

Evaluation Summary	
Age range	Primary (Year 1)
Number of pupils	720
Number of schools	45
Design	Randomised controlled trial with randomisation at the pupil level
Primary Outcome	Reading

## BACKGROUND

The Institute for Effective Education (IEE) proposes to conduct an evaluation of the Plymouth Parent Partnership: SPOKES programme. This will consist of a two-group randomised controlled trial (RCT) of Year 1 children, to assess the effects of the Supporting Parents On Kids Education in School (SPOKES) on children's literacy. In addition, there will be a process assessment to identify whether level of fidelity impacts children's subsequent attainment and behaviour and for which children is the SPOKES programme most effective.

## RESEARCH PLAN

### **Sample**

The Plymouth Parent Partnership: SPOKES team proposal specifies a total of 720 pupils across approximately 45 primary schools to take part in the project. Each school will participate in two rounds of the project, making approximately 360 intervention children and 360 control. Control children and their parents will receive no treatment, but parents will be given a hotline number if they have concerns. The intervention will occur over two academic years with Year 1 pupils taking part in either the academic year 2012–2013 or 2013–2014.

Across six cohorts and within each school half of the pupils designated as struggling readers, approximately eight pupils, will be randomly assigned to the SPOKES programme, and approximately eight to the comparator group. The control group will provide an ideal counterfactual for the SPOKES group as, being within the same school, they will be receiving the same education beyond the SPOKES programme, and children within schools tend to share more similar characteristics than children from different schools.

All schools will have volunteered to participate in the programme. Children will be identified as having early difficulties in their literacy learning using the previous year's teacher-completed Early Years Foundation Profile 5+, and whose parents have agreed to (and are able to) participate in the programme if they are selected. Randomisation will ensure that children receiving the SPOKES intervention and control children will be very similar across

all relevant factors. The Institute for Effective Education will undertake the random assignment, following completion of parental consent and parent/child baseline measures.

The analyses will use an intent-to-treat-design, meaning that even if parents drop out or cease attending sessions for any reason, associated child outcomes will be retained in the main analyses. We will conduct follow-up analyses with the level of participation and implementation fidelity as factors. Additional analyses will determine if the programme was differentially effective for particular types of children (e.g., those eligible for free schools meals).

Additional analysis, will examine the impact of different aspects of the programme on child outcomes through using the results of the parental interviews, implementation analysis and the Teacher SDQ (see below).

### **Measures**

We will use demographic data such as marital status, income/home ownership status, number of children (in household), age at birth of first child, parental education levels, to inform the analyses.

Measures for the impact analyses will be administered by IEE researchers at pre-test (baseline), immediately post-test, and six months post-baseline (some cohorts will receive a 12-month follow-up). Measures will be:

#### **1) Completed by the child:**

**British Picture Vocabulary Scale (BPVS) II edition** – The British Picture Vocabulary Scale, second edition (BPVS-II) is an individually-administered, norm-referenced test of receptive vocabulary for Standard English. It is a standardised test showing the extent of English vocabulary acquisition. Cronbach's Alpha for the Year 1 age group is 0.96. This will form the pre-test for each participating child.

**Woodcock Reading Mastery Tests – Revised/ Normative Update (WRMT-R/ NU)** – The primary outcome measure will be the WRMT, a comprehensive set of individually administered tests of reading. Sub-tests used will measure letter awareness, word recognitions and phonological awareness. This will form the post-test and for selected cohorts a six-month follow-up (cohorts 1-5) and a twelve month follow-up (cohorts 1 & 2).

**Year 1 phonics screening check** – This is a compulsory check carried out in schools in the summer term to assess Year 1 pupils' phonics decoding skills. This data will be routinely collected from schools for all participating pupils.

#### **2) Completed by the teacher:**

**Strengths and Difficulties Questionnaire (SDQ), with impact supplement** – Additional detail on the children’s emotional wellbeing will be collected using the SDQ (Goodman, 1997). This is a 25-item behavioural screening questionnaire covering five different dimensions of children’s behaviour (age 4–16 years); conduct problems, inattention-hyperactivity, emotional symptoms, peer problems, and pro-social behaviour. These will be completed by teachers and the information will assist in identifying if the programme has impacts on children’s social behaviour and for which children the SPOKES programme is most effective. Teachers will be sent the SDQs and will be asked to complete and send back to the evaluation team in FREEPOST envelopes. Child ID numbers will be used to ensure anonymity of participants.

### **3) Completed with the parent:**

The PARYC (McEachern et al., 2012) parenting questionnaire is a relatively new measure with three subscales; supporting positive behavior; proactive, positive parenting; and setting limits. These items are rated via a 7 point Likert scale. The first two subscales were piloted autumn 2013 during the pilot phase of the project as they more accurately reflected the underlying principles of the SPOKES programme.

In the main study this assessment was to be administered in person at baseline by the Plymouth Parenting Partnership (PPP) home visiting team during the home visits, with a post-test assessment administered with all parents (1 main carer per child) by telephone interview at post-test. PPP unfortunately no longer have the staff resources to conduct the home visits and so the PARYC will be collected from parents via a 15-minute telephone interview.

PPP will collect demographic data for the research teams.

### **Analysis Plan and Statistical Power**

The evaluation of SPOKES is a within-school design so analysis of covariance (ANCOVA) will form the main statistical analysis, with programme participation as the independent variable and literacy and behaviour outcomes as the dependent variables, using pre-test scores as the covariates. The analyses will use an intent-to-treat-design, meaning that even if parents cease attending sessions for any reason, associated child outcomes will be retained in the main analyses.

Additional sub-analysis will include:

- whether the programme was more or less effective for children who were eligible for free school meals (FSM) than those who were not, and for girls or boys.

- whether the programme was more or less effective for children depending on the level of dosage (parental attendance at SPOKES sessions).

The statistical power of the planned analyses was estimated using Optimal Design software. Assumptions were as follows (based on extensive experience with similar analyses).

Number of schools: 45

Number of subjects: 720

Students per school per year group: 16

Pre-post correlation (squared): 0.49

Intraclass correlation: 0.15

Criterion for statistical significance:  $p < .05$

Based on these assumptions a minimum detectable effect size (MDES) of 0.20 could be detected with a probability of 0.80.

### **Summary of the Process Evaluation**

Previous evaluations have indicated the importance of fidelity of implementation on outcomes (Eames et al., 2010) and also the importance of parents as moderators in impacting on child literacy. We anticipate analysing implementation data collected by the PPP: SPOKES team to inform our analysis and findings.

We propose conducting additional telephone interviews with a subsample of approximately a third of the parents participating in the SPOKES programme (note that the PARYC will be administered during the same call for these participants to reduce the burden on participants). After taking part in the programme, parents will be randomly selected to ensure a mix of SDQ results, whether or not their children were eligible for free schools meals, and level of attendance at SPOKES sessions. Areas of interest include:

- SPOKES strategies implemented by the parent.
- Parental satisfaction of the SPOKES programme.
- Factors influencing attendance (or non-attendance) at sessions.
- Frequency of engagement in recommended activities with children prior to and after participation in the SPOKES programme.

By using repeated measures over a period of time (i.e. post-test, 6 months and 12 month follow-ups) we will be able to conduct longitudinal analysis of literacy outcomes (See Table 1).

We also recognise that one aim of the project is to use findings from the intervention to make it more effective and affordable in the future. Building on previous evaluations of SPOKES, the formative evaluation conducted by Oxford University will also determine how different aspects of SPOKES impact on child literacy outcomes through feedback from parents.

### PERSONNEL

**Bette Chambers, PhD. Principal Investigator.** Professor Bette Chambers is Director of the Institute for Effective Education at the University of York and part-time professor at the Center for Research and Reform in Education at Johns Hopkins University in Baltimore. Professor Chambers develops and evaluates effective practices in early childhood and literacy education and promotes the use of evidence-based practices. She has authored or co-authored numerous articles, books, and practical guides for teachers, including *Let's Cooperate* and *Two Million Children: Success for All*.

**Louise Tracey, PhD. Project Manager.** Dr Louise Tracey is a Research Fellow in the Institute for Effective Education at the University of York. She conducts evaluations of literacy and mathematics programmes in primary schools using experimental and quasi-experimental methodologies. Dr Tracey is currently working on an evaluation of the Success for All programme, a longitudinal matched study involving 40 primary schools over 4 years. She is also piloting the use of literacy measures in Reception classes for the Born in Bradford cohort project.

**Tracey Bywater, PhD. Researcher.** Dr Tracey Bywater is a Reader in the Institute for Effective Education at the University of York, focusing on enhancing parental input in supporting children's success and long-term positive outcomes. She is also an Honorary Senior Research Fellow in the School of Psychology, Bangor University, Wales, and is Chair of the Board of Trustees for the Children's Early Intervention Trust. Dr Bywater has led on many randomised control trials (including Incredible Years) to improve behavioural, cognitive, and health outcomes in children and their parents/carers. She has published widely on these topics and has recently co-authored a Cochrane Review on group-based parenting programmes for children aged 3–12 years.

**Louise Elliott.** Louise Elliott is the Data Manager at the Institute for Effective Education, where she manages all database organisation, data entry, cleaning and descriptive statistical analyses conducted in the research work.

**Table 1. Timeline**

	<b>2012</b>	<b>2012-2013</b>	<b>2013</b>	<b>2013-2014</b>	<b>2014</b>	<b>2014-2015</b>
	June-Nov	Dec-May	June-Nov	Dec-May	Jun-Nov	Dec-May
Recruit and train assessors						
Pre-tests for cohort 1 (C1 – autumn term 2013)						
Post-tests for C1 (summer term 2013)						
Additional recruitment and training (assessors)						
Telephone interviews with sub-sample of C1 parents						
Pre-tests for Cohort 2 (C2 – spring term 2013)						
Six month follow-up C1						
Post-tests for C2						
Telephone interviews with sub-sample of C2 parents						
Pre-tests Cohort 3 (C3 – summer 2013)						
Additional recruitment and training (assessors)						
Twelve month follow-up C1						
Six month follow-up C2						
Post test C3						
	<b>2012</b>	<b>2012-2013</b>	<b>2013</b>	<b>2013-2014</b>	<b>2014</b>	<b>2014-2015</b>

	June-Nov	Dec-May	June-Nov	Dec-May	Jun-Nov	Dec-May
Telephone interviews with sub-sample of C3 parents						
Pre-test Cohort 4 (C4 – autumn term 2013)						
Pre-test Cohort 5 (C5 – spring term 2013)						
Post-test C4 (Summer 2014)						
Telephone interviews with sub-sample of C4 parents						
12 month follow-up C2						
6 month follow-up C3						
Post-test C5						
Telephone interviews with sub-sample of C5 parents						
Pre-test Cohort 6 (C6)						
6 month follow-up C4						
6 month follow-up C5						
Post-test C6						
Telephone interviews with sub-sample of C6 parents						
Conduct analysis and write reports						

## **RISKS**

One of the main risks is a failure to engage and recruit parents, or specific groups of parents. For example, previous studies of SPOKES have suggested high levels of non-attendance by some parents, including after recruitment has occurred. We propose to routinely collect attendance and recruitment data and include it in our sub-analysis. In addition, we understand the PPP: SPOKES programme team have both parental engagement and retention strategies in place. We will follow up parents in the evaluation telephone interview to further understand why they have or have not attended sessions. An additional risk is non-participation by parents whose children have the lowest achievement as these parents can sometimes be hard to reach. We must assume the risk will be the same across all schools. This issue, and possible diversity in schools recruited, will be addressed in the analysis. We will also ensure that researchers are blind to allocation during data collection.

## **Ethics, Data Management, Protection and Confidentiality**

Ethical approval for this study was awarded in January 2013 by the Ethics Committee of the Department of Education, University of York.

All outputs will be made anonymous so that no schools or pupils will be identifiable in the report or dissemination of results.

Data will be handled in accordance with the Data Protection Act (1998). Statistical databases will hold non-identifiable data. Twenty per cent of data will be double entered to assess reliability. Confidentiality will be maintained and no one outside the trial team will have access to the database. The trial database will be securely held and maintained on the University's research data protection server, which is regularly backed up.