such as spelling, grammar and comprehension. The Progress in English test was the only test available to the evaluation team (in order to comply with EEF testing policy) which included a writing component. Tests were marked by GL Assessment blind to allocation (i.e. markers did not know whether test papers were from intervention or control pupils).

The pre-test was pupils' performance in Key Stage 2 English at the end of Year 6, obtained through the national pupil database (NPD).

### Primary outcomes

The primary outcome was extended writing score which referred to the combined raw score on the two extended writing tasks (Exercises 5 and 6) from the PiE 11 LF. Exercise 5 had a maximum of 20 marks and involved writing a persuasive letter; Exercise 6 had a maximum of 12 marks and assessed informative writing. Overall, the extended writing task score could therefore range from 0 to 32, with a higher score representing higher attainment.

### Secondary outcome

Secondary outcomes were based on pupils' reading, spelling and grammar scores. Reading score was based on the combined raw score on the reading tasks 3, 4, 3x and 4x. Exercise 3 (comprising Exercises 3 and 3x) had a maximum of 19 marks and assessed reading comprehension of a narrative. Exercise 4 (comprising Exercises 4 and 4x) had a maximum of 13 marks and assessed non-narrative reading comprehension. Overall, reading score could therefore range from 0 to 32, with a higher score representing better attainment.

Spelling and grammar score was based on the combined raw score on the spelling and grammar tasks (Exercises 1 and 2). Exercise 1 had a maximum of 10 marks and assessed spelling; Exercise 2 also had a maximum of 10 marks and assessed grammar. This means the spelling and grammar score combined could range from 0 to 20, with a higher score representing higher attainment.

### Delivery of outcomes

Teachers were asked to deliver the outcome tests under 'exam' conditions. They were not informed of the group allocation of the children, although it is possible that children may have informed teachers if they attended the summer school or not.

## Sample size

This trial aimed to recruit 250 pupils. To estimate the differences that we could estimate with 80% power (and a two-sided significance level of 0.05, i.e.,  $2p = 0.05$ ), we used the assumption that there would be a pre- and post-test correlation of 0.70 (i.e. the outcome test would correlate with the Key Stage 2 English result with a correlation of 0.70). This means that there would have been the equivalent sample size of 492 if no pre-test had been conducted. Allowing for a 10% attrition rate gave an effective sample size to 442 pupils. This gave 80% power to show a difference of 0.27 standard deviations in writing score between the intervention and control groups, should a difference of this magnitude exist.

## Randomisation

Pupils were individually randomised to either the intervention or control group using an unequal allocation ratio of 3:2 (intervention:control). Randomisation was stratified by secondary school for practical reasons and a fixed block size of 10 was employed. The trial statistician, based at York Trials Unit, undertook the randomisation in Stata® version 12 (Stata Corporation, College Station, Texas, USA) after the pupil baseline data had been received. The evaluation team provided allocation information to the implementation team, who provided this information to parents of pupils and disseminated further information about the summer school to those in the intervention arm.

Two sets of twins were included in this trial. For practical reasons, it was requested that each of the twins within a pair be assigned to the same trial arm. All pupils were randomised separately: in the case of the twins, each pair received the allocation assigned to the 'first' twin as defined by the smallest trial ID number.

It was planned that pupils allocated to the intervention would be randomly assigned to one of five teaching groups such that the groups were of identical size. Following consultation with the implementation team about this, and in order to be pragmatic and reflect what would happen in usual practice, pupils were divided into four groups by teachers for the following reasons: 1) several pupils fasting for Ramadan were grouped together; 2) pupils attending the same secondary schools in autumn term were grouped together; 3) pupils could be moved into different groups should disagreements arise between pupils in the same group.

## Analysis

Analysis was conducted in Stata® version 13 (Stata Corporation, College Station, Texas, USA) using the principles of intention-to-treat, meaning that all pupils were analysed in the group to which they were randomised irrespective of whether or not they actually received the intervention and irrespective of implementation fidelity. Statistical significance was assessed at the 5% level, unless otherwise stated.

Effect sizes were calculated using the Hedges' *g* method and are presented alongside 95% confidence intervals.

## Primary analysis

The difference between pupils receiving the Discover four-week summer programme and those pupils in the 'business as usual' control group was compared using regression analysis with extended writing post-test result as the response variable. It was planned that group allocation, gender, FSM status, EAL status and predicted KS2 score would be included as covariates in the model. Adjustment was also planned for secondary school which was used as a stratification factor during randomisation. Given the low levels of post-test completion and the resulting limited number of complete case observations available for inclusion in this analysis, as well as the low numbers of pupils per secondary school, it was not possible to include the stratification factor in the primary analysis (EMEA, 2003) and the fitted model only adjusted for predicted KS2 level.

## Secondary analyses

An analogous method to the primary analysis was used to assess differences between the intervention and control groups in terms of the secondary outcome of spelling and grammar. In relation to the secondary outcome of reading, there were not enough pupils fully completing the reading outcome exercises to conduct any statistical analyses.

A subgroup analysis to investigate the effect of the intervention on the writing skills of pupils who were eligible for FSM was planned but was not conducted as the low numbers of complete cases relating to the primary outcome of extended writing score did not allow for the inclusion of an interaction term within the model.

A further subgroup analysis to assess the effect of the four teaching groups was also planned but not possible.

Patterns of missing data in the post-test result data were explored. Multiple imputation was not deemed appropriate, particularly due to the large amounts of missing data.

## Post-hoc analysis

It was not possible to adjust for FSM status, EAL status and gender in the primary analysis. As a result, three regression analyses were conducted adjusting for predicted KS2 level and one of the three additional covariates one at a time.

Due to the low level of post-test completion and the resulting limited number of complete case observations, post-hoc analyses were requested by the funding body. Based on the data, two such analyses were conducted. Both used the regression approach of the planned primary analysis: the first used scores from Exercise 5 only as the response and the second used combined raw score on the two reading exercises from the short form of the test (Exercise 3 and 4) as the response. These analyses on part of the primary outcome and secondary outcome of reading were requested due to the number of pupils who were partially missing primary outcome data. Given that the amount of data was still limited it was again not possible to include the stratification factor of school in the primary analysis (EMEA, 2003).

## Attendance

Summary statistics of the number of sessions attended were produced to describe fidelity to the intervention. Reasons for non-attendance were collected, where possible, and are reported in the results section of this report.

## Process evaluation methods

Non-participant observations were undertaken by a researcher independent to the intervention delivery (LJ) in order to observe the delivery of the Discover Summer School. Owing to the short timeframe for this study, in-depth process evaluation was not conducted and observations were primarily undertaken to gain greater insight into the nature of the intervention, in particular the delivery of literacy-based teaching sessions. Formal qualitative analysis of these observations was not conducted.

University ethics approval was also sought for this part of the evaluation. Prior to commencing observations, the teachers were provided with an information leaflet about the observations and written consent was obtained prior to commencing any observations (Appendices 8 and 9).

# Results

## Timeline

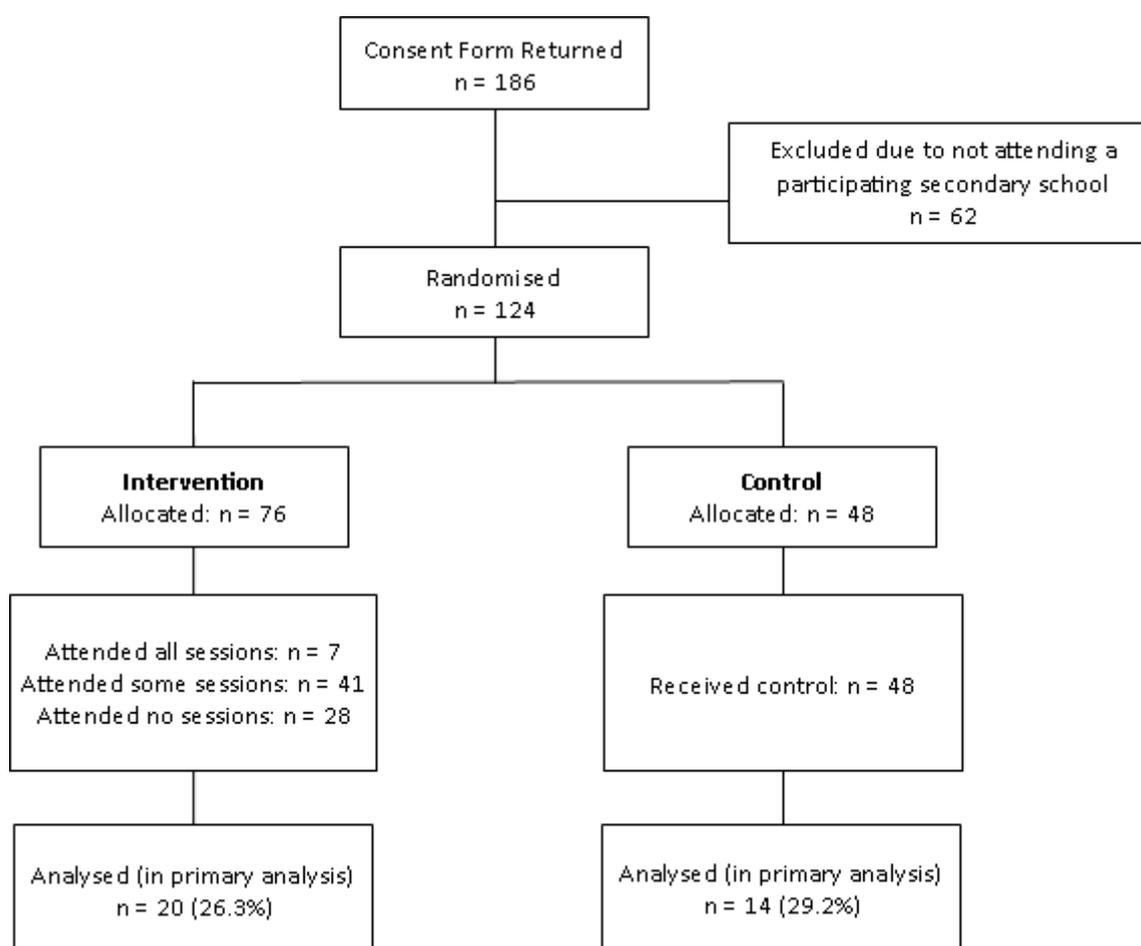
School recruitment took place from February to May 2013, with pupil recruitment running concurrently to this. Baseline data for the trial were collected and pupils randomised in June 2013. The summer school took place from 29th July to 23rd August and pupils were tested within the first 3 weeks of return to school following the summer holidays.

## Recruitment and follow-up of participants

Pupils from 29 primary schools were identified that met the inclusion criteria for the study and were also due to be attending participating secondary schools ( $N = 14$ ) in the autumn term of 2013. Participating primary and secondary schools were all within a similar geographic location close to the Discover Children's Story Centre in Stratford, East London.

Consent was obtained from the parents or guardians of 186 pupils, however, due to changes in the secondary school choice for 62 pupils, a total of 124 pupils were eligible and randomised. Ascertaining which secondary school pupils planned to attend was particularly problematic as the study was located close to a number of potential schools, leading to late decisions and changes. Not all these schools had agreed to outcome testing (one of the requirements for pupil eligibility) resulting in a reduced pool of eligible pupils for this trial. For fairness, as these 62 pupils had already been informed of the study and offered the opportunity to take part in the summer school, these children were randomised (on a 3:2 basis) to either the intervention or control group. No further data were collected or used for these pupils in this evaluation. The CONSORT diagram in Figure 1 describes the flow of participants through this study. Throughout the results section, **N** is used to refer to the number of schools and **n** is used to refer to the number of pupils.

Figure 1. CONSORT flow diagram



## Baseline characteristics

Table 1 shows characteristics of the 29 primary schools from which pupils were recruited to the trial. The mean school size was just under 600 pupils with a range between 250 and nearly 1,000 pupils. Just over one third of pupils on roll were eligible for FSM, which is considerably higher than the national average of 19.2% for 2013 (Department for Education, 2013). Over 40% had received FSM at some point in the last 6 years. The proportion of pupils with English as an additional language was high, with a mean of over 70%.

**Table 1. Characteristics of recruited schools**

Number of pupils on roll	N = 29
Mean (SD)	578.9 (188.24)
Med (Min, Max)	534 (250, 993)
Missing (%)	0 (0.0)



<b>Number of pupils on roll</b>	<b>N = 29</b>
<b>Percentage pupils eligible for FSM</b>	
Mean (SD)	36.7 (12.4)
Med (Min, Max)	34.8 (17.6, 68.2)
Missing (%)	0 (0.0)
<b>Percentage pupils receiving FSM in the last 6 years</b>	
Mean (SD)	43.5 (12.6)
Med (Min, Max)	42.3 (24.8, 77)
Missing (%)	0 (0.0)
<b>Percentage pupils with English as an additional language</b>	
Mean (SD)	71.1 (16.6)
Med (Min, Max)	73.2 (28.5, 96)
Missing (%)	0 (0.0)
<b>Percentage pupils with SEN statement or on School Action Plus</b>	
Mean (SD)	7.4 (2.77)
Med (Min, Max)	6.2 (3.4, 11.8)
Missing (%)	0 (0.0)

Table 2 shows baseline pupil-level characteristics by allocated group (i.e. intervention and control), both as randomised and as analysed in the primary analysis. In relation to the demographic characteristics of age, FSM status, Pupil Premium (PP) status, and predicted KS2 writing level at baseline, proportions of pupils within each category were fairly similar between the intervention and control arms both as randomised and as analysed in the primary analysis, although numbers eligible for analysis were small due to missing data. The proportion of those eligible for inclusion in the primary analysis with English as an additional language was much higher in the control arm than in the intervention arm (92.9% compared with 65.0%).

Table 2. Baseline characteristics of participating schools and classes

	As randomised Frequency (%)		As analysed (primary cluster analysis) Frequency (%)	
	Intervention	Control	Intervention	Control
<b>Age</b>	<b>n = 76 (61.3%)</b>	<b>n = 48 (38.7%)</b>	<b>n = 20 (58.8%)</b>	<b>n = 14 (41.2%)</b>
Mean (SD)	11.3 (0.32)	11.3 (0.38)	11.3 (0.30)	11.3 (0.33)
Median	11.3	11.4	11.3	11.4
Minimum and maximum	10.8, 12.4	10.0, 12.1	10.8, 11.7	10.9, 11.9
<b>Gender</b>				
Male (%)	43 (56.6)	29 (60.4)	12 (60.0)	7 (50.0)
Female (%)	33 (43.4)	19 (39.6)	8 (40.0)	7 (50.0)
Missing (%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
<b>FSM</b>				
Eligible (%)	32 (42.1)	27 (56.3)	8 (40.0)	9 (64.3)
Not eligible (%)	44 (57.9)	21 (43.8)	12 (60.0)	5 (35.7)
Missing (%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
<b>Pupil premium</b>				
Eligible (%)	31 (40.8)	23 (47.9)	10 (50.0)	8 (57.1)
Not eligible (%)	45 (59.2)	25 (52.1)	10 (50.0)	6 (43.9)
Missing (%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
<b>English as an additional language</b>				
EAL (%)	42 (56.0)	33 (68.8)	13 (65.0)	13 (92.9)
Non-EAL (%)	33 (44.0)	15 (31.3)	6 (68.4)	1 (7.1)

	As randomised Frequency (%)		As analysed (primary cluster analysis) Frequency (%)	
Missing (%)	1 (0.8)	0 (0.0)	1 (5.0)	0 (0.0)
<b>Predicted KS2 writing level</b>				
Level 3c (%)	8 (10.5)	3 (6.3)	2 (10.0)	2 (14.3)
Level 3b (%)	8 (10.5)	8 (16.7)	3 (15.0)	1 (7.1)
Level 3a (%)	21 (27.6)	10 (20.8)	5 (25.0)	3 (21.4)
Level 4c (%)	38 (50.0)	25 (52.1)	9 (45.0)	8 (57.1)
Level 4b (%)	0 (0.0)	1 (2.1)	0 (0.0)	0 (0.0)
Level 4a (%)	1 (1.3)	1 (2.1)	1 (5.0)	0 (0.0)
Missing (%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

## Outcomes and analysis

Raw, unadjusted mean post-test scores are presented in Table 3 by trial arm. Extended writing scores were fairly similar in both allocated groups at 18.3 out of 32 marks (SD 4.34) in the intervention group and 17.3 marks (SD 2.76) in the control group. Proportions of those completing the extended writing questions were low but similar in both allocated arms; overall only 27.4% of pupils completed the primary outcome. In relation to the secondary outcomes of reading, and spelling and grammar, mean scores were also similar between the arms, as were proportions completing.

**Table 3. Unadjusted average scores for the intervention and control groups**

	Intervention	Control	Overall
	<b>n = 76</b>	<b>n = 48</b>	<b>n = 124</b>
<b><u>Primary outcome</u></b>			
<b><i>Extended writing score</i></b>	<b>n = 20</b>	<b>n = 14</b>	<b>n = 34</b>
Mean (SD)	18.3 (4.34)	17.3 (2.76)	17.9 (3.75)
Med (Min, Max)	17.5 (8, 27)	16.5 (13,23)	17 (8, 27)
Completely missing (%)	44 (57.9)	27 (56.3)	71 (57.3)
Partially missing (%)	12 (15.8)	7 (14.6)	19 (15.3)

	Intervention	Control	Overall
Complete (%)	20 (26.3)	14 (29.2)	34 (27.4)
<b><u>Secondary outcomes</u></b>			
<b><i>Reading score</i></b>	<b>n = 24</b>	<b>n = 16</b>	<b>n = 40</b>
Mean (SD)	12.5 (3.86)	11.8 (4.04)	12.2 (3.90)
Med (Min, Max)	13 (3, 20)	11 (6, 19)	12 (3, 20)
Completely missing (%)	26 (34.2)	20 (41.7)	46 (37.1)
Partially missing (%)	26 (34.2)	12 (9.7)	38 (30.6)
Complete (%)	24 (31.6)	16 (33.3)	40 (32.3)
<b><i>Spelling and grammar score</i></b>	<b>n = 44</b>	<b>n = 25</b>	<b>n = 69</b>
Mean (SD)	8.0 (4.11)	7.2 (3.59)	7.7 (3.92)
Med (Min, Max)	8 (0, 17)	6 (0, 13)	7 (0, 17)
Completely missing (%)	27 (35.5)	20 (41.7)	47 (37.9)
Partially missing (%)	5 (6.6)	3 (6.3)	8 (6.5)
Complete (%)	44 (57.9)	25 (52.1)	69 (55.6)

Post-test data were missing for 71 pupils (57.3%). Just over two fifths (43.6%) of pupils did not complete any questions from the long form part of the paper. All schools attempted the long form part of the test, however all pupils at one school were completely missing scores for the long form exercises. Due to the small pupil numbers at this school, it is not possible to say with certainty that this school did not set pupils the long form of the test (more details in Appendix 10).

Only 27.4% of pupils completed the extended writing exercises in full. Of the 15.3% of individuals who partially completed the extended writing section of the paper, all were missing responses to Exercise 6. Higher proportions of those with English as an additional language had an extended writing score than those with English as a first language. Proportions completing and not completing the test were similar irrespective of FSM status, gender, or whether the pupil was predicted a Level 3 or a Level 4.

There are a number of possible factors which may have contributed to the low rates of test completion. In some cases there was confusion over which pupils were required to sit tests, and it is possible that others may have experienced difficulty in testing only a handful of students or in finding adequate time for children to sit the tests, resulting in incomplete tests and missing data. For some schools, delivery of the correct tests was delayed, which may have reduced engagement with testing in some cases.

Just under one third of pupils attempted all reading exercises and hence had a reading score. Two of the reading exercises were part of the long form of the test; whilst 75 pupils attempted Exercises 3 and

4 (the short form reading questions), only 40 of these also attempted both Exercise 3x and Exercise 4x (the long form reading questions). Just over half of the pupils (55.6%) attempted both Exercises 1 and 2 and hence had a spelling and grammar score.

Exercise 3 was the most frequently completed exercise (78 pupils). Of the two questions which formed the primary outcome (Exercises 5 and 6), a higher proportion completed Exercise 5 (53 pupils, 42.7%) than Exercise 6 (34 pupils, 27.4%). More details relating to the number of pupils completing and missing results for each exercise can be found in Appendix 10.

## Primary analysis

The primary analysis adjusted for baseline-predicted KS2 writing level (Level 3/Level 4). Analysis was conducted on 34 pupils (20 intervention pupils and 14 control pupils) who were tested in seven secondary schools. There was no statistically significant evidence of a difference in extended writing score between the intervention and control groups with a non-significant increase of 0.97 marks for those in the intervention group when compared with those in the control group ( $p = 0.47$ , 95% CI: -1.76 to 3.71). This relates to an effect size of 0.25 (95% CI: -0.42 to 0.92).

## Secondary analyses

### Reading

A regression model was fitted with adjustment for baseline-predicted level only (Level 3/Level 4). Analysis was conducted on 40 pupils (24 intervention pupils and 16 control pupils) tested in 12 secondary schools. There was no evidence of a statistically significant difference in spelling and grammar score between the two randomised groups with a non-significant increase of 0.85 marks for those in the intervention group when compared with those in the control group ( $p = 0.51$ , 95% CI: -1.72 to 3.41). This relates to an effect size of 0.21 (95% CI: -0.41 to 0.83).

### Spelling and grammar

A regression model was fitted with adjustment for baseline-predicted level only (Level 3/Level 4). Analysis was conducted on 69 pupils (44 intervention pupils and 25 control pupils) tested in 13 secondary schools. There was no evidence of a statistically significant difference in spelling and grammar score between the two randomised groups with a non-significant increase of 0.58 marks for those in the intervention group when compared with those in the control group ( $p = 0.53$ , 95% CI: -1.26 to 2.42). This relates to an effect size of 0.15 (95% CI: -0.34 to 0.63).

### Sub-group analyses

A pre-specified subgroup analysis was planned to assess the impact of the intervention on those eligible for FSM. Due to the low completion rate, it was not possible to conduct this analysis. It also was not possible to conduct a planned subgroup analysis to investigate the effect of the four teaching groups within the intervention arm.

### Post-hoc analyses

Due to the low response rate, it was not possible to adjust for all the covariates stated in the statistical analysis plan. To explore the potential impact of FSM status, EAL status and gender, each was

included in a separate repetition of the primary analysis. Results are presented in Table 4. There was no evidence of a significant effect of the intervention on extended writing score in any of the analyses and neither gender, FSM status nor EAL status had a significant impact on the primary outcomes ( $p = 0.37$ ,  $p = 0.64$  and  $p = 0.57$  respectively).

**Table 4. Post-hoc analysis results – primary analysis with further adjustments**

	Change in extended writing score due to intervention (95% CI)	p-value	Effect size (95% CI)
Primary Analysis	0.97 (-1.76 to 3.71)	0.47	0.25 (-0.42 to 0.92)
Adjusting for gender	1.20 (-1.48 to 3.89)	0.37	0.31 (-0.36 to 0.98)
Adjusting for FSM status	0.65 (-2.17 to 3.48)	0.64	0.17 (-0.50 to 0.84)
Adjusting for EAL status	0.83 (-2.09 to 3.75)	0.57	0.22 (-0.46 to 0.88)

A further post-hoc analysis used total score on Exercise 5 as the response and adjusted for baseline-predicted KS2 writing level (Level 3/Level 4), FSM status, gender and EAL status. As the correlation between Exercises 5 and 6 was fairly high (0.68) this analysis was deemed appropriate. Analysis was conducted on 54 pupils (32 intervention pupils and 21 control pupils) who were tested in 9 secondary schools. There was no evidence of a statistically significant difference in total score on Exercise 5 between the randomised groups with a non-significant increase of 0.29 marks for those in the intervention group when compared with those in the control group ( $p = 0.67$ , 95% CI: -1.05 to 1.63). This relates to an effect size of 0.13 (95% CI: -0.41 to 0.68).

A final post-hoc analysis used the combined total on Exercises 3 and 4 (the short form parts of the secondary outcome of reading) as the response and adjusted for baseline-predicted KS2 writing level (Level 3/Level 4), FSM status, gender and EAL status. Analysis was conducted on 75 pupils (48 intervention pupils and 27 control pupils) who were tested in 14 secondary schools. There was no evidence of a difference in short form reading score between the randomised groups with a non-significant increase of 0.67 marks for those in the intervention group when compared with those in the control group ( $p = 0.46$ , 95% CI: -1.13 to 2.47). This relates to an effect size of 0.19 (95% CI: -0.28 to 0.66).

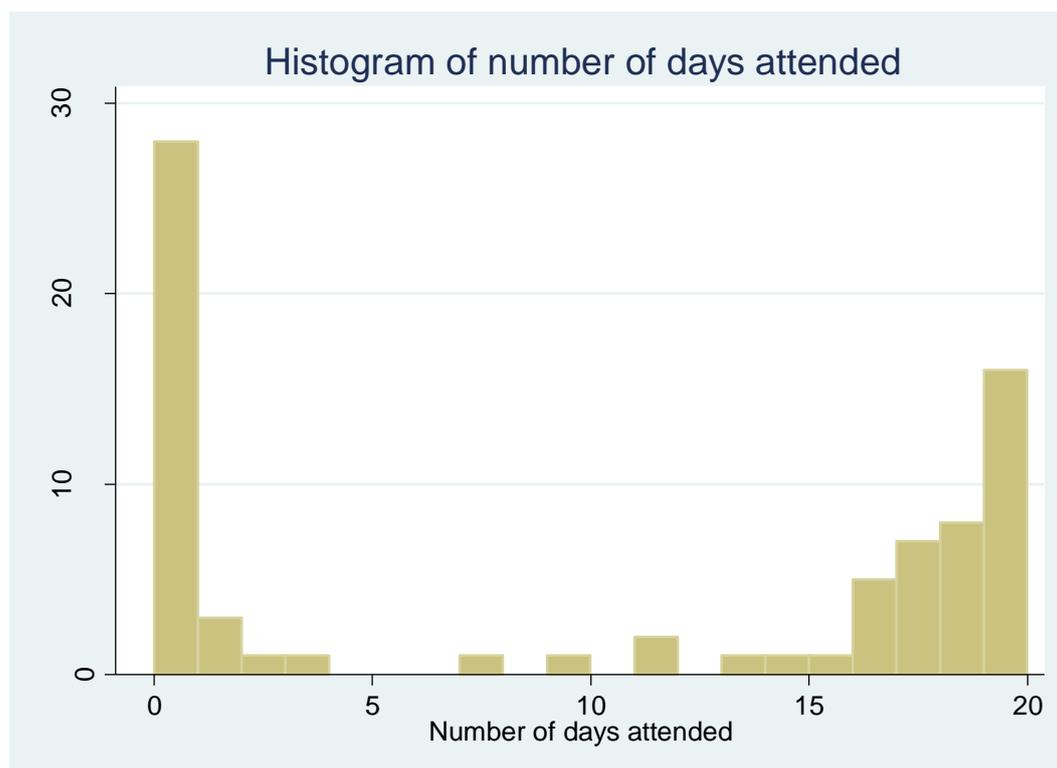
## Cost

Schools were not charged to take part in the project evaluation, however the ongoing cost of the programme is estimated at £1,790 per pupil. This estimate includes venue hire, food and travel (estimated at £635 per pupil), direct salary costs of staff (£773), promotion and contingency (£94) and management and overheads (£288). This estimate is based on 125 pupils attending a summer school on a single site.

## Attendance

Attendance data were available for pupils allocated to attend the summer school. Over a third of pupils did not attend any sessions (28 out of 76, 36.8%) and approximately 10% attended all sessions (7 out of 76). The distribution of attendance was non-normal (see Figure 2) and whilst the mode of the distribution was 0, nearly half of those allocated to the summer school attended on 15 or more days (37/76, 48.6%).

**Figure 2. Attendance**



During the first week of the summer school the implementation team attempted to contact the parents or carers of the pupils who had not attended to ascertain reasons for non-attendance. This was mostly unsuccessful, but in instances where a reason was given this tended to be because their child no longer wanted to attend, or because of previously unscheduled holidays, or in some cases because the parent was unsure whether they would be attending at a later date.

Of those pupils who attended some, but not all, sessions of the summer school, a variety of reasons were cited, including: pre-booked holidays, hospital appointments, birthday celebrations, induction at secondary schools, Eid celebrations, illness and other family commitments such as weddings or funerals.

## Process evaluation findings

Observations were undertaken of two sessions, the first led by a poet and writer with experience in delivering creative writing training to children, and the second delivered by two local primary school teachers. These sessions were supported by members of the Discover team, termed 'Story Builders', and by volunteers (mostly trainee teachers wishing to gain experience during their summer break from

university). Sessions were 1 hour 15 minutes in length and were held in groups of 14 pupils, although this varied daily depending on levels of attendance (minimum 4 pupils per group, maximum 14 pupils per group).

Sessions were pre-planned to meet the broad aims of the Discover Summer School and were based around a book upon which much of the summer school teaching was framed. This book, *The Unforgotten Coat* (Cottrell Boyce, 2012), was given to each child at the summer school and described the experiences of a central character in their final year at primary school and period before starting secondary school. This appeared to engage the children through its use of imaginative imagery and photography, and was of relevance to the 'transition' period that the pupils were experiencing. The book also discussed issues such as immigration and minority groups that may have been pertinent to this group.

In poet-led literacy sessions, techniques were used to engage the children as much as possible, for example using actors and objects in the classroom to excite their imagination and encourage creative writing. Pupils were then asked to explore these objects together as a group and write about them, giving brief histories and descriptions of each using an imaginative approach. In another session pupils were asked to research a famous poet or writer using online searching and then write descriptions about these people. Children were given advice about thinking creatively and expanding their descriptions to aid their writing. Children were encouraged positively, for example: 'You can't get this wrong, don't worry, it's your ideas.'

Children for the most part appeared well engaged and to enjoy these sessions. The interactive approach in poetry sessions in particular appeared to motivate pupils in their writing. Children talked and listened to each other as a group at the beginning and end of sessions, allowing them to build confidence in sharing their ideas to a group. Attempts were made to involve all pupils, particularly the shy pupils in the group. At times there were pupils who were not engaged in the class, and this was more apparent in one group than in another, possibly as, by chance, these children had been grouped together.



## Conclusions and implications

The conclusions that can be drawn from this study are limited due to the small sample size and problems with attrition. We found no evidence that the Discover Summer School had a statistically significant effect on English attainment. There is, however, a need for further research to explore the effect of literacy summer schools such as this, and in this respect key lessons from this study may prove useful.

### Strengths of the evaluation

In the design and conduct of our study we used best practice as defined by the CONSORT guidelines for randomised controlled trials (Altman et al., 2011). Importantly, we used independent concealed allocation to ensure that the children were allocated without the possibility of bias. We used the principles of intention-to-treat by including all consenting eligible children in the final analysis. We pre-specified our main outcome and wrote a statistical analysis plan before we observed the data. We also used an independent company to mark the test papers, blind to the allocated group.

### Limitations of the evaluation

The target sample size of 250 pupils was not achieved in this study, with only 124 eligible pupils recruited into the study and attrition from testing in this group further reduced our ability to detect an effect of the summer school intervention, as statistically significant, if one existed.

Potential explanations for this low recruitment appear to be twofold. Firstly, it is possible that the design of the intervention may not have attracted parents to consent for their child to be part of the study, for example as the summer school took place five days per week over the course of four weeks during the summer holidays. Day et al. (2013) suggest that while literacy summer schools need to be sufficient in duration to improve pupils' literacy skills, summer schools over two weeks in length may not be feasible due to clashes with family holidays and other commitments, as well as reducing levels of interest amongst pupils. Another potential explanation for low recruitment to this trial is the lateness with which parents were informed of the study. Owing to the short timescale for this trial, recruitment took place in late spring, when many may have already made plans for the summer holidays and so could not commit to the summer school intervention. Future summer schools and evaluations may wish to consider a shorter intervention and greater advance notice for parents considering their child's participation.

Attrition was also a key problem in this evaluation: this occurred both in terms of non-attendance at the summer school and in terms of non-completion of the test. We explored the impact of non-test completion in a post-hoc analysis comparing the mean values (Table 4) of the GL scores that had been completed by the highest proportion of children. However, this did not change the overall finding of a lack of statistical evidence for a difference in post-test scores. This study has shown that it is not advisable to undertake a full trial of this intervention until issues associated with attrition from the intervention are resolved.

Further work needs to be done to investigate approaches that may overcome problems with low attendance, as 36.8% of the intervention group pupils never attended. This was despite steps that were taken by the implementation team to enable greater attendance, for example through the provision of free transport arrangements for pupils from multiple collection and drop-off points. Day et

al. (2013) recently reported similar problems with attendance (50% of disadvantaged pupils never attending) suggesting that this is a common difficulty in undertaking summer schools with children from disadvantaged groups. As aforementioned, a different format of summer school may be required as it is possible that parents or guardians may have been unwilling or unable to commit to their child to attend a four-week summer school.

In terms of attrition from testing, primary outcome data for fewer than 30% of trial pupils was available. To overcome this problem, we recommend that researchers should explore the use of whole-class testing or using routinely collected data for outcome assessment, such as the standard assessment tests (SATs) where data collection is planned to be undertaken by schools and that this is thought to pose a particular problem. This recommendation may be useful as lessons learned from this evaluation (where schools may have experienced difficulty in testing only a handful of students in some instances and finding adequate time for children to sit the tests, resulting in incomplete tests and missing data) could prevent similar problems occurring in future trials.

Attrition from testing in this evaluation has also highlighted the important role that schools have in administering tests and emphasis should be placed on sufficient engagement with schools to ensure that their role is fully understood. This may be particularly necessary in trials that explore interventions taking place during the transition from primary to secondary school, where initial priority may be placed on liaison with primary schools to identify pupils and supply baseline data, but sufficient emphasis also needs to be placed on the involvement of secondary schools undertaking outcome assessment from the outset, so that both sets of schools are sufficiently engaged and aware of the requirements for their involvement. Transitions projects in their very nature also make the process of identifying schools and pupils difficult, with changes to eligible pupils' secondary schools, in this trial resulting in 62 consenting pupils being excluded from the evaluation.

Although this study concentrated on investigating the effect of a literacy summer school on children predicted to achieve Level 3c to Level 4c in English by the end of Key Stage 2 (based on teacher assessment), upon analysis of baseline characteristics it was noted that three pupils were included in error (one at Level 4b and two at Level 4a), however as the intervention was not inappropriate for these pupils they were retained in the analyses.

## Generalisability of results

The generalisability of this study is limited by the relatively small geographic location in which the schools were based. Nonetheless, it is likely that the pupils sampled may be representative of other inner-city urban areas which have a high proportion of pupils belonging to minority ethnic groups or eligible for FSM. It is possible that attendance rates at this summer school might differ from areas in the UK with lower proportions of disadvantaged or ethnic minority groups, for example children that were fasting for Ramadan during the summer school may have struggled with their attendance. This should be borne in mind when planning future summer schools. Low attendance rates at the summer school may limit the generalisability of these findings to those children that are more likely to attend a summer school; for example the sample in the evaluation may represent children and parents with greater motivation and may not include harder to reach children and parents.

## Further research

The need for further research exploring the feasibility of conducting a larger RCT in this field has been highlighted. This work should also consider the potential effect that other activities over the summer

holidays may have on children's attainment, and could be investigated through questionnaire methods and incorporated into statistical analyses.

Although a process evaluation was conducted in this study to observe the intervention being delivered, this formed a very small part of this evaluation and further qualitative research may be valuable to identify other aspects of pupils' progress that could benefit from participation in a summer school. Domains of interest may include pupils' confidence in their literacy, general self-esteem or attitudes towards the transition from primary to secondary school. Additionally, qualitative interviews or focus groups with pupils, parents and teachers may be of use to gain insight into the potential barriers and facilitators of conducting future evaluations of summer schools.

Given the large number of projects currently being funded by bodies such as the EEF, trialists undertaking educational research should be aware of the potential for pupils to be participating across multiple studies. During this evaluation it was noted by the trial statistician, working on multiple educational trials, that two participating pupils had also been included in another 'transitions trial.' As the intervention and testing periods for both trials did not overlap, the decision was taken to retain these participants. However, as the same test was used in both trials, these pupils may have benefited from 'training' in the test and future trials should consider exploring the effect of this through sensitivity analyses. Due to the small amount of data in the present trial this was not undertaken.

The full involvement of the independent evaluators in the recruitment of pupils and schools is recommended for future trials in order to ensure that the nature of the evaluation, the randomisation process and the importance of outcome assessment is sufficiently discussed in order to circumvent potential problems such as attrition from testing that was experienced in this trial. For example, some teachers thought that children who did not attend the summer school did not need to be tested. An independent evaluator who had recruited the schools and teachers would have made this clearer and consequently may have avoided this problem. This would also enable greater monitoring of anticipated recruitment rates so that additional measures could be taken in order to reach the desired sample size.

## Conclusion

This randomised controlled trial explored the effect of a literacy-based summer school on the reading and writing abilities of pupils. Although the conclusions that can be drawn from this study are limited due to the small sample size and problems with attrition, the feasibility of undertaking such a study on a larger scale has been explored and useful points for consideration prior to undertaking a full trial are recommended.

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## Appendix 1: Trial protocol

THE UNIVERSITY *of York*



# Independent Evaluation of the Discover Children's Story Centre summer writing workshop

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## A Randomised Controlled Trial

### TRIAL PROTOCOL

**Chief Investigators:** Professor David Torgerson and Professor Carole Torgerson

**Protocol Version:** 2.1

**Protocol Date:** 23.04.13

**Ethical approval:** 01/05/13

**ISRCTN:** 45473011

**Funder:** Education Endowment Foundation

## Roles and Responsibilities

### *Evaluation Team*

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The evaluation team will be responsible for the design, conduct, analysis and reporting of the independent evaluation.

DT and CT – Design of trial; write protocol; oversee all stages in the design, conduct, analysis and reporting of trial, including recruitment and retention of schools, report-writing; supervise work of trial manager and researchers, statistician and data managers on the trial.

LJ – Design of trial; write protocol; register trial; trial co-ordination and data management, contribution to the analysis and write up.

HA and NM – Trial co-ordination assistance.

HB – Design of trial, write trial analysis plan, randomisation, conduct analyses, contribute to write up.

CH – Assist with trial co-ordination and data management; co-ordinate independent outcome assessments

### *Sponsor*

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### *Implementation Team*

Discover Children’s Story Centre. Registered Charity No: 1070468

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Discover Children’s Story Centre (implementation team) will be responsible for school recruitment and on-going relationship with schools, informing parents and pupils, intervention development, including writing detailed description of intervention to allow others, if necessary, to be able to replicate the intervention in other areas, intervention training and delivery, baseline data collection.

### *Funder*

Education Endowment Foundation (EEF), Registered charity 1142111, Millbank Tower, 21-24 Millbank, London SW1P 4QP.

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The Education Endowment Foundation has funded both the Transitions Project (Improving Writing Quality) and the independent evaluation. They will have oversight of the project.

### *Ethics Committee*

Durham University School of Education Ethics Committee

York Health Sciences Research Governance Committee (by Chair's Action)

### *Advisory Group*

Durham University School of Education and CEM EEF panel of evaluators and York Trial Unit panel of evaluators will provide advice on any aspect of the design, conduct and reporting of the evaluation when and as required.

## **Background and significance**

The Education Endowment Foundation has funded the University of York and Durham University to evaluate the *Discover Children's Story Centre summer writing workshop* intervention being delivered and supported by Discover Children's Story Centre.

The intervention will provide summer writing workshops to children between Year 6 and the start of Year 7. The intervention will involve a four week summer programme for children in order to improve reading and writing skills, specifically of children who are less able writers. The Programme will include a variety of workshops, including poetry and literacy sessions, in which children will also have the opportunity to engage with professional poets and writers. A range of enrichment activities will also be provided including: drama, sports activities and trips around London, such as West End performances and visits to the Olympic Park. An independent evaluation using rigorous design and methods is timely as there have been no previous evaluations of the impact of this project.

The trial will compare the summer writing workshop intervention with a "business as usual" control group who will not receive the summer writing workshop. Such a comparison will allow us to estimate whether or not there is an important intervention effect. We propose to recruit 250 pupils for this evaluation.



The implementation team (Discover) will be responsible for developing and delivering the *summer writing workshop* intervention. They will provide a detailed description of the intervention and a manual to be used as guidance for these summer schools.

## Research Question

What is the effectiveness of the *Discover* summer writing workshop intervention compared with a “business as usual” control group on the reading and writing abilities of participating children?

## Design

This will be a pragmatic individually randomised controlled trial involving 250 children. We estimate that there will be approximately 10-12 children, per primary school class of approximately 27 children, who will be potentially eligible for this study. The average primary school size in the geographical area will determine the number of primary schools that will be required to achieve this sample size.

Pupils in Year 6 will be eligible to be included in the trial if they 1) attend a participating secondary school and 2) are predicted to achieve between level 3c and level 4c in English by the end of Key Stage 2 (based on teacher assessment).

Pupils whose parents provide informed consent for them to participate in the trial will be randomised to either the intervention or control. The intervention group will be invited to attend a Discover Children’s Story Centre four week summer programme, which will take place at one hosting secondary school. Pupils attending the summer school will then be randomly allocated into one of five teaching groups. The control group will not attend the Discover Children’s Story Centre four week summer programme, however in order to increase recruitment and avoid disappointment the control group will receive a secondary school-based reading and writing intervention delivered in the autumn term 2013. This secondary school-based intervention will not form part of the evaluation as it will take place after the outcome testing.

The trial will be designed, conducted and reported to CONSORT standards (Altman et al, 2011) in order to minimise all potential threats to internal validity, such as selection bias and a range of post randomisation biases (Cook and Campbell, 1969; Shadish, Cook and Campbell, 2002; Torgerson and Torgerson, 2008). In this way, unbiased estimates of the impact of the intervention will be provided.

## Recruitment

Discover will recruit appropriate schools and pupils. Recruitment will take place during the development phase of the intervention (i.e. between March and May 2013). The York/Durham evaluation team will prepare information documentation about the evaluation for schools and

pupils/parents. This will include details of the trial design. The intervention will be delivered during the summer break between Year 6 and Year 7.

## Inclusion criteria

Participating secondary schools will liaise with primary schools to provide a list of pupils that will be attending in the autumn term 2013. Primary schools will screen this list of pupils to identify potential pupils meeting the following inclusion criteria:

- 1) Attend a participating secondary school
- 2) Predicted to achieve between level 3c and level 4c in English by the end of Key Stage 2 (based on teacher assessment).

Primary schools will inform the parents of eligible pupils about the study (material and help provided by the evaluation team and Discover charity). Parents will then be asked to provide written informed consent to agree for their child to participate in the study.

### *School participation*

In order for schools to be eligible to take part in the evaluation and to receive the intervention, we will put in place a memorandum of understanding with the schools which will specify the following:

#### **Primary schools:**

- Enthusiasm for the project and for professional development
- Agreement to be in the independent evaluation
- Willingness to allow the random allocation of Year 6 pupils to either intervention or comparison group
- Willingness to identify all eligible pupils using pre-specified criteria
- Provision of baseline data about pupils

#### **Secondary schools:**

- Enthusiasm for the project and for professional development
- Agreement to be in the independent evaluation
- Liaison with feeder primary schools to identify pupils that will attend in Year 7
- Willingness to administer the outcome assessment to children participating in the trial in Year 7 within 2 weeks of the summer intervention ending (the test will be marked independently by external markers)

## Randomisation

An independent individual at York Trials Unit will use a dedicated computer program to carry out all randomisation. Once parents and pupils have given consent their details will be sent to the York

Trials Unit and these will be entered onto a randomisation database. Pupils will be individually randomised to either the intervention or control group. If recruitment is as predicted, this randomisation will use equal allocation. Due to there being a limited number of places on the summer school, if recruitment is better than expected, unequal allocation will be used with 125 pupils allocated to the intervention group and with those remaining allocated to the control group. If recruitment is not as good as anticipated, unequal allocation will favour the intervention group in order to fill all the places on the summer school.

Pupils randomised to the intervention group will be randomised further into five groups for teaching purposes using equal allocation. Pupils randomised to the control group will be pseudo randomised to one of the five teaching groups for analysis purposes using equal allocation.

## Sample size calculation

This trial will aim to recruit 250 pupils. To estimate the differences that we could estimate, with 80% power ( $2p = 0.05$ ), we use the assumption that there will be a pre and post-test correlation of 0.70 (i.e. the outcome test will correlate with the Key Stage 2 English result with a correlation of 0.70). This means that we have an effective sample size of 510 pupils. Allowing for a 10% attrition rate give an effective sample size to 460 pupils. This would give 80% power to show a difference of 0.27 standard deviations in writing score between the intervention and control groups should a difference of this magnitude exist.

## Analysis

Analysis will be conducted using the principles of intention to treat, meaning that all pupils will be analysed in the group to which they were randomised irrespective of whether or not they actually received the intervention.

Statistical significance will be assessed at the 5% level unless otherwise stated and 95% confidence intervals will be provided as appropriate. Methods for handling missing data and further detail on analyses will be provided within a statistical analysis plan.

### *Primary Analysis*

The primary objective of this study is to investigate the effectiveness of the intervention on the writing skills of eligible children. The difference between pupils receiving the Discover four week summer programme intervention and those pupils in the control group will be compared using regression analysis with writing post-test result as the response variable. Group allocation, predicted KS2 score and gender will be included as covariates in the model.

### *Secondary Analyses*

A similar method to that taken in the primary analysis will be used to assess differences between the intervention and control groups in terms of the secondary outcomes of reading, spelling and grammar.

Subgroup analyses will investigate the effect of the intervention on pupils who are eligible for FSM in terms of post-test scores.

The impact of non-compliance (should this occur) will also be assessed, using Complier Average Causal Effect (CACE) analysis, which will estimate the intervention's impact on writing skills in the absence of non-compliance.

An ancillary analysis will compare difference in terms of post-test scores between the intervention and control pupils assigned to the five teaching groups using a paired t test.

## Outcome measure

We propose to use the Progress in English 11 (Long Form), GL Assessment, for our main literacy outcome. The primary outcome will be the combined score on the two writing tasks within the test. Secondary outcomes will be scores on the reading, spelling and grammar components of the test. The assessment will be carried out within 2 weeks of the intervention ending, in local secondary schools. All tests will be completed during the first three weeks of the autumn term 2013. Long term outcomes can be collected through the National Pupil Database.

Test results will be marked, blind to group assignment, by GL assessment. The results will then be sent to Durham University and copies of the results will be forwarded to the York Trials Unit for analysis.

## Process evaluation

Independent observer(s) will attend at least one session of the Discover Children's Story Centre summer workshop to observe the delivery of the intervention.

## Data Protection Statement

Durham University's data protection policy is publically available at:  
<http://www.dur.ac.uk/resources/data.protection/dataprotectionpolicy.pdf>

"Durham University is committed to protecting the rights and freedoms of individuals in accordance with the provisions of the Data Protection Act 1998. The requirements to which University staff and student who process personal data must adhere are set out in the University's Data Protection Policy"

The University of York's data protection policy is publically available at:

<http://www.york.ac.uk/media/recordsmanagement/documents/dataprotectiondocs/Data%20Protection%20Policy.pdf>

## Risks

Low risks associated with this project include operational and project specific risks. For the operational risks such as staffing and IT / assessment system we are confident that we have systems and procedures in place to minimise any risks, but would nonetheless be very happy to provide further details.

**School and pupil recruitment** – whilst this will be the primary responsibility of the implementation team, the evaluation team have a good track of recruiting schools, and will help with this if necessary.

**Attrition and loss to follow up** – in a study such as this it is essential that this is kept to a minimum. Whilst this will be the primary responsibility of the implementation team, our involvement, as with the recruitment, will help to minimise attrition.

**Maintaining fidelity (intervention and control)** - it is essential that as many as possible schools maintain a high level of implementation fidelity. Again whilst the primary responsibility will lie with the implementation team we will provide some support, for example, by emphasising the importance of contributing to the process of building good evidence.

## References

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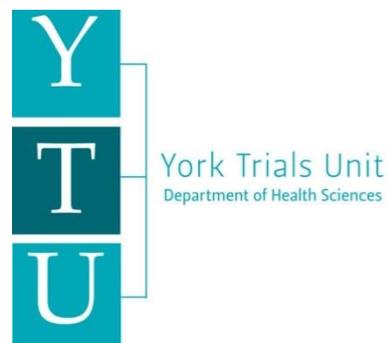
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## Appendix 2: Statistical Analysis Plan



### Discover

Independent Evaluation of the Discover Children's Story Centre summer writing workshop

STATISTICAL ANALYSIS PLAN  
Final v1.0

**York Trials Unit**  
Department of Health Sciences  
University of York  
York, YO10 5DD

**Version date: 3<sup>rd</sup> Oct 2013**  
**Author(s):** Hannah Buckley, Taeko Becque  
**Chief Investigator: David Torgerson**  
**Chief Investigator: Carole Torgerson**

**Trial Coordinator:** Laura Jefferson

## 1. Trial Objectives

### *Primary objective*

The primary objective of the trial is to evaluate the effectiveness of the *Discover* summer writing workshop intervention compared with a “business as usual” control group on the reading and writing abilities of participating children.

## 2. Design

The study is a pragmatic, two-armed randomised controlled trial, with randomisation at the pupil level. The intervention group will be invited to attend a Discover Children’s Story Centre four week summer programme. The control group will not receive any reading or writing intervention until after the outcome testing.

Pupils in Year 6 will be eligible to be included in the trial if they 1) attend a participating secondary school and 2) are predicted to achieve between level 3c and level 4c in English by the end of Key Stage 2 (based on teacher assessment).

Pupils attending the summer school will be taught in one of five teaching groups.

The trial will be designed, conducted and reported to CONSORT standards (Altman et al, 2011) in order to minimise all potential threats to internal validity, such as selection bias and a range of post randomisation biases (Cook and Campbell, 1969; Shadish, Cook and Campbell, 2002; Torgerson and Torgerson, 2008). In this way, unbiased estimates of the impact of the intervention will be provided.

## 3. Sample Size

The trial will aim to recruit 250 pupils. To estimate the difference that we could detect, with 80% power ( $2p = 0.05$ ), we use the assumption that there will be a pre and post-test correlation of 0.70 (i.e. the outcome test will correlate with the Key Stage 2 English result with a correlation of 0.70). This means that we have an effective sample size of 492 pupils. Allowing for 10% attrition reduces the effective sample size to 442 pupils. This would give 80% power to show a difference of approximately 0.27 standard deviations in writing score between the intervention and control groups should a difference of this magnitude exist.

[NB. There was a slight error in the minimal detectable difference calculation in the published protocol. This does not affect the detectable effect size and the correct version is printed here.]

## 4. Randomisation

Pupils will be individually randomised to either the intervention or control group. If recruitment is as predicted, this randomisation will use equal allocation. Due to the a limited number of places on the summer school, if recruitment is better than expected, unequal allocation will be used with 125 pupils allocated to the intervention group and with those remaining allocated to the control group. If recruitment is not as good as anticipated, unequal allocation will favour the intervention group in order to fill all the places on the summer school.

Due to the trial under-recruiting, randomisation will be conducted using a 3:2 (Intervention:Control) allocation ratio within each secondary school. A fixed block size of 10 will be used. There is no concern about predictability as all pupils will be randomised at one time.

There was a request that twins would have the same allocation. Both pupils will be randomised separately and then both will receive the allocation assigned to the 'first' twin as defined by the smallest trial ID.

It was planned that pupils allocated to the intervention would be taught in 5 colour groups and that they would be assigned to these groups randomly on a 1:1:1:1:1 ratio. This did not occur due to Discover's preference, this was not thought to be a problem as we are examining the effectiveness of the intervention in practice. Also, teaching was conducted in 4 groups and not 5.

## 5. Definition of terms

**Level 3 or fragile Level 4:** Level 3c, Level 3b, Level 3a, Level 4c or Level 4b

**KS2:** Key Stage 2

**(KS2) SAT:** (Key Stage 2) Standard Assessment Tests

**PIE 11 (LF):** Progress in English 11: Second Edition (Long Form) sometimes simply referred to as PiE or PiE 11

**Raw score:** number of marks awarded (no adjustment for age or similar)

**Extended writing score:** the combined raw score on the two extended writing tasks on the PiE11



**Overall writing score:** the combined raw score on the spelling, grammar and writing tasks on the PiE11

**National curriculum writing level:** Key Stage 2 SAT Writing Level

**Reading score:** the combined raw score on the reading tasks on the PiE11

**National curriculum reading level:** Key Stage 2 SAT Reading Level

**Spelling and grammar score:** the combined raw score on the spelling and grammar tasks on the PiE11

**Overall raw score:** combined total raw score on the PiE11

**Standardised age score:** overall raw score on the PiE11 adjusted for age in months

**FSM:** Free School Meals

**PP:** Pupil premium

**EAL:** English as an Additional Language

## 6. Outcomes

The Progress in English (PiE) 11: Second Edition (Long Form), GL Assessment, will be the main literacy outcome. The test includes both narrative and non-narrative exercises and assesses both reading and writing skills including areas such as spelling, grammar and comprehension. The Progress in English test was the only test available to the evaluation team (in order to comply with EEF testing policy) which included a writing component.

### *Primary outcome*

The primary outcome will be the combined raw score on the two extended writing tasks (Ex 5 and Ex 6). This test will be conducted within 2 weeks of the intervention ending.

Exercise 5 has a total possible 20 marks. These marks come from 4 sub scores:

- 5.1 Composition and effect (8 marks)
- 5.2 Text organisation (4 marks)

- 5.3 Sentence structure (4 marks)
- 5.4 vocabulary (4 marks)

Exercise 6 has a total possible 12 marks. These come from 2 sub scores:

- 6.1 Composition and effect and vocabulary (8 marks)
- 6.2 Text organisation and sentence structure (4 marks)

The combined raw score on the two extended writing tasks is in the range 0 to 32, with a higher score representing better attainment.

### *Secondary outcomes*

## Reading

The combined raw score on the reading tasks (Ex 3, Ex 4, Ex 3x and Ex 4x) will be a secondary outcome.

Exercise 3 (comprising of Ex3 and Ex 3x) has a total possible 19 marks and assesses reading comprehension of a narrative. Exercise 4 (comprising of Ex4 and Ex 4x) has a total possible 13 marks and assesses non-narrative reading comprehension. Therefore, the combined raw score on the reading should be in the range 0 to 32, with a higher score representing better attainment.

The corresponding national curriculum writing level can be obtained as follows:

<b>Writing Raw Score</b>	<b>Level</b>
0-11	3 or below
12-15	4c
16-18	4b
19-21	4a
22-23	5c
24-25	5b
26-32	5a or higher

## Spelling and Grammar

The combined raw score on the spelling and grammar tasks (Ex 1 and Ex 2) will be a secondary outcome.

Exercise 1 has a total possible 10 marks and assesses spelling. Exercise 2 has a total possible 10 marks and assesses grammar. The combined raw score on the reading is in the range 0 to 20, with a higher score representing better attainment.

#### *Other important information*

Important pupil characteristics include:

- Gender
- FSM status
- PP status
- EAL status
- Predicted KS2 Writing Score

## **7. Analysis**

Analysis will be conducted using the principles of intention to treat, that is, all pupils will be analysed in the group to which they were randomised irrespective of whether or not they actually received the intervention. Statistical significance will be assessed at the 5% level unless otherwise stated and 95% confidence intervals will be provided as appropriate. Analyses will be conducted on complete cases.

#### *Baseline data*

All participant baseline data will be summarised descriptively by trial arm. No formal statistical comparisons will be undertaken. Continuous measures will be reported as means and standard deviations, while categorical data will be reported as counts and percentages.

#### *Primary analysis*

Regression analysis of the post-test extended writing score on randomised group will be carried out. Gender, FSM status, EAL, age and predicted KS2 score will be included as covariates in the model. Adjustment will be made for secondary school which was used as a stratification factor. The estimate of the difference in scores between pupils randomised to the Discover four week summer

programme and pupils randomised to the control group will be reported, together with the 95% confidence interval.

Analysis of the primary outcome will be checked by a second statistician.

#### *Secondary analyses*

Regression analysis adjusting for the same covariates as in the primary analysis will be used to assess differences between the intervention and control groups in terms of the secondary outcomes of reading, spelling and grammar.

#### *Subgroup analyses*

A subgroup analysis will investigate the effect of the intervention on post-test scores for pupils who are eligible for FSM. An interaction term between FSM status and randomised allocation will be included in the regression model fitted in the primary analysis. Statistical significance will be set at the 10% level as this trial is not powered to detect interactions.

A subgroup analysis will compare difference in post-test scores between the intervention and control pupils assigned to the four teaching groups. An interaction term between teaching group and randomised allocation will be included in the regression model fitted in the primary analysis.

#### *Sensitivity analyses*

Patterns of missingness in the post-test result data will be explored. Where appropriate multiple imputation will be considered provided the assumption that data are missing at random (MAR) is plausible.

Summary statistics for the number of sessions attended will be produced.

The impact of non-compliance (should this occur) will also be assessed, using Complier Average Causal Effect (CACE) analysis, which will estimate the impact of the intervention among the group of compliers.

## Appendix 3: Project Briefing Sheet for Schools

### Evaluation of the Discover Literacy Summer School intervention

The Education Endowment Foundation (EEF) have asked researchers at the University of York and Durham University to evaluate a *Literacy Summer School* intervention being delivered and supported by the Discover Children's Story Centre in 2013. The summer school intervention will take place during a four-week period and will combine literacy sessions with enrichment activities (including a range of exciting experiences such as trips to West End performances, opportunities to meet with professional writers and poets and sporting activities). Everything, including healthy meals, will be provided free of charge. Lister Community School will host the intervention, which will be delivered by the Discover team from 29<sup>th</sup> July to 23<sup>rd</sup> August 2013.

The evaluation aims to find out if the intervention improves pupils' reading and writing skills during the transition from Year 6 to Year 7, especially the writing skills of pupils who are currently achieving between KS2 Level 3c and 4c in English. In order to find out how well the *Literacy Summer School* works, we must compare children attending the summer school to those that do not. This has to be decided completely at random using a computer, and those children who are not allocated to receive the intervention will be offered a school-based Saturday morning literacy workshop in the autumn term of Year 7.

We aim to recruit 250 pupils for this evaluation, 125 of whom will receive the intervention and 125 of whom will form the control group. All primary schools who decide to take part in the intervention and its evaluation will be asked to provide information to the University of York about all pupils that consent to take part in the study. The information will include each pupil's UPN and their predicted KS2 teacher assessment in English plus some demographic information (e.g. gender, date of birth, Free School Meal status). Some basic demographic information about the school will also be requested at this stage.

At the beginning of autumn term 2013, all 250 participating Year 7 pupils in participating secondary schools will be tested so that researchers at the University of York can estimate the effect the intervention has had on pupils' writing skills by comparing results from children who attended the summer school to those who did not. The GL Assessment Progress in English (PiE) 11 (Long Form) will be used.

### What commitment would this project require from schools?

- Enthusiasm for the project
- Willingness to provide feeder primary schools with information about eligible pupils attending in Year 7 (secondary schools)
- Willingness to identify, provide information letters and collect consent forms for eligible children in Year 6 (primary schools)
- Provision of baseline data about pupils in Year 6 (primary schools)
- Willingness to administer a writing test to all participating Year 7 pupils during the first weeks of autumn term 2013 (the test will be marked independently by external markers) (secondary schools)

As a designated EEF Research Partner School you will be entitled to: permission to use the EEF's logo on your website, a certificate showing that the school is an EEF Research Partner School, access to EEF networking and knowledge events, a regular newsletter updating schools on the latest EEF projects and evidence, free places for Year 6 teachers on a literacy INSET to be held at Discover in the autumn term.

### When will this project take place?

We hope to inform parents of potential pupils in May and collect consent for their children to take part in this evaluation around May half term. For all consenting pupils, baseline data will be collected and pupils randomised in June. Parents will be notified of their child's allocation to intervention or control group in July and the intervention will take place between 29<sup>th</sup> July and 23<sup>rd</sup> August. Participating pupils will be tested in the first 2-3 weeks of the autumn term 2013, after which point pupils in the control group will be offered a Saturday morning literacy session.

### Is there funding to support my involvement?

Yes – the Discover Children's Centre will provide all activities, travel and meals free of charge. The Saturday morning literacy sessions delivered to control group children in the autumn term will also be provided free of charge.

## Appendix 4: Primary School Agreement to Participate Form



### Evaluation of the Discover Literacy Summer School intervention

#### *Primary School Agreement to Participate*

- I confirm that I have read and understood the information sheet for the above evaluation and have had the opportunity to ask questions;
- I understand that all children’s results will be kept confidential and that no material which could identify individual children or the school will be used in any reports of this evaluation;
- I agree to identify eligible pupils in Year 6;
- I agree to providing an information letter to all parents of eligible children in Year 6;
- I agree to collect in parent consent forms;
- I agree to provide baseline data about participating pupils in Year 6;
- I understand that pupils’ test responses will be collected by GL Assessment and accessed by the evaluation team. Named data will be matched with the National Pupil Database and shared between the evaluation team, Discover Children’s Story Centre and EEF.
- I consent to the school taking part in the above study**

Name of headteacher .....

Name of School .....

School Tel no .....

Headteacher Email address .....

Name of School Contact (if not headteacher).....

School Contact email address.....

**Signature of headteacher.....Date.....**

Thank you for agreeing to take part in this research. Please return this consent form by post to: Mrs D Parsons, Discover Children’s Story Centre, 383-387 High Street, Stratford, London, E15 4QZ

## Appendix 5: Secondary School Agreement to Participate Form



### Evaluation of the Discover Literacy Summer School intervention

#### *Secondary School Agreement to Participate*

- I confirm that I have read and understood the information sheet for the above evaluation and have had the opportunity to ask questions;
- I understand that all children's results will be kept confidential and that no material which could identify individual children or the school will be used in any reports of this evaluation;
- I agree to provide feeder primary schools with information about the pupils that will be attending the school in Year 7 in the autumn term on 2013;
- I agree to administer a writing test to all participating Year 7 pupils in September 2013
- I understand that pupils' test responses will be collected by GL Assessment and accessed by the evaluation team. Named data will be matched with the National Pupil Database and shared between the evaluation team, Discover Children's Story Centre and EEF.
- I consent to the school taking part in the above study**

Name of headteacher .....

Name of School .....

School Tel no .....

Headteacher Email address .....

Name of School Contact (if not headteacher).....

School Contact email address.....

**Signature of headteacher.....Date.....**

Thank you for agreeing to take part in this research. Please return this consent form by post to:  
Mrs D Parsons, Discover Children's Story Centre, 383-387 High Street, Stratford, London,  
E15 4QZ

## Appendix 6: Parent and pupil information letter



### Evaluation of the Discover Literacy Summer School intervention: Information Letter for Parents

[INSERT DATE]

[INSERT SCHOOL NAME]

Dear Parent / Carer

Durham University and the University of York have been asked by the Education Endowment Foundation (an organisation funding research into education) to independently evaluate the *Discover Literacy Summer School* programme. The summer school is being led by the Discover Children's Story Centre (a charity organisation in the local area).

Your child's school has been chosen to take part in the evaluation and have identified your child as suitable for the study. We would like to invite your child to take part.

#### What is the purpose of the evaluation?

The *Discover Literacy Summer School* programme is designed to improve children's writing skills during the transition from Year 6 to Year 7. Good writing skills are important for all children. This evaluation will find out how helpful the *Discover Literacy Summer School* is. The results of this study could influence the provision of literacy summer schools such as this in the future.

#### What does this mean for my child?

To find out how well the summer school programme works, children whose parents consent for them to take part will be allocated **completely at random** by computer, to either attend a four-week summer school or to receive a school-based literacy session delivered on a Saturday morning in the autumn term of Year 7. Both activities are offered completely **free of charge** and further details are provided below. All schools will continue to teach children writing skills during term time.

#### *The summer school*

Children allocated to the summer school group will be invited to attend a four-week literacy summer school. This will be held at Lister Community School from 29<sup>th</sup> July to 23<sup>rd</sup> August 2013, Mondays to Fridays from 8.30am and 4pm. The programme will combine literacy sessions with a range of exciting and memorable activities, such as trips to West End performances, opportunities to meet professional writers and poets and sporting activities. Further details of the programme will be sent to you, should you wish your child to take part and they are allocated to this group.

#### *Autumn term Saturday literacy sessions*



Children allocated to this group will receive a half-day Saturday session in the autumn 2013 term, consisting of an intensive graphic novel/comic writing activity, led by a Discover artist and Story Builder. Each child will be given a complimentary book from Discover, signed by the author. Further details of these autumn sessions will be sent to you, should you wish your child to take part and they are allocated to this group.

### **What will happen next?**

If you consent for your child to take part we will collect information about your child from your child's primary school, and later from your child's secondary school. Your child's school will provide information including your child's name, date of birth, gender, unique pupil number, details on your child's current National Curriculum writing level, free school meal status, eligibility for pupil premium and English as an Additional Language (EAL) status.

In order to measure the effectiveness of the summer school intervention, both groups of pupils will be tested at the start of the autumn term 2013 so that we can estimate what effect the intervention has had on their writing skills. We expect that your child will enjoy doing the tests and being part of the programme.

Your child's information will be treated with the strictest confidence. Named data will be matched with the National Pupil Database and shared between the evaluation team, Discover charity and EEF. We will not use your child's name or the name of the school in any report arising from the research. Your child's information will be kept confidential at all times. Your child may withdraw from the evaluation at any time.

**Thank you for reading this information. If you are happy for your child to take part in this study, please complete the enclosed consent form and return it to your child's school by [INSERT DATE].**

If you would like further information about the *Discover Literacy Summer School* evaluation please contact Laura Jefferson, the Evaluation Coordinator: [laura.jefferson@york.ac.uk](mailto:laura.jefferson@york.ac.uk) ; 01904 321511

Yours faithfully

Professor David Torgerson (University of York)

Professor Carole Torgerson (Durham University)

Discover Children's Story Centre

Education Endowment Foundation

## Appendix 7: Parent and pupil consent form

### Evaluation of the Discover Literacy Summer School intervention:

#### Parent Consent Form

If you would like your child to take part in the Discover Literacy Summer School programme evaluation, please complete the following information and return this form to your child's school as soon as possible.

Please initial in boxes

1. I **AGREE** to my child taking part in the *Discover Literacy Summer School* evaluation
2. I understand that there are two programmes and **AGREE** to my child being randomly allocated to attend **either** the four-week summer school or an autumn term literacy session as part of this evaluation
3. I **AGREE** to my child undertaking a test of their writing ability in the autumn term 2013
4. I **AGREE** to my child's data being shared for use in the *Discover Literacy Summer School* evaluation

Parent/Carer Signature..... Date.....

Child's Name.....

Home address of child: .....

Email address of parent: .....

Home contact number: .....

Mobile contact number: .....

Child's primary school.....

Child's primary school class.....

Child's secondary school.....

Child's secondary school class (if known).....

**PLEASE RETURN THIS FORM TO YOUR CHILD'S CLASS TEACHER by:** [insert date]

## Appendix 8: Observation Information Leaflet



### Discover Children's Story Centre summer writing workshop:

#### Observation Information Sheet

The Education Endowment Foundation has asked researchers at the University of York and Durham University to evaluate the *Discover Children's Story Centre summer writing workshop* intervention being delivered and supported by the Discover Children's Story Centre in 2013.

As part of this evaluation we will be holding observations of the *Discover Children's Story Centre summer writing workshop* being delivered to a class of pupils. We will use the observation to help us better understand the *Discover Children's Story Centre summer writing workshops* and evaluate its use. Neither yourself nor any pupils will be identified in any reports resulting from the evaluation.

It would be helpful to us if we could observe you delivering the *Discover Children's Story Centre summer writing workshop* to a class of pupils but you do not have to agree to be observed. If you decide you do want to take part then change your mind, you are free to withdraw at any time, without giving a reason.

If you decide you would like to take part, please sign and return the consent form to the researcher.

If you would like any more information please contact Dr Laura Jefferson.

Tel: 01904 321511

Email: [laura.jefferson@york.ac.uk](mailto:laura.jefferson@york.ac.uk)

**Thank you for considering taking part**

## Appendix 9: Observation Consent Form



### Discover Children's Story Centre summer writing workshop:

#### Observation Consent Form

Please initial  
each box

1. I confirm that I have read and understood the Discover Children's Story Centre summer writing workshop: Observation Information Sheet. I have had the opportunity to consider the information and ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I understand that my details will be provided to researchers working on the evaluation and will be stored securely. I understand that neither I, nor my school, nor any pupils will be identified in any reports resulting from the evaluation.
4. I agree to be observed delivering a session of the *Discover Children's Story Centre summer writing workshop* intervention to a class of pupils.

Teacher Name (please print).....

Teacher Signature.....

Date.....

**Thank you for taking part**

## Appendix 10: Missing data exploration

**Table 5: Completion of short and long parts of test and primary outcome by school**

The short form part of the test consists of exercises 1, 2, 3 and 4.

ID	n	Primary Outcome			Short Form Parts of Test			Long Form Parts of Test		
		Complete	Partial	Missing	Complete	Partial	Missing	Complete	Partial	Missing
10	2	1	0	1	1	0	1	1	0	1
11	17	6	1	10	7	0	10	1	6	10
12	18	0	13	5	12	4	2	0	15	3
13	15	13	0	2	13	0	2	9	4	2
14	3	0	2	1	1	2	0	0	3	0
15	13	0	0	13	2	2	9	0	2	11
16	4	1	0	3	3	0	1	1	2	1
17	2	2	0	0	2	0	0	2	0	0
18	7	0	0	7	0	6	1	0	6	1
19	3	0	0	3	3	0	0	0	3	0
20	1	0	0	1	1	0	0	0	1	0
21	4	0	0	4	4	0	0	0	0	4
22	7	6	0	1	7	0	0	6	0	1
23	28	5	3	20	9	0	19	4	4	20
<b>Total</b>	<b>124</b>	34	19	71	65	14	45	24	46	54
		27.4%	15.3%	57.3%	52.4%	11.3%	36.3%	19.4%	37.1%	43.5%

The long form part of the test consists of exercises 3x, 4x, 5 and 6.

The primary outcome is a subset of the long form parts of the test (exercises 5 and 6). This means that a pupil may have fully completed the primary outcome but not fully completed the long form of the test (e.g. if they did not answer exercise 3x and/or exercise 4x).

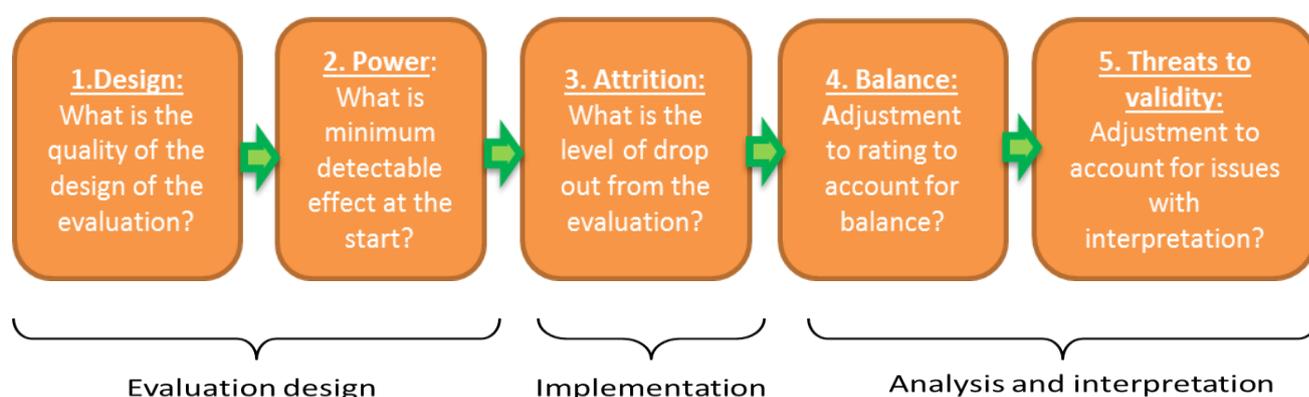
**Table 6: Number of returned and missing test papers, by school.**

School	Test created for	Results provided			Missing outcome data		
		Total	Intervention	Control	Total	Intervention	Control
10	2	1	0	1	1	1	0
11	17	7	5	2	10	4	6
12	18	16	11	5	2	0	2
13	15	13	6	7	2	2	0
14	3	3	3	0	0	0	0
15	13	4	4	0	9	4	5
16	4	3	1	2	1	1	0
17	2	2	1	1	0	0	0
18	7	6	4	2	1	1	0
19	3	3	2	1	0	0	0
20	1	1	1	0	0	0	0
21	4	4	3	1	0	0	0
22	7	7	4	3	0	0	0
23	28	9	5	4	19	12	7
<b>TOTAL</b>	<b>124</b>	<b>79</b>	<b>50</b>	<b>29</b>	<b>45</b>	<b>25</b>	<b>20</b>

**Table 7: Completion of test by exercise**

Exercise	Complete	Missing
1	72	52
2	74	50
3	78	46
4	75	49
3x	49	75
4x	57	67
5	53	71
6	34	90

## Appendix 11. Security rating summary



Rating	1. Design	2. Power (MDES)	3. Attrition	4. Balance	5. Threats to validity
🔒🔒🔒🔒🔒	Fair and clear experimental design (RCT)	< 0.2	< 10%	Well-balanced on observables	No threats to validity
🔒🔒🔒🔒	Fair and clear experimental design (RCT, RDD)	< 0.3	< 20%		
🔒🔒🔒🔒	Well-matched comparison (quasi-experiment)	< 0.4	< 30%		
🔒🔒🔒🔒	Matched comparison (quasi-experiment)	< 0.5	< 40%		
🔒🔒🔒🔒	Comparison group with poor or no matching	< 0.6	< 50%	Regression used to control for imbalance	
🔒🔒🔒🔒	No comparator	> 0.6	> 50%	Imbalanced on observables	Significant threats

The final security rating for this trial is 0🔒. This means that the evaluation has very low security and adds little or nothing to the existing evidence base. The trial was designed as a randomised, independently-run, efficacy trial and was powered to achieve a maximum of 3🔒.

The trial had very high attrition of over 70%. The evaluators used regression methods to try and control for observable characteristics, but this could not account for the potential imbalance on unobservable characteristics. In addition there were significant threats to the validity of the findings. Schools delivered the tests, rather than blind by evaluators.

Additional detail about the EEF’s security rating system can be found at: [www.educationendowmentfoundation.org.uk/evaluation](http://www.educationendowmentfoundation.org.uk/evaluation).



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