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Effectiveness study of the Thinking, Doing, Talking Science Programme

Submission date
01/06/2016

Recruitment status
No longer recruiting

Registration date
03/06/2016

Overall study status
Completed

Last Edited
03/03/2022

Condition category
Other

[_] Prospectively registered
[_] Protocol
[X] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol
Background and study aims
A recent report on science education found that the best science teaching in primary schools included scientific enquiry as a central focus of teaching and held pupil interest in the subject. However, primary school teachers often do not know how to create enquiry based science lesson plans. This study is testing a new teacher professional development program called "Thinking, Doing, Talking Science" (TDTS), which aims to teach primary school teachers to develop science enquiry based lesson plans. The idea is the TDTS professional development programme will support teachers in lesson planning so that they can better develop engaging lessons tailored to the interests of their pupils. This would then improve teacher self-efficacy and teaching practices, which in turn is thought to improve pupil engagement, content knowledge, and enquiry skills. The aim of this study is to find out whether the TDTS programme can lead to an improvement in pupil attainment, engagement and interest in science.

Who can participate?
Year 5 pupils who attend participating state primary schools in the UK and their teachers.

What does the study involve?
Schools are randomly allocated to one of two groups. Teachers in the first group take part in the TDTS programme. This involves a four day professional development course over the course of the school year, with a focus on learning how to create and deliver enquiry-based lesson plans. Teachers in the second group are continue as normal throughout the study but are given a chance to take part in the TDTS programme after the study is complete.

What are the possible benefits and risks of participating?
Teachers receiving the TDTS professional development will benefit from becoming more capable of teaching science to their pupils. Pupils may benefit from improved attainment in science. There are no notable risks involved with taking part in this study.

Where is the study run from?
The study is run from Science Oxford and Oxford Brookes University and takes place in around 180 primary schools (UK)

When is the study starting and how long is it expected to run for?
September 2015 to December 2017

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

Who is the main contact?
1. Dr Raquel Gonzalez (public)
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2. Dr Sami Kitmitto (scientific)
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Additional identifiers

Study information

Scientific Title
Effectiveness Study of the Thinking, Doing, Talking Science Programme - a professional development programme about enquiry-based science for Year 5 teachers

Study objectives
1. The Thinking, Doing, Talking Science (TDTS) programme will lead to increased pupil science attainment
2. The TDST programme will lead to increased pupil enagement and interest in science

Ethics approval required
Old ethics approval format

Ethics approval(s)
American Institutes for Research Institutional Review Board, 30/03/2016

Study design
Cluster randomised controlled trial

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Interest and engagement in science

Interventions
Schools will be recruited within areas or sites by a trainer assigned to that area. Schools will be assigned to the control or intervention within site using minimisation methods to balance percentage of pupils eligible for free school meals (FSM) and school size as measured by the number of year 5 teachers.

Intervention group: Teachers will participate in the TDTS programme and receive 4 days of professional development over the course of the school-year. Teachers receive continuing professional development (CPD) over the course of the school year that supports their knowledge of and ability to conduct enquiry-based learning, and ability to plan engaging lessons that provide opportunities for deeper thinking. Since the trainings are held over the course of the year, teachers are expected to return to the classroom and implement what they have learned from the training to improve their lesson plans and pedagogy.

Control group: Teachers will experience "business as usual" and will not participate in this TDTS professional development (but may participate in any professional development typically provided by their schools) during the course of the study. Teachers in this group will receive the programme in the following year, after data collection for the study is complete.

At the end of year 5, pupils undergo a series of assessments in order to test their attainment and attitudes towards science.

Intervention Type
Other

Primary outcome(s)
Pupil science knowledge attainment is measured by a score on a science assessment administered as part of the evaluation, at the end of Year 5.

Key secondary outcome(s))
Pupil attitudes towards science which will be measured by a pupil-level survey administered at the end of Year 5.

Completion date
31/12/2017

Eligibility

Key inclusion criteria
Schools:
1. Regular (non-special) state school
2. Contain Year 5 students

Students:
Year 5 students attending participating schools

Teachers:
Those who teach a Year 5 class. In schools where there is only one year 5 teacher, a second teacher will be nominated to participate in the TDTS programme however that teacher and his /her students will not be part of the evaluation.

Participant type(s)
Other

Healthy volunteers allowed
No

Age group
Mixed

Sex
All

Key exclusion criteria
Schools:
Special schools.

Students:
No exclusion criteria.

Date of first enrolment
15/01/2016

Date of final enrolment
11/07/2016

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Science Oxford
Oxford Centre for Innovation
New Road
Oxford
United Kingdom
OX1 1BY

Study participating centre
Oxford Brookes University
Headington Campus
Headington Road
Oxford
United Kingdom
OX3 0BP

Sponsor information

Organisation
Education Endowment Foundation

ROR
https://ror.org/03bhd6288

Funder(s)

Funder type
Charity

Funder Name
Education Endowment Foundation

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be stored in a repository

IPD sharing plan summary

Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Statistical Analysis Plan		07/09/2017	03/03/2022	No	No