Study Title:
The Effectiveness of an Enhanced Book-Gifting Intervention for Improving Reading Outcomes for Children in Foster Care

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Version History

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Section I: General Study Information

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Study start date: 2018-01-01
**Study end date:** 2020-06-30

**Intervention start date:** 2019-09-16

**Timing of entry:** Prior to implementation of the intervention

**Brief abstract:**
Educational outcomes for children in care are poor and there remains a consistent attainment gap between them and the wider child population. This gap is now well-recognised internationally and a number of initiatives have emerged to tackle this issue. One of the most popular types of intervention targeted at improving literacy levels of children in care is book-gifting programmes.

Within the UK, book-gifting programmes for children in foster care are fairly common. One of the most popular is delivered to all children aged between 7 and 9 years of age in foster care across Northern Ireland and in over a third of local authorities in England. The programme comprises six personalised packs of books and other materials posted to the children once a month from May to October. It was originally hypothesised that children will develop a love of books and that this will, in turn, enhance reading activities and ultimately improve reading skills. The one evaluation of this intervention in Northern Ireland, by members of the current research team, using a randomised controlled trial design, found that it had no effect on children's reading skills or attitudes towards reading. However, this evaluation did confirm the findings of previous qualitative evaluations that suggested that the programme was well-received by all involved. Moreover, it found that the foster carers were interested in playing a role in the delivery of the book-gifting programme and in supporting the children's reading (see Section VIII for references to this previous evaluation).

This present study, funded by the Economic and Social Research Council (ESRC), builds significantly upon the findings of this initial trial in Northern Ireland. Led jointly by the Centre for Evidence and Social Innovation at Queen's University Belfast and the Rees Centre at the University of Oxford, the study has designed and piloted an enhanced book-gifting programme - called "Reading Together" - that is aimed at children in foster care aged between 7 and 9 years. The programme runs for six months and includes sending children three book parcels. These parcels are enhanced with a focus on supporting foster carers to undertake a structured programme of paired reading with their children for the duration of the intervention.

The purpose of this present trial is to measure the impact of Reading Together on children's reading skills (comprehension, accuracy, reading rate and vocabulary) and also their attitudes to reading. The trial is also testing the optimal level of support required for foster carers. As such this is a three-armed trial that includes a control group and two intervention groups: one where foster carers are supported by being provided with a Handbook and access to further resources via a website; and another where this support is supplemented by the provision of specific training for the foster carers.

The programme will be delivered from September 2019 to April 2020 through between 15-20 local authorities in England. The actual start date of the intervention for each local authority will vary between mid-September to the beginning of November 2019. The research team is aiming to achieve a final sample of 528 children recruited through the local authorities (176 children for each arm of the trial). Within each local authority, children will be randomly assigned to one of the three arms of the trial.

**Keywords:** Book-gifting; paired reading; children in care; foster care; children aged 7-9; attitudes to reading; reading accuracy; reading rate; reading fluency; reading comprehension; England; UK.

**Comments:**

*Section II starts on the next page.*
Section II: Description of Study

Type of intervention:
Curriculum/Product

Topic area of intervention:
Reading and Writing

Number of intervention arms:
2

Target school level of intervention:
2, 3

Target school type:
Home-based intervention

Location of implementation:
International: Europe

Further description of location:
England

Brief description of intervention arm 1:
Reading Together (Arm 1) is a six-month intervention that comprises the following elements: (1) sending three individual book parcels to the children at weeks 1, 8 and 16 with each parcel containing three books and where, for the latter two parcels, the children have some choice of which books to receive; (2) the provision of a Handbook to the child's foster carer that provides instructions and further advice and guidance on how to use the book packs as a basis to undertake a structured paired reading programme with their child; (3) a dedicated (password-protected) website where the foster carer and child can access further information and resources, including short videos for foster carers on how to undertake paired reading and a section for the children that provides further information on the books they can select from for their parcels; and (4) a half-day training session for foster carers that takes place at the beginning of the intervention and before the delivery of the first book parcels to the children.

Brief description of intervention arm 2:
Reading Together (Arm 2) is also a six-month intervention that includes just the first three elements set out above for Arm 1. In other words, the participants in this arm of the trial will receive all of the Reading Together intervention except for the half-day training session for foster carers.

Brief description of comparison condition:
Children in the comparison condition do not receive any elements of the Reading Together intervention but, instead, continue as usual.

Comparison condition: Business-as-usual

Comments: It has been agreed that the intervention (as specified for Arm 2) will be provided to all children in the comparison condition once post-testing has been completed.

Section III starts on the next page.
Section III: Research Questions

Confirmatory research questions:

Question 1
Is Reading Together effective in improving the reading skills of 7-9 year old children in foster care compared to business as usual and, if so, does this depend on the level of support offered to foster carers (Arms 1 and 2)?

Question 2
Is Reading Together effective in improving the enjoyment of reading of 7-9 year old children in foster care compared to business as usual and, if so, does this depend on the level of support offered to foster carers (Arms 1 and 2)?

Exploratory research questions:

Question 1
Do the effects of Reading Together (Arms 1 and 2) differ in relation to the child’s age and gender and also the educational qualifications of their foster carers?

Question 2
To what extent, if any, are the effects of Reading Together (Arms 1 and 2) associated with the degree to which the interventions are delivered with fidelity and in accordance with the respective programme manuals?

Comments:

Section IV-A: Study Design (Selection)

Study Design:
Randomized Trial (RT)

Comments:

Section IV-B: Study Design (Input)

Unit of random assignment of intervention:
Student

Assignment within blocks or selected strata:
Yes

Define the natural blocks or purposefully selected strata:
Local Authorities

Probability of assignment to treatment the same across blocks or strata:
Yes

Probability of assignment to treatment:
1/3 to Intervention Arm 1; 1/3 to Intervention Arm 2; and 1/3 to Control Group.
Unit outcome data measured:
Student

Intermediate clusters between unit of random assignment and unit of measurement:
No

Design Classification:
RT: Multisite (Blocked)

Comments
Random allocation of children within each Local Authority to the three conditions will be undertaken 'blind' by experienced researchers in the Centre for Evidence and Social Innovation (CESI) at Queen's who are not involved in this trial.

The actual process for randomisation for children in each Local Authority will be undertaken using Stata. All children will initially be assigned a unique identifying number by the research team. For each Local Authority, the full list of identifying numbers of children (with no other information included) will then be sent to the independent person within CESI for randomisation. This independent person will then generate a second variable in the dataset, alongside the list of unique identifying numbers. This second variable will be a list of random numbers (one assigned to each child) generated in Stata. The dataset will then be sorted by those random numbers. The first third of children in that sorted list will be allocated to Intervention Arm 1; the second third to Intervention Arm 2; and the final third of children to the Control Group. Where the number of children in a Local Authority is not divisible by three, one or two dummy cases will be added to the sample so that the total is divisible by three. This will ensure that all children have an equal probability of being allocated to one of the three conditions. However, if dummy cases are used, it will lead to slightly unbalanced numbers of children allocated to each condition within a Local Authority, once these dummy cases are subsequently removed. The three randomised lists of unique identifying numbers, and their allocation to each of the three conditions, will then be set back to the research team.

It is anticipated that there will be a small number of cases where there are two or more eligible children living in the same foster home. In such cases, the children will be randomised as a cluster so that they are all assigned to the same condition.

Section V: Sample Characteristics

Approximate number of students in the intervention arm 1 within each block: 10
Approximate number of students in the intervention arm 2 within each block: 10
Approximate number of students in the comparison condition within each block: 10
Number of blocks: 17

Certain students that were targeted for the study:
Yes - All children aged between 7 and 9 years of age in foster care. More specifically, the children need to be at least 7 years of age and no older than 7 years and six months at the time of pre-testing.

Certain students that were excluded from the study:
Yes - Children will be excluded from the study if they meet any of the following three criteria: (1) are not aged 7-9 years of age as defined above; (2) are not in foster care; or (3) if their social worker determines that they are not likely to benefit from the programme by virtue of the level of learning, emotional and/or behavioural issues they are experiencing or by the instability or other extenuating factors associated with their foster placement or personal circumstances.
Certain blocks that were targeted for the study: No

Certain blocks that were excluded from the study: Yes - Local Authorities will normally be excluded from the study if they are currently operating another book-gifting programme and/or undertaking training in Paired Reading for foster children in the target age-range. The only exception will be cases where it is possible to ensure that there is no overlap between this existing provision and the programme being tested through this current trial.

Comments
An open invitation to all Local Authorities to participate in the trial will be issued through the Association of Directors of Children's Services (ADCS). An invitation will also be issued directly to the National Association of Virtual School Heads. Local Authorities will be included on a "first-come, first-serve" basis until either the required total sample size (528 children) is reached or the time cut-off point is reached (whereby all preparatory activities can be completed so that the delivery of Reading Together can begin at the start of November 2019 at the very latest). Any additional Local Authorities who contact the research team after that point will be added to a waiting list, in order of when they approached the team.

Section VI-A: Outcomes (Selection)

Confirmatory question 1 - number of outcome measures: 4

Confirmatory question 2 - number of outcome measures: 1

Comments:

Confirmatory Question 1, Outcome Measure 1

Outcome domain: Student Achievement - Literacy

Minimum detectable effect size: 0.19

Outcome measure: York Assessment of Reading Comprehension (YARC) - Reading Comprehension

Scale of outcome measure: Continuous

Normed or state test: Yes

Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 1, Outcome Measure 2

Outcome domain: Student Achievement - Literacy

Minimum detectable effect size: 0.19

Outcome measure: York Assessment of Reading Comprehension (YARC) - Reading Accuracy

Scale of outcome measure: Continuous
Normed or state test: Yes
Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 1, Outcome Measure 3
Outcome domain: Student Achievement - Literacy
Minimum detectable effect size: 0.19
Outcome measure: York Assessment of Reading Comprehension (YARC) - Reading Rate
Scale of outcome measure: Continuous
Normed or state test: Yes
Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 1, Outcome Measure 4
Outcome domain: Student Achievement - Literacy
Minimum detectable effect size: 0.19
Outcome measure: British Picture Vocabulary Scale (BPVS)
Scale of outcome measure: Continuous
Normed or state test: Yes
Same outcome measure in treatment and comparison groups: Yes

Confirmatory Question 2, Outcome Measure 1
Outcome domain: Student Social, Emotional, & Behavior - Attitudes
Minimum detectable effect size: 0.19
Outcome measure: Elementary Reading Attitude Survey (Garfield Test)
Scale of outcome measure: Continuous
Normed or state test: No
Test-retest reliability:
Internal consistency:
Inter-rater reliability:
Same outcome measure in treatment and comparison groups: Yes

Comments: Reading comprehension will be designated as the primary outcome for this study (as measured by YARC - Reading Comprehension). The other four outcomes listed above will be designated as secondary outcomes.

Section VII: Analysis Plan

Baseline data collected prior to start of intervention: Yes

Description of baseline data:
Data will be collected for all children, in all three groups (both intervention arms and the control condition) for all five outcome measures.

Covariates to include at the student level in the model:
Student Pretest

Analytic model:
All the main analyses outlined below will be undertaken on an "intention to treat" basis.

1) CONFIRMATORY QUESTION 1:
A series of linear regression models will be fitted for each of the five outcome measures. In each case, the dependent variable will be the post-test score and the independent variables will be: the pre-test score and two dummy variables representing whether the child is participating in one of the two intervention arms of the trial (with children in the control condition acting as the reference category). The coefficients for the two dummy variables representing the two intervention arms will be used to determine whether there is evidence that either intervention is having a significant effect and also to calculate the effect sizes for the two conditions (compared to the control group).

2) EXPLORATORY QUESTION 1:
For the analysis of gender, the above models will be extended by adding in a further independent variable (representing the child’s gender) and also two interaction terms between the new independent variable for the child’s gender and the two dummy variables representing the two intervention conditions respectively. The estimated coefficients for the two interaction terms will be used to determine whether there is any evidence that either intervention is having differential effects in relation to the child’s gender. This will be done for each of the five models associated with the five outcome measures. The same approach will then be taken in relation to the child’s age and also their foster carer’s level of education.

3) EXPLORATORY QUESTION 2:
For each of the five outcome measures, two models will be fitted on sub-samples of the data (one consisting only of those children in Intervention Arm 1 and the other consisting only of those children in Intervention Arm 2). In each case, the dependent variable will be the post-test score and two independent variables will be added: the pre-test score and the measure of programme fidelity (continuous variable). The estimated coefficient for the measure of fidelity will be used to determine whether there is any evidence that the level of programme fidelity is associated with differential outcomes and also to estimate the size and nature of any such association. If there is evidence that the level of programme fidelity is associated with differential outcomes, the models fitted will be used to estimate what the effects of the programme are where it is delivered with different levels of fidelity. These estimates will be reported for illustrative purposes only.

Plan to handle cases with missing outcome data:
Delete cases with missing data for the outcome being analyzed
Planned multiple comparisons adjustment, confirmatory question 1 (Student Achievement - Literacy):

No

**Comments:** For all the models fitted three further sensitivity analyses will be conducted: 1) a series of dummy variables representing the local authorities will be added as additional independent variables to assess whether there are any clustering effects associated with the local authorities that impact on the findings; 2) if more than 10% of the children share the same foster home as one or more of the other children in the sample, and thus have been allocated together with others as clusters to one of the three conditions, further dummy variables will be added for these children to assess whether there are any clustering effects associated with them that impact upon the findings; and 3) multiple imputation will be used (using the MI procedure in Stata) to determine whether the findings have been influenced by missing data.

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**Section VIII: Additional Materials**

Right click to open links in a new window.

**Links**

URL: [https://www.qub.ac.uk/sites/readingtogether/](https://www.qub.ac.uk/sites/readingtogether/)
Description: The Reading Together website.

- URL: [https://www.qub.ac.uk/research-centres/cesi/](https://www.qub.ac.uk/research-centres/cesi/)
Description: The Centre for Evidence and Social Innovation, Queen's University Belfast

- URL: [http://www.education.ox.ac.uk/rees-centre/](http://www.education.ox.ac.uk/rees-centre/)
Description: The Rees Centre, University of Oxford

- URL: [https://gtr.ukri.org/projects?ref=ES%2FP008240%2F1](https://gtr.ukri.org/projects?ref=ES%2FP008240%2F1)
Description: Further details of the research study, provided on the funder's website (UKRI Gateway to Research Portal).

- URL: [https://doi.org/10.1016/j.childyouth.2016.03.009](https://doi.org/10.1016/j.childyouth.2016.03.009)

- URL: [https://doi.org/10.1016/j.childyouth.2016.11.016](https://doi.org/10.1016/j.childyouth.2016.11.016)
Description: Supplementary findings of a qualitative process evaluation associated with the previous trial undertaken by members of the current research team of a book-gifting intervention in Northern Ireland: Roberts, J., Winter, K., & Connolly, P. (2017). The letterbox club book gifting intervention: Findings from a qualitative evaluation accompanying a randomised controlled trial. Children and Youth Services Review, 73:
pp. 467–473.

**Files**

*No files have been added yet.*

**Comments**

A full Programme Manual, detailing the specific components of the Reading Together programme and precisely how they should be delivered has been prepared. This is currently being used by the research team and Local Authorities to guide their delivery of the programme. This, together with the Handbook for Foster Carers and full access to the resources being made available on the Reading Together website, will be made available here when the trial is completed. They are not being shared at this stage to prevent contamination.