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

Submission date
22/09/2017

Recruitment status
No longer recruiting

Registration date
02/10/2017

Overall study status
Completed

Last Edited
23/08/2019

Condition category
Other

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] 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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Study website
https://educationendowmentfoundation.org.uk/our-work/projects/engaging-the-brains-reward-system/

Contact information

Type(s)
Public

Contact name
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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
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

Secondary study design
Randomised controlled trial

Study setting(s)
School

Study type(s)
Treatment

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

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.

This project 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, will be integrated with class teaching in Year 8 science lessons, and students will work in teams to answer these. The study will explore three approaches to learning content:
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 measure
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)

Secondary outcome measures
No secondary outcome measures

Overall study start date
01/12/2014

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

Age group
Child

Sex
Both

Target number of participants
Main trial: 64 schools, 9600 pupils

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
England

United Kingdom

Study participating centre
York Trials Unit
University of York
York
United Kingdom
YO10 5DD

Sponsor information

Organisation
University of York

Sponsor details
Research Innovation Office
Innovation Centre
York Science Park
Innovation Way
Heslington
York
England
United Kingdom
YO10 5DG

Sponsor type
University/education

ROR
https://ror.org/04m01e293

Funder(s)

Funder type
Charity

Funder Name
Education Endowment Foundation (EEF)

Results and Publications

Publication and dissemination plan

1. Protocol can be found at: https://educationendowmentfoundation.org.uk/our-work/projects/engaging-the-brains-reward-system/
2. Publication of a final report by the Education Endowment Foundation and openly available on their website (Summer 2018)

Intention to publish date

01/06/2018

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.

IPD sharing plan summary

Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Funder report results	results		23/08/2019	No	No