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Evaluation of Counting Collections

Submission date
10/07/2023

Recruitment status
No longer recruiting

Registration date
12/07/2023

Overall study status
Completed

Last Edited
22/07/2025

Condition category
Other

[_] Prospectively registered
[X] Protocol
[X] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Counting Collections is a practical approach that allows pupils to make connections between concepts through structured collaborative counting and recording sessions.

Who can participate?
Mainstream schools with at least 20 pupils aged 4-5 years old in September 2023

What does the study involve?
The weekly sessions are based on a four-part routine, with pupils working in pairs. A typical Counting Collections session follows a teacher-led sequenced structure that encourages and guides children to work in pairs to plan, count and record their approach to counting a set of manipulatives ('collections' of everyday objects such as straws, small soft toys, and pinecones). These collections form a counting library in the classroom. There are tools to aid counting (such as boxes, jars and number frames). The manipulatives and tools are provided by the delivery team so that all settings have the same resources available for the activities. A structured routine for counting is taught in four parts: choose, strategise, count, and record. This routine represents one of the core components of the programme. Collection sizes are increased over time alongside teaching of more complex strategies including counting unitised groups.

What are the possible benefits and risks of participating?
Pupil number ability could potentially improve. The intervention is delivered in classrooms by regular class teachers and presents no additional risks to pupils.

Where is the study run from?
Counting Collections has been developed by the University of Nottingham (UK). The independent evaluator is Sheffield Hallam University (UK).

When is the study starting and how long is it expected to run for?
October 2022 to January 2025

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

Who is the main contact?
Dr Martin Culliney, m.culliney@shu.ac.uk (UK)

Contact information

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Additional identifiers

Study information

Scientific Title
Evaluation of Counting Collections, a two-armed cluster randomised controlled trial of a numeracy intervention for pupils aged 4-5 years

Study objectives
Research questions
1. What is the impact of Counting Collections on reception pupil attainment in number as measured by the Sandwell Early Numeracy Test?
2. What is the impact of Counting Collections on disadvantaged reception pupil attainment in number as measured by the Sandwell Early Numeracy Test?

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 12/01/2023, Sheffield Hallam Research Ethics Committee (Sheffield Hallam University, Sheffield, S1 1WB, United Kingdom; None available; SSH-ResearchEthics@shu.ac.uk), ref: ER50653704

Primary study design
Interventional

Study design
Two-armed two-level cluster-randomized controlled trial

Study type(s)
Efficacy

Health condition(s) or problem(s) studied
Mathematics approach to develope children’s number sense

Interventions
Counting Collections is a hands-on early mathematics approach to develop children’s number sense (understanding of numbers and quantity). It involves children using containers of objects (manipulatives) to find how many are in the collection.

This is a two-armed, two-level cluster randomised controlled trial. The unit of randomisation is the school. There will be two stratifiers: geographical region (North East, East Midlands and South Yorkshire, South West) and use of Mastering Number (yes/no). Schools will be allocated to the intervention or control group using the ‘stratrand’ procedure in Stata 17. Schools are randomly allocated to either the intervention group, which receives the Counting Collections programme, or the control group, which continues teaching numbers to reception pupils (aged 4-5 years old) on a business-as-usual basis. Schools are aware of their allocation during the study. The intervention delivery in schools begins in November 2023. In total, 180 schools have been recruited for the trial.

Intervention Type
Other

Primary outcome(s)
Number ability measured using the total raw score achieved on the Sandwell Early Numeracy Test B. The baseline measure is Sandwell Early Numeracy Test A. Outcome testing is scheduled for 8-10 months after baseline testing.

Key secondary outcome(s)
There are no secondary outcome measures

Completion date
31/01/2025

Eligibility

Key inclusion criteria
Mainstream schools with at least 20 pupils aged 4-5 years old in September 2023

Participant type(s)
Learner/student

Healthy volunteers allowed
No

Age group
Child

Lower age limit
4 Years

Upper age limit
5 Years

Sex
All

Total final enrolment
3600

Key exclusion criteria
Does not meet the inclusion criteria

Date of first enrolment
01/03/2023

Date of final enrolment
30/06/2023

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
University of Nottingham
C82 Dearing Building
Jubilee Campus
Nottingham
United Kingdom
NG8 1BB

Sponsor information

Organisation
Education Endowment Foundation

ROR
https://ror.org/03bhd6288

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

Data will be stored in a non-publicly available repository, the EEF data archive. Schools and pupils will not be identifiable in the data stored there. Researchers can apply to access this data through EEF.

IPD sharing plan summary

Stored in non-publicly available repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Funder report results		01/07/2025	22/07/2025	No	No
Protocol file	version 1.1	09/05/2024	22/01/2025	No	No
Statistical Analysis Plan	version 1.0	24/01/2024	22/01/2025	No	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes