ISRCTN17195519 https://doi.org/10.1186/ISRCTN17195519

National evaluation of the impact of code clubs

Submission date 24/09/2015	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 15/10/2015	**Overall study status** Completed	
Last Edited 27/07/2017	**Condition category** Other	

Plain English summary of protocol

Background and study aims
The National Foundation for Educational Research (NFER) has been commissioned by Code Club UK and National Endowment for Science Technology and the Arts (Nesta) to run an evaluation of Code Clubs in England. Code Clubs are offered to year 5 and 6 pupils in primary schools and there are currently around 2,300 clubs with 70 setting up each month. Code Clubs usually run for an hour a week after school for up to 15 children. They can be run by a volunteer with computer science knowledge, or by teachers themselves. Code Clubs teach children Scratch, HTML & CSS, and Python and children learn to programme by making games, animations, websites and applications. The evaluation involves running a study that looks at differences in computational thinking, coding skills, attitudes to coding and soft/transferable skills between children who attend a Code Club for three terms compared to children that don't attend a Code Club.

Who can participate?
Primary schools in England who have the resources to run a Code Club and a sufficient number of children in year 4 who wish to participate in Code club in year 5 and have not already taken part in a Code Club.

What does the study involve?
During the spring and summer terms of 2015, schools are recruited into the trial and are asked to send NFER details of pupils who wish to participate in Code Club. Pupils take three initial (baseline) assessments in September 2015. The assessments include: the Bebras Computational Thinking Challenge, a Coding Quiz developed by Code Club UK with the support of the University of Roehampton and NFER, and a Pupil Attitude Survey developed by NFER. The Pupil Survey assesses pupils' attitudes and aspirations towards computing and coding and their perceptions of their transferable or 'soft' skills. Upon completion of the assessments pupils are randomly allocated to one of two groups – intervention or control. Pupils in the intervention group attend Code Club for three terms during the academic year 2015/16. Once these three terms are complete, all pupils (control and intervention) take the three assessments again. After this, children in the control group are offered a place in Code Club for the academic year 2016/17. The study also aims to gain an in-depth understanding of the delivery of Code Clubs, including key success factors, challenges and the impact they have on pupils. This includes in-depth telephone interviews with teachers from ten schools and the completion of a qualitative

proforma (questionnaire) by the remaining schools. Teachers are also required to complete a Teacher Log on a weekly basis, providing details of the Code Club session delivered and an attendance register of pupils.

What are the possible benefits and risks of participating?
Schools who participate have the opportunity to attend training run by Code Club UK on teaching national curriculum coding modules. This will take place after the trial is completed.

Where is the study run from?
Up to 35 primary schools in England (UK)

When is the study starting and how long is it expected to run for?
February 2015 to July 2016

Who is funding the study
National Endowment for Science Technology and the Arts (UK)

Who is the main contact?
Dr Susie Bamford

Contact information

Type(s)
Scientific

Contact name
Dr Susie Bamford

Contact details
National Foundation for Education Research
The Mere
Upton Park
Slough
United Kingdom
SL1 2DQ

Additional identifiers

Study information

Scientific Title
A randomised controlled trial on the impact of code clubs

Study objectives
The study will analyse the differences on 3 outcome measures between children in year 5 who attend Code Club for three terms and children who do not attend Code Club. We will measure differences on the following:
1. Children's computational thinking
2. Children's coding skills
3. Children's attitudes to coding and soft/transferable skills

Our hypothesis is that attending Code Club for 3 terms will positively impact on all three measures when comparing intervention children to control group children.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Internal ethical approval received on 17/03/2015

Primary study design
Interventional

Study design
Pupil-randomised controlled efficacy trial

Study type(s)
Other

Health condition(s) or problem(s) studied
This study is exploring the educational benefits and transferable skills of attending Code Club on year 5 primary pupils

Interventions
Through an RCT design, pupils will be allocated to an intervention group or a control group.

1. The intervention arm consists of attending code club (a weekly after school club that runs for one hour) for 3 terms. During these terms children will be taught modules in Scratch, HTML & CSS, and Python. The teachers will fill out an attendance log for the class to record how many sessions each child attended.
2. The control group will not attend code club for this academic year and will instead remain on a "treatment as usual" path. At the end of the trial these children will be offered a place in code club.

During the trial, NFER will carry out a process evaluation consisting of a teacher proforma and telephone interviews with the code club lead teacher to monitor adherence to the trial.

Intervention Type
Behavioural

Primary outcome(s)
Bebras Computational Thinking Assessment in September 2015 and three terms later

Key secondary outcome(s)
1. Coding quiz
2. Attitude survey
Assessed in September 2015 and three terms later

Completion date
30/07/2016

Eligibility

Key inclusion criteria
Schools were recruited to the trial if they met the following criteria:
1. Primary school in England
2. Could recruit sufficient number of pupils to the trial > 20 who were at the end of year 4 and who would like to join Code Club at the start of year 5 and who hadn't taken part in Code Club before.
3. Able to run a code club between September 2015 and July 2016 for the pupils assigned to the intervention group.
4. Willing and able to run a Code Club between September 2016-July 2017 for the control group

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Child

Sex
All

Key exclusion criteria
1. Schools in Wales, Scotland and Northern Ireland
2. Schools that don't have resources to run a Code Club
3. Pupils who have attended Code Club before

Date of first enrolment
04/03/2015

Date of final enrolment
30/07/2015

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
National Foundation for Educational Research
Slough
United Kingdom
SL1 2DQ

Sponsor information

Organisation
Nesta

ROR
https://ror.org/02rqc5533

Funder(s)

Funder type
Charity

Funder Name
National Endowment for Science Technology and the Arts

Alternative Name(s)
National Endowment for Science, Technology and the Arts, National Endowment for Science, Technology & the Arts, Nesta (charity), NESTA, NESTA

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

IPD sharing plan summary

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Funder report results	results	01/03/2017		No	No