# Switch-on Effectiveness Trial

**Evaluation report and executive summary**

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**NatCen**
**Social Research**

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.

The EEF aims 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; and
- encouraging schools, government, charities, and others to apply evidence and adopt innovations found to be effective.

The EEF was established in 2011 by the Sutton Trust as lead charity in partnership with Impetus Trust (now part of Impetus - Private Equity Foundation) and received a founding £125m grant from the Department for Education.

Together, the EEF and Sutton Trust are the government-designated What Works Centre for improving education outcomes for school-aged children.

# About the evaluator

The project was independently evaluated by a team from NatCenSocial Research: Rakhee Patel, Nico Jabin, Loraine Bussard, Javiera Cartagena, Sarah Haywood, and Michael Lumpkin.

The lead evaluator was Rakhee Patel:

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# About the evaluator

# Table of Contents

# Executive summary

**The project**

Switch-on is an intensive, targeted literacy intervention that aims to improve the reading skills of pupils who are struggling with literacy. There are two versions of the intervention: Switch-on Reading and Switch-on Reading and Writing. Both involve specially trained Teaching Assistants (TAs) delivering a tailored programme of literacy support in daily 20-minute sessions over a ten-week period.

A previous EEF-funded evaluation of Switch-on had shown signs of promise in raising reading outcomes for Year 7 pupils, hence a larger scale effectiveness evaluation was conducted. Each of the 184 participating schools were randomly assigned to receive either Switch-on Reading, Switch-on Reading and Writing, or continue their usual practices of supporting pupils with reading difficulties (called 'business as usual' control). Between two and four TAs in each school were trained to deliver the interventions by a team of trainers who were distinct from the developers. TAs received 1.5 days training for Switch-on Reading, and 2.5 days for Switch-on Reading and Writing. Each TA worked with between two and four Year 3 pupils who had not met age-related expectations in literacy at the end of Key Stage 1, and who did not have a high level of special needs. In total, 999 pupils were involved in the trial. The primary outcome measure was the Hodder Group Reading Test 2A. The evaluation was conducted over the 2015/2016 academic year. A process and implementation evaluation was carried out which included depth telephone interviews with the developers, trainers, and TAs, and six case studies incorporating the views of TAs, class teachers, and Switch-on co-ordinators in the school.

| Key conclusions |
|---|
| 1. Participating children in schools delivering either version of Switch-on made no additional progress in reading compared to similarly struggling children in 'business as usual' control schools. The 4 padlock security rating means that we have high confidence that there was no difference, and that this was due to Switch-on and not affected by other factors. |
| 2. A similar result was observed for children eligible for Free School Meals. |
| 3. The secondary analysis suggests that Switch-on might have affected children who did not actually receive the intervention by changing the make-up of their class or the capacity of their TAs. These findings are tentative, but emphasise the importance of considering potential impacts on all children when using targeted interventions. |
| 4. Overall, participating staff were positive about the intervention and accompanying training. Perceived outcomes for pupils included increased confidence, motivation and interest in reading, and improved reading and writing skills. Skills of participating TAs were also felt to have improved. |
| 5. Some schools reported modifications to the prescribed content, duration and format of Switch-on sessions. Closer monitoring by the developers could help to ensure greater fidelity in future. It was also reported that some class teachers had limited awareness of Switch-on. Clarifying the role of Switch-on as part of a broader, teacher-led literacy strategy could improve implementation. |

**EEF security rating**

> *Security rating awarded as part of the EEF peer review process*

The security rating of the trial indicates how confident we can be that any additional progress experienced by the children receiving Switch-on was due to the intervention rather than any other factors. This trial was an effectiveness trial that aimed to test whether the intervention was effective when delivered in a form that could be available to a large number of schools. Findings from this study

have high security. The trial was a well-designed, three-arm randomised controlled trial, with randomisation at school level. Relatively few pupils were lost to the analysis and pupils who received the intervention were similar to the pupils in the comparison group. The trial was only designed to reliably detect an impact equivalent to three months' progress.

## Additional findings

The trial did not find evidence that a three-month delivery of Switch-on Reading or Switch-on Reading and Writing improves reading outcomes of pupils struggling with literacy at Key Stage 1 compared to schools' usual practices. Estimated effects were at zero standard deviations and not statistically significant. The intervention also showed no effect on pupils eligible for free school meals. These findings contradict previous evidence from a smaller within-school efficacy trial and the literature on the effectiveness of structured, one-on-one literacy interventions led by TAs.

The process evaluation suggests that in some schools intervention fidelity was compromised to some degree, which is likely to have affected the quality of the intervention and could explain the lack of impact. The process evaluation also indicated inconsistent involvement of class teachers and senior leaders, which is identified in the literature as a factor that enables effective implementation.

The secondary analysis suggests that Switch-on might have affected children who didn't actually receive the intervention by changing the make-up of their class or the capacity of their TAs. There is a possibility that implementing Switch-on may have had a negative impact on the literacy of pupils in the same year who were eligible to receive the intervention but were not selected due to limitations on numbers. Conversely, there is a possibility that the intervention had a positive impact for pupils in the same that class that were ineligible to receive the intervention. Both results should be treated cautiously.

## Cost

The cost of the project was estimated at £546 per pupil. This estimate includes up-front costs (for website development and access, and for the development of training materials such as films) and ongoing delivery costs (including provision of books and TA and trainer training). In terms of staff time, approximately 68 hours per pupil were required to deliver Switch-on. This included training and the delivery of sessions. If the intervention were delivered in a school over a period of three years, the cost per pupil per year would be much lower, at £184, because most of the cost are up-front costs. Estimates are based on an average of five pupils per school and two or three TAs per school delivering the intervention.

**Table 1: Summary of impact on primary outcome**

| Group | Effect size (95% confidence interval) | Estimated months' progress | EEF security rating | Type of trial | EEF cost rating |
|---|---|---|---|---|---|
| Switch-on vs. control | 0.00 (-0.13, 0.13) | 0 | 🔒🔒🔒🔒🔓 | Effectiveness | £££££ |
| Switch-on FSM vs. control | 0.03 (-0.18, 0.20) | 0 | n/a | Effectiveness | £££££ |

# Introduction

## Switch-on: intervention description

1. Rationale and aims

Switch-on is an intensive literacy intervention which was developed by Nottinghamshire Reading Recovery Teacher Leaders. The intervention was developed in response to requests from headteachers to provide TAs with professional development in literacy. The needs identified for improved training of TAs reflect findings in a wider review of evidence on 'Making the Best Use of Teaching Assistants' which found that 'the typical deployment and use of TAs, under everyday conditions, is not leading to improvements in academic outcomes' (Sharples *et al.*, 2015, p. 11).

By providing TAs with structured support and training to deliver a one-to-one reading intervention, the aim of the intervention was to enable children:

> *'to participate more fully in the classroom by becoming more confident, active and independent readers, who can use a range of effective reading strategies in order to achieve their full reading potential'* (Nottinghamshire County Council Switch-on training manual, p. 2).

The intervention manual and accompanying training introduced TAs to the following theoretical frameworks:

- Vygotsky's theory of the zone of proximal development, which draws a distinction between what a learner can do independently and with help from an adult or more competent peer (Smagorinsky, 2011); and
- the 'simple view of reading', which distinguishes between language comprehension processes and word recognition skills and demonstrates that both are essential for effective reading (Gough and Tunmer, 1986).

It also explained the rationale for re-reading familiar books and how this approach helped to build confidence and fluency.

2. Who (recipients)

The intervention was aimed at pupils in Year 3 (aged seven and eight) who were working below age-related expectations at the end of Key Stage 1 (five to seven years) and did not have a high level of special needs. Schools were able to select pupils who met these criteria—reflecting the need to reflect real-life choices and contexts in a large scale effectiveness trial—and were advised only to select pupils for whom, in their view, the intervention would be appropriate and beneficial.

3. What (materials)

TAs were provided with an intervention manual which included:

- the rationale for the intervention;
- the theory of reading progress underpinning the intervention;
- detailed instructions about how the intervention should be delivered, including examples; and
- forms to monitor and record the progress of pupils, and explanations of how these should be used.

After the initial training, each school received a pack of 180 reading books to be used in the delivery of Switch-on. This bank of reading resources, from a variety of publishers, had an increasing gradient of challenge to meet the needs of all abilities. There was one book for each of the 30 reading levels across 15 colour bands. Books were fictional narrative texts.
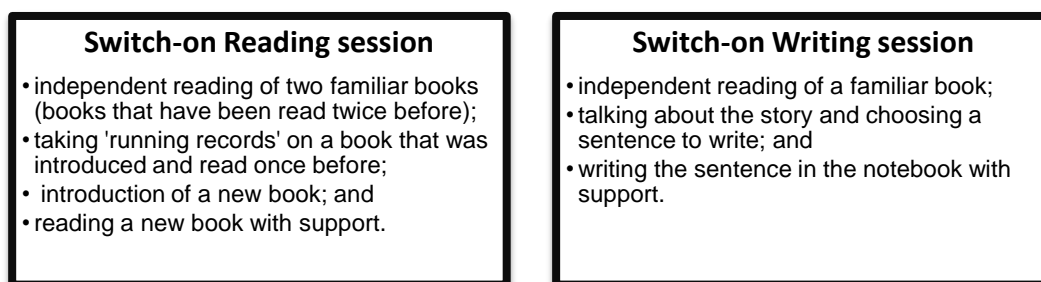
4. What (procedures)

Two versions of the Switch-on programme were included in the trial: Switch-on Reading and Switch-on Reading and Writing. Switch-on Reading consisted of daily reading sessions and Switch-on Reading and Writing alternated between writing and reading sessions.

Key features of Switch-on and how it was intended to be delivered included:

- It was designed to be **interactive and to encourage active and independent problem-solving**.
- It was based on **observation, monitoring of progress, and detailed feedback**. TAs used 'Running Records', a form of shorthand developed by Reading Recovery to record word by word pupils' mistakes and successes when reading. They used this to ensure pupils were accessing appropriately challenging texts, to develop understanding of how the child was learning, and to provide feedback and tailored prompts.
- It was intended to be **distinct from classroom learning**. This was emphasized in the writing sessions by the use of a different notebook and different pens. Switch-on was nonetheless intended to be embedded in pupils' wider learning and classroom work through communication between the TA and class teacher. This was emphasised in trainers' training.

In terms of content, the breakdown of each session is summarised in Figure 1**Error! Reference source not found.**.

**Figure 1: Content of Switch-on Reading and Writing**

| **Switch-on Reading session** | **Switch-on Writing session** |
|---|---|
| • independent reading of two familiar books (books that have been read twice before); <br>• taking 'running records' on a book that was introduced and read once before; <br>• introduction of a new book; and <br>• reading a new book with support. | • independent reading of a familiar book; <br>• talking about the story and choosing a sentence to write; and <br>• writing the sentence in the notebook with support. |

Each session of Switch-on Reading incorporated the revision of at least one familiar text, the introduction of a new text and vocabulary, practising phonics, and some work on comprehension through questions and discussions. There was an expectation that in each session the pupil would read excerpts from four books. In Switch-on Writing, pupils read one book.

In practice, some modifications were made to the regularity and the content of the sessions. This is explored in the Process Evaluation section of this report.

5. Who (implementers)

Switch-on was designed to be delivered by trained TAs. Schools were asked to allocate a minimum of two TAs to the intervention as well as a co-ordinator, who was responsible for supporting and overseeing delivery of the intervention in the school. It was specified that this should be a member of the senior management team.

6. How (mode of delivery)

Switch-on is a personalised one-to-one intervention that is tailored to the needs of individual pupils. It was delivered face to face. No specific guidance was included in the intervention manual about when sessions should take place and if they should be delivered during or outside of class time.
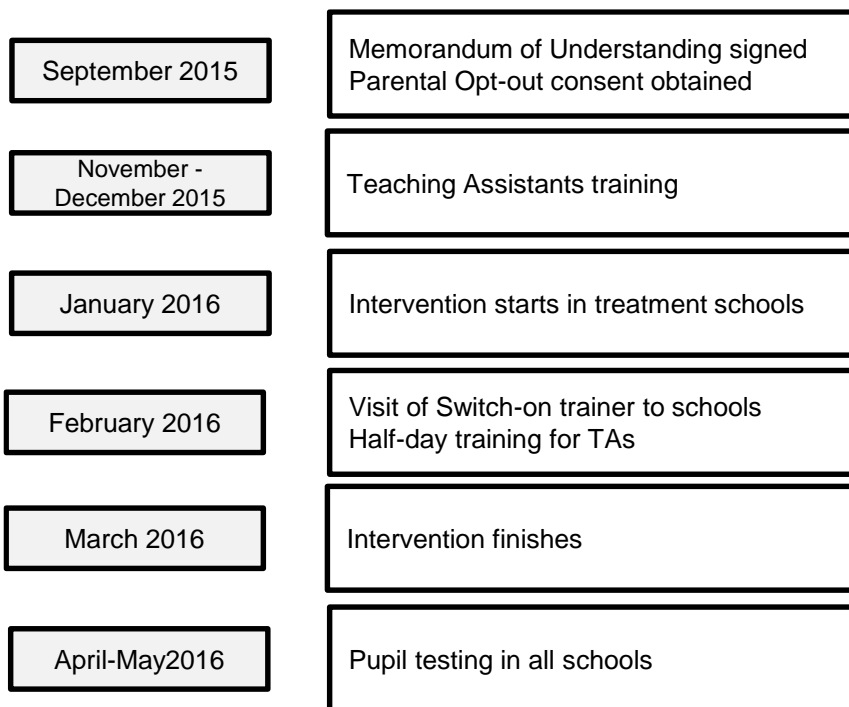
7. Where (setting)

The intervention took place in school. No specific guidance was included in the intervention manual about which settings within the school were most appropriate, leaving flexibility for schools to choose.

8. When and how much (dosage)

Delivery of Switch-on began in schools in the first week of the Spring term (week commencing 4 January 2016) and included daily 20-minute sessions over a ten-week period.

**Figure 2: Timeframe of the intervention delivery**

| September 2015 | Memorandum of Understanding signed Parental Opt-out consent obtained |
|---|---|
| November - December 2015 | Teaching Assistants training |
| January 2016 | Intervention starts in treatment schools |
| February 2016 | Visit of Switch-on trainer to schools Half-day training for TAs |
| March 2016 | Intervention finishes |
| April-May2016 | Pupil testing in all schools |

9. Tailoring

Switch-on is a manualised intervention and optimal treatment fidelity is emphasised. Nonetheless, TAs were encouraged to adapt their support strategies to the specific needs of pupils.

10. How well (planned)

A 'train the trainer' model was adopted in order to maximise implementation effectiveness. In this model the Switch-on developers trained 21 Switch-on trainers, who then went on to train TAs in the participating schools. In October 2015, the Switch-on trainers received two days (14 hours) training on how to deliver Switch-on Reading and Writing. They trained TAs in November and December 2015.

TAs and school coordinators both attended training on how to deliver Switch-on in their schools. Those in the Switch-on Reading group received one day of training, while those in the Reading and Writing group received two days (fourteen hours), one day each on reading and writing. The training provided background information on Switch-on, including the rationale for the content and approach, and also included demonstration of the use of the running record used to log the individual pupil's progress. There was also a video demonstration of the key components of a Switch-on session.

Half way through the programme (at approximately five weeks), TAs received a further half-day training session. Trainers also made one visit to TAs in their schools to observe delivery and provide feedback as well as answer any questions. Switch-on trainers also offered technical support and assistance by phone and email.

## Background evidence

A previous efficacy trial evaluated the reading element of the full Switch-on programme. This trial was funded by the EEF as part of a funding round dedicated to reading catch-up projects for children at the transition from primary to secondary school. The writing component of Switch-on was not included. The earlier efficacy trial involved Year 7 pupils who had not reached a secure level 4 at the end of Key Stage 2. It found that the programme 'made a noticeable positive impact' (Gorard *et al.*, 2014, p. 5). The findings suggested that, on average, pupils receiving the intervention would make approximately three additional months' progress over the course of a term compared with pupils who did not receive the intervention. In particular, the intervention was shown to have a positive impact on the literacy learning of pupils with special educational needs (SEN), those in receipt of pupil premium, and lower attainers (Gorard *et. al.*, 2014, p. 5).

This effectiveness trial sought to test the findings from the efficacy trial on a larger sample of schools using a cascaded 'training the trainer' approach. This more accurately reflected the conditions required for a larger scale-up. It also included Switch-on Reading and Writing, as well as Switch-on Reading. The effectiveness trial included pupils in Year 3 rather than Year 7, reflecting the EEF's focus on early intervention and prevention. In addition, based on their experience of delivering Switch-on, the developers considered this to be the age group most likely to benefit from the intervention.

## Evaluation objectives

The trial consisted of an impact study and a process study. The impact evaluation sought to establish whether, and to what extent, Switch-on improved outcomes in reading. The trial was an effectiveness trial, focused on determining how the intervention performs in the circumstances in which schools would normally be implementing it (that is, at scale).

There were three principal research questions tested by the project:

1. What is the impact of Switch-on Reading and Switch-on Reading and Writing on reading outcomes for eligible Year 3 children?
2. Does Switch-on Reading and Writing achieve better outcomes that Switch-on Reading?
3. Are there (positive or negative) spill-over effects on non-participating children that have reading difficulties, or on non-participating children?

The main aim of the process evaluation was to identify the main enablers and barriers to effective scaling-up of delivery of Switch-on.

The research protocol can be found here:

**https://educationendowmentfoundation.org.uk/our-work/projects/switch-on-effectiveness-trial/**

## Ethical review

NatCen Social Research obtained ethical approval from its internal Research Ethics Committee for the evaluation. Approval was sought for the opt-out process, communications and interviews with TAs, class teachers, co-ordinators, and Switch-on trainers, as well as the pupil testing, data linkage, and analysis of test results. Approval was granted on 31 July 2015.

## Project team

The team responsible for delivering Switch-on consisted of:

Paula Burrell, Intervention Developer
Jose Coles, Intervention Developer
Switch-on Trainers (21)

Teaching Assistants (297)

NatCen Social Research were the independent evaluators. The research team was led by Rakhee Patel and the evaluation design lead was Nico Jabin. They were supported by:

Loraine Bussard, Researcher
Javiera Cartagena, Senior Researcher
Sarah Haywood, Senior Researcher (now at the Department for Work and Pensions)
Michael Lumpkin, Research Administrator

## Trial registration

The protocol was published on the EEF website in December 2015 and no changes to the trial design were made after the trial start. The trial was registered on 6 July 2016 on the international standard randomised controlled trial number (ISRCTN) registry at **http://www.isrctn.com/ISRCTN64088368**. Registration took place after the start of the trial but before any outcome data was received.

# Methods

## Trial design

The evaluation estimated the impact of the Switch-on intervention on reading outcomes using a three-arm school-randomised controlled effectiveness trial with waitlist. An effectiveness trial aims to assess outcomes under conditions as close as possible to those faced in the real world.[1] The trial's primary focus was to compare the two treatment conditions jointly against a control condition, on the understanding that the differences between the interventions were marginal and of secondary interest.

Switch-on was delivered from January 2016 to March 2016; 184 schools in 17 local areas were recruited and were randomly allocated to one of three groups:

1. Switch-on Reading;
2. Switch-on Reading and Writing; or
3. a 'business as usual' control group, with a financial incentive.

Schools in the control condition used their business as usual approach to supporting struggling readers. These schools were offered compensation of £1,500 upon completion of outcome testing, and were given the option to participate in Switch-on training in the following year (to be delivered to any year groups except the trial year group). The evaluation collected information on the nature of support provided in control schools.

Before randomisation, each trial school designated between 4 and 16 eligible pupils from Year 3 to receive the intervention, subject to treatment allocation. All schools were informed that the outcomes of these core trial pupils would be assessed using an intention-to-treat approach (that only the outcomes of the pre-selected pupils would be considered in the impact analysis). The number of pre-selected core pupils was determined by the number of TAs each school assigned to the intervention. Each participating school had to commit between two and four TAs, identified prior to randomisation, and for each TA, schools selected between two and four pupils to receive the intervention.

This design was chosen because it takes into account the resource limitations schools actually face when making choices about targeted interventions and so is appropriate for an effectiveness trial. The requirement for a minimum of two TAs per school was stipulated to ensure peer support was available and to avoid TAs working in isolation.

## Participant selection

### Schools

Twenty-one Switch-on trainers recruited schools in 17 local areas.[2] The local areas were selected by the developers and, in many cases, were areas where they had existing professional links. Any state-maintained, academy, or private primary school located in one of the 17 participating areas where there was not already whole-school implementation of Reading Recovery (that is, where teachers and TAs had been trained in, and practiced, Reading Recovery principles)[3] were eligible to participate.

