

# Independent evaluation of Sci-napse/Uncertain Rewards (pilot and main trial)

<b>Submission date</b> 22/09/2017	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 02/10/2017	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 23/08/2019	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

This study will test the impact of a game-based approach to whole-class teaching, developed by researchers at the University of Bristol and Manchester Metropolitan University (MMU), which uses uncertain rewards for correct answers. Questions, posed using an online platform, are integrated with class teaching in Year 8 science lessons, and students work in teams to answer these. The study explores three approaches to learning content: game-based (questions with uncertain rewards, where points are awarded for correct answers but teams can choose whether to keep their points or to risk doubling or losing them based on the chance spin of a wheel); test-based (questions with fixed rewards, i.e. a pre-determined number of points for being correct) and conventional teaching (teacher's usual practice). Although the points are not linked to any material reward, the state of heightened excitement over whether or not pupils will gain or lose points in the "uncertain rewards" condition may increase their receptivity to learning.

### Who can participate?

Year 8 students at schools where at least 20% of students receive free school meals

### What does the study involve?

Year 8 science classes are randomly allocated to one of three groups: game-based approach, test-based approach, or conventional teaching. Participating year 8 students are tested before the intervention begins and at the end of the intervention (summer term 2017) with the Progress in Science Test.

### What are the possible benefits and risks of participating?

Participants may benefit from potentially improving their 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 York Trials Unit (Department of Health Sciences, University of York) and takes place in secondary schools located within the UK.

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

December 2014 to March 2018

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

Who is the main contact?  
Louise Elliott  
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## Contact information

### Type(s)

Public

### Contact name

Mrs Louise Elliott

### Contact details

York Trials Unit  
Department of Health Sciences  
University of York  
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## Additional identifiers

### Protocol serial number

2

## Study information

### Scientific Title

Independent evaluation of Sci-napse: engaging the brain's reward system - a three-armed within-school randomised controlled trial

### Study objectives

Testing the impact of game-based rewards in secondary school science classes.

The trial is designed to establish:

1. The impact of the game-based teaching versus conventional teaching on academic achievement in science?
2. The impact of the test-based teaching versus conventional teaching on academic achievement in science?
3. The impact of the game-based teaching versus test-based teaching on academic achievement in science?
4. How the two approaches are enacted and received in the classroom, and how this compares with "business as usual"?

### Ethics approval required

Old ethics approval format

**Ethics approval(s)**

School of Education, University of York, 08/12/2015, ref: 15/039

**Study design**

Three-armed within-school randomised controlled trial

**Primary study design**

Interventional

**Study type(s)**

Treatment

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

Pupils in Year 8 science lessons

**Interventions**

A minimum of three classes were recruited in each school. Classes within schools were randomised 1:1:1 using block randomisation with a block size of 3 to ensure balance as far as possible of the three allocations within each school.

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Intervention 1: game-based. Questions with uncertain rewards, where points are awarded for correct answers but teams can choose whether to keep their points or to risk doubling or losing them based on the chance spin of a wheel

Intervention 2: test-based. Questions with fixed rewards, i.e. a pre-determined number of points for being correct

Intervention 3: conventional teaching, teacher's usual practice

**Intervention Type**

Other

**Primary outcome(s)**

Attainment in science, measured using the GL Assessment Progress Test in Science (PTS13) at baseline (before the intervention begins) and at the end of the intervention (summer term 2017)

**Key secondary outcome(s)**

No secondary outcome measures

**Completion date**

31/03/2018

**Eligibility****Key inclusion criteria**

1. State secondary schools around Manchester and Bristol
2. At least half of the recruited schools should have 20% or more pupils with FSM
3. A minimum of 3 year 8 classes available to take part in the evaluation

**Participant type(s)**

Other

**Healthy volunteers allowed**

No

**Age group**

Child

**Sex**

All

**Total final enrolment**

4976

**Key exclusion criteria**

Schools that have not participated in the Sci-napse pilot trial

**Date of first enrolment**

01/01/2015

**Date of final enrolment**

30/09/2016

**Locations****Countries of recruitment**

United Kingdom

England

**Study participating centre**

York Trials Unit

University of York

York

United Kingdom

YO10 5DD

**Sponsor information**

## Organisation

University of York

## ROR

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

## Funder(s)

### Funder type

Charity

### Funder Name

Education Endowment Foundation (EEF)

## Results and Publications

### 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

Stored in repository

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Funder report results</a>	results		23/08/2019	No	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes