

# Independent evaluation of the Maths Champions programme

<b>Submission date</b> 20/04/2016	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 16/05/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 26/03/2019	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims:

Numeracy is an important skill, but many children underachieve in this area. The National Day Nursery Association (NDNA) has developed the Maths Champions programme, which focuses on maths within play and other activities in nursery settings. Research suggests that there are links between early mathematics achievement and achievement in mathematics and other areas in later life. This study focuses on the impact of Maths Champions on the mathematical development and skills of children who are three and four years old. Previous research about Maths Champions reported by the developer did show benefits including increased practitioner confidence, but the current evidence base is fairly weak. Maths Champions is a one year programme that aims to improve the knowledge, skills and confidence of nursery practitioners and the quality of maths provision in their nurseries. A designated Maths Champion in a nursery is a graduate nursery practitioner. The Maths Champions programme includes a variety of online training and resources that are designed to help the 'Maths Champion' to support their colleagues in evaluating their current practice, assess their own level of mathematical knowledge and skills and to develop their knowledge, understanding and confidence. The intervention helps nurseries to audit their maths learning environment and identify areas for improvement, developing action plans. The aim of this study is to evaluate the impact Maths Champions has on the mathematical skills and development of children aged 3 and 4 years old. Other aims include exploring the impact of the Maths Champions intervention on: practitioner confidence, the mathematical practice of different settings, the development of literacy and phonological awareness skills of children aged 3 and 4 years old.

### Who can participate?

Private, voluntary and independent nurseries in areas of high deprivation, and three year old children attending these nurseries for at least 15 hours per week who due to start school in September 2017.

### What does the study involve?

Nurseries are randomly allocated to one of two groups. The nurseries in the first group are offered the Maths Champions programme for one year. These nurseries are supported by NDNA to evaluate mathematics provision in their nurseries, which is facilitated by a graduate practitioner (the Maths Champion) who has access to a variety of support and online training

provided by the NDNA. The nurseries in the second group will continue as usual in their approach to mathematics. Nurseries in both groups receive £500 reimbursement for the time spent participating in the study, which is enough to continue to provide or to begin the Maths Champions intervention in the year following the study.

What are the possible benefits and risks of participating?

Participants may benefit from potentially improving their attainment in mathematics. There are no notable risks involved with taking part in this study.

Where is the study run from?

The study is run from York Trials Unit (University of York), Centre for Evaluation and Monitoring (Durham University) and the School of Education (Durham University), and takes place in nursery schools across the UK.

When is the study starting and how long is it expected to run for?

August 2016 to March 2018

Who is funding the study?

Education Endowment Foundation (UK)

Who is the main contact?

1. Professor David Torgerson (public)

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## Contact information

### Type(s)

Public

### Contact name

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Scientific

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**Additional identifiers**

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers

V2 7 March 2016

**Study information****Scientific Title**

Independent Evaluation of the Maths Champions programme: A pragmatic two-arm cluster randomised controlled trial

**Study objectives**

Primary research question:

What is the impact of the Maths Champions intervention on the mathematical development and skills of children aged three and four years?

#### Secondary research questions:

1. How effective is the Maths Champions intervention at improving nursery practitioners' confidence in supporting children's maths development?
2. What is the impact of the Maths Champions intervention on the mathematical practice of settings as evaluated using ECERS 3 and ECERS E (Maths)?
3. What is the impact of the Maths Champions intervention on the literacy development and skills of children aged three and four years?
4. What is the impact of the Maths Champions intervention on the development of phonological awareness skills of children aged three and four years?

#### Ethics approval required

Old ethics approval format

#### Ethics approval(s)

1. Durham University School of Education Ethics Committee, 16/03/2016, ref: 2302
2. Chairs Action University of York Department of Health Sciences, 18/04/2016

#### Study design

Pragmatic multi-centre two-arm cluster randomised controlled trial

#### Primary study design

Interventional

#### Secondary study design

Cluster randomised trial

#### Study setting(s)

Other

#### Study type(s)

Treatment

#### Participant information sheet

Not available in web format, please use the contact details to request a participant information sheet

#### Health condition(s) or problem(s) studied

Children at risk of underachieving in numeracy skills

#### Interventions

Randomisation will be implemented at nursery level, all children who have consent to participate will be tested at baseline (prior to randomisation) by a nominated member of staff in each participating nursery. Nurseries will be randomised to one of two study arms: intervention or control. The NDNA will provide all participating nurseries with £500 by way of reimbursement for time spent participating in the study. Nurseries allocated to the control group would be able to use this reimbursement to purchase the Maths Champions intervention the following year (the children participating in the study will have left the nursery by then).