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[1] An efficacy trial, conversely, aims to detect the potential of an intervention under conditions as ideal as possible.
[2] The participating local authorities were Birmingham, Bristol, Cambridgeshire, Cheshire, Coventry, Derbyshire, Northamptonshire, Kent and Medway, Lincolnshire, Nottingham City, Nottinghamshire, Stoke on Trent, Sandwell, Walsall, Warrington, Wiltshire, and Yorkshire.
[3] The rationale for this was that if there was already whole-school implementation of Reading Recovery, including among TAs, additional training in Switch-on would bring limited benefits. Nevertheless, the process evaluation indicated that 3% of intervention schools and 4% of control schools were delivering Reading Recovery.

Only TAs that had not already received training in Switch-on were eligible; there were no additional eligibility criteria. When a school agreed to participate in the trial, the headteacher was required to sign a memorandum of understanding setting out the roles and responsibilities of the school, the evaluators, and the Switch-on delivery team. The memorandum of understanding informed the school about the design of the trial, the consent procedures, and specified what type of data would be collected and when.

Schools were only entered into the randomisation process if they completed a pre-randomisation survey and submitted all of the required data. Shortly after they were recruited to the trial, schools were sent a link to an online pre-intervention questionnaire that asked for information on:

- type of school;
- participating Year 3 pupils (such as their name, Unique Pupil Number (UPN), date of birth, and reading level);[4]
- how TAs are trained and deployed in the school (for example, whether there was a standard induction for TAs, or whether time was timetabled for TAs and teachers to plan lessons or part of lessons together in advance);
- TAs (including qualifications, experience levels in years, and which TAs would be working with pupils);
- pupils selected to receive Switch-on and information on why they were selected;
- 'reserve' pupils, in the event that those selected left the school before the start of the intervention;
- rooms and equipment available for testing, and the dates of the summer term to plan the testing schedule; and
- data on disability and SEN status in an anonymised, aggregated format.

### Pupils

Pupils that had not met age-related expectations in literacy at the end of Key Stage 1 (based on teacher assessments carried out at the end of Year 2), and who did not have a high level of special needs, were eligible for selection to the core trial group. Schools were advised to only select pupils for whom, in their view, the intervention would be appropriate. If there were more eligible pupils than the maximum 16 places available, schools were able to select which pupils to include. Pupils that were not pre-selected into the core trial group thus fell into two categories: eligible non-core pupils (those who were eligible but were not allocated to one of the places available) and ineligible pupils. These were included in the secondary analysis as set out below.

When schools were recruited to the trial in September 2015, they were able to select three 'reserve' pupils who, if necessary, could replace pupils that left the school before the start of the treatment in January 2016. However, because of the potential for introducing bias in the group of core trial pupils, we did not consider any replacements in the analysis.

Opt-out consent to participation in the trial, and to data linkage, was sought from parents of all pupils in Year 3 in all recruited schools prior to randomisation. The decision to obtain consent from all pupils was taken to allow (a) the investigation of spill-over effects on non-participating eligible and ineligible pupils and (b) whole-class outcome testing, which is less stigmatising for designated trial pupils and does not require opt-in consent.

## Outcomes measures

The primary, and only, outcome measure used in the evaluation was the Hodder Group Reading Test (HGRT) 2A (Vincent and Crumpler, 2007).[5] This test aims to test reading comprehension at word,

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[4] Note that information on SEN was not collected at this point as this would have required opt-in consent from pupils and parents. School-level summary information was therefore collected instead.
[5] More detail is available at **http://www.hoddereducation.co.uk/Product/9780340912706.aspx**

sentence, and continuous text level and is suitable for use with mixed ability groups. It was chosen because it is targeted at a wide age range (Years 2–6, ages 7–12), thus reducing the risk of floor or ceiling effects, while being non-adaptive and therefore ensuring that all pupils are measured on the same dimensions. It is also paper-based, which allowed whole-class testing in primary schools without adequate IT equipment. HGRT 2 is highly reliable, with a Kuder-Richardson 20/Cronbach's alpha score of 0.95. Improvement in writing skills from Switch-on Reading and Writing was not tested for as in this evaluation we were interested in the potential impact of the writing component on reading outcomes.

Outcomes were collected through whole-class testing over a period of three and a half weeks between 5 and 29 April 2016. Mop-up tests to collect outcomes from pupils that missed the main testing were carried out in 19 schools until 10 May 2016. Testing was overseen by NatCen invigilators who were blind to the treatment assignment of the school. Test papers were scored electronically by NatCen administrative staff who were also blind to treatment assignment.

## Sample size

The study planned to recruit 189 schools, nine schools per Switch-on trainer. This meant that between 756 and 3,024 pupils[6] were expected to be tested, depending on each school's choices about the number of pre-selected pupils. For the power calculations, we assumed that the harmonic mean of pupils pre-selected in each school would be five,[7] and the number of pupils in the trial therefore 945.

Our initial power calculations were based on a joint comparison of Switch-on Reading and Switch-on Reading and Writing against the control. This is because our discussion with the developers and the EEF indicated that the two interventions were conceptually very similar and differences in outcomes of secondary importance. In addition to the overall question, each intervention was also tested separately against the control. Minimum detectable effect sizes (MDES), expressed in standard deviations, are displayed in Table 2. The calculations assumed a power of 80%, a statistical significance level of 5% for a one-sided test, and an intra-class correlation coefficient (ICC) of 0.15 (based on EEF 2015, which suggests an ICC of between 0.08 and 0.15 for Reading at Key Stage 2).

The proportion of variance explained can be high for educational interventions if pre-test scores are used (Bloom *et al.*, 2007), and our primary MDES, based on an assumed sample size of 189 schools and a proportion of variance explained by pre-test scores of 0.60, was 0.18 standard deviations.

These calculations did not account for attrition.

**Table 2: Minimal detectable effect sizes**

|  | Number of recruited schools (Switch-on : Control): 126:63 (n = 189) |
| --- | --- |
| Unadjusted | 0.22 |
| 0.20* | 0.21 |
| 0.40* | 0.19 |
| 0.60* | 0.18 |

* Proportion of residual variance explained by baseline covariates.

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[6] If every school selected four pupils, 756 pupils would take part, if every school selected 16 pupils, 3,024 pupils would take part.

[7] The harmonic mean is the reciprocal of the arithmetic mean of the reciprocals, and, compared to the typical arithmetic mean, is less influenced by large outliers.

## Randomisation

Schools were randomly assigned to either of the two treatments or the control condition using randomisation stratified by the Switch-on trainer. As each trainer had capacity to support six schools in the implementation of Switch-on, each trainer was asked to recruit nine schools to the trial. In the event, six trainers recruited eight schools, 14 the expected nine, and one recruited ten schools—a total of 184 schools.

For the randomisation, a random sequence, generated by NatCen using Stata 12, was used to shuffle schools linked to each Switch-on trainer. The first three schools were assigned to Switch-on Reading, the next three to Switch-on Reading and Writing, and the remainder to the control. As a result, 63 schools were assigned to each treatment and 58 to the control condition. This approach is a slight variation to the approach set out in the statistical analysis plan, in which a third of a trainer's schools would be allocated to each arm with a random tie-breaker if the number of schools was not divisible by three. The adopted approach ensures that each trainer supported the maximum number of schools in the trial, which was felt to be important in the context of an effectiveness trial.

## Analysis

### Baseline characteristics
Baseline characteristics were summarised for core-trial pupils by intervention group. Variables available at pupil level were presented at pupil level, other variables were presented at school level.

Continuous variables were summarised with descriptive statistics (n, mean, standard deviation, range and median).

At school level, the comparison covered:

- school type;
- urban or rural status of schools;
- English as additional language (EAL) status; and
- Special Educational Needs (SEN) status.

At the pupil level, the following baseline comparisons were presented:

- Free School Meal (FSM) eligibility;
- gender;
- birth term; and
- KS1 reading outcome.

A summary of baseline characteristics is presented in the 'Outcomes and Analysis' section of the report.

### Primary analysis
The primary analysis examined whether pupils participating in a Switch-on variant had better average reading outcomes four to five months after starting the programme than pupils receiving 'business as usual' support for their reading.

Both treatment arms were compared jointly against the control using a multi-level model to account for heterogeneity between schools. This approach is in line with our original plan as set out in the trial protocol, but differs from the approach set out in the Statistical Analysis Plan (SAP). The reason for this is that an external review of the draft SAP suggested a separate analysis. This was then codified. However, a review of the logic behind our original choice and considerations of statistical power caused a reversal to our original plan. We have carried out the analysis set out in the SAP as sensitivity analysis, as described below.

Analysis was conducted on an intention-to-treat basis. The main model adjusted estimates and standard errors to baseline reading outcomes (Key Stage 1 teacher reading assessment) and the randomisation stratification variable, the Switch-on trainer, as fixed effects. Confidence intervals were calculated using bootstrapping.

The calculation of the effect sizes followed the methodology for Hedges' *g*—using the differences in means between treatment and control groups as numerator, and the pooled standard deviation based on the total variance from a multilevel model as denominator. The effect size calculation was based on Hedges' (2007) approach assuming unequal sample size per school.

The analysis was run in *R* version 3.2.1 (R Core Team, 2015) using the EEF's analytical package for education trials, *eefAnalytics*, in version 1.04 (Kasim *et al.*, 2016). Confidence intervals were specified at the 5% significance level for a two-sided test.

### Sensitivity analyses

A range of sensitivity analyses were carried out to explore the robustness of the main finding:

1. Each treatment arm was compared separately against the control, as set out in the SAP. The analysis assumed coefficients for the included covariates were constant across treatment conditions. No adjustment was made for multiple comparisons as the outcomes of the two interventions are considered to be highly correlated and findings in one intervention are likely to support the finding in the other (Schulz and Grimes, 2005).
2. A wider range of prognostic covariates were included to increase power. These were, at school level: a binary urban/rural indicator for the school, the type of school,[8] the total number of pupils, the proportion of pupils eligible for FSM, and the proportion of pupils with English as additional language. At year-group level: the proportion of SEN pupils, and the average baseline reading score. At individual level: gender, absences in Year 2, FSM eligibility, age, and the school term of birth.
3. CACE analysis: any core-trial participants that had not participated in at least 50% of sessions were labelled as non-compliant and a complier average treatment effect (CACE) was estimated. The cut-off was based on the consideration that attending less than 50% of sessions could not be considered as having participated in the intervention in a meaningful way.
4. Imputed values: we explored whether loss-to-follow-up was related to existing covariates or treatment assignment, used multiple imputation to infer the likely results of those lost to follow-up, and included these imputed data in a sensitivity analysis. In addition, although not specified in the analysis plan, we carried out an analysis that did not assume missing outcome data was 'missing at random' (MAR) but is instead 'missing not at random' (MNAR). For this purpose we assumed that pupils with missing outcome data would have achieved a score of zero points.

Our analysis plan also specified a variant of the CACE analysis where compliance was defined as attending at least 50% of sessions *and* being taught by a TA who had received the Switch-on training. However, due to the absence of the relevant TA data we could not perform this analysis.

### Secondary analyses

In secondary analyses, four hypotheses were examined, as set out below. As these analyses are additional to the main focus of the trial, the results should be considered preliminary and indicative.

- **H2**: pupils participating in Switch-on Reading have different (better or worse) outcomes than pupils participating in Switch-on Reading and Writing.
- **H3**: non-participating *eligible* pupils in the same class as pupils who participate in Switch-on Reading or Switch-on Reading and Writing will have better reading outcomes than eligible pupils in classes without pupils who participate in either Switch-on programme (positive spill-

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[8] The school types included: LA maintained schools, academies, faith schools and special schools.

over to non-participating eligible pupils). Pupils in treated arms are considered separately, reflecting the idea that core pupils' learning (which may be different in the two interventions) is passed on to non-participating pupils, for example by raising expectations.

- **H4**: non-participating *ineligible* pupils in the same class as pupils who participate in Switch-on Reading or Switch-on Reading and Writing will have better reading outcomes than ineligible pupils in classes without pupils who participate in either Switch-on programme (positive spill-over to non-participating ineligible pupils). Treatment arms, again, are compared separately.

- **H5**: Switch-on Reading and Switch-on Reading and Writing (jointly considered) will have a different (higher or lower) impact on FSM pupils.

Analyses for H2 to H4 included the full set of predictive covariates set out in the first sensitivity analysis above. The analysis of H5 included the same set of covariates as the primary analysis, to allow for comparability of the results.

The Statistical Analysis Plan is included in Appendix C.

## Implementation and process evaluation

The process evaluation was designed to explore how school staff in participating schools (TAs, class teachers, and co-ordinators) and Switch-on trainers viewed the delivery and implementation of Switch-on, and what they perceived the outcomes to be.

The main research questions were:

- What are the key success factors and barriers to successful implementation in a scaled up 'train the trainer' model?

- To what extent is fidelity to the core elements of Switch-on maintained when implementation is scaled up?

- What are the direct and indirect costs of delivering Switch-on?

Fieldwork took place between February and March 2016. The components are shown in Table 3.

**Table 3: Elements of the process evaluation**

| Elements of the process evaluation | Mode |
|---|---|
| Observation of a Switch-on Reading training session | Face-to-face by NatCen researchers |
| Registers to collect information on pupil attendance at Switch-on sessions | Pupil attendance log kept by TAs and provided to NatCen via Switch-on trainers |
| Interviews with TAs | Over the phone by NatCen researchers |
| Interviews with Switch-on trainers | Over the phone by NatCen researchers |
| Joint interview with the developers | Over the phone by NatCen researchers |
| Observation and interviews in six case-study schools | Face-to-face by NatCen researchers |
| Post-intervention survey | Online |

All research participants were provided with written information about taking part in the evaluation.

**Observation of a Switch-on training session**

Observation of a 'train the trainer' session and a TA training session provided the research team with insight into the delivery of the programme. Information gained from these events was used to develop the research tools for the process evaluation.

**Registers to collect information on pupil attendance at Switch-on session**

During the ten-week Switch-on intervention period, TAs in the treatment schools kept a record of pupil attendance, and noted any absences. They passed this information on to their Switch-on trainers, who entered it into a pro forma provided by the research team and uploaded it to a secure File Transfer Protocol (FTP) site so NatCen could access it. Trainers also provided information on attendance at the TA training sessions and support visits. This information on the 'dosage' of the intervention was analysed and informed an assessment of whether fidelity had been maintained in implementation.

**Teaching Assistants**

TAs from treatment schools were interviewed in order to understand their experience of delivering the programme, how Switch-on fitted into school life, and what they perceived the outcomes, if any, to be. An original sample of 14 TAs was selected to include a good range on the basis of the following characteristics:

- intervention group (Switch-on Reading or Switch-on Reading and Writing);
- number of years of experience;
- school practices in relation to TA deployment (induction training and whether TAs have planning time before lessons); and
- size of school.

A total of eight TAs were unable to participate. In their place, TAs with similar profiles were approached.

TAs in the sample received an email with an information leaflet and were given the opportunity to opt-out.

The interviews collected the views of TAs on a range of topics including:

- the training they received;
- their workload;
- delivering the programme;
- materials;
- views on whether the programme works more successfully with some groups than others, and why;
- views on the facilitators to successful implementation;
- views on the barriers to successful implementation;
- outcomes for children and reasons for this; and
- suggestions for improvements to the programme.

**Switch-on trainers**

These interviews aimed to understand trainers' experience of the training they had received from the developers, and their experience of subsequently delivering training to TAs. They also examined views on barriers to implementation and examples of successful implementation. Five trainers were selected to participate from different local authority areas in different regions.

**Case studies**

The aim of the case studies was to build a more detailed understanding of implementation. Day visits were carried out to selected schools. Visits took place around the eighth and ninth weeks of the ten-week Switch-on programme and included:

- watching a Switch-on session to view the programme in practice; and
- interviews with a TA, classroom teacher, and school co-ordinator.

A sample of six schools was selected, half of which had participated in Switch-on Reading, and half in Switch-on Reading and Writing. In addition, across the sample, there were schools with different:

- proportions of FSM pupils (low/medium/high);
- school practices in relation to TA deployment (induction training; whether TAs have planning time before lessons);
- sizes; and
- academy/LA status.

Two of the selected schools were unable to participate. In their place, two schools with similar profiles were approached and recruited.

The classroom teacher interviews covered topics such as:

- the workload created by the programme;
- if, and how, teachers had worked with Switch-on TAs;
- the barriers and facilitators to implementation;
- their views on the content of the programme and its suitability for their pupils;
- how the programme fitted in with their curriculum and schemes of work;
- perceptions of benefits to pupils; and
- suggestions for improvements to the programme.

The school co-ordinator interviews covered similar topics to the classroom teacher interviews including:

- the workload created by the programme;
- the barriers and facilitators to implementation and to sustaining the programme across the ten weeks; and
- any improvements they would make to the programme.

**Developers**

One joint interview was conducted with the two developers. This enabled the research team to fully understand the rationale behind the programme, its aims and objectives, how it was intended to be implemented, and their views on how implementation had gone in practice.

**Conduct of interviews**

Each interview was based on a topic guide to ensure systematic coverage of key issues that addressed the process evaluation research objectives. It was intended to be flexible and interactive, allowing issues of relevance to be covered through detailed follow-up questioning. Separate topic guides were produced for each type of respondent.

To minimise the burden on participants, all interviews, apart from the case studies, were conducted over the telephone. Interviews lasted approximately 45 minutes. The interviews were digitally recorded and then analysed using Framework, a systematic approach to qualitative data management developed by NatCen Social Research and now widely used in social policy research.

All participants were assured that everything discussed in the interview would remain confidential and would be treated in accordance with the Data Protection Act.

**Post-intervention survey**

At the end of the intervention, intervention and control schools were sent a link to a short online post-intervention survey. Its purpose was to map intervention and delivery in implementation schools and to gather an overview of the other interventions that may have been delivered in control schools—to understand what 'business as usual' meant for each school. The link to the survey was sent to the Switch-on co-ordinator in each school. Dosage and fidelity information was collected by asking schools whether the same TAs worked with the pupils throughout the programme, whether any TAs left the school, whether any pupils left the school, and whether the programme was delivered fully in the way it was intended. The survey also collected cost information from all schools.

Of the 184 participating schools, 179 completed post-intervention surveys—a response rate of 97%.

## Costs

Information on costs was collected through two tools:

- the post-intervention survey; and
- a cost spreadsheet, provided by the developers, covering all aspects of the delivery, discussed with them in a subsequent interview.

Our estimate of the total cost includes up-front costs (such as training for TAs and the purchase of resources and materials) and running costs (such as TA time to prepare and deliver the Switch-on sessions, and photocopying costs). The costs of developing the intervention are not included.

In order to calculate the total cost per pupil in the intervention's first year we considered those pupils who were intended to receive either Switch-on Reading or Switch-on Reading and Writing (n = 658). When estimating costs per pupil in the intervention's second and third years, we assumed that the same number of pupils would receive the intervention.

## Timeline

Planning for the intervention began in Spring 2015 with initial discussions about the trial with schools. This was followed by memorandums of understanding being signed at the start of the Autumn 2015 term. The intervention was delivered during the Spring 2016 term. Evaluation activities in the field started in January 2016 and ended in May 2016. Table 4 sets out the key evaluation milestones.

**Table 4: High level evaluation timeline**

| Date | Activity |
|---|---|
| March–September 2015 | Recruitment of schools |
| September 2015 | Memorandum of understanding signed<br>Opt-out letters sent to parents by schools |
| October 2015 | Schools provide pre-randomisation data on selected pupils<br>**Randomisation of schools performed based on data received** |
| November–December 2015 | TAs receive training |
| January 2016 | Intervention delivery begins |
| February 2016 | Fieldwork for the process evaluation |

| March 2016 | Intervention finishes |
| April 2016 | Pupil testing |
| May 2016 | Schools complete the online post-intervention survey |
| August 2016 | NPD outcome data extract obtained |
| September 2016 | Analysis |

# Impact evaluation

**Participants**

Switch-on trainers approached 476 schools across the 21 areas in which they operated,[9] and recruited 184 schools from a target of 189. One of the recruited schools (the only special school) was excluded from the study after randomisation because teachers did not believe the outcome test was appropriate for their pupils.[10]

In the 184 schools, 9,034 out of 9,185 (98%) pupils provided consent to trial participation and data linkage. Among those providing consent, 2,064 pupils were eligible for the intervention and 999 were pre-selected by schools to participate in the core trial. Eligible pupils had to be in Year 3 (aged seven and eight years), working below age-related expectations at the end of Key Stage 1 (five to seven years), and without a high level of special needs. Schools were able to select pupils who met these criteria and were advised by the Switch-on trainers and evaluation team to only select pupils for whom, in their view, the intervention would be appropriate and beneficial.

Of the 999 pre-selected pupils, 80 were lost to follow-up, so that outcome data of 919 pupils (92% of those assigned) was available for the analysis. For an additional 17 pupils, other covariates included in the primary analysis were missing, meaning that 902 pupils (90%) were included in the primary analysis.

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[9] Switch-on trainers were responsible for recruiting schools and used a variety of different techniques for that purpose. Some trainers invited all primary schools in their area, while others recruited in a more targeted way. As a result, the number of schools approached by trainers is not an appropriate indicator of schools' interest in participating in the study.

[10] At recruitment, teachers—on the basis of the intervention description given by trainers—believed that their pupils could benefit from this intervention. For this reason, the special school was not excluded prior to randomisation. However, when schools were asked to plan the outcome testing phase, the special school teachers made it clear that the test would not be appropriate for their pupils. At this point the decision was made to drop the school from the study.
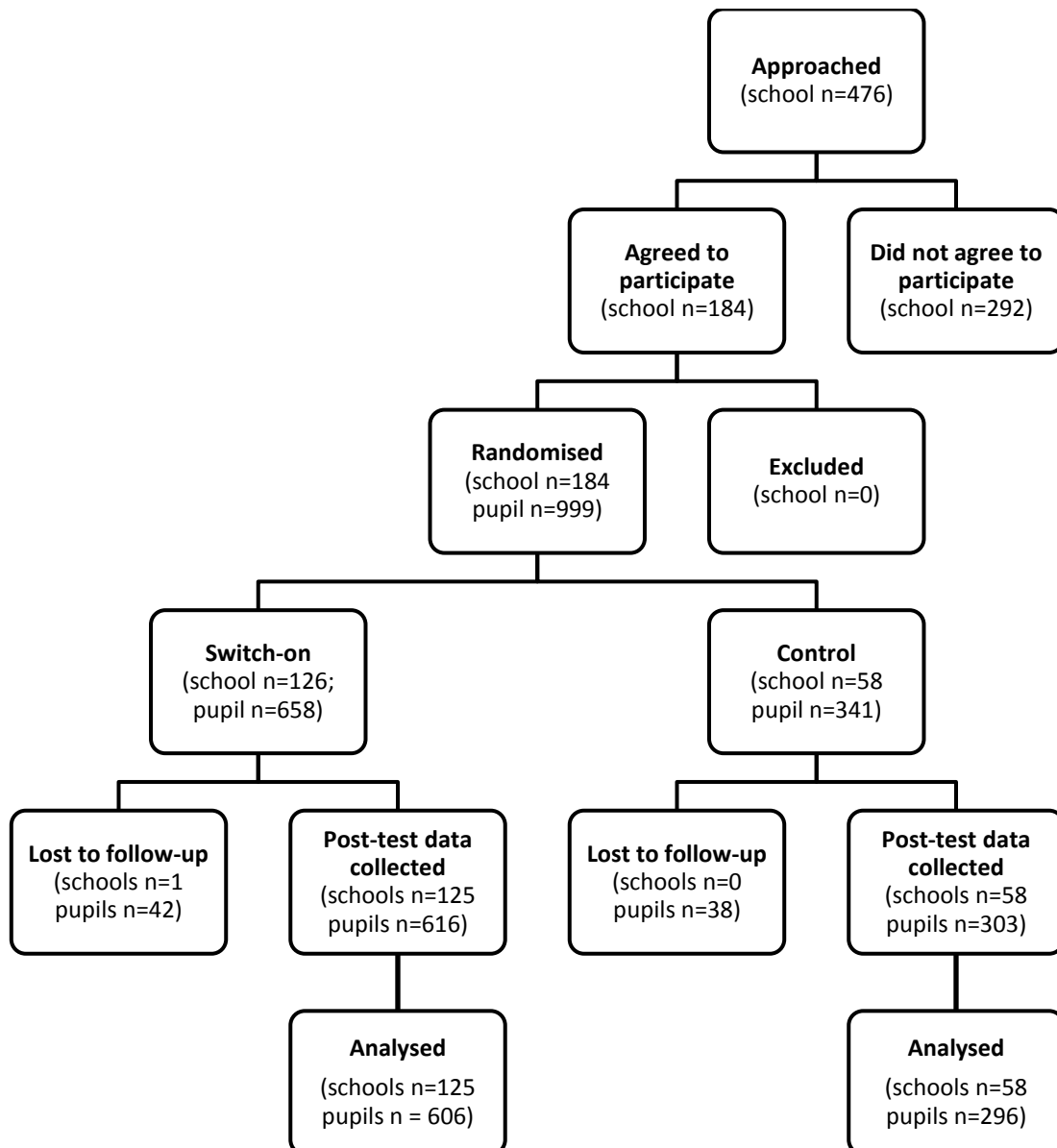
**Figure 3: Participant flow diagram**



Table 5 sets out the changes in the minimum detectable effect size (MDES) between design and analysis stages. At design stage, the MDES was estimated to be around 0.18 standard deviations, based on the assumptions that the two treatment arms would be jointly compared against the control in the main analysis, that baseline covariates would explain around 60% of the variance of final outcomes, and that the strength of the previous evidence allowed the significance test to be one-sided rather than two-sided.

The MDES at randomisation stage increased to 0.24 standard deviations due to the following factors:

- It was also decided to use, despite the positive evidence from the efficacy trial, a two-sided test to conservatively allow testing for negative intervention effects. This was done to better reflect current practice in impact evaluation research.

- The baseline covariates were not very predictive of the outcome test results. Our original power calculation assumed that baseline covariates would explain around 60% of variance in the outcome. However, the NPD-based baseline only accounted for 12% of variance (the correlation between baseline and outcome measure was 35%).

It is difficult to know exactly why baseline measures were such a poor predictor of final results. The higher correlation for better-performing pupils (66% for pupils not eligible for the intervention) indicates that regression to the mean may be a factor, a phenomenon whereby extreme scores normalise towards the mean. Regression to the mean occurs due to a proportion of extreme values being the result of chance variation. Another reason may be the difficulty in assessing reading skills adequately at KS1, or the importance of factors not accounted for in the analysis in influencing reading skills during the time of the intervention. Finally, the HGRT outcome test may not be a reliable reading test for low-achieving 'eligible' pupils, despite the overall positive evidence on reliability and validity from the standardisation across the range of skills, which showed high internal validity and good high correlation with other measures of reading ability (see Vincent and Crumpler, 2007).

The MDES at analysis stage increased marginally to 0.25 due to loss-to-follow-up of some pupils.

**Table 5: Minimum detectable effect size at different stages**

| Stage | N [schools/pupils] (n=intervention; n=control) | Correlation between pre-test (+other covariates) & post-test | ICC | Blocking/ stratification or pair matching | Power | Alpha | Minimum detectable effect size (MDES) |
|---|---|---|---|---|---|---|---|
| **Protocol** | Schools: 189 (SO: 126; C: 63) Pupils: 945 (SO: 630; C: 315) | 0.6 | 0.15 | Stratification by SO trainer | 80% | 0.05, one-sided | 0.18 |
| **Randomisation** | Schools: 184 (SO: 126; C: 58) Pupils: 999 (SO: 658; C: 341) | 0.35 | 0.11 | Stratification by SO trainer | 80% | 0.05, two-sided | 0.24 |
| **Analysis (i.e. available pre- and post-test)** | Schools: 183 (SO: 125; C: 58) Pupils: 902 (SO: 606; C: 296) | 0.35 | 0.11 | Stratification by SO trainer | 80% | 0.05, two-sided | 0.25 |

## School and pupil characteristics

Of the 184 schools recruited to the study, one, a special school, was excluded shortly after randomisation due to concerns of teachers about pupil testing. Of the remaining 183, seven in ten (69%) were local authority maintained schools, two in ten (22%) academies, and one in ten (9%) faith schools. Nearly nine in ten (87%) were located in an urban area.

The cross-trial mean of the school-level proportions of pupils with English as additional language was 16.5%, and of pupils with special educational needs, 11.5%. On average, a trial school had 50.1 Year 3 pupils, of which 16.9 were eligible for the intervention. Each trial school, on average, assigned 2.4 TAs to the intervention. None of these characteristics differ statistically significantly between trial arms. However, there is a difference, statistically significant at the 5% level, in the number of pupils pre-selected by schools for the intervention. Control schools selected 5.9 pupils, Switch-on Reading schools 5.6, and Switch-on Reading and Writing, 4.9.

At pupil level, across schools, 40% of core trial pupils were FSM-eligible, and 42% of core trial pupils were female. Pupils missed around 5% of the lessons they could have attended. These percentages do not differ between treatment arms. This is set out in more detail in Table 6.

Importantly, there is no statistically significant difference in baseline scores (KS1 reading score) across treatment arms, with 11.17 points achieved, on average, in Switch-on Reading and Writing as well as the control group, and 11.09 points achieved in Switch-on Reading. The effect size of the difference is 0.00 for Switch-on Reading and Writing against the control, and 0.03 for Switch-on Reading against the control.

**Table 6: Baseline comparison**

| Variable School-level (categorical) | Switch-on | | Control | |
|---|---|---|---|---|
| | **n/N (missing)** | **Percentage** | **n/N (missing)** | **Percentage** |
| **School-type** | | | | |
| Local authority maintained school | 89/125 (1) | 71% | 38/58 (0) | 66% |
| Academy | 25/125 (1) | 20% | 15/58 (0) | 26% |
| Faith school | 11/125 (1) | 9% | 5/58 (0) | 9% |
| **Rural/urban status** | | | | |
| Rural | 13/125 (1) | 10% | 10/56 (2) | 18% |
| Urban | 112/125 (1) | 90% | 46/56 (2) | 82% |
| **School-level (continuous)** | **n (missing)** | **Mean** | **n (missing)** | **Mean** |
| **EAL (% of pupils per school)** | 123 (3) | 16.5 | 53 (5) | 16.4 |
| **SEN (% of pupils in Year 3)** | 125 (1) | 11.7 | 58 (0) | 11.3 |
| **Average number of Y3 pupils per school** | 125 (1) | 50.8 | 58 (0) | 48.7 |
| **Number of *eligible* Y3 pupils** | 125 (1) | 16.7 | 58 (0) | 17.4 |
| **Number of pre-selected (core) Y3 trial pupils** | 125 (1) | 5.2 | 58 (0) | 5.9 |
| **TAs selected to deliver the intervention, per school** | 125 (1) | 2.4 | 58 (0) | 2.4 |
| **Pupil-level (categorical)** | **n/N (missing)** | **Percentage** | **n/N (missing)** | **Percentage** |
| **Eligible for FSM** | 221/606 (52) | 36% | 115/296 (45) | 39% |
| **Gender (female)** | 256/606 (52) | 42% | 122/296 (45) | 41% |
| **Birth term** | | | | |
| Spring | 273/606 (52) | 45% | 129/296 (45) | 44% |
| Summer | 239/606 (52) | 39% | 113/296 (45) | 38% |
| Autumn | 94/606 (52) | 16% | 54/296 (45) | 18% |
| **Pupil-level (continuous)** | **n (missing)** | **Mean** | **n (missing)** | **Mean** |
| **KS1 reading score (baseline)** | 606 (52) | 11.1 | 296 (45) | 11.2 |

| | | | | |
|---|---|---|---|---|
| **Absences (%)** | 606 (52) | 4.9 | 296 (45) | 5.0 |

There is a statistically significant difference in loss-to-follow-up between trial arms in the core trial group (see Table 7). The Switch-on Reading arm lost 7.4% of pupils at follow-up, Switch-on Reading and Writing 5.2%, and the control group 11.1%. Differential loss-to-follow-up can introduce bias in effect estimates to the extent that the differences are related to outcomes, that is, that the likelihood of being a poor or good reader is linked to the likelihood of missing the outcome test.

The large and statistically significant difference in loss-to-follow-up between trial groups raises the possibility that loss-to-follow-up is linked to outcomes, since eligible non-participating pupils were substantially more likely to miss the outcome test (23% did so) than ineligible, adequate readers (of whom 5% missed the test). Teachers may have felt that participation in a test was not appropriate for some pupils who would have achieved lower scores. However, it may also reflect a higher likelihood of absences in the eligible compared to the ineligible group.

The difference in missingness between trial arms of the core group thus may be problematic if it reflects teachers' propensity to prevent poorly performing pupils from being tested, or less problematic if other, less strongly outcome-related reasons are the cause. The imputation of missing outcome values thus becomes an important sensitivity analysis.

**Table 7: Percentage of pupils lost to follow-up, per trial group and treatment arm**

| | Control % | SO R % | SO RW % |
|---|---|---|---|
| Core | 11.1 | 7.4 | 5.2 |
| Eligible | 23.1 | 25.1 | 19.9 |
| Ineligible | 5.0 | 5.7 | 4.2 |

## Outcomes and analysis

### Primary analysis

The average post-intervention outcome scores for the core trial group, as measured by the Hodder Group Reading Test 2a, were 15.99 and 15.81 for Switch-on and the control group, respectively. The estimate of the average treatment effect, rounded to two decimal places, was 0.00. (Table 8).

**Table 8: Raw outcome test scores by treatment arm**

| | Switch-on Reading | Control group |
|---|---|---|
| Number of pupils (missing) | 606 (52) | 296 (45) |
| Mean (95% confidence interval) | 15.99 (15.54, 16.44) | 15.81 (14.99, 16.63) |

| | | |
|---|---|---|
| Effect size of comparison against control group | 0.00 | |
| Confidence interval for comparison against control | (-0.13, 0.13) | |
| Intra-class correlation in comparison against control | 0.16 | |

### Sensitivity analyses

The three sets of sensitivity analyses support the robustness of the primary analysis estimates.

#### 1. Comparing Switch-on Reading and Switch-on Reading and Writing separately against the control

Our Statistical Analysis Plan differed from our original protocol and the primary analysis presented by proposing to analyse Switch-on Reading and Switch-on Reading and Writing separately against the control. It was felt, at the time, that this was necessary to reflect the remaining uncertainty about the importance of the differences between the two intervention forms. However, following discussions with the EEF, we decided to revert to our original plan of a joint analysis in order to maximise statistical power. For transparency, we present here the analysis proposed in the SAP, which comes to the same conclusion of no evidence of an effect.

#### 2. Wider range of prognostic factors

In the first sensitivity analysis we included additional prognostic factors to reduce the variance around the estimated effect and offset the influence of any baseline imbalances in these factors. We added:

At school level:

- a binary urban/rural indicator for the school;
- the type of school;[11]
- the total number of pupils;
- the proportion of pupils eligible for FSM; and
- the proportion of pupils with English as additional language.

At year-group level:

- the proportion of pupils with special educational needs; and
- the average baseline reading score.

At individual level:

- gender;
- absences in Year 2;
- FSM eligibility;
- age; and
- the school term of birth.

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[11] The school types included: LA maintained schools, academies, faith schools, and special schools.

The results, set out in Table 9, show no change in the estimated effect of 0.00. As before, this estimate is not statistically significant.

### 3. Complier average causal effect

Non-attendance, or, in the case of the control group, take-up of treatment despite control group assignment, can lead to an underestimation of the true treatment effect when using an intention-to-treat approach. The estimation of the complier average causal effect (CACE) aims to take account of non-compliance to offer a better estimate of the true treatment effect. A core assumption of CACE analysis is that treatment outcomes are not dependent on the random allocation, in other words, that non-compliers in treatment and control groups have the same expected outcome as that of compliers in the alternative group.

In the present case, the difference of CACE estimates to the primary analysis estimates will be small because compliance was very high. No control-group pupils took up the treatment. In the treatment group, over seven in ten (71%) of all possible treatment sessions were attended by pupils across the two treatment arms, and nearly nine in ten (89%) of pupils attended at least 50% of sessions.

The point estimate of the effect of Switch-on on pupils attending at least 50% of sessions is -0.01 (CI: -0.16 to 0.14), and for pupils attending at least 80% of sessions -0.02 (CI: -0.29 to 0.25).

### 4. Loss-to-follow-up

Finally, we examined the effect of loss-to-follow-up on estimated effects under two different assumptions concerning missing data mechanisms: that outcome data were missing at random (MAR) and missing not at random (MNAR). MAR assumes that, except for random variation, missing outcomes can be predicted from other existing data, without bias. For example, pupils with higher levels of absence are more likely to perform poorly in the outcome test, but their performance does not also depend on, say, their teachers' judgement on how well the pupil would do in the test (on which we have no data). MNAR assumes that the missing data is related to the values of unobserved data. For example, participants judged by teachers to have lower levels of literacy may be less likely to complete the outcome measure. It is important to note that we cannot know whether our missing data is missing at random or missing not at random.

Assessment under the MAR assumption started, first, by exploring whether loss-to-follow-up was related to any prognostic variable or treatment assignment and, second, by running our expanded model with imputed missing outcome values.

Loss-to-follow-up rates were 7.4% in the Switch-on Reading arm, 5.2% in the Switch-on Reading and Writing arm, and 11.1% in the control arm.

A multi-level logit model showed that the likelihood of missing data was predicted by higher absences, lower treatment attendance rates in the treatment groups, attending a faith school, and the trial arm.

Once imputed missing outcomes were included in the model, the estimated effect (0.03 standard deviations) was of similar magnitude as the effect estimated in the primary analysis, and not statistically significant.

Under the MNAR assumption, we assumed that all pupils with missing outcomes would have achieved the lowest point score (zero points) if they had taken part in the outcome test. This is an extreme assumption that builds on the idea that missingness is related to teachers' insight into pupils' performance. In reality, even if teachers had held back low-performing pupils from the test, those pupils would have, on average, achieved scores higher than zero. Given the distribution of missing values, our assumption is likely to bias results in favour of finding an intervention effect. We found that under these assumptions, the estimated effects are larger (0.12 standard deviations) but not statistically significant, thus supporting our main result.

**Table 9: Effect sizes of sensitivity analyses**

| | n (missing) | Effect size | Confidence intervals |
|---|---|---|---|
| Separate analysis of Switch-on Reading and Switch-on Reading and Writing | | | |
| Switch-on Reading | 612 (79) | -0.04 | (-0.19, 0.11) |
| Switch-on Reading and Writing | 586 (63) | 0.05 | (-0.10, 0.19) |
| Additional prognostic factors | | | |
| Switch-on vs. control | 849 (150) | 0.00 | (-0.15, 0.15) |
| Complier Average Causal Effect (CACE) | | | |
| Attended at least 50% of sessions | 860 (139) | -0.01 | (-0.16 0.14) |
| Attended at least 80% of sessions | 860 (139) | -0.02 | (-0.29, 0.25) |
| Imputed outcome values (multiple imputation assuming MAR) | | | |
| Switch-on vs. control | 978 (21) | 0.03 | (-0.12, 0.13) |
| Imputed outcome values (manual imputation assuming MNAR) | | | |
| Switch-on vs. control | 974 (25) | 0.12 | (-0.02, 0.23) |

### Secondary analyses

Four additional analyses were carried out, as specified in the analysis plan. The results are summarised in Table 10.

#### *H2: Difference in impact between Switch-on Reading and Switch-on Reading and Writing*

The first compared the two treatment arms, Switch-on Reading with Switch-on Reading and Writing. We found no difference in effect between the two treatment variants, although it should be noted that the trial was powered to detect only very large differences with certainty. The point estimate, not statistically significant, was 0.08 standard deviations (CI: -0.05, 0.22) in favour of Switch-on Reading and Writing.

#### *H3: Impact on non-participating eligible pupils*

Our second analysis explored the effect of the Switch-on variants on pupils who were eligible to receive Switch-on but were not selected by schools to receive the intervention. We had hypothesised that any improvement in reading ability of core-trial pupils could raise expectations and thus standards of other eligible, as well as ineligible, pupils. However, our result—a moderate and statistically significant negative effect of 0.31 standard deviations—indicates that Switch-on could have a negative effect on non-participating eligible pupils. One could speculate that the reduction in availability of TAs to non-participating pupils with lower reading standards has a negative effect on their performance. However, it needs to be emphasised that these results, even if statistically significant, are only indicative. One reason for caution is the large proportion of missing data. Nearly a third of observations were excluded from analysis due to missing data. Moreover, our trial was designed to test our primary hypothesis. Undertaking multiple hypothesis tests increases the likelihood that the groups being compared will

appear to differ on at least one attribute due to random sampling error alone and may lead to false conclusions that an observed difference is 'real'.

### H4: Impact on ineligible pupils

Our trial also pointed towards a positive spill-over effect on non-eligible pupils. Results showed a low, statistically significant positive effect (of 0.11 standard deviations) on the reading outcomes of ineligible pupils. In the light of our previous findings, these results could be hypothesised to arise from the removal of under-performing pupils from the classroom, although again, these findings are only indicative and may be spurious.

### H5: Impact on core trial pupils eligible for free school meals

Our final secondary analysis explored the effect of the Switch-on variants on FSM pupils. A subgroup analysis showed no effect of either treatment arm. The point estimates in each case are more extreme than those of the full sample, so that Switch-on Reading shows a larger negative effect on FSM pupils, and Switch-on Reading and Writing a larger positive one. An interaction test also failed to find a statistically significant effect.

**Table 10: Effect sizes of secondary analyses**

| | n (missing) | Effect size (Hedge's *g*) | Confidence interval | Intra-class correlation |
|---|---|---|---|---|
| H2: Comparing Switch-on Reading and Writing over Switch-on Reading | 606 (10) | 0.08 | (-0.05, 0.22) | 0.21 |
| H3: Non-participating eligible pupils | 719 (346) | -0.31 | (-0.47, -0.13) | 0.12 |
| H4: Ineligible pupils | 6309 (661) | 0.11 | (0.06, 0.17) | 0.12 |
| H5: FSM subgroup analysis | 336 (61) | 0.03 | (-0.18, 0.20) | 0.17 |

### Additional checks

In addition to the above analyses, we examined the possibility of floor effects in the outcome measure. Floor effects occur when a non-trivial proportion of trial participants (in either treatment arm) achieve the lowest possible score. In that case it is no longer possible to distinguish between better- and worse-performing pupils achieving this score, and consequently improvements due to the intervention may go undetected.

There is no evidence of floor effects, as 0.3% of core trial pupils in the control group and 0.5% in the treatment group obtained the lowest possible score (zero). The histogram gives further assurance that floor effects were not a problem preventing the detection of an effect.
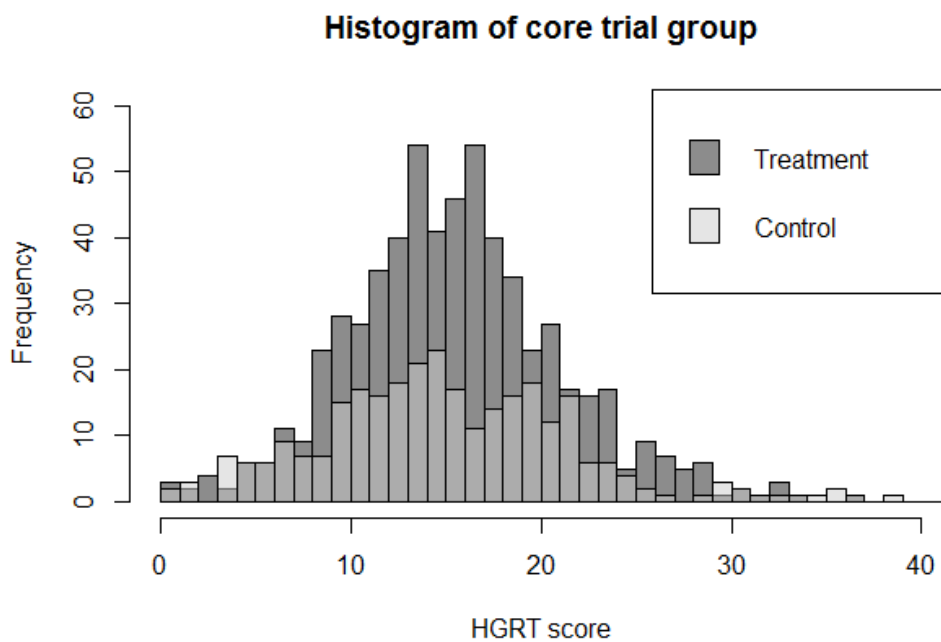
**Histogram of core trial group**



**Figure 4: Histogram of trial outcomes for core group**

## Cost

The cost estimate presented here relates to the cost to schools of implementing the intervention without EEF funding. Our estimate of the cost of a school participating includes:

- up-front costs, such as buying the Switch-on set of reading books, the Switch-on manual and teaching materials, fees for the initial and follow-up training, and staff time required for attendance at training; and
- running costs, such as the time of TAs to prepare for and deliver sessions, the time of co-ordinators in schools to support TAs, and the costs of photocopying materials.

Our estimates are based on 658 pupils receiving the intervention in 126 participating schools (63 in each treated arm) with 296 TAs and 126 co-ordinators. This equates to approximately five pupils, two or three TAs, and one co-ordinator per school. Costs incurred by the Switch-on developers to train the trainers and pay their professional fees are not included in our estimates.

The following sections show the components of costs incurred by schools and present the cost per pupil.

Overall, the cost of the intervention was estimated at £359,499, and the total cost per pupil, over the first year, was estimated at £546.35.

## Up-front costs and running costs

The main up-front costs to schools are the one-off purchases of two sets of books (£1,850), the Switch-on manual (£30) and accompanying teaching materials (approximately £9 per TA), and fees for training. For Switch-on Reading and Writing, TAs and co-ordinators received two days (14 hours) of training, and for Switch-on Reading, one day (seven hours). In addition, TAs in each version of the

programme received half a day of follow-up training after they had started delivering the intervention. The fee for two days (fourteen hours) of training is approximately £300.[12]

Delivering Switch-on required a considerable investment of time by TAs. As well as the daily 20-minute session with each pupil, schools reported that each TA spent an average of 1.5 hours per day preparing to deliver Switch-on and writing up notes after sessions. Schools also reported that co-ordinators spent around 1.5 days (10.5 hours) across the ten-week period supporting TAs in their delivery. Therefore, on the basis of seven working hours per day, a total of 4,067 hours were spent by staff (co-ordinators and TAs) when preparing the sessions. Additionally, 33,390 hours were spent in total by staff when delivering the intervention.

The only direct running costs identified relate to photocopying forms and 'running records', and the occasional purchase of additional books. This averaged approximately £13.75 per school (£1,733 in total).

**Table 11: Trial total up-front and running costs**

| Up-Front Costs | | |
|---|---|---|
| **Item** | **Time in Days (hours)** | **Cost (£)** |
| | | |
| Switch-on folder and teaching materials | | 6,444 |
| | | |
| Time for co-ordinator to attend training (Reading and Writing) | 126 (882) | |
| Time for co-ordinator to attend training ( Reading) | 63 (441) | |
| Time for TAs to attend training (Reading and Writing) | 370 (2,310) | |
| Time for TAs to attend training ( Reading) | 222 (1,554) | |
| Books | | 233,100 |
| Fees for training (Reading and Writing) | | 74,400 |
| Fees for training (Reading) | | 42,750 |
| Travel costs to attend training | | 1,072 |
| **Sub-Total** | **781 (5,467)** | **357,766** |
| | | |
| **Total up-front costs** | | **357,766** |
| | | |
| Running costs | | |
| **Item** | **Time in Days (Hours)** | **Cost (£)** |
| | | |
| Time spent by TAs preparing sessions | 1,586 (11,102) | |
| Time spent by TAs delivering sessions | 1,410 (9,870) | |
| Time spent by TAs writing up sessions and follow up after sessions | 1,586 (11,102) | |
| Time spent by co-ordinators supporting TAs | 189 (1,323) | |
| Printing and photocopying/purchase of additional books | | 1,733 |
| **Sub-Total** | **4,770 (33,390)** | **1,733** |

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[12] It was reported that in the trial the cost of training—including venue hire, refreshments and TA travel but excluding trainer fees—was £90 for two days. It was also estimated by the developers that in a non-trial context and without EEF funding, the fees charged to schools for training would be £300 for two days (£150 per day). This is the figure that we have used in our estimates in order to reflect the true costs schools would incur if choosing to deliver Switch-on.

| | | |
|---|---|---|
| **Total running costs** | | **1,733** |
| **Total: up-front and running costs** | | **359,499** |

## Pupil cost and cost over time

The up-front costs are regarded as one-off expenditure which will not apply in subsequent years if the intervention is extended for a longer period of time. This separation is particularly important as it also allows us to estimate the potential cost of the intervention if it is implemented for three years, where up-front costs are distributed over the whole length of the programme.

Table 12 presents the up-front and running costs per pupil in the first year and Table 13 goes on to show how the average cost per pupil per year decreases as the length of the interventions is increased.

The up-front cost per pupil for the trial is £543.72 and the running costs per pupil are £2.63 (although there is a significant investment of staff time) which gives a total per pupil of £546.35. In the case that this project is run over a period of three years, the per pupil per year cost decreases to £183.87. This is due to the up-front costs being relatively high compared to the total running costs. In terms of staff time required to deliver Switch-on, 8.3 hours per pupil were spent on TA and coordinator training and an additional 50.7 hours per pupil were required to deliver the sessions. This gives a total of 68.41 hours per pupil (or 8.44 days per pupil).

**Table 12: Up-front and running costs per pupil**

| | Summary | |
|---|---|---|
| **Cost** | **Time in days (hours) per pupil** | **Cost per pupil (£)** |
| Start-up cost | 1.19 (8.31) | 543.72 |
| Running costs per year | 7.24 (50.74) | 2.63 |
| Total cost in first year | 8.44 (68.41) | 546.35 |

**Table 13: Costs per pupil over time**

| **Cost per year over 3 years** | **Cumulative cost per pupil (£)** | **Average cost per pupil per year (£)** |
|---|---|---|
| When delivered for 1 year | 546.35 | 546.35 |
| When delivered for 2 years | 548.98 | 274.49 |
| When delivered for 3 years | 551.62 | 183.87 |

## Per pupil costs compared with the efficacy trial

The per pupil costs estimated in the previous efficacy trial was £627, which is higher than the £546 per pupil estimated in this effectiveness trial. The cost of resources was similar in both trials (£1840 in the efficacy trial and £1850 in this study). The estimated per day cost of training was higher for this study than in the efficacy trial (£150 per day compared with £95 per day in the efficacy trial).

# Process evaluation

This section synthesises the findings from the process evaluation of the implementation of Switch-on. It sets out what worked well and the main challenges, and identifies areas of improvement that could strengthen fidelity and replication. It brings together the perspectives and experiences of stakeholders who participated in the evaluation research. These include Switch-on trainers who trained Teachings Assistants and supported intervention delivery, TAs who delivered the daily sessions for pupils, co-ordinators responsible for intervention delivery in their school, classroom teachers, and the developers of the intervention. Table 14 sets out the number of achieved interviews for each type of participant.

**Table 14: Achieved interviews, process evaluation**

| Participant | Achieved interviews |
|---|---|
| Switch-on trainers | 5 |
| Teaching Assistants | 20 |
| Class teachers | 6 |
| Co-ordinators | 6 |
| Switch-on Developers | 1 joint interview with both developers |

The process evaluation also drew on an online post-intervention survey: 179 out of the 184 participating schools completed the survey (a response rate of 97%).

## Implementation

The section on implementation is structured around the key elements that were found to be related to successful delivery of Switch-on:

- attractiveness of the intervention;
- quality of the training and resources;
- team delivery;
- senior leadership, particularly in relation to resource management;
- halfway visit by the trainer to the school;
- adequate facilities; and
- 'Reading Recovery' experience.

### *Attractiveness of the intervention*

The intervention was attractive to stakeholders and aligned with the ambition of most schools to ensure pupils were confident and effective readers, and that TAs were skilled at supporting reading. TAs and co-ordinators were particularly enthusiastic about the new books. They considered that the books covered a good range of topics and fostered the varied interests of different pupils.

> '*We loved the fact that we were given all of these lovely books and everything and the children were going to get to read lots of new stories and everything because once you can get children enthusiastic about reading you're halfway there really*' (TA).

The books were primarily narrative fiction. There was a clear rationale that non-fiction texts are less helpful for struggling readers due to their less 'natural' language, specific vocabulary, and more complicated layouts. Nonetheless, some TAs felt that the range of books could have been broader to introduce children to different reading experiences, for example by including non-fiction books. This

suggests that a clearer explanation of why fictional texts had been selected could be helpful to secure commitment among TAs.

Another aspect of the perceived attractiveness of Switch-on was the upskilling of TAs. Stakeholders felt that Switch-on invested in TAs, increasing their understanding of reading support strategies and teaching them how to adapt their teaching to children's individual needs. As a consequence, it was seen to enable TAs to take more responsibility in the classroom, which was highly valued.

### *Quality of the training and resources*

The following aspects of the training facilitated effective implementation of Switch-on:

- Explanations and examples were clear. TAs particularly praised the use of videos to demonstrate aspects of the intervention.
- The training was practical and hands-on. For example, the role-play and mock delivery were valued by TAs.
- Folders with all the forms and documents needed for the intervention were provided and these were considered to save TAs' time during the intervention.
- There was opportunity for school co-ordinators to attend as well as TAs. This meant co-ordinators had a good understanding of the intervention and of how they should support TAs. As a result, TAs felt well-supported and were confident that the co-ordinator could help them to deliver the intervention.
    '*When I left the training, there was nothing that I needed that I hadn't got*' (TA).
    Similarly, TAs and co-ordinators generally felt well-supported by the trainer.

Although the training videos were seen as useful, TAs felt they would have benefitted from seeing a video of a full session rather than just components of a session. This was provided later at the half-way training and also made available on the website, but earlier availability was thought to be important. Some TAs were not aware the training video was on the website.

Reducing the lag between the end of training and the start of delivery would also support improved delivery. TAs felt less confident about implementing Switch-on because of the lag and had forgotten some aspects of the intervention, such as use of the Running Records.

Ensuring materials are provided to schools well in advance of the start of intervention delivery was considered to be important for effective delivery. School staff found the resources (such as the books, notebooks and pens) helpful but suggested they should be provided earlier to allow sufficient time for preparation.

### *Team delivery*

The Switch-on delivery model included support for schools from a Switch-on trainer and support for TAs from a school co-ordinator and at least one other TA in the school (Figure 5).

**Figure 5: Support built in to the Switch-on delivery model**
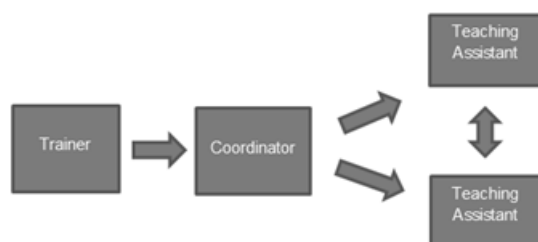
These different levels of support and collaboration between trainers, co-ordinators and TAs were critical to the smooth running of Switch-on:

- The trainer was an important source of support for the co-ordinator. Co-ordinators appreciated the trainers' availability to answer questions about the administrative aspects of the intervention as well as more technical questions related to reading strategies and pupil support. This provided reassurance and helped to build confidence that they were delivering the intervention as intended.
- TAs benefitted from having a dedicated co-ordinator in the school. A co-ordinator without other competing responsibilities, such as teaching, was thought to provide the ideal level of support.
- The fact that there was a minimum of two Switch-on TAs in the school meant that staff could discuss the intervention together, trial it, and answer each other's queries. This motivated TAs and helped sustain their engagement with the intervention.

It was felt that class teachers' input was missing from the delivery model and there were concerns about a lack of coherence between Switch-on sessions and classroom teaching. Class teachers had no formal role in delivery, and in some cases it was reported that they knew little about the intervention. It was felt that their involvement would have helped TAs:

- to understand better the background and difficulties of intervention pupils;
- to develop better strategies to work with these pupils; and
- to establish coherence between the intervention and the classroom to create a transfer of skills.

Class teachers not being involved in the timetabling process, and the intervention taking place during key lessons (English, maths, and science), was felt to be a potential source of concern and tensions. Teaching staff worried this could have a negative effect on pupils' confidence and attainment. They were particularly concerned when pupils missed English classes and were worried that already-struggling pupils might fall further behind. Schools in which co-ordinators, TAs and class teachers had worked collaboratively and discussed the delivery and goals of the intervention tended to be more satisfied. They recommended discussing the objectives for the selected pupils and involving teaching staff in the timetabling of the intervention.

### Leadership from senior staff

The memorandum of understanding signed by schools specified that a member of the senior management team should be responsible for Switch-on in the school. While in many schools a senior member of staff was allocated (for example, the deputy head or even headteacher), in some schools the Switch-on co-ordinator was a Year 3 or 4 teacher.

Findings from the qualitative interviews indicate that when involved, senior staff were able to liberate TAs from their other duties, organise cover, and ring-fence TA time for the intervention. This was seen as a crucial condition of successful delivery and where this did not happen, it was challenging to deliver the intervention effectively.

> '*So all the practicalities of time, of resources, all that organisational side, is huge with any intervention, and it can make or break the pupil outcomes for that intervention. So however good your training is, your Switch-on training, if, if the TAs go back to school, and there isn't that will to release them from the classroom, for example, or if schools are not prepared to buy the reading resources, then that intervention fails*' (Trainer).

### Managing TA workloads

There was a perception that the introduction of Switch-on to a school contributed to resource constraints and limited TA availability in other areas. Managing this effectively was seen as an important factor in successful delivery.

Due to their increased workload resulting from Switch-on, some TAs had to stop delivering other interventions and programmes. There was a reported concern that non-intervention children were missing out on support as a consequence. For example, one TA used to deliver the Daily Readers literacy intervention but had to stop when she started working on Switch-on. She was concerned that other pupils were falling behind.

> '*There's other children now that are not getting my time because this is taking my time*' (TA).

TAs' increased workloads as a result of Switch-on also meant that in some schools there was less TA support available in the classroom. Some class teachers reported that this was challenging, and TAs also felt that they were not fulfilling all their responsibilities since the start of Switch-on, for example, in relation to supporting behaviour management in the classroom. In some instances, other TAs, or the class teacher, had to take on the responsibilities of the Switch-on TA.

Overall, 79% of school co-ordinators agreed or strongly agreed that because of the TAs' involvement in Switch-on, other pupils received less support than they would have otherwise.

### Half-way visit by the trainer to the school

The half-way visit by the trainer was identified as crucial. This opportunity to clarify uncertainties or ask for support and strategies was highly valued by TAs. As a result of the visit, in which the trainer observed the TA delivering a session and provided feedback, TAs felt more confident that they could deliver the intervention as intended.

> '*That was really good 'cause it made me more confident to know that I was doing the right thing, and she gave us quite a bit of feedback and some good tips on how to progress the children*' (TA).

However, there was a concern about the timing of the visit. It was reported that the visit took place too late in the intervention, and as a consequence limited the capacity of TAs to correct their mistakes or address their difficulties. Respondents felt the visit should have happened during the first few weeks rather than half-way through. The same feedback was collected about the half-day training, which took place mid-way through intervention delivery.

> '*If you've made a mistake really, by then, you're making a mistake all the way through*' (TA).

### Adequate facilities

Having an adequate room, ideally in a private setting, was identified as important for the delivery of the intervention given the emphasis on one-to-one attention for the pupil. Around a third of schools (34%) reported that it had been a challenge to find adequate facilities. For example, one school reported delivering the intervention in a corridor, which meant ongoing disruptions that inevitably affected the quality of delivery.

As a consequence of the lack of a designated and stable location, some TAs had to carry the materials between locations and set up the intervention every day. This became an additional source of pressure on their time. There was also some concern that the lack of consistency disrupted pupils. In cases where the intervention was scheduled at a regular and specific time of the day, it was generally easier to secure a stable room.

### Level of detail of the intervention

Switch-on was reported to be a demanding intervention that required a lot of investment from TAs in terms of preparation, delivery time, and paperwork. Some schools felt that the requirements of the intervention, in terms of time required for preparation and planning, could have been clearer.

The rationale behind the paperwork was to help the TA develop a theory of how the pupil was learning in order to inform planning and teaching. For that purpose, TAs had to complete a form for each session detailing the familiar reading to be used, the reading objective, the strategies planned for praise and prompts, and how well these worked. In addition, TAs had to do the Running Record, which listed the number of errors made and calculated the error rate in order to assess the adequacy of the reading level.

Although 'Running Records' were seen as useful to monitor progress—'*You can see those little things that you would never pick up on just listening*' (TA)—TAs felt that the forms for session planning were repetitive and overly detailed. This put pressure on their time, which they thought would have been better used with the children. Sixty-eight percent of schools reported that doing all the paperwork relating to the sessions had been a challenge and there was a general view that the paperwork could be simplified.

**Concern about the approach to books**

There was a shared concern about the requirement to read three or four books per session. The rationale for this was to introduce children to a wider range of books. However, it was feared to be disheartening and demotivating for children if they did not have the opportunity to complete a book. TAs felt that reading a book all the way through and getting to the end was part of the satisfaction of reading. As a result TAs feared that not being able to do so might be demotivating for the intervention pupils.

> '*That is one of the drawbacks that all of us found, that the children, especially early on, they get so caught up in the fact that now they can read they really want to read to the end of the book and Switch-on doesn't—it almost doesn't want you to read to the end of the book*' (TA).

Training for Switch-on trainers emphasised that children should have access to the books outside of the Switch-on session so that they could complete the books, but this was not always clearly understood by TAs. The need to cover three or four texts also meant it was a challenge for TAs to keep to the timeframe of 20 minutes per session.

**Reading Recovery experience in the school**

Schools that had a member of staff who was trained in Reading Recovery appeared to have fewer difficulties in delivering Switch-on effectively. The methodology and monitoring requirements were perceived to be similar and expertise could be transferred to Switch-on. This was considered to be particularly helpful early on, when TAs were still getting used to the intervention.

## Fidelity

Commitment to deliver Switch-on as intended was evident. There was a high level of fidelity in terms of delivering sessions at the prescribed frequency and ensuring trained TAs continued to run the sessions. Nonetheless, school staff made contextual adaptations for various reasons—primarily in relation to the format and content of sessions. These findings reflect those of the previous efficacy trial, which also found that there was a tendency for some staff to stray away from the explicit schedule.

*Regularity:* Most schools delivered Switch-on daily, as required, but around one in ten schools (9%), however, reported that they were unable to deliver daily sessions. The process evaluation indicates that this was principally due to competing pressures on TAs' time. For example, TAs were required to provide cover when class teachers were unavailable, support pupil assessment, or help with mock SATs. Events such as school trips were also reported to disrupt the daily timetable. In addition, pupil absence due to illness or medical appointments was a factor.

*Format:* TAs adapted the format of Switch-on based on what they thought would work best for the pupils. For example, they reported letting the sessions run for longer than 20 minutes when they felt the

children would benefit from not being interrupted. In some instances sessions also took longer due to form-filling.

> '*It's like you almost need a stopwatch in front of you and that's—I didn't want to do that because you don't want to be clock-watching while you're trying to work with a child because it just interrupts the flow a bit really*' (TA).

In some cases only one familiar reading was done instead of two.

***Session lead:*** In a very small proportion of schools (5%), in case of temporary absence, the TAs allocated to the intervention were replaced by a TA who had not been trained by a Switch-on trainer. In such cases, the process evaluation indicates that the TA tended to explain the intervention to the replacement staff in order to maintain coherence in the delivery.

***Content:*** Content was sometimes adapted to children's specific needs. For example, some children who had behavioural difficulties were not always asked to do the writing, or the writing component was left out entirely. In one case, a child with behavioural difficulties was taken out of the intervention completely as staff felt it was not appropriate for him. The main change to content was an added focus on comprehension as TAs felt there was not enough focus and time dedicated to it. Adaptations in this case included additional prompts on comprehension and vocabulary checking.

> '*I felt as though Switch-on doesn't give you enough time to focus on comprehension, and I feel sometimes that children can accelerate in their reading but not always totally understand what they are reading*' (TA).

It was thought that, although children were improving in decoding words, their understanding didn't always improve equally. Some TAs reported moving up book levels very fast with their pupils, but then having to go down because of insufficient comprehension. This raised uncertainties and meant TAs became unsure about when to move a child to the next reading level.

## Outcomes

### A. Perceived benefits of the intervention

The perceived benefits were:

- increased confidence;
- increased motivation and interest in reading;
- increased skills for pupils; and
- positive effects for TAs.

**Increased confidence**

Increased confidence was widely reported as an outcome of Switch-on. TAs reported that pupils were more confident looking at stories and talking about them. They felt pupils were more willing to talk in class, and less apprehensive about reading and writing. This was partly attributed to the fact that the approach of Switch-on is to allow mistakes and accept them as a normal part of learning. Reducing the fear of failure was seen as important, especially for under-achieving and less confident children.

The one-to-one support was considered to be an important contributing factor to increased confidence. There was a view that having the full attention of an adult, interested in what they were saying, helped to build confidence and therefore achievement.

> *'I think as part of Switch-on you have to have conversations, so the fact that somebody is there interested in what she's saying I think has made her come out of her shell a bit and she seems more chatty in class as well'* (TA).

**Increased interest in reading**

TAs reported that Switch-on increased interest in reading and that children were more interested in taking books home, which for some had not happened before. They would be curious about starting a new book in a session, and be more engaged reading it—asking questions and talking about it. This interest was often reported as being sustained in the classroom. TAs also reported that pupils would be motivated to progress in the book bands and colours.

> *'She's going into class and she's actually trying with the reading now where she was a bit unsure before with whether she was doing it right or not and understanding it'* (TA).

**Increased reading and writing skills for pupils**

Switch-on was believed to have increased the reading and writing skills of pupils. In terms of reading, it was perceived that pupils could break down words and decode better, leading to more coherent reading. In terms of writing, pupils were reported to be thinking about structure more, and in some cases structuring sentences more effectively. In general, TAs reported that children were learning to self-correct more as well as developing their own decoding strategies.

Some TAs also thought that some pupils were applying what they had learnt in Switch-on sessions to their wider work in the classroom. However, class teachers tended to be more sceptical about progress. Some class teachers reported seeing progress in the decoding of words, but not in reading comprehension.

**Positive effects for TAs**

Class teachers and co-ordinators also reported that a benefit of the intervention was to be upskilling TAs. It was perceived to give them the confidence to make professional decisions, notably about when to move a pupil to the next reading level.

> '*So I think that transference of ownership, and also that, that confidence to make those professional decisions as being one of the things that is developing through, through the programme'* (co-ordinator).

TAs themselves thought that the training had been a good learning experience and useful for them. Less experienced TAs specifically reported that it had reinforced their understanding of reading strategies and how to support struggling pupils. Some commented that even if they did not have the opportunity to deliver Switch-on in the future, they would maintain a similar approach to reading support.

***B. Unintended or negative consequences***

**Disruption to classroom learning**

Co-ordinators, class teachers, and TAs reported concerns that Switch-on could be disruptive to classroom learning when pupils were taken out of the classroom during core topics (English, maths, and science). They worried that by missing key subjects they would experience delays in their learning and struggle to keep up with the curriculum and its planned progression.

> *'It means that they are missing whatever continuity we've planned and the progression we've planned throughout the week. Say one of them might have been doing their reading intervention today in maths, so they are now not as able to do tomorrow's maths lesson, because they've missed out a step in the progression that we've planned throughout the week."* (class teacher)*.*

Teaching staff were concerned that this could have a negative impact on pupil confidence and attainment.

In cases where pupils were missing English classes, it was feared that the intervention might be hampering rather than supporting progress.

> *'So we write on a Monday morning for a longer period of time, and she's missed those. That was something she often found quite tricky, writing for a long period, and she would be quite slow. So I think she's going to struggle to get back some of those skills.'*

Another concern was that when children didn't miss the morning core lessons, they would then miss physical education or creative classes. It was felt that missing such classes could be detrimental and lead to decreased enjoyment and motivation at school.

This approach of schools deciding how to schedule Switch-on differs slightly from the approach in the previous efficacy trial. In the efficacy trial, each pupil was given a schedule in which to come out of one normal class per day for 20 minutes at a time for the Switch-on session. The schedule was arranged so that parts of different lessons were missed. Despite this, evidence from the process evaluation of the efficacy trial indicated that schools strayed from the schedule due to the constraints of the secondary school timetable, resulting in some cases in similar challenges to those described here.

**Reduced support for non-intervention pupils**

Seventy-nine per cent of schools agreed or strongly agreed that because of the TAs' involvement in Switch-on, other pupils received less support than they would have otherwise. The increase in the TAs' workload meant that some had to stop delivering other interventions. There was a reported concern that children who were not receiving Switch-on were missing out on other interventions that were previously delivered. For example, one TA used to deliver *Daily Readers* but had to stop to deliver Switch-on. This TA was concerned that pupils were falling behind. In another school, a maths intervention had to be cancelled.

> '*There are other children now that are not getting my time because this is taking my time'* (TA).

**Pressure on other staff workload**

TAs' reported reduced availability to support class teachers with classroom preparation and activities. In some cases it was reported to be a source of tension. TAs also reported feelings of guilt and frustration for having less time for other responsibilities.

'*Sometimes you feel like you're walking out on a sinking ship*' (TA).

It was reported that, in some cases, other TAs or the class teacher had to take on the workload originally meant for the Switch-on TA.

## Formative findings

The findings from the process evaluation suggest ways in which a scaled-up delivery of Switch-on could be improved. Some of these stem from the experiences and suggestions of trainers and school staff, and it is important to note that participants in an intervention, even when they are professionals, can have mistaken views about what works and what does not.

*Closer monitoring of delivery of the intervention.* Although most schools complied with the required 'dosage' (the delivery of daily sessions), there is evidence to suggest that fidelity was affected in some cases by modifications to the content, the duration of sessions, and delivery format. Closer monitoring of delivery, especially in the early stages of the 10-week delivery period, could help to ensure greater fidelity.

*Reducing the lag between the end of training and the start of delivery*. Schools, particularly those without previous experience of Reading Recovery, found the intervention complex and reported that it took time to become familiar with the requirements. Reducing the time between the end of training and the start of delivery should be considered to allow TAs to apply learning as soon as possible.

*Specifying the role of the classroom teacher in the intervention* should be considered in further development work. It was reported that in some schools class teachers had limited awareness of Switch-on. Being clear about the requirement for Switch-on to be embedded in a broader literacy strategy led by the class teacher could help to enhance outcomes. As part of this, specifying that class teachers should be involved in developing each pupil's Switch-on timetable—deciding when Switch-on sessions should take place—should be considered.

*Ensuring the Switch-on co-ordinator is a member of the senior management team*. This was specified as a requirement in the memorandum of understanding, but in practice some Switch-on co-ordinators were Year 3 or 4 teachers. Ensuring a senior member of staff has oversight of Switch-on would help to alleviate challenges around timetabling and resourcing.

*Number of books per session*. TAs found it a rush to cover three or four books per session and some believed that pupils would have been more motivated if they had fewer texts.

*Use of the Running Records.* Feedback from some TAs suggested that the Running Records and session records were not helpful. They claimed the forms were repetitive and did not facilitate a fuller understanding of pupils' progress.

## Control group activity

The control condition was 'business-as-usual', however there was some indication that control schools compensated for their treatment status assignment by increasing the amount of literacy interventions they delivered. Control and treatment schools were asked questions in a post-intervention survey about literacy interventions delivered in the Spring Term of 2016 (January-March), when Switch-on was being delivered. As set out in Table 15, the survey indicated that:

- 25% of the control schools indicated they did not have other literacy interventions in place, compared to 46% of the treatment schools;
- 75% of the control schools had some kind of other literacy intervention; and
- 4% of the control group schools used Reading Recovery.

Table 15 summarises the findings.

**Table 15: Reading interventions implemented in trial schools during the trial period with Year 3 pupils (multiple selections possible)**

|  | Treatment arms (%) | Control group (%) |
|---|---|---|
| **None** | 46 | 25 |
| **Acceleread** | 2 | 2 |
| **Better Reading Partnerships** | 7 | 11 |
| **Boosting Reading** | 2 | 9 |
| **Catch-up Literacy** | 1 | 2 |
| **Direct Phonics** | 13 | 18 |
| **Inference Training** | 3 | 7 |
| **Nessy** | 4 | 13 |
| **Reading Recovery** | 3 | 4 |
| **Toe by Toe** | 8 | 5 |
| **Other(s)** | 35 | 53 |
| **Don't know** | 1 | 0 |

**n = 179**

# Conclusion

| Key conclusions |
| --- |
| 1. Participating children in schools delivering either version of Switch-on made no additional progress in reading compared to similarly struggling children in 'business as usual' control schools. The 4 padlock security rating means that we have high confidence that there was no difference, and that this was due to Switch-on and not affected by other factors. |
| 2. A similar result was observed for children eligible for Free School Meals. |
| 3. The secondary analysis suggests that Switch-on might have affected children who did not actually receive the intervention by changing the make-up of their class or the capacity of their TAs. These findings are tentative, but emphasise the importance of considering potential impacts on all children when using targeted interventions. |
| 4. Overall, participating staff were positive about the intervention and accompanying training. Perceived outcomes for pupils included increased confidence, motivation and interest in reading, and improved reading and writing skills. Skills of participating TAs were also felt to have improved. |
| 5. Some schools reported modifications to the prescribed content, duration and format of Switch-on sessions. Closer monitoring by the developers could help to ensure greater fidelity in future. It was also reported that some class teachers had limited awareness of Switch-on. Clarifying the role of Switch-on as part of a broader, teacher-led literacy strategy could improve implementation. |

## Interpretation

### Primary analysis: the effect of Switch-on on reading outcomes

Our effectiveness trial did not find evidence that a ten-week delivery of Switch-on improves reading outcomes of participating pupils more than schools' usual practices. This finding runs counter to indications from the academic literature on high-intensity one-on-one interventions (D'Agostino and Murphy, 2004; Elbaum *et al.*, 2000; Jun *et al.*, 2010; Slavin *et al.*, 2011) and is not in agreement with findings from a previous efficacy trial (Gorard *et. al.*, 2014).

### *Possible reasons for not finding an effect if Switch-on was effective*

Our evaluation gives no indication that Switch-on affects outcomes of eligible participating pupils. While we believe this result to be robust, our trial was limited to detecting effects of 0.25 standard deviations 80% of the time. This limitation is a statistical property that applies, with different cut-offs, to all randomised controlled trials. If Switch-on had a true effect of less than 0.25 standard deviations, the likelihood of detection are even smaller than 80%.

Furthermore, compensatory behaviour by control schools may have reduced our ability to detect an effect. Compensatory behaviour occurs if control schools, as a result of being assigned to the control condition, implement additional reading support. Our finding that 46% of treatment schools, but only 25% of control schools, implemented no other literacy intervention (apart from Switch-on in treatment schools) indicates that some compensatory behaviour may have taken place. To the extent that these additional interventions were effective, the trial's ability to detect the true effect of Switch-on would be diminished.

Finally, the fact that post-intervention outcomes were measured approximately one month after the end of the intervention may not have provided sufficient time for improved reading skills to become apparent.

*Possible reasons why Switch-on was less effective in this effectiveness trial*

It is also possible that Switch-on was effective at smaller scale (as measured in the efficacy trial) but is not effective at the size of implementation in this trial. Three findings indicate that this may be a contributing factor.

First, the process evaluation indicates that, in some schools, class teacher involvement in Switch-on was limited. While part of the appeal of Switch-on as an intervention is that it is TA-led, evidence from the literature indicates that one-to-one catch up interventions should be 'additional but explicitly linked to normal teaching and that teachers should monitor progress to ensure tutoring is beneficial' (Higgins *et al.*, 2014, p. 10). This suggests that even if TAs deliver the intervention, class teachers should be involved to ensure that the intervention is embedded in a wider literacy strategy for the child. The fact that class teachers were not systematically included in the planning and delivery of Switch-on in schools could therefore have undermined the achievement of outcomes. This is a challenge common to many one-to-one interventions that require children to leave the classroom. The previous efficacy trial highlighted the challenge of scheduling the intervention within the school timetable as a barrier to successful implementation. This remained a challenge in the current effectiveness trial and the inconsistent involvement of class teachers appears to have exacerbated timetabling difficulties.

Second, the literature identifies having a strong champion at a senior level as a success factor (for example, Tanner *et al.*, 2015) for effectively implementing literacy interventions. Evidence from the process evaluation suggests that the engagement of senior level staff was inconsistent across participating schools. This meant resource and timetabling issues were not always resolved adequately, which affected schools' ability to deliver the intervention effectively.

Third, there is evidence from the process evaluation that schools undertook some level of adaptation and modification of the content and format of the intervention. This evidence reflects the findings of the previous efficacy trial, where some staff strayed from the Switch-on protocol and thus potentially reduced the intervention's impact. While the efficacy trial nonetheless found improvements to reading outcomes, the 'train the trainer' model used in this trial may have led to greater changes to content and format. Examples of adaptations identified in this trial include changing the number of texts covered in a session, changing the duration of a session, or leaving out the writing component in Switch-on Reading and Writing. In addition, in response to lack of space, some schools had to deliver the intervention in busy, common areas in the school rather than a quiet space suitable for one-to-one delivery without interruptions. This is likely to have affected the quality of delivery. Previous evaluations of one-to-one catch-up literacy interventions, including the previous efficacy trial of Switch-on, have reported on school infrastructure having a bearing on successful implementation (Tanner *et al.*, 2011; Gorard *et. al.*, 2014; NFER, 2014).

In addition to potential challenges around implementation at a larger scale, the difference in estimated effect between efficacy and effectiveness trials could also be due to differences in the trial design and study population. For example, the efficacy trial focused on Year 7 pupils while our trial focused on Year 3 pupils. It may be that Switch-on works better for older pupils.

Also, in the pupil-level randomised efficacy trial, non-participating eligible pupils acted as controls with an assumption that non-participation has no effect. However, if non-participation had a negative effect on pupils with low reading skills in schools that delivered Switch-on (as we have found indicative evidence for), a pupil-level randomised trial would over-estimate the true effect of Switch-on. Instead of measuring the difference between the effect of Switch-on (say, A) and 'business as usual' (zero), it would measure the difference between the effect of Switch-on on eligible pupils (A) and the effect of Switch-on on non-eligible pupils (-B). The caution to this interpretation is that in our trial there are likely to be differences between participating and non-participating pupils as schools made decisions about participation. In the efficacy trial, participation was selected by lottery, so treatment and control pupils were similar. Furthermore, the intervention effect on non-participating eligible pupils was not a primary focus of the study and thus needs to be interpreted with caution.

**Secondary analyses – the effect of Switch-on on pupils not receiving the intervention**

The unexpected findings from the secondary analysis raise the possibility of unintended consequences from implementing Switch-on. In particular, our trial found a moderate statistically significant negative effect of Switch on eligible pupils that did not receive the intervention. Findings from the process evaluation indicated that the majority of school co-ordinators perceived that, because of TA involvement in Switch-on, other pupils received less support than they would have otherwise. This suggests that the removal of TAs may negatively impact the results of pupils that were previously supported by those TAs, which indicates that careful planning of TA deployment is critical for a successful delivery of Switch-on. This finding regarding other under-performing pupils is not in line with our implicit theory of change, which hypothesised that a positive effect from Switch-on would have a positive spill-over effect on other pupils with lower reading standards. Furthermore, as indicated in earlier sections of our report, this finding would need to be considered as indicative due to the large proportion of missing data and the increased risk of finding spurious effects when carrying out multiple hypothesis testing.

Another unexpected result from the secondary analyses indicated that delivering Switch-on has a small, positive effect on pupils whose reading ability *does* meet age-expected standards. This does not lend support to our original hypothesis—that positive effects from Switch-on would raise the standards of low-achieving pupils and have a lesser, but positive, spill-over effect on adequately achieving pupils. We can speculate that the removal of under-performing pupils from the classroom had a positive effect on better performing pupils because of increased teacher support and availability. However, as with other results from secondary analysis described above, this finding would need to be interpreted with caution due to the issues around missing data and multiple hypothesis testing.

## Limitations

First, the change from a one-sided to a two-sided statistical test, and the low correlation between baseline scores and outcomes, resulted in a reduction of statistical power compared to our original estimates. The intervention would have to have had an effect of 0.25 standard deviations for our trial to have a chance of at least 80% of detecting the effect.

Second, the differential loss to follow-up in the three core trial arms reduces the confidence we have in our findings. The support from the multiple imputation analysis for our findings is conditional on the assumption, implicit in any multiple imputation and not verifiable, that the missingness is random, conditional on factors for which we have data.

Thirdly, data was not collected systematically about which classes eligible participating pupils missed because of their involvement in the intervention. The process evaluation indicates varying practices in schools, with some delivering Switch-on during literacy lessons and others withdrawing pupils from other lessons. This could be an explanatory factor that means any positive impact of Switch-on is counter-balanced by reduced participation in normal literacy lessons, which the study has not been able to investigate in detail.

## Future research and publications

Future research should examine further the likelihood of effectiveness of one-to-one interventions delivered by TAs, in different contexts, subjects, age ranges, that are delivered over a longer period of time and with a greater follow-up period. Given the cost of the intervention, it may be advisable to determine the minimum effectiveness that the intervention would have to show to be cost-effective.

Our findings also highlight the risk of negative spill-over effects on non-participating low-performing pupils, and these should be examined in any educational intervention that reduces resources for such pupils.

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# Appendix A: EEF cost rating

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

| Cost rating | Description |
|---|---|
| £ £ £ £ £ | *Very low:* less than £80 per pupil per year. |
| £ £ £ £ £ | *Low:* up to about £200 per pupil per year. |
| £ £ £ £ £ | *Moderate:* up to about £700 per pupil per year. |
| £ £ £ £ £ | *High:* up to £1,200 per pupil per year. |
| £ £ £ £ £ | *Very high:* over £1,200 per pupil per year. |

# Appendix B: Security classification of trial findings

| Rating | Criteria for rating | | | Initial score | | Adjust | | Final score |
|---|---|---|---|---|---|---|---|---|
| | **Design** | **Power** | **Attrition** | | | | | |
| 5 🔒 | Well conducted experimental design with appropriate analysis | MDES < 0.2 | 0-10% | | | | | |
| 4 🔒 | Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity | MDES < 0.3 | 11-20% | 4 🔒 | | Adjustment for Balance [ 0 ] | | |
| 3 🔒 | Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity | MDES < 0.4 | 21-30% | | | | | |
| 2 🔒 | Weakly matched comparison or experimental design with major flaws | MDES < 0.5 | 31-40% | | | Adjustment for threats to internal validity [ -1 ] | | |
| 1 🔒 | Comparison group with poor or no matching (E.g. volunteer versus others) | MDES < 0.6 | 51-50% | | | | | |
| 0 🔒 | No comparator | MDES > 0.6 | <50% | | | | | |

- **Initial padlock score:** lowest of the three ratings for design, power and attrition = 4 padlocks
- **Reason for adjustment for balance** (if made): None required as this is well- balanced
- **Reason for adjustment for threats to validity** (if made): The intervention was not implemented as planned as some schools charged for the intervention and some control schools had introduced a breakfast club.
- **Final padlock score:** initial score adjusted for balance and internal validity = 4 padlocks

## Appendix C: Analysis plan

# Switch-on Analysis Plan

**Introduction**

This pre-analysis plan sets out the detail of the analysis planned for the cluster-randomised controlled effectiveness trial of Switch-on, a reading intervention.

Switch-on is an intensive ten-week literacy intervention targeted at children not demonstrating age-expected levels at primary school. It aims to enable children to '*participate more fully in the classroom by becoming more confident, active and independent readers, who can use a range of effective reading strategies in order to achieve their full reading potential*' (Nottinghamshire County Council Switch-on training manual). Switch-on is delivered by specially trained teaching assistants (TAs) in daily 20-minute sessions.

The trial runs two versions of the intervention, implemented through a scaled-up delivery model. Both versions aim to improve reading skills. However, *Switch-on Reading* includes only reading exercises, while *Switch-on Reading and Writing* combines the teaching of reading skills with a focus on writing. Otherwise the two interventions are the same: both have the same amount of TA-pupil contact, the same amount of TA training and deliver a similarly designed intervention. The delivery model minimises the involvement of the intervention developers by cascading the training of teaching assistants through trained trainers, so that this model more accurately reflects the conditions of scale up.

**Primary hypotheses**

The primary hypotheses (**H1**) is that pupils participating in *Switch-on* will have better reading outcomes than pupils not participating in the programme, but receiving business-as-usual support for their reading. The main hypothesis will compare the two interventions separately against the control.

**Secondary hypotheses**

Four secondary hypotheses will be examined, as set out below. These hypotheses will be considered preliminary and indicative.

- **H2**: Pupils participating in *Switch-on Reading* will have different (better or worse) outcomes than pupils participating in *Switch-on Reading and Writing*.

- **H3**: Non-participating *eligible* pupils in the same class as pupils who participate in *Switch-on Reading* or *Switch-on Reading and Writing* will have better reading outcomes than eligible pupils in classes without pupils who participate in either *Switch-on* programme.

- **H4**: Non-participating *ineligible* pupils in the same class as pupils who participate in *Switch-on Reading* or *Switch-on Reading and Writing* will have better reading outcomes than *ineligible* pupils in classes without pupils who participate in either Switch-on programme.

- **H5**: *Switch-on Reading* and *Switch-on Reading and Writing* (separately considered) will have a different (higher or lower) impact on pupils participating in the intervention and eligible for free school meals.

## Sample

The 184 schools participating in this trial were recruited by the 21 trainers whose role it is to train the teaching assistants. Each trainer aimed to recruit nine schools in their local area in England[13], although some trainers only successfully recruited eight schools.

No selection or exclusion criteria were set on school type, size, denomination, etc., but schools with an existing whole-school implementation of Reading Recovery principles were ineligible. Trainers were also asked to prioritise recruiting schools with higher levels of deprivation.

Participating pupils include all pupils in Year 3 of recruited schools (9332 pupils aged 7 and 8 years, of which 202 opted out). Pupils fall into two groups: 'core-trial pupils' were designated, prior to randomisation, to receive the intervention if the school was allocated to a treatment condition. If the school was allocated to the control group, the allocated pupils formed part of the core trial control group. 'Spill-over pupils' were not pre-allocated to receive the intervention and were included in the trial to measure potential spill-over effects.

To select core-trial pupils, each school designated, prior to randomisation, between two and four teaching assistants that would deliver Switch-on if the school was assigned to a treatment condition. Each school then matched each teaching assistant with between two and four eligible pupils to receive the intervention, so that in each school between four and 16 pupils were designated to receive the intervention subject to the randomisation.

The trial thus includes all pupils that schools have capacity to teach, as they would in a non-trial setting, and thus all eligible pupils when eligibility is conceptualised as including schools' capacity constraints.

### Power calculations

For the primary hypothesis test, Table 16 presents the MDES when comparing *Switch-on Reading* only with the control (the same MDES would apply for comparing *Switch-on Reading and Writing* with the control). All calculations assume 80% statistical power and 0.05 statistical significance for a two-tailed test.

The table presents a range of MDES for different assumptions about the intraclass correlation coefficient (ICC), i.e. the degree to which intervention effectiveness clusters within schools, and for the predictive power of covariates. Estimates from recent studies show that ICC values of 0.1 are frequently obtained, but 0.2 presents the conservative estimate. Adjusting analysis for baseline outcomes reduces heterogeneity in outcomes and thus increases power. Bloom (2007) estimates that these range from 0.12 to 0.31 for individual and from 0.18 to 0.73 for school level variance explained by individual level baseline measures two years prior to the intervention. For simplicity, the same value was assumed for both individual and school level variances in the table below.

The MDES thus ranges from 0.15 in the most optimistic scenario (ICC of 0.1 and 60% of variance explained by covariates) to 0.26 (ICC of 0.2 and no variance explained by

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[13] The trial took place in seventeen local authority areas: Birmingham, Bristol, Buckinghamshire, Cambridgeshire, Cheshire, Coventry, Derbyshire, Northamptonshire, Kent and Medway, Lincolnshire, Stoke on Trent, Sandwell, Walsall, Warrington, Wiltshire and Yorkshire

covariates). For our study, we are assuming an ICC of 0.15 and an $R^2$ of 0.4 as conservative but realistic scenario, with an MDES of 0.22 standard deviations.

| Table 16: Minimum detectable effect sizes: SO Reading only | | | | | |
|---|---|---|---|---|---|
| | | | Intraclass correlation | | |
| | | | 0.10 | 0.15 | 0.20 |
| **Proportion of variance explained by covariates** | | **0.0*** | 0.27 | 0.29 | 0.30 |
| | | **0.2*** | 0.24 | 0.26 | 0.27 |
| | | **0.4*** | 0.21 | 0.22 | 0.24 |
| | | **0.6*** | 0.17 | 0.18 | 0.19 |

### Randomisation

The randomisation was carried out independently by NatCen Social Research. Schools were randomly assigned to *Switch-on Reading*, *Switch-on Reading and Writing* or the control condition using a stratified randomisation. The single stratification factor was 'trainer', indicating the trainer employed by the programme that trains teaching assistants in a particular geographical region. This was done in order to ensure a set number of treatment schools per trainer. Where the number of schools linked to a trainer was not divisible by three, the remainder was allocated by simple random allocation.

## Data

### Outcome

The outcome measure for the trial is raw reading score, as measured by the Hodder Group Reading Test (HGRT).

### Data sources

The analysis will use data from four sources, as set out in Table 17:

| Table 17: Data sources | |
|---|---|
| **Source** | **Data** |
| School baseline survey | • Participating core-trial and spill-over **pupils**, such as their name, Unique Pupil Number (UPN) and date of birth<br><br>• Information on why pupils were selected for the Switch-on intervention |

| | |
|---|---|
| | • Data on disability and SEN status in an anonymised, school-aggregate format |
| Registers | • Information on take-up, drop-out and dosage of each individual core-trial pupil |
| Pupil test | • Reading outcome – Hodder Group Reading Test |
| National Pupil Database (NPD) | • pupil Key Stage 1 reading scores, as baseline outcome<br><br>• **Pupil level information:**<br><br>• Establishment number of the school attended as assigned by the DfE.<br><br>• Age of pupil at start of the academic year (in full years).<br><br>• Month part of age of pupil at start of the academic year.<br><br>• Deprivation indicator - IDACI score<br><br>• Is pupil known to be eligible for FSM?<br><br>• Flag to indicate if pupil has been recorded as eligible for free school meals in any termly School Census, AP Census or PRU Census in the last 3 years<br><br>• Flag to indicate if pupil has ever been recorded in any Spring Census as being eligible for free school meals<br><br>• Flag to indicate if pupil has been recorded as eligible for free school meals in any termly School Census, AP Census or PRU Census in the last 3 years<br><br>• Flag to indicate if pupil has ever been recorded in any Spring Census as being eligible for free school meals<br><br>• Gender.<br><br>• Institution type generated by AAT. |

|  |  |
|---|---|
|  | • Reading attainment point score. |
|  | • Writing attainment point score. |
|  | • Average Reading and Writing attainment point score |
|  | • Number of sessions possible for the academic year. Based on termly sessions for all schools except special schools for which annual sessions data will be used. |
|  | • Number of sessions missed due to authorised absence during the academic year. Based on termly sessions for all schools except special schools for which annual sessions data will be used. |
|  | • Number of sessions missed due to unauthorised absence during the academic year. Based on termly sessions for all schools except special schools for which annual sessions data will be used. |
|  | • **School level information:** |
|  | • Establishment number as assigned by the DfE. |
|  | • Number of Pupils |
|  | • Number of school places collection |
|  | • Indicator showing whether a school is in an urban or rural area |
|  | • Percentage of pupils known to be eligible for FSM |
|  | • Percentage of pupils with special needs with statements |
|  | • Percentage of pupils with special needs without statements |
|  | • IDACI Band |
|  | • Percentage of pupils classified as white British ethnic origin |
|  | • Percentage of pupils whose first language is known or believed to be other than English |

| | <ul><li>Pupil teacher ratio</li><li>Full time Pupils</li><li>Total full time equivalent of teaching assistants</li><li>Total Pupils at level 2 or above in reading</li><li>Total Pupils in reading</li><li>Denominator for APS - all pupils reading</li></ul> |
|---|---|

## Analysis

### Baseline characteristics

Baseline characteristics will be summarised for core-trial pupils by intervention group across schools and pupils. Variables available at pupil level will be presented at that level, otherwise at school level.

Continuous variables will be summarised with descriptive statistics (n, mean, standard deviation, range and median).

At school level, the comparison will cover:

- School type
- Urban/rural status of schools
- English as additional language (EAL) status
- Special Educational Needs (SEN) status

At the pupil level, the following baseline comparisons will be presented:

- FSM eligibility
- Gender
- Birth term
- KS1 reading outcome

A summary of baseline characteristics will be presented in the additional analysis section of the report, covering the two spill-over pupil groups.

### Trial completion

CONSORT diagram will be used to present summary of the flow of core-trial pupils and their schools from recruitment through baseline assessment, randomisation, post intervention assessment and analysis. The number of pupils and schools included or excluded at each stage will be clearly stated and the reasons for exclusion will also be stated.

In addition, the flow of spill-over analysis pupils will be presented separately.

### Main hypothesis

The main and preliminary analyses will be conducted on an intention-to-treat basis and will include all core-trial pupils pre-designated to receive treatment subject to randomisation status for which outcome data has successfully been collected.

The preliminary analysis will compare the effects sizes between the two treatment arms. If there is no statistically significant difference, the main analysis will merge the two intervention groups and consider them jointly against the control. If a statistically significant difference is found, the two groups will be compared separately against the control.

The model analysed will be a random effects model which allows for school effects on reading attainment:

$$Reading_{ij} = \beta_0 + \beta_1 baseline_{ij} + u_{0j} + u_{1j} baseline_{ij} + e_{ij}$$

where *j* presents the school and $u_j$ is the group effect. In line with the EEF Analysis guidance, other covariates will not be taken into account at this stage.

The calculation of effect sizes will follow the methodology for Hedges' *g*, using the differences in means between treatment and control groups as numerator and the pooled standard deviation based on the total variance from a multilevel model as denominator. The effect size calculation will be based on Hedges' (2007) approach assuming unequal sample size per school.

The analysis will run in *R* version 3.2.1, and at its core use EEF's analytical package for education trials, *eefAnalytics*, in the latest available version.

No adjustment will be made for multiple comparisons, as the outcomes of the two interventions are considered to be highly correlated and findings in one intervention is likely to support the finding in the other (Schulz and Grimes, 2005).

### Sensitivity analyses

A range of sensitivity analyses will be carried out to explore the robustness of the main finding. The following analyses will be carried out:

- Including a wider range of prognostic covariates to increase power: Including school-level proportions of pupils with SEN and disability, school-level urban/rural indicator and individual-level indicators of English as Additional Language, free school meal eligibility, gender and birth term, as additional co-variates;

- CACE analysis: We will label any (core-) trial participants that has not participated in at least 50% of sessions as non-compliant and estimate a complier average treatment effect (CACE);

- If baseline imbalance is found, an analysis adjusting for baseline imbalance will be carried out.

### Secondary analyses

Secondary analyses will explore hypotheses H3 – H5 set out above. All analyses will include the full set of predictive covariates set out in the sensitivity analysis.

Hypothesis H3 is a spill-over analysis that explores whether pupils who were eligible but not selected for Switch-on were impacted by the participation of their peers. This may occur, for

example, because these pupils may now receive less support from their teaching assistant(s). The analysis will merge *Switch-on Reading* and *Switch-on Reading and Writing* on the assumption that any spill-over effects arise through the use of teaching assistants in an intensive intervention rather than due to the intervention content.

Hypothesis H4 is an extension of the spill-over analysis H3, and covers pupils not eligible to receive *Switch-on* support. It will be carried out in the same way as H3.

Hypothesis H5 is a requirement for analysis in all EEF trials and explores the impact of the intervention on pupils eligible for free school meals. The analysis will be comparable to the main analysis, but include all predictive covariates (in order to increase power) and merge *Switch-on Reading* and *Switch-on Reading and Writing* (also for power reasons).

### Attrition

We expect an overall low rate of attrition. At the individual level, we expect to lose around 10% of pupils due to moves and other external factors influencing participation in the final outcome testing. Given that we include only a database-driven baseline measure and no other co-variates in the main analysis, we do not expect further losses due to lack of data.

If loss-to-follow-up can be predicted using existing covariates, multiple imputation will be used to infer the likely results of those lost to follow-up, and these imputed data will be included in the analysis.

# Appendix D: Randomisation syntax

```
------------------------------------------------------------------------------------
      name: <unnamed>
       log: I:\Workdocs\Tenders\1Tenders  with  an  outcome\Won\EEF\I11798  Switch  On
Evaluation\Secure
> \Data management\randomisation-log.txt
 log type: text
 opened on: 21 Oct 2015, 16:20:19

. set more off


.
.  import  excel  using  "School  IDs.xlsx",  sheet("School  IDs")  firstrow  clear
case(lower)


.
.
. // set up
. g sch = respondent_id

. egen tra = group (trainer), label missing

. g _assignment = 0

. label define _alb 0"No assignment (error)" 1 "SO R" 2"SO RW" 3"Control"

. label values _a _alb


.
. //checks
. * Duplicate schools
. duplicates l sch

Duplicates in terms of sch

(0 observations are duplicates)


.
. * Number of schools per trainer
. * There must be between 8 and 10 schools per trainer
. ta tra,m

  group(trainer) |   Freq.    Percent    Cum.
-------------------+-----------------------------------
Trainer 01       |     9      4.89      4.89
Trainer 02       |     9      4.89      9.78
Trainer 03       |     8      4.35     14.13
Trainer 04       |     9      4.89     19.02
Trainer 05       |     8      4.35     23.37
Trainer 06       |     8      4.35     27.72
Trainer 07       |     9      4.89     32.61
Trainer 08       |     8      4.35     36.96
Trainer 09       |     8      4.35     41.30
Trainer 10       |     8      4.35     45.65
Trainer 11       |     9      4.89     50.54
Trainer 12       |     9      4.89     55.43
Trainer 13       |     9      4.89     60.33
```

```
Trainer 14       |       9     4.89      65.22
Trainer 15       |      10      5.43      70.65
Trainer 16       |       9     4.89      75.54
Trainer 17       |       9     4.89      80.43
Trainer 18       |       9     4.89      85.33
Trainer 19       |       9     4.89      90.22
Trainer 20       |       9     4.89      95.11
Trainer 21       |       9     4.89     100.00
------------------+-----------------------------------
        Total |     184    100.00


.
.
. // randomisation
. * seed and random number assignment
. set seed 1206364607         //from random.org

. di "Seed: " %10.0f c(seed)
Seed: X7eeb8b23c43f462544a474abacbdd93d00042570


.
. g double r = 0

. replace r = runiform()
(184 real changes made)


.
. * Assign three schools to Group 1, three schools to Group 2, and the rest to Group
3.
. sort tra r

. by tra: replace _a = trunc((_n+2)/3)
(184 real changes made)

. replace _a=3 if _a>3
(1 real change made)


.
.
. // save output
. sort tra _a sch

. drop sch tra r

. export excel using "Schools-assignment.xlsx", firstrow(var) replace
file Schools-assignment.xlsx saved


.
. log close _all
   name: <unnamed>
    log: I:\Workdocs\Tenders\1Tenders  with  an  outcome\Won\EEF\I11798  Switch  On
Evaluation\Secure
> \Data management\randomisation-log.txt
 log type: text
 closed on: 21 Oct 2015, 16:20:19
--------------------------------------------------------------------------------
```

# Appendix E: Memorandum of Understanding for school

## Switch-on Effectiveness Research Project

We are very pleased and grateful that your school wishes to take part in our study to find out if **Switch-on** can be an effective national intervention.

Two versions of the intervention are being evaluated:

- Group 1: Switch-on – reading and writing
- Group 2: Switch-on – reading only.

Your school will be allocated to one of these groups or a control group (Group 3). See Section 4 below for more information.

This document will help to clarify what is involved and act as a memorandum of understanding between your school and Switch-on. We will be working with the research team from NatCen Social Research (NatCen) who will conduct an independent evaluation of the intervention.

### 1. Aims of the project

The aim of the project is to test the effectiveness of the Switch-on Reading and Writing intervention in accelerating the literacy learning of pupils. The target group is underperforming Year 3 children working below age related outcomes at the end of Key Stage 1.

### 2. About the teams

**The Education Endowment Team**
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. The EEF have provided the funding for this project, following a successful smaller trial of the Switch-on approach.

**The Switch-on team**
A Switch-on trainer will train and support each school in Group 1 or Group 2. This trainer will be the first point of contact for all enquiries or concerns relating to the programme.
The Switch-on developers will train the trainers and provide resources for the schools in Group 1 and Group 2. They will coordinate the project and be available for trainer and evaluator enquiries.

**The NatCen Team**

NatCen is an independent social research organisation that carries out research on a wide range of social issues. The NatCen evaluation team are independent of the Switch-on team and have been funded by the Education Endowment Foundation (EEF). Our evaluation will aim to gain a better understanding of how the programme is working in practice, gather the views of trainers and school staff and assess the impact on pupil attainment in literacy. The evaluation will report on the feasibility of rolling the programme out to more schools.

NatCen will be doing all of the data collection and analysis. They will also liaise directly with your school in order to

- Provide you with the parent information letter to be sent out. The purpose of this letter will be to:
  - o seek parental consent for their child to be involved in the study
  - o take the tests required for the evaluation
  - o allow NatCen to link their child's information with test results and the National Pupil Database.
- Provide you with links to the 2 online surveys.
- Liaise with your school about the testing and support arrangements for invigilators to be present at the testing sessions.
- To seek access to the school and relevant staff, to take part in interviews and case studies (more information can be found in the process evaluation section of this document)
- Respond to any queries you may have about the research tasks or the research itself.

## 3. Rationale

Previous research for Switch-on Reading, www.educationendowmentfoundation.org.uk/projects/switch-on-reading/, has shown that the intervention has a positive impact on literacy learning among Year 7 pupils, particularly pupils with SEN, those in receipt of pupil premium and lower attainers. The 2015-2016 effectiveness study will investigate:

1. The impact of the Switch-on (reading and writing) intervention on the literacy learning of underperforming children working below age related outcomes in Year 3
2. The impact of the Switch-on Reading intervention on the reading abilities of underperforming children working below age related outcomes in Year 3
3. If the Switch-on (reading and writing) intervention has a greater impact on children's reading ability than Switch-on Reading alone
4. If these interventions have an impact on secondary outcomes, such as, self-esteem, attitude to and engagement in learning
5. If Switch-on training and support develop the knowledge, skills and understanding related to literacy learning of Teaching Assistants (TAs) in primary schools

The research findings will provide valuable information about the elements of the intervention that have a positive effect on pupils and practitioners. Based on the evaluation findings, adjustments can be made to the training of trainers and practitioners to enable Switch-on to be rolled out on a wider scale.

## 4. Evaluation design

Participating schools will be randomly allocated to either:
1. **GROUP 1 -** to deliver Switch-on (Reading and Writing) with 4-16 targeted pupils
2. **GROUP 2 -** to deliver Switch-on Reading with 4-16 targeted pupils
3. **GROUP 3 -** to continue business as usual with targeted pupils and receive a financial incentive that can be used at a later date to purchase Switch-on training. These schools will form the 'control group' for the evaluation.

Random allocation of schools is the best way to study the impact Switch-on has on children's literacy attainment. It is important that schools understand that even if they are allocated to GROUP 3 (control group) they will still need to undertake all evaluation activities they are asked to do.

**5. Data sharing**

All the information that we gather about individual pupils, teachers and schools will be kept completely confidential in accordance with the Data Protection Act. No information about individual children will be made available to anyone outside of the research teams at Switch-on, NatCen and the Education Endowment Foundation (who fund the work).

Data Archiving – Fischer Family Trust will collate and anonymise the data for upload to the UK Data Archive. The archived data will be available in an anonymised form with restricted access for research purposes only

Evaluation report - NatCen will not use pupils' or teachers' names or the names of any of the schools involved in the project in the final report. The accounts of the effectiveness of Switch-on will be presented in the form of aggregated or averaged data.

**6. Requirements for NatCen's Evaluation**

> i. Background survey:

At the beginning of the project, schools will be asked to provide school and pupil level information via an online 'background' questionnaire. This will include:

- school's Unique Reference Number (UCN) and LAESTAB code
- names of all pupils in Year 3 with a flag for the children who receive Switch-on support
- Unique Pupil Numbers (UPNs) for all Year 3 pupils
- indicator if the pupil's parent has opted out of the evaluation
- information about TAs involved in the programme including their contact details and qualifications.

The NatCen team will use this information and access the National Pupil Database (NPD) to collect data on relevant pupils in order to assess any impact of the project on attainment.

> ii. Process evaluation

As part of the evaluation, the NatCen team will visit 6 of the schools involved to understand how Switch-on is delivered. Participating in these visits is voluntary. A NatCen researcher will arrange visits at a time convenient to the school. These visits will include an interview with the Switch-on co-ordinator, teaching assistants and with a classroom teacher. We will also view the delivery of one Switch-on session. This would take place in the spring term 2016.

In addition, NatCen will also be inviting TAs to take part in telephone interviews (in those schools not involved as a case study). These interviews will also be voluntary and will be arranged at a time convenient to the TA.

> iii. Testing

All schools (in groups 1, 2, and 3) would need to complete a test assessing the reading of every child in Year 3. The test would take place at the start of the summer term 2016 after the trial and would take approximately one hour to complete. It is recommended that this takes the place of a literacy lesson.

Schools will need to agree to testing dates and times in advance and allow for an invigilator to attend each session to ensure that the tests are completed consistently across all schools.

iv. Implementation survey

Following the trial, all schools (in groups 1, 2 and 3) will need to complete a second online survey. This would include details about the literacy interventions going on in your school during this period, and costs incurred.

**7. Responsibilities of all parties**

**The Switch-on team will:**

- provide the evaluators with a list of participating schools
- be the first point of contact for any queries about the programme.

If the evaluator (NatCen) randomly assigns your school to **Group 1**, Switch-on will:

- supply school with all resources including 2 Switch-on book packs (£1,800) and sets of teaching resources (£200).
- provide 1 ½ days initial training in November 2015
- provide a school visit for support in early February 2016
- provide a follow-up half day training in late February 2016.

The training will be for 2-4 teaching assistants and a teacher from the school management team who will be the project coordinator in your school.

If the evaluator (NatCen) randomly assigns your school to **Group 2**, Switch-on will:

- supply school with all resources including 2 Switch-on book packs (£1,800) and sets of teaching resources (£100).
- provide 1 day initial training in November 2015
- provide a school visit for support in early February 2016
- provide a follow-up half day training in late February 2016.

The training will be for 2-4 teaching assistants and a teacher from the school management team who will be the project coordinator in your school.

If the evaluator (NatCen) randomly assigns your school to **Group 3**, Switch-on will:
- promptly pay the financial compensation for taking part at the end of the spring term 2016 when all Year 3 pupils have been tested.

**Schools**

**GROUP 1 responsibilities:**
- send out parent opt-out letters to all Year 3 pupils asking for consent to participate in all aspects of the evaluation and collect any opt-out slips. The letter would be provided for you, you would just need to post this out to parents
- complete a 'background' survey which would provide the research team with details about the pupils in the year, the pupils chosen to be part of the trial, pupils' UPNs and background information about the school and the TAs involved

- release one member of the senior management team (coordinator) and 2-4 teaching assistants for 1 ½ days training in the autumn term 2015 (1 day for Switch-on Reading training ½ day for Switch-on Writing training)
- timetable the 2-4 teaching assistants to work for 20 minutes every day for 10 weeks with each target child (2-4 children for each teaching assistant)
- your school must start the intervention the week commencing the 4th January 2016
- fill in registers for each session
- release the coordinator for the ½ day support visit from the Switch-on trainer in spring term
- release the teaching assistants for the ½ day support visit from the Switch-on trainer in spring term
- release the coordinator and 2-4 teaching assistants for ½ day training in the spring term 2016
- complete an 'implementation' survey after the trial has finished. This would include details about the other literacy interventions going on in your school during this period and information about how you have delivered Switch-on and the costs incurred
- the whole of Year 3 would need to complete either an online test to asses reading or a paper-based test assessing their reading and writing at the end of the trial. The test would take place at the start of the Summer Term 2016 and would take around an hour to complete. It will be recommended that this takes the place of a literacy lesson.
- the coordinator will support pupil testing by providing NatCen interviewers with access to schools, planning testing sessions and ensuring that all pupils are tested within the designated testing timeframe
- ensure the shared understanding and support of all school staff to the project and personnel involved
- be a point of contact for parents/carers seeking more information on the project.


**GROUP 2 responsibilities**:
- send out parent opt-out letters to all Year 3 pupils asking for consent to participate in all aspects of the evaluation and collect any opt-out slips. The letter would be provided for you, you would just need to post this out to parents
- complete a 'background' survey which would provide the research team with details about the pupils in the year, the pupils chosen to be part of the trial, pupils' UPNs and background information about the school and the TAs involved
- release one member of the senior management team (coordinator) and 2-4 teaching assistants for 1 day training in the autumn term 2015 (1 day for Switch-on Reading training)
- timetable the 2-4 teaching assistants to work for 20 minutes every day for 10 weeks with each target child (2-4 children for each teaching assistant)
- your school must start the intervention the week commencing the 4th January 2016
- fill in registers for each session
- release the coordinator for the ½ day support visit from the Switch-on trainer in spring term
- release the teaching assistants for the ½ day support visit from the Switch-on trainer in spring term
- release the coordinator and 2-4 teaching assistants for ½ day training in the spring term 2016
- complete an 'implementation' survey after the trial has finished. This would include details about the other literacy interventions going on in your school during this period and information about how you have delivered Switch-on and the costs incurred
- the whole of Year 3 would need to complete either an online test to asses reading or a paper-based test assessing their reading and writing at the end of the trial. The test would take place at the start of the Summer Term 2016 and would take around an hour to complete. It will be recommended that this takes the place of a literacy lesson.
- the coordinator will support pupil testing by providing NatCen interviewers with access to schools, planning testing sessions and ensuring that all pupils are tested within the designated testing timeframe

- ensure the shared understanding and support of all school staff to the project and personnel involved
- be a point of contact for parents/carers seeking more information on the project.

Responsibilities if in the **intervention Group 3**:
- send out parent opt-out letters to all year 3 pupils asking for consent to participate in all aspects of the evaluation and collect any opt-out slips. The letter would be provided for you, you would just need to post this out to parents.
- carry out a 'background' survey which would provide the research team with details about the pupils in the year, the pupils chosen to be part of the trial, pupils' UPNs and background information about the school and the TAs involved.
- carry out an 'implementation' survey after the trial period has finished. This would include details about the English interventions going on in your school during this period.
- the whole of Year 3 would need to complete either an online test to asses reading or a paper-based test assessing their reading and writing at the end of the trial. The test would take place at the start of the Summer Term 2016 and would take around an hour to complete. It will be recommended that this takes the place of a literacy lesson.
- the coordinator will support pupil testing by providing NatCen interviewers with access to schools, planning testing sessions and ensuring that all pupils are tested within the designated testing timeframe
- ensure the shared understanding and support of all school staff to the project and personnel involved
- be a point of contact for parents/carers seeking more information on the project.

**Schools must not, under any circumstances, change the pupils allocated to the intervention once they have been entered into the background survey.**

**NatCen**

NatCen will:
- conduct the random allocation and inform schools
- collate School- and Pupil- Level data provided by schools
- obtain National Pupil Database data for participants from the DfE
- work closely with the school coordinator to plan and invigilate testing
- store all data safely and securely
- analyse data from the project in order to produce impact estimates
- conduct the process evaluation, including analysis and reporting from this
- produce end of project evaluation report
- provide head teachers with all attainment data after the tests have been completed
- share the final report with the school

If you have any questions about the research or concerns about your role and responsibilities, please contact us. You can telephone or email Paula Burrell **paula.burrell@nottscc.gov.uk** 07771345930 or Jose Coles **jose.coles@nottscc.gov.uk** 07979744941.

Once again, we would like to express our gratitude to you for joining us in this research. We believe that it will be a thoroughly worthwhile project and that it will produce some valuable results

We commit to the Evaluation of Switch-on as detailed above. **As a school, I commit to remaining a part of the Switch-on Effectiveness research project as detailed above for the period of September 2015-April 2016**

Head teacher name:

_____

School name:

_____

School address: _____ Postcode: _____

School Tel no:

_____

Head teacher Signature: _____ Date: _____

Head teacher Email address:

_____

Switch-on co-ordinator name: _____ contact number:_____

Switch-on co-ordinator email address:

_____

Switch-on co-ordinator position at school:

_____

Number of Teachers (including SLT) at school as at [Insert date]

_____

Number of pupils at school as at [Insert date]

_____

Jose Coles and Paula Burrell – Switch-on developers
Rakhee Patel and Sarah Haywood – NatCen Social Research

*Please complete and sign copies, retaining one and returning the second copy to your Switch-on trainer by September 18th 2015.*

# Appendix F: Post-intervention survey

**P11798 Follow-up Survey**

**SPEC**

---

**Questions are documented as follows:**

{Question routing- who is asked the question}

**Question Name**

Question text

: Question response options

**If the respondent presses "next" without selecting an answer then please have "Don't know" appear as an answer code option.**

---

{ASK ALL}

**Serial** (VARLAB: Serial)

Welcome to the final survey of the Switch-on Evaluation.

Please enter the access code given to you by NatCen (this can be found in the email which contained the link to this information form).

: Numeric (6 characters)

**Introduction**

{ASK IF=INTERVENTION SAMPLE}

Dear {textfill coordinator name},

This follow-up information form is the last step of the Switch-on evaluation.

It will help us to evaluate the impact of this intervention on the reading level of your pupils and to gather information on any cost incurred to you.

**Please fill this survey before May 20th 2016.**

As usual, if you have any questions whilst completing this form please contact Michael directly on 0808 281 0308 or email: switchon@natcen.ac.uk

{ASK IF=COMPARISON SAMPLE}

Dear {textfill coordinator name},

Thank you again for taking part in the Switch-on trial.

This follow-up information form is the last step of the Switch-on evaluation.

All the information given to us will be kept securely and used for research purposes only.

**Please fill this survey before Wednesday 8th<sup>th</sup> June 2016.**

If you have any questions whilst completing this form please contact Michael Lumpkin directly on 0808 281 0308 or email: switchon@natcen.ac.uk

{ASK ALL}

**Laestab** (VARLAB: LA Number )

What is your school's LA/Estab number?

Your LA/Estab number is composed of 3 numbers followed by a forward slash and then 4 numbers. This is an example: 961/4009

If you are not sure of what yours is, you can find it here: **http://www.education.gov.uk/edubase/home.xhtml**

: Numeric

Hard check: [If incorrect / too few / too many characters] Your LA/Estab number is composed of 3 characters followed by forward slash followed by 4 characters.

A - LITERACY INTERVENTIONS IN THE SCHOOL

{ASK ALL}

**OtherInt** (VARLAB: Whether other literacy interventions took place)

From this list, please select all those interventions that took place in your school **only during the Spring Term of 2016 (January-March) with your Year 3 pupils**.

{DISPLAY IF = INTERVENTION SAMPLE}

If any other literacy interventions took place during that time with Year 3 pupils that are not listed here, please select "other". If you had no other literacy intervention than Switch-on taking place in Year 3 please select "none".

{DISPLAY IF = COMPARISON SAMPLE}

If any other literacy interventions took place and are not listed here, please select "other". If you had no literacy intervention taking place in Year 3 please select "none".

MULTICODE

1. None
2. Acceleread
3. Better Reading Partnerships
4. Boosting Reading
5. Catch-up Literacy
6. Direct Phonics
7. Inference Training
8. Nessy
9. Reading Recovery
10. Toe by Toe
11. Switch-on {ONLY SEE IF = COMPARISON}
12. Other intervention(s)

{ASK IF OTHERINT = 12}

**OtherNum** (VARLAB: Number of other interventions)

How many other literacy interventions did you have **during the Spring Term of 2016 (January-March) for your Year 3 pupils**?

:Numeric {soft check between 1 and 5}

{ASK IF OTHERINT = 12}

**Othercha** (VARLAB: Characteristics of the other interventions)

We would like to know more about the other literacy intervention(s) that took place in your school during the Spring Term of 2016 for Year 3 pupils.

Please tick all the relevant options which best describe the intervention(s) that you delivered.

:GRID with

Rows = {feed forward from **OtherNum** response}

Columns =

1. Daily intervention
2. Weekly intervention
3. One-to-one reading support
4. Small group reading and writing support

MULTICODE so that

- 1 and 2 cannot be both selected for the same intervention
- 3 and 4 cannot be both selected for the same intervention

## B - FIDELITY TO PROGRAMME

{ASK IF=INTERVENTION SAMPLE}

**TAdeliver** (VARLAB: Whether the TA was replaced)

Before Switch-on started, you told us that the following Teaching Assistants (TAs) would be delivering Switch-on. For each TA, please tell us if they were able to deliver the intervention until the end of the trial?

:Feedforward TAfirst and TAsurname from baseline survey and by each name please display as a drop-down menu the following options:

1. Yes, this TA delivered the whole Switch-on intervention for ten weeks
2. No, this TA withdrew from the intervention **before** the start of the trial
3. No, this TA withdrew from the intervention **during** the trial

{ASK IF=INTERVENTION SAMPLE AND TAdeliver = 2 or 3}

**TAwhy** (VARLAB: Why TA did not deliver whole intervention)

These are the TAs who did not deliver Switch-on until the end of the trial. For each TA, please tell us why they withdrew by choosing one of the options

:Feedforward TAfirst and TAsurname where TAdeliver = 2 or 3, and by each name please display as a drop-down menu the following options:

1. Left the school
2. Was re-allocated to another intervention
3. Was re-allocated to other duties
4. Long-term sick
5. Other

{ASK IF=INTERVENTION SAMPLE AND TAdeliver = 2 or 3}

**TAreplace** (VARLAB: Who replaced the TA)

When a TA had to withdraw from the trial, what did you do?

:Feedforward TAfirst and TAsurname where TAdeliver = 2 or 3, and by each name please display as a drop-down menu the following options:

1. Replaced the TA with another TA trained directly by a Switch-on trainer
2. Replaced the TA with another TA not trained directly by a Switch-on trainer
3. Replaced the TA with another member of staff
4. Did not replace the TA and stopped the intervention for the pupils allocated to this TA
5. Other

**Fidelity** (VARLAB: keys aspects of fidelity)

We would like to know more about how the intervention was delivered. For each statement below, please tell us if this occurred always, most of the time, some of the time or never:

:GRID

1.  The sessions were in a one-to-one setting
2.  The sessions lasted 20 minutes

: Present the sentences in a grid and for each sentence, please display the following options

1.  Always
2.  Most of the time
3.  Some of the time
4.  Never
5.  Don't know

**Daily** {VARLAB: Did the sessions occur daily}

Did the sessions occur daily?

1.  Yes
2.  No
3.  Don't know

**Replic** (VARLAB: whether coordinator thinks training was followed)

How closely do you think the guidance on how to deliver Switch-on was followed by TAs? Please think about the guidance at the face-to-face training days and in the Switch-on manual.

1.  Very closely
2.  Closely
3.  Not too closely
4.  Not closely at all

**Challg** (VARLAB: what aspects of the project were challenges)

Below are a number of statements about potential challenges of implementing Switch-on. For each one, please indicate how much you agree or disagree.

:GRID

1. The pressures on our TAs' time was a challenge
2. Because of the TA's involvement in Switch-on, other pupils received less support than they would have otherwise
3. The training events and materials were not clear enough
4. TAs didn't feel confident about implementing the programme
5. Doing all the paperwork related to the sessions was a challenge
6. Finding a room for the sessions was a challenge
7. The costs were a challenge for our school
8. The content of the programme was not always suitable for the selected pupils

: Please present the sentences in a grid, and for each sentence please display the following options

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree
5. Don't know


C - MEASURABLE COSTS


{ASK IF=INTERVENTION SAMPLE}

**Matcosts** (VARLAB: Material costs)

For each of the items below, please tell us how much you, as a school, spent in total on each item throughout the trial. Please enter '0' if you have not spent anything on the following items.

:GRID

1. Additional books                                       £

{Soft check: should not exceed 1000}

2. Printing/photocopying                              £

{Soft check: should not exceed 100}

3. Travel (e.g. for TAs to get to training)      £

{Soft check: should not exceed 800}

4. Other (please specify)                             £

Error message: "Are you sure? That sounds like rather a lot. Please check and amend if necessary."

{ASK IF=INTERVENTION SAMPLE}

**TAcover** (VARLAB: whether had to cover for TA time)

Did you have to organise cover for your TA(s) during the Switch-on training day(s)?

1. No cover was required
2. Yes

{ASK IF=INTERVENTION SAMPLE and TAcover= 1}

**TAcovhrs** (VARLAB: whether had to cover for TA time)

How many hours or days did you organise cover for?

: Hours {Soft check if over 300 hours}
: Days {Soft check if over 10 days}

{ASK IF=INTERVENTION SAMPLE}

**Extrares** (VARLAB: Whether had to purchase staff)

Did you hire any new staff for the delivery of this project or extend the contracted hours of any existing staff?

Note: We are not asking about employed staff members working unpaid overtime

1. Yes - increased the contracted hours of existing staff
2. Yes – employed somebody new
3. No

{ASK IF=INTERVENTION SAMPLE AND Extrares = 1}

**Extrahrs** (VARLAB: Extra hours purchased)

How much did you spend per month on additional hours for existing staff for this intervention from September 2015 to March 2016?

: Numeric

Soft check: [needs to be between 0 and 20,000 ]

{ASK IF=INTERVENTION SAMPLE AND Extrares = 2}

**Salcosts** (VARLAB: Salary costs)

How much did you spend **per month** on salary costs for new staff for this intervention from September 2015 to March 2016?

: £Numeric

Hard check: [needs to be between 0 and 4,000 ]

D. COSTS IN TERMS OF TIME

{ASK IF=INTERVENTION SAMPLE}

**TAprep** (VARLAB: total TA time preparing for Switch-on)

**Excluding the time spent attending the training and taking part in elements of the evaluation** (such as doing an interview), please tell us how much time TAs spent preparing themselves and their materials **before the intervention started in January** (for example counting the 100 words in the books, photocopying their forms, practising Running Records, etc.…)

You can tell us in either days or hours.

: Numeric (days) {hard check if over 20 days}

: Numeric (hours) {hard check if over 140 hours}

{ASK IF=INTERVENTION SAMPLE}

**TAtasks** (VARLAB: daily TA time on tasks)

Please tell us how many hours TAs spent **daily:**

GRID

- Preparing for each session
- Doing tasks after the sessions

1. : Less than 1 hour
2. :Numeric {Hard check if over 5 hours}

{ASK IF=INTERVENTION SAMPLE}

**COtime** (VARLAB: Coordinator time spent on Switch-on tasks)

Thinking of your tasks and role as a Coordinator, how much time did you spend working on Switch-on in total from September to March? (not counting the tasks for the evaluation, i.e. the online information forms or anything related to the testing)

You can tell us in either days or hours

: Numeric (days) {hard check if over 140 days}

: Numeric (hours) {hard check if over 980 hours}

{ASK IF=INTERVENTION SAMPLE}

**Recomm** (VARLAB: Would you recommend this intervention)

Would you recommend the Switch-on intervention to another school?

1. Yes
2. No
3. Don't know

{ASK ALL}

ImprEv (VARLAB: How could we improve the evaluation process)

Now we would like to ask you about your experience of the evaluation process. Is there anything that we could have done to make this process easier for you?

:text {maximum 4000 characters}

{ASK ALL}

ImprTest (VARLAB: How could we improve the testing process)

Now we would like to ask you about your experience of the testing process: is there anything that we could have done to make this process easier for you?

:text {maximum 4000 characters}

**Thank you**

{ASK ALL}

Thank you for your help.

We have now collected all the information we need from your school for the evaluation of Switch-on.

If you are interested in the results of our study, our report will be publicly available on this website **http://www.natcen.ac.uk/switch-on**

If you have any questions, please contact Michael directly on 0808 281 0308 or email: switchon@natcen.ac.uk

Kind regards,

The Switch-on Research team

# Appendix G: Topic guides

## 1. Coordinator topic guide

**Interviews with Switch-on coordinators**

**Aim of the phone interview:**

The aim of the interview with school coordinators is to find out about their experience of the programme, the workload it created for them and how they liaised with other school staff and the Switch-on trainers for the delivery. Finally, it will explore their perceptions of the impacts of the programme.

**The topic guide:**

This guide sets out a number of topics and questions that will be covered during interviews. The guide does not contain follow-up probes and questions like `why', `when', and `how', etc. as participants' contributions will be explored in this way, as far as is feasible, during the 45 minute interview. Researchers will use prompts and probes in order to understand how and why views, behaviours and experiences have arisen.

The interview will last for **approximately 45 minutes.**

**Interviewer: specify that the interview is about the intervention, not about the evaluation.**

1. **Introductions**
   - Introduce yourself and NatCen Social Research
   - Introduce the study:
     - Evaluation of Switch-on Programme
     - Commissioned by the Education Endowment Foundation
   - Overall project aims:
     - To understand experiences of delivering Switch-on and in particular to understand barriers to delivery and what enables delivery
     - To understand the benefits of the programme for pupils.

   - **Interview is one of 6 interviews with Switch-on school coordinators.**
   - **The interview is not about the evaluation aspect (baseline survey and co) but about the delivery.**

   - Digital recording – check OK, and reassure re: confidentiality
   - Data kept securely in accordance with Data Protection Act
   - How we'll report findings – anonymity of all participants
   - Any questions/concerns?

**2. Background**

*Aim: To gather background information on the Switch-on Coordinator and the school.*

- Current occupation – role in the school, …
- Professional background
- Experience of delivering/ overseeing literacy interventions and role
- School context
    - Profile of pupils (FSM, EAL,SEN)
    - How many TAs in the school
    - Processes for inducting and training TAs; how they are deployed
    - How much of a priority is improving reading in the school?
    - Other reading programmes/ interventions currently or previously used in school
- Involvement with Switch-on:
    - How first heard about the programme?
    - How was the decision to join the programme made?
    - How was the coordinator role assigned?
    - What did they know about it?
- What expectations did they have about the programme and their role

**3. Role in the Switch-on intervention and workload**

*Aim: To provide understanding of what role the coordinators had in the Switch-on programme.*

- What role in the programme?
    - Had a say in the selection of the pupils and of the Teaching Assistants
    - Had a say in organisation and content of sessions
    - Administrative tasks
    - Other
- What type of contact with Switch-on trainer?
    - Frequency of contact
    - Format of contact
    - Content of communication
    - Other
- How they worked with TAs
    - Format of contact
    - Content of communication
    - Other
- How did Switch-on affect their workloads?
    - Any additional work required (beyond what they would normally do)
    - Was the workload manageable related to the tasks that the intervention implied: selecting the pupils and the TAs, contacting the trainer, attending the training…)

**4. Views on facilitators and barriers to implementation**

*Aim: To provide an understanding of experiences of delivering Switch-on and lessons learnt from these experiences.*

- What were the main challenges to implementation

- o For staff
- o For the school
- o For pupils
- What enabled implementation
  - o For staff
  - o For the school
  - o For pupils
- Crucial factors for successful implementation?
- Views on whether it is replicable - why/why not?
- Any schools in which it wouldn't work?


## 5. Impacts and perception of benefits

*Aim: To establish the perceived impact on all pupils and staff.*

- Impact of the intervention on the Switch-on pupils
  - o ability to read
  - o ability to write
  - o pupils' wellbeing
  - o confidence in reading
  - o interest in reading
  - o any other impact
- Impact of the intervention on non-recipient pupils
  - o Impact on the class as a whole?
  - o ability to read
  - o confidence in reading
  - o interest in reading
  - o any other impact
- Main benefits of the intervention
  - o For recipient pupils
  - o For non-recipient pupils
- Negative impacts of the intervention?
- Unexpected consequences
  - o Hidden costs

# 2. Teaching assistants topic guide

**Interviews with Switch-on teaching assistants**

**Aim of the phone interview:**

The aim of the interview with TAs is to explore how they were trained to deliver Switch-on and their experience of delivering the ten week programme. The interview will ask TAs about their views on what enables or acts as a barrier to successful implementation and perceived impacts on pupils.

**The topic guide:**

This guide sets out a number of topics and questions that will be covered during interviews. The guide does not contain follow-up probes and questions like `why', `when', and `how', etc. as participants' contributions will be explored in this way using prompts and probes in order to understand how and why views, behaviours and experiences have arisen.

The interview will last for **approximately 45 minutes.**

**Interviewer note: emphasize that the interview and observation are not about checking how well they are delivering Switch-on but rather to understand what they think about it and how they are implementing it.**

2. **Introductions**
   - Introduce yourself and NatCen Social Research
   - Introduce the study:
     - Evaluation of Switch-on Programme
     - Commissioned by the Education Endowment Foundation
   - Overall project aims:
     - To understand experiences of delivering Switch-on and in particular to understand barriers to delivery and what enables delivery
     - To understand the benefits of the programme for pupils.

   - **Interview is one of 20 interviews with Switch-on Teaching Assistants.**
   - **Repeat that the aim of the interview is not to evaluate the TAs' performance, but to collect their thoughts on Switch-on.**

   - Digital recording – check OK, and reassure re: confidentiality
   - Data kept securely in accordance with Data Protection Act
   - How we'll report findings – anonymity of all participants
   - Any questions/concerns?

## 2. Background

*Aim: To gather background information including detail of the context in which the school operates and the profile of their pupils.*

- Professional and educational background (e.g no. years as a TA, training, qualifications, experience of other literacy interventions)
- Duties and role as a TA within school
- Profile of Year 3 pupils:
  - Special Education Needs (SEN)
  - English as an additional language (EAL)
  - Disadvantaged children (based on FSM take-up)
  - Turnover of pupils at the school
- Does the school have educational priorities? How much of a priority is improving reading in the school?
  - Other reading programmes/ interventions currently or previously used in school
- Involvement with Switch-on:
  - How first heard about the programme
  - How was the decision to join the programme made
  - What did they know about it
  - What expectations did they have about the programme and their role


## 3. Training received from the Switch-on Trainers

*Aim: To provide understanding of how TAs were trained to deliver the intervention*

- Overview of the training
  - Nature and format + hours
  - Received any material for the intervention?
  - Content – *probe: was comprehension a focus?*
- Any other preparation before intervention, such as practising using the forms, readings, meetings, scheduling, …
  - Nature of this
  - Support received from the school coordinator and Year 3 staff
  - Support received from trainer
  - Support from others
- Thoughts and expectations about the intervention
- Effectiveness of training/other preparation
  - Which aspects of the training/preparation helped most?
  - Which helped least?
  - How prepared they felt to deliver Switch-on
  - 

## 4. Programme-delivery

*Aim: To provide understanding of how the intervention was delivered in practice, if this differed from the guidance provided and reasons for this, and what impact being part of Switch-on had on their workload*

- Selecting pupils
  - How were pupils selected to receive the intervention?
  - Who had a say, who made the final decision?
  - On hindsight are they satisfied with this process and outcome of the selection?
- Format of the sessions
  - How was organised: time set aside in timetable? Ad hoc?
  - Regularity
  - Format

- o Location
- o Attendance and pupil engagement
- Have they done the Switch-on sessions the way they had planned?
  - o Format
  - o Using the documents and materials provided
- Materials
  - o What materials did they use?
  - o Whether materials targeted at the right age and abilities
  - o Suggested improvements to materials and forms
- Monitoring progress
  - o How was pupil progress monitored
- Communication with the Class Teacher
  - o In regards to content of the intervention
  - o In regards to monitoring and sustaining progress
- Differences of delivery to different subgroups (E.g. high ability, low ability, middle ability, FSM, ESL)
  - o How this was managed within the intervention
  - o Was the programme adapted for particular groups
  - o Impact on the planning and delivery of the session
- TA workload: session replacing other duties or on top?
  - o Time spent planning – including any joint planning with teachers
  - o Time spent delivering
  - o Unexpected tasks
  - o Could they cope with that workload all the time?
- Did delivery of Switch-on go as planned? Any changes related to:
  - o pupils
  - o TAs
  - o mode/format of delivery
  - o dosage
  - o content
  - o anything else
- What aspects of delivery worked well
- What aspects of delivery worked less well

## 5. Support received and contact with the coordinator and trainer

*Aim: To establish what support TAs received from Switch-on trainers and coordinators*

- Contact with Switch-on trainer
  - o Who initiated it and why – regular check-in or when there were specific issues?
  - o How often
  - o Format
  - o Content of contact: help, clarification, support?
  - o Any additional support would have liked
  - o Anything they would have liked to change
- Support from Switch-on Coordinator?
  - o What kind of support and for what
  - o How often
  - o Format
  - o Content of contact: help, clarification, support
  - o Any additional support would have liked
  - o Anything they would like to have changed

- Mid-way visit
  - What happened
  - Format
  - Views on content
  - Views on helpfulness
  - Any improvements or other visits they would have liked

## 6. Impacts

*Aim: To provide an understanding of outcomes of the programme on different groups of pupils, to gather information about the positive and negative impacts.*

- Were there benefits for intervention pupils, and if so why?
- *Probe*
  - ability to read
  - reading comprehension
  - ability to write
  - confidence in reading
  - interest in reading
  - pupils' perception of their own abilities
  - pupils' wellbeing
  - Any other impact?
- Were there benefits for the rest of the Year 3 pupils and why?
- *Probe*
  - Impact on the class as a whole, did it change the culture around reading?
  - ability to read
  - ability to write
  - confidence in reading
  - interest in reading
  - pupils' perception of their own abilities
  - pupils' wellbeing
  - Any other impact?
- Negative impacts of the intervention?
- Unexpected consequences
  - Hidden costs or time needs

## 7. Overall views and suggested improvements

*Aim: To gather views on the programme as a whole, whether they would recommend it and how it can be improved.*

- If there were benefits, what helped to achieve these benefits for the pupils?
  - How/ Why?
- What prevented progress/benefits for pupils?
  - How/ Why?
- Any improvements
  - Materials (folders, forms, books)
  - Support structures
  - Programme itself
- Recommend use to other schools
  - Why/ why not?
- Views on whether Switch-on would appeal to other schools

**6. Overall views and suggested improvements**

*Aim: To gather views on the programme as a whole, whether they would recommend it and how it can be improved.*

- Does the programme meet its aims
  - How/ Why not?
- Any additional support they would have liked
  - At what stage?
  - In what form?
  - Relationship with Switch-on
  - Within school (from Year 3 teacher, headteacher)
- Any improvements
  - Materials
  - Support structures
  - Programme itself
- Recommend use to other schools
  - Why/ why not?

# 3. Class teacher topic guide

**Interviews with class teachers on Switch-on**

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**Aim of the phone interview:**

The aim of the interview with classroom teachers is to explore their experience of the programme, the workload it created for them, how they liaised with other school staff for the delivery and their perception of the impact that the programme had.

**The topic guide:**

This guide sets out a number of topics and questions that will be covered during interviews. The guide does not contain follow-up probes and questions like `why', `when', and `how', etc. as participants' contributions will be explored in this way, as far as is feasible, during the 45 minute interview. Researchers will use prompts and probes in order to understand how and why views, behaviours and experiences have arisen.

The interview will last for **approximately 45 minutes.**

---

1.  **Introductions**
    - Introduce yourself and NatCen Social Research
    - Introduce the study:
        - Evaluation of Switch-on Programme
        - Commissioned by the Education Endowment Foundation
    - Overall project aims:
        - To understand experiences of delivering Switch-on and in particular to understand barriers to delivery and what enables delivery
        - To understand the benefits of the programme for pupils.
    - **Interview is one of 6 interviews with classroom teachers.**
    - Digital recording – check OK, and reassure re: confidentiality
    - Data kept securely in accordance with Data Protection Act
    - How we'll report findings – anonymity of all participants
    - Any questions/concerns?


## 2. Background

*Aim: To gather background information including previous experiences of teaching and of working on literacy interventions.*

- Current occupation – role in the school.
- Professional and educational background
- Experience with other literacy interventions
- Involvement with Switch-on:
    - How first heard about the programme?
    - How was the decision to join the programme made?
    - What did they know about it?
    - What expectations did they have about the programme and their role

**3. Role in the Switch-on intervention and workload**

*Aim: To provide an understanding of the role that class teachers had in the Switch-on intervention .*

- What role in the programme?
    - Selection of the pupils
    - Deciding on how Switch-on would be delivered in the school (timetabling, format of sessions, content)
    - Administrative tasks
    - Other
- How did they work with TAs?
    - Joint planning
    - Did they communicate with TAs on the pupils' experience of the intervention
    - Sharing information to monitor improve pupils' progress
    - Supporting TAs during the ten-week delivery period
- What did TAs find difficult or need support with?
- How did Switch-on affect teachers' workloads?
    - Any additional work required (beyond what they would normally do)
    - Was the workload manageable?
- Views on the content of the programme
    - Suitability for different kinds of pupils (EAL, SEN, confident/shy, behavioural issues)
    - Aligned with needs
    - Aligned with curriculum
- Views on the format of the programme
    - Suitability for different kinds of pupils
    - Aligned with needs
    - Aligned with curriculum
- Did delivery of Switch-on go as planned? Any changes related to:
    - pupils
    - TAs
    - mode/format of delivery
    - dosage
    - content
    - anything else

**4. Impacts and perception of benefits**

*Aim: To provide an understanding of outcomes of the programme on different groups of pupils, to gather information about the positive and negative impacts.*

- Were there benefits for intervention pupils, and if so why?
- Probe
    - ability to read
    - ability to write
    - confidence in reading
    - interest in reading
    - pupils' perception of their own abilities
    - pupils' wellbeing

- o Any other impact?
- Were there benefits for the rest of the Year 3 pupils and why?
- *Probe*
    - o Impact on the class as a whole, did it change the culture around reading?
    - o ability to read
    - o ability to write
    - o confidence in reading
    - o interest in reading
    - o pupils' perception of their own abilities
    - o pupils' wellbeing
    - o Any other impact?
- Main benefits of the intervention
    - o For recipient pupils
    - o For non-recipient pupils
- Negative impacts of the intervention?
- Unexpected consequences
    - o Hidden costs


## 5. Views on facilitators and barriers to implementation

*Aim: To provide an understanding the various experiences of implementation and lessons learnt from these experiences.*

- What were the main challenges to implementation
    - o For staff
    - o For the school
    - o For pupils
- What enabled implementation
    - o For staff
    - o For the school
    - o For pupils
- Crucial factors for successful implementation?
- Views on whether it is replicable - why/why not?
- Any schools in which it wouldn't work?


## 6. Overall views and suggested improvements

*Aim: To gather views on the programme as a whole, whether they would recommend it and how it can be improved.*

- Does the programme meet its aims
    - o How/ Why not?
- Any additional support they would have liked
    - o At what stage?
    - o In what form?
    - o Relationship with Switch-on
    - o Support from within school (headteacher, coordinator, SENCO)
- Any improvements
    - o Materials
    - o Support structures
    - o Programme itself
- Recommend use to other schools ? Why/ why not?

# 4. Trainers topic guide

**Interviews with Switch-on trainers**

**Aim of the phone interview:**

The aim of the interview with trainers is to explore how they were trained and how they themselves trained TAs to deliver the intervention. The interviews will explore how well the schools engaged in the programme and the workload that this implied for the trainers. Finally, the interview will ask about the facilitators and barriers to successful implementation and views on the impacts of the programme on pupils and schools.

**The topic guide:**

This guide sets out a number of topics and questions that will be covered during interviews. The guide does not contain follow-up probes and questions like `why', `when', and `how', etc. as participants' contributions will be explored in this way, as far as is feasible, during the 45 minute interview. Researchers will use prompts and probes in order to understand how and why views, behaviours and experiences have arisen.

The interview will last for **approximately 45 minutes.**

1. **Introductions**
   - Introduce yourself and NatCen Social Research
   - Introduce the study:
     - Evaluation of Switch-on Programme
     - Commissioned by the Education Endowment Foundation
   - Overall project aims:
     - To understand experiences of delivering Switch-on and in particular to understand barriers to delivery and what enables delivery
     - To understand the benefits of the programme for pupils.
   - **Interview is one of 5 interviews with Switch-on trainers.**


   - Digital recording – check OK, and reassure re: confidentiality
   - Data kept securely in accordance with Data Protection Act
   - How we'll report findings – anonymity of all participants
   - Any questions/concerns?


## 2. Background

*Aim: To gather background information including previous experiences of delivering training, and of working on literacy interventions*

   - Current occupation – where based, job(s),
   - Professional and educational background
   - Experience in education, literacy interventions, and delivering training
   - Experience working with schools and TAs

- How got involved with Switch-on: how heard about it, what did they know about it.
- Understanding of the Switch-on intervention and of their role before training

## 3. Training received from Switch-on

*Aim: To provide understanding of how the trainers were trained to deliver the Switch-on intervention and to train the TAs*

- Training delivered by Switch-on
    - Format and nature of the training, hours, location, materials received
    - How effective this was - what was most useful / what was least useful
    - How prepared they felt to implement the programme
- Preparing to train the TAs
    - Process of being allocated schools and TAs
    - Communication with TAs and coordinators
    - Organising the training
- Support from Switch-on developers
    - Nature of the support received
    - Frequency of contact
    - Mode of contact, ease of asking for support
    - Suggested improvements to the training received and communication with developers

## 4. Training the TAs

*Aim: To provide understanding of how the TAs were trained, how consistent the training was and what worked best.*

- Preparation required
- Delivery
    - Was guidance given by developers followed? Reasons for any changes.
    - Attendance and impact of absences
- Materials
    - What materials they used
    - What materials they provided TAs
    - Suggested improvements to the materials used and provided
- Engagement of the schools, TAs and coordinators
    - Different levels of initial engagement from schools and TAs
    - What did TAs find easy
    - What did TAs find hard
    - Which sort of TAs struggled
- Overall experience of training TAs
    - Difficulties and barriers experienced
    - Most positive elements
    - Lessons learnt from the training experience
- Support received from Switch-on in preparing and delivering the training
    - Nature and frequency of support
    - Adequate level of support?
    - Suggested improvements to the support

**5. Programme-delivery (engagement with schools + workload)**

*Aim: To establish how the programme was delivered, what were the different levels of need, engagement and communication with the participating schools?*

- Engagement with schools once the intervention began
    - General overview of engagement with schools
    - How easy/difficult trainers found this process
    - Any characteristics of easy vs difficult schools to engage with
- Type of support provided
    - What type of support TAs asked for
    - What type of support coordinators asked for
    - Any general rule regarding who would ask for support
    - Any common difficulty that required support
- Half intervention visit
    - What the purpose was
    - Did it meet the purpose – why/why not?
- Form of communication with schools
    - How often would communicate: only when issue or check-ins
    - What format? Emails, phone calls, texts, visits
- Workload
    - What was workload compared to expectations
    - How managed workload

**6. Facilitators and barriers to implementation**

*Aim: To provide an understanding of experiences of delivering Switch-on and lessons learnt from these experiences.*

- Main challenges and barriers to implementation
    - Working with schools and staff
    - Working with Switch-on developers
- What worked well
    - Working with schools and staff
    - Working with Switch-on developers
- Examples of schools that engaged well and delivered Switch-on effectively
    - Characteristics of the school and staff involved
    - What made a difference
    - Is it replicable

**7. Overall views and suggested improvements**

*Aim: To gather views on the programme as a whole, whether they would recommend it and how it can be improved.*

- Does the programme meet its aims
    - How/ Why not?
    - Views on benefits for pupils
    - Views on benefits for TAs
    - Views on benefits for schools
- Any additional support they would have liked
    - At what stage?

- o In what form?
- o Relationship with Switch-on
- o Relationship with schools
- Any improvements
  - o Materials
  - o Support structures
  - o Programme itself
- Recommend roll-out to other schools
  - o Why/ why not?