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A trial of the Reception Jigsaw programme on reception pupils' maths ability

Submission date 28/08/2020	**Recruitment status** No longer recruiting	[_] Prospectively registered [X] Protocol
Registration date 11/09/2020	**Overall study status** Completed	[_] Statistical analysis plan [X] Results
Last Edited 08/07/2024	**Condition category** Other	[_] Individual participant data

Plain English summary of protocol

Background and study aims
Research suggests that high-quality early numeracy education in the early years can have long-lasting effects which may help to narrow the gap in achievement throughout life.
White Rose's Reception Jigsaw is a professional development training package that aims to improve maths teaching quality and outcomes in Reception classes. The Reception Jigsaw is a training package delivered over a year to teachers and teaching assistants in reception and Year 1. It aims to improve early years maths teaching and practitioners (teachers and teaching assistants) confidence to teach maths. In turn, it aims to improve pupils' outcomes in maths. Teachers and teaching assistants complete 5 modules, each of which consists of a training session, gap tasks and a half-day coaching session. The modules cover: developing early number sense; creating a mathematical classroom; mathematical talk and questioning; reasoning and problem-solving in the early years; and exploring pattern and shape.
The aim of the study is to explore the impact of the training programme on children's maths ability and on teachers' and teaching assistants' confidence to teach maths to reception classes. The study will also investigate how the sessions are delivered, and teachers' views on the programme and the support provided.

Who can participate?
Schools are eligible for the trial if they meet the following criteria:
1. Primary schools situated within a 75-mile radius of Halifax, and schools in Essex or those close to the Essex border in Outer London
2. Schools that have not previously had more than two sessions of WRM Primary Jigsaw training or any sessions of Reception Jigsaw training
3. Schools that are not participating in any other EEF early years trials in 2021/22
4. Schools with stand-alone Reception classes (i.e. not mixed reception/year 1)
5. Schools may participate in this trial and the DFE EY professional development scheme so long as the reception teachers in the school do not take part in the maths module of the scheme

What does the study involve?
Schools who agree to participate in the trial will be asked to provide WRM with a key contact in their school for the duration of the project. At the end of the summer term 2021, schools will be asked to provide a list of all children who will be starting in Reception in September 2021 along

with the names and email addresses of all Reception teachers. NFER will then sample 20 children from this list who will then take part in the trial (please note that the intervention will include all children within the cohort but only 20 will be measured).
In autumn 2021 Reception teachers will complete a short observational baseline measure for the 20 sampled children and participating staff will also complete a short survey about their maths teaching. Once these activities are complete, schools will be randomly allocated to be part of either the intervention group or the control group. Intervention schools will receive the complete WRM Reception Jigsaw Package at a heavily subsidised rate of £1,000. Control schools will not receive the WRM Reception Jigsaw at this time, but these schools are essential for the researchers to understand the impact of the intervention and will receive £500 on completion of the testing and data requirements. They will also have the opportunity to access the training package at a later date at a discounted rate.

What are the possible benefits and risks of participating?
All schools in the trial will contribute to the evidence-base on what works in teaching maths in Reception and Year 1. Schools allocated to the intervention group will have the opportunity to receive discounted training in the Reception Jigsaw intervention. Schools only have to take part if they wish to do so. Teachers/teaching assistants can opt out of taking part at any time.

Where is the study run from?
National Foundation for Educational Research (NFER) (UK)

When is the study starting and how long is it expected to run for?
July 2019 to December 2023 (note the project was paused for 1 year due to the COVID-19 outbreak in 2020)

Who is funding the study?
Education Endowment Foundation (UK)

Who is the main contact?
Sarah Tang, s.tang@nfer.ac.uk

Contact information

Type(s)
Public

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Additional identifiers

Protocol serial number
EEYJ

Study information

Scientific Title
A randomized controlled trial of the White Rose Maths Reception Jigsaw on reception pupils' maths ability

Acronym
EEYJ

Study objectives
Receiving the Reception Jigsaw intervention improves the quality of maths teaching and practitioners' confidence to teach maths, which in turn improves pupils' outcomes in maths.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 17/10/2019, Code of Practice Group, National Foundation for Educational Research (NFER) (The Mere, Upton Park, Slough, SL1 2DQ, UK; +44 (0)1753574123; Enquiries@nfer.ac.uk), ref: not applicable

Primary study design
Interventional

Study design
Interventional two-arm cluster randomized controlled trial with random allocation at school level

Study type(s)
Other

Health condition(s) or problem(s) studied
Children's mathematics ability; teachers' ability and confidence to teach mathematics in the early years (reception)

Interventions
White Rose's Reception Jigsaw is a professional development training package that aims to improve maths teaching quality and outcomes in Reception classes. The Reception Jigsaw is a training package delivered over a year to teachers and teaching assistants in reception and Year 1. It aims to improve early years maths teaching and practitioners (teachers and teaching assistants) confidence to teach maths. In turn, it aims to improve pupils' outcomes in maths. Teachers and teaching assistants complete 5 modules, each of which consists of a training session, gap tasks and a half-day coaching session. The modules cover: developing early number sense; creating a mathematical classroom; mathematical talk and questioning; reasoning and problem-solving in the early years; and exploring pattern and shape.
At the end of the summer term 2021, schools will be asked to provide a list of all children who will be starting in Reception in September 2021 along with the names and email addresses of all Reception teachers. NFER will then sample twenty children from this list who will then take part in the trial (the intervention will include all children within the cohort but only twenty will be measured). Also in summer 2021, all schools will be asked to provide information about their usual practice in terms of maths CPD.

The new Reception Baseline Assessment (RBA) will be rolled out to all schools in autumn 2021. The timing of the RBA prevents the administration of a separate baseline with the pupils for this trial due to the burden on schools and their new pupils. Therefore in autumn 2021 Reception teachers will complete a short observational baseline measure for the 20 sampled children and participating staff will also complete a short survey about their maths teaching. Once these activities are complete, schools will be randomly allocated to be part of either the intervention group or the control group.

Intervention schools will receive the complete WRM Reception Jigsaw Package at a heavily subsidised rate of £1,000. The programme will run across the 21/22 academic year. During this time schools in the intervention group will:
1. Organise for all Reception staff (including support staff), Year 1 practitioners and the Maths Lead to attend the 5 twilight training sessions at their school.
2. Release one Reception teacher and the Maths Lead to work with the SLE during the 5 half-day coaching visits.
3. Complete gap tasks between the training sessions.
4. Complete the journal to record reflections and progress.

Control schools will not receive the WRM Reception Jigsaw, and they will continue with their usual practice. In summer 2022 control schools will be asked to complete a proforma about the maths CPD that took place for reception/KS1 staff during the trial period.
At the end of the intervention year, in June/July 2022, NFER Test Administrators will visit all participating schools and carry out a post-test on the 20 sampled children (a short maths measure). Depending on the outcomes of the trial, there may be a longitudinal follow-up (a maths measure) when the pupils reach the end of Year 1 (Summer 2023).
Staff in both the intervention and control groups will be asked to complete the practitioner survey again in June 2022. Some intervention schools will be invited to take part in interviews.

Intervention Type
Behavioural

Primary outcome(s)
Maths attainment measured using PUMA on Reception children in June/July 2022 with a possible follow up at the end of Year 1

Key secondary outcome(s)
1. Reception pupils' Early Years Foundation Stage Profile (EYFSP) maths results, using data from the NPD linked via UPN obtained at the outset from schools at the end of the reception year
2. The impact of the intervention on practitioners' confidence to teach maths in the reception year, assessed using a pre-survey (Sept/Oct 2021) and post-survey (June/July 2022) of teachers, teaching assistants and the school maths coordinator

Completion date
31/12/2023

Eligibility

Key inclusion criteria
1. Primary schools situated within a 75-mile radius of Halifax, and schools in Essex or those close to the Essex border in Outer London
2. Those that have not previously had more than two sessions of WRM Primary Jigsaw training or any sessions of Reception Jigsaw training
3. Schools who are not participating in any other EEF early years trials in 2021/22
4. Schools with stand-alone Reception classes (i.e. not mixed reception/year 1)
5. Schools may participate in this trial and the DFE EY professional development scheme so long as the reception teachers in the school do not take part in the maths module of the scheme
6. All pupils in the cohort will receive the intervention, but only 20 will be tested

Participant type(s)
Other

Healthy volunteers allowed
No

Age group
Child

Sex
All

Total final enrolment
138

Key exclusion criteria
1. Schools geographically outside of the target areas
2. Special schools, pupil referral units
3. Schools who have not signed MoU and provided data

Date of first enrolment
01/11/2019

Date of final enrolment
31/05/2021

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
National Foundation for Educational Research (NFER)
The Mere
Upton Park
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Sponsor information

Organisation
National Foundation for Educational Research

ROR
https://ror.org/044sxgs38

Funder(s)

Funder type
Charity

Funder Name
Education Endowment Foundation

Alternative Name(s)
EducEndowFoundn, The Education Endowment Foundation (EEF), Education Endowment Foundation | London, EEF

Funding Body Type
Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
Information about how the data collected will be archived is detailed in the privacy notices for the project: https://www.nfer.ac.uk/for-schools/participate-in-research/white-rose-maths-reception-jigsaw/.
At the end of the trial, the datasets generated during and/or analysed during the current study will be shared with EEF's data archive processor through secure data portals, where it will be encrypted and saved to secure servers.
Participants are made aware that data will be placed in the archive. This data is archived to allow for further secondary analysis. The EEF archive is hosted by the Office for National Statistics (ONS) and managed by the EEF archive manager. Other research teams may use the de-identified data as part of subsequent research through the Approved Researcher Scheme. The Approved Researcher Scheme is used by the Office for National Statistics (ONS) to grant secure access to data that cannot be published openly, for statistical research purposes, as permitted by the Statistics and Registration Service Act 2007 (SRSA).

IPD sharing plan summary
Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol article	protocol	01/08/2019	28/08/2020	Yes	No
Funder report results		01/05/2024	08/07/2024	No	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes