

# Effectiveness study of the Thinking, Doing, Talking Science Programme

<b>Submission date</b> 01/06/2016	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 03/06/2016	<b>Overall study status</b> Completed	<input checked="" type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 03/03/2022	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> 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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## Contact information

### Type(s)

Public

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## Additional identifiers

EudraCT/CTIS number

**IRAS number**

**ClinicalTrials.gov number**

**Secondary identifying numbers**

N/A

## **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

### **Secondary study design**

Cluster randomised trial

### **Study setting(s)**

School

### **Study type(s)**

Other

### **Participant information sheet**

No specific participant information sheet available, please use the contact details below to request a further information.

### **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 measure**

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.

### **Secondary outcome measures**

Pupil attitudes towards science which will be measured by a pupil-level survey administered at the end of Year 5.

### **Overall study start date**

01/09/2015

### **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

**Age group**

Mixed

**Sex**

Both

**Target number of participants**

5,760 students in 180 schools in 6 sites

**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**

England

United Kingdom

**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

### **Sponsor details**

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+44 207 802 1676  
info@eefoundation.org.uk

### **Sponsor type**

Charity

### **Website**

<https://educationendowmentfoundation.org.uk>

### **ROR**

<https://ror.org/03bhd6288>

## **Funder(s)**

### **Funder type**

Charity

### **Funder Name**

Education Endowment Foundation

## **Results and Publications**

Publication and dissemination plan

The final report will be distributed by the Education Endowment Foundation and made available on their website.

### **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 stored in a repository

### **IPD sharing plan summary**

Stored in repository

### **Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Statistical Analysis Plan</a>		07/09/2017	03/03/2022	No	No