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Evaluation of ASCENTS 121 Support for Science

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Registration date 26/09/2019	**Overall study status** Completed	[ ] Statistical analysis plan [ ] Results
Last Edited 22/09/2021	**Condition category** Other	[ ] Individual participant data [ ] Record updated in last year

Plain English summary of protocol

Background and study aims
The University of Lincoln's ASCENTS 121 support for science programme trains STEM undergraduates across five universities to provide one to one science tutoring to Year 11 pupils. Tutees are all eligible for pupil premium and predicted to achieve a level 3-5 in GCSE science. Primarily, pupils receive 23 one hour tutoring sessions (one hour per week for 23 weeks throughout Year 11). Delivered by trained undergraduates, these take place at school, outside of the school timetable and the topic of each session is determined by the Year 11 pupil. These sessions are also supplemented by a six hour revision session held at a university just before their GCSE exam. The University of Lincoln have previously carried out a small study to evaluate the ASCENTS programme in four schools with 86 Year 11 students. The study found that students who were tutored achieved better in their GCSE science examinations than those who were not, with an effect that equates to an additional 4 months of progress. This study will enable more rigorously evaluate the programme and find out whether it positively impacts pupils across a larger number of schools. More broadly, there is good evidence that tutoring is an effective way to improve attainment. However, due to high cost, disadvantaged pupils may struggle to access one to one tuition, while schools may find it difficult to fund tutoring interventions. Programmes like ASCENTS, directly targeting pupil premium pupils and provided by universities, could expand access.

Who can participate?
ASCENTS will be delivered by undergraduate students (mentors) in their 2nd or 3rd year of study for a degree in a science-related subject, to Year 11 pupils (mentees) eligible for pupil premium, predicted a grade 3 to 5 in GCSE combined double award science(foundation or higher)

What does the study involve?
Pupils are randomly allocated to receive 23 hours of one-to-one mentoring in science over 23 weeks plus a day-trip to visit a university, or to receive usual science teaching and support. The impact of the ASCENTS programme on GCSE science attainment is measured. The study also looks at how the programme is implemented across different schools and universities and the barriers and facilitators to implementation.

What are the possible benefits and risks of participating?
The expected benefits are higher attainment in science and greater interest in science. The main risk of participating is a displacement effect (i.e. higher attainment in science at the cost of a lower attainment in other subjects such as English or maths).

Where is the study run from?
1. National Centre for Social Research (NatCen) (UK)
2. Schools within the vicinity of the university partners in Lincoln, London, Leeds, Liverpool and York (UK)

When is the study starting and how long is it expected to run for?
August 2018 to July 2020

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

Who is the main contact?
Dr Arnaud Vaganay
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Study website
https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/ascents-121-support-for-science/

Contact information

Type(s)
Public

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
P13232

Study information

Scientific Title
Effect of one-to-one mentoring on attainment among Year 11 pupils in England: a randomised controlled trial

Acronym
ASCENTS

Study objectives
1. What is the impact of ASCENTS on the Science attainment of disadvantaged Year 11 pupils in England?
2. What is the impact of ASCENTS on the Maths attainment of disadvantaged Year 11 pupils in England?
3. What is the impact of ASCENTS on the English attainment of disadvantaged Year 11 pupils in England?
4. What is the impact of ASCENTS on enrolment in Science A- and AS-levels?
5. How does the impact of ASCENTS differ by prior levels of attainment?

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 11/01/2019, NatCen's Research Ethics Committee (35 Northampton Square, London EC1V 0AX, UK; Tel: +44 (0)20 7250 1866; Email: info@natcen.ac.uk), ref: P13232

Study design
Multi-site efficacy trial with randomisation at the individual level

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
School

Study type(s)
Other

Participant information sheet
http://www.natcen.ac.uk/taking-part/studies-in-field/evaluation-of-ascents-121-support-for-science/

Health condition(s) or problem(s) studied
Inequalities in education

Interventions
Randomisation was undertaken at the pupil level using Stata software.

Pupils in the treatment group are expected to receive 23 hours of one-to-one mentoring in science over 23 weeks plus a day-trip to visit a university. Pupils in the control group will receive usual science teaching and support.

ASCENTS 121 Support for Science (hereafter 'ASCENTS') trains STEM undergraduates to provide one-to-one science support to disadvantaged Year 11 pupils in local schools. STEM undergraduates from five different universities will be trained to deliver mentoring sessions. The programme will run in 35 schools from September 2019 to May 2020.

For the purpose of this study, mentoring is defined as the provision of intensive, individualised and subject-specific support by a teacher, teaching assistant or another adult, to a pupil. It is important to note that this definition usually refers to the activity of tutoring rather than mentoring. As ASCENTS was also developed with a view to building confidence and resilience among pupils, it was felt by the developers that the term tutoring was too restrictive. Throughout this protocol, the terms 'mentoring' and 'tutoring' will be taken to have broadly the same meaning.

Intervention Type
Behavioural

Primary outcome measure
Science attainment: the baseline measure will be science attainment at Key Stage 2 or maths attainment at Key Stage 2 or English attainment at Key Stage 2 (the researchers will choose the measure explaining the most variance in science attainment at GCSE. This will be confirmed in the statistical analysis plan). The endline measure will be the grade achieved in Full GCSE Double Award Science. All data will be derived from the National Pupil Database (NPD).

Secondary outcome measures
1. Maths attainment: the baseline measure will be Maths attainment at Key Stage 2. The endline measurement will be the NPD variable that records the highest grade achieved in full GCSE Maths.
2. English attainment: the baseline measure will be English attainment at Key Stage 2. The endline measurement will be the NPD variable that records the highest grade achieved in full GCSE English.
3. Pupils' progress to A- or AS- level science (Biology, Chemistry or Physics) two years after collection of GCSE attainment data in 2022. The researchers will create a binary variable to indicate whether pupils sat an A- or AS-level science exam, which will act as a proxy for whether pupils go on to study science at A-level. This will be based on NPD-derived A- or AS-level attainment grades in any of the three aforementioned science subjects. Any science outcome indicating a pupil was graded or ungraded (A-E and N, Q, U, or X) will be classified as 'progression to A- or AS- level science', while not enrolling for AS-or A-level science will be classified as 'did not progress to A- or AS- level science'.
All data will be derived from the National Pupil Database (NPD)

Overall study start date

01/08/2018

Completion date
31/07/2020

Eligibility

Key inclusion criteria
ASCENTS will be delivered by undergraduate students (mentors) to Year 11 pupils (mentees)

In order to be eligible to take part, mentors must meet the following criteria:
1. Be in their 2nd or 3rd year of study during the academic year of mentoring sessions (i.e. 2019 /2020)
2. Studying for a degree in a science-related subject that confers a BSc degree or integrated master's degree
3. Minimum of a C grade in GCSE English, Maths and Science
4. Minimum of one A-level in either Biology, Chemistry, Physics or Psychology at grade C or higher

In order to be eligible to take part, schools must meet the following criteria:
1. State, mixed-sex schools
2. Schools within the vicinity of the university partners in Lincoln, London, Leeds, Liverpool and York

In order to be eligible to take part, mentees must meet the following criteria:
1. Be in Year 11 during the academic year of mentoring sessions (i.e. 2019/20)
2. Eligible for pupil premium
3. Predicted a grade 3 to 5 in GCSE science
4. Studying combined double award science (foundation or higher)

Participant type(s)
Mixed

Age group
Mixed

Sex
Both

Target number of participants
770

Key exclusion criteria
Does not meet inclusion criteria

Date of first enrolment
07/01/2019

Date of final enrolment
10/09/2019

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
National Centre for Social Research (NatCen)
35 Northampton Square
London
United Kingdom
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Sponsor information

Organisation
Education Endowment Foundation

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Sponsor type
Charity

Website
https://educationendowmentfoundation.org.uk

ROR
https://ror.org/03bhd6288

Funder(s)

Funder type
Charity

Funder Name
Education Endowment Foundation

Alternative Name(s)
EducEndowFoundn, Education Endowment Foundation | London, EEF

Funding Body Type
Private sector organisation

Funding Body Subtype
Trusts, charities, foundations (both public and private)

Location
United Kingdom

Funder Name
Wellcome Trust

Alternative Name(s)

Funding Body Type
Private sector organisation

Funding Body Subtype
International organizations

Location
United Kingdom

Results and Publications

Publication and dissemination plan
Current publication and dissemination plan as of 22/09/2021:
The impact evaluation of ASCENTS 121 Support for Science was cancelled due to the COVID-19 pandemic and consequent changes in GCSE grading. While almost all of the programme was delivered, the evaluation could not use 2020's GCSE grading system to reliably estimate the impact of the intervention. A standalone implementation and process evaluation (IPE) was conducted, involving interviews with university project leads and school teachers, observations of mentor training, and surveys with teachers, mentors and mentees. The following publications can be found on the website of the Education Endowment Foundation :
1. The evaluation protocol (impact assessment and IPE)
2. The Statistical Analysis Plan
3. The evaluation report, including the findings from the IPE only

Previous publication and dissemination plan:
1. A protocol will be published on the website of the Education Endowment Foundation in September 2019

2. A Statistical Analysis Plan will be published on the same website in October 2019. See: https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/ascents-121-support-for-science/

Intention to publish date
30/05/2021

Individual participant data (IPD) sharing plan
The dataset(s) used in the above-mentioned analyses will be anonymised and archived in a repository managed by FFT Education Datalab: https://ffteducationdatalab.org.uk/. Data and results will be available around November 2021.

IPD sharing plan summary
Stored in repository