Intervention: The Maths Champions intervention will be offered to nurseries randomised to the intervention group. The intervention duration is one year. The Maths Champions intervention

involves the identification of a dedicated Maths Champion who is a graduate practitioner working within the given nursery. The dedicated Maths Champion in each nursery is able to access a variety of online training and resources with the aim of using these to support non-graduate practitioners in evaluating their practice, current level of mathematical knowledge /skills and in developing their knowledge, understanding and practice around mathematics in their nurseries. The NDNA provide support to nurseries implementing the Maths Champions programme.

**Control:** Nurseries randomised to the control will continue with usual nursery provision. As part of the trial we will gather basic information about usual provision in order to be able to describe this.

Follow up for both study arms will be at the end of the intervention year (before the participating children leave nursery to attend school). All children who were tested at baseline (both control and intervention) will be re-tested using ASPECTs which will at post-test be collected independently by NATCEN. The Early Childhood Environmental Rating Scales 3 (ECERS-3) and the Early Childhood Environmental Rating scale (ECERS-E) will also be collected at nursery level at the end of the trial in both intervention and control groups. In terms of long term tracking data will be accessed via the National Pupil Database (NPD), this will happen January – March 2018.

## **Intervention Type**

Other

## **Primary outcome measure**

Maths attainment at the end of nursery is measured using the 'Assessment Profile on Entry for Children and Toddlers' (ASPECTS) assessment at baseline and 1 year.

## **Secondary outcome measures**

1. Reading and phonological awareness scores are assessed using the 'Assessment Profile on Entry for Children and Toddlers' (ASPECTS) assessment at baseline and 1 year
2. The nursery environment (a snapshot of it) is measured using the Early Childhood Environmental Rating Scales 3 (ECERS-3) and the Early Childhood Environmental Rating Scale (ECERS-E, including a maths subscale) at 1 year
3. Practitioner confidence is measured using a questionnaire designed in the pilot phase of this trial at both pre (June 2016) and post (June/July 2018). In the analysis, practitioner confidence will be summarised descriptively by trial arm.

## **Overall study start date**

17/08/2015

## **Completion date**

31/03/2018

# **Eligibility**

## **Key inclusion criteria**

Nurseries:

1. Private, voluntary and independent (PVI) settings
2. Located in areas of high deprivation (less than 40% in accordance with the Indices of Deprivation)

3. Not previously involved with Maths Champions
4. At least one graduate practitioner
5. Willing to agree to randomisation and all of the other study requirements outlined in the Memorandum of Understanding

Children:

1. Aged 3 years at the start of the intervention and due to start school in September 2017
2. Attending nursery for a minimum of 15 hours per week
3. Opt-in consent from the parents/carers

### **Participant type(s)**

Other

### **Age group**

Child

### **Lower age limit**

3 Years

### **Sex**

Both

### **Target number of participants**

120 nurseries (1200 children)

### **Key exclusion criteria**

Nurseries:

1. Not private, voluntary and independent (PVI) settings
2. Not located in areas of high deprivation (less than 40% in accordance with the Indices of Deprivation)
3. Previously involved with Maths Champions
4. Do not have at least one graduate practitioner
5. Not willing to agree to randomisation and all of the other study requirements outlined in the Memorandum of Understanding

Children:

1. Not 3 years old at the start of the intervention
2. Not due to start school in September 2017
3. Not attending nursery for a minimum of 15 hours per week
3. Parents/carers do not provide opt-in consent

### **Date of first enrolment**

01/01/2016

### **Date of final enrolment**

31/05/2016

## **Locations**

### **Countries of recruitment**

England

United Kingdom

**Study participating centre**

**York Trials Unit**

University of York

York

United Kingdom

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**Study participating centre**

**Centre for Evaluation and Monitoring (CEM)**

Rowan House

Mountjoy Centre

Stockton Road

Durham

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**Study participating centre**

**Durham University**

School of Education

Leazes Road

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## **Sponsor information**

**Organisation**

University of York

**Sponsor details**

Research Innovation Office

Innovation Centre

York Science Park

York

England

United Kingdom

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**Sponsor type**

University/education

**ROR**

<https://ror.org/04m01e293>

## Funder(s)

**Funder type**

Charity

**Funder Name**

Education Endowment Foundation

**Alternative Name(s)**

EducEndowFoundn, 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

**Publication and dissemination plan**

1. Publication of a final report by the Education Endowment Foundation
2. Planned publication of the outcomes of the research in academic journals

**Intention to publish date**

31/12/2018

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study will be deposited in the EEF Data Archive (in association with the Fischer Family Trust). Enquiries to FFT's Datalab can be made via [educationdatalab@fft.org.uk](mailto:educationdatalab@fft.org.uk).

**IPD sharing plan summary**

Available on request

**Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
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[Funder report results](#)

results

12/03/2019

No

No