

Generation STEM - an evaluation of a STEM-related work experience intervention

Submission date 12/02/2018	Recruitment status No longer recruiting	☐ Prospectively registered ☒ Protocol
Registration date 28/03/2018	Overall study status Completed	☒ Statistical analysis plan ☒ Results
Last Edited 14/12/2021	Condition category Other	☐ Individual participant data

Plain English summary of protocol

Background and study aims

In 2011 the coalition government made an important change to the policy regarding work experience in secondary schools. The decision was made that it was no longer mandatory for 14-16 year olds to undertake work experience in schools. Since then the number of teenagers who have experience in the workplace has rapidly fallen. Now the responsibility lies with the schools themselves to decide which companies to work with, and what provisions to offer to help prepare their students for the world of work. Thus work experience programmes differ from school to school with some schools still offering work experience to their year 10s and 12s and some offering none at all. Previous research into the likely outcomes of work experience programmes highlight their potential to impact on life skills, and on preparation for or decisions about transitions into further education or work. As it stands, there is no evidence showing that this increase in life skills spills over to directly affect attainment, and this gap needs to be addressed. Generation STEM (Gen Stem) is a work experience intervention made up of several independent aspects, a work prep day, an interview, a debrief and a work experience week. The aim of this study is to see whether attending this intervention improves attainment outcomes for the pupils.

Who can participate?

Year 10 pupils at secondary state schools who are interested in Science, Technology, Engineering and Mathematics (STEM) careers

What does the study involve?

Schools get their pupils to complete a survey and then they are randomly allocated to the intervention group or the control group. The control group won't receive the intervention and pupils in these schools carry on with their normal work experience week. These control schools receive £1000 for completing the surveys. The intervention group schools take part in the Gen Stem work experience programme to provide quality, relevant work experience to students in year 10. The aim is for students with an interest in STEM to get a placement in a job area related to their specific interests and career aspirations and to complete relevant work whilst they are at the placement. The programme has a structured schedule which students follow from beginning to end. The first part is a work preparation day delivered to the whole of year 10 if possible by CSW Group and local employers who can offer a STEM-related placement. If schools

are unable to accommodate the work preparation day for the whole of year 10 then at a minimum it is delivered to the 15 students interested in STEM who intend to take part in the entire process. During this work preparation day students learn more about the world of work, what's expected of them in a work experience placement, how best to prepare for their work experience, and have chance to think about the local opportunities available for them. Following this, 15 students with an interest in STEM and the placements available are offered an interview with a small panel of local employers and a CSW Group co-ordinator. This interview takes place at the school and is an opportunity for the students to gain experience of an interview situation, and for CSW Group to learn more about the students' particular interests and reasons for wishing to complete a placement. Following this stage, all 15 students are given detailed feedback in a debrief by the CSW Group co-ordinator. Five of these students are chosen to continue on to the bespoke work experience placement. An example of a placement would be a role as a Railway Assistant Engineer working for Great Western Railway. Students on this placement would be engaged as a trainee engineer dealing with servicing and repair of railway rolling stock. The student would shadow engineering staff and gain hands on experience with assembly of parts, cleaning components, and oil sampling. Thus a student with an interest in engineering would gain a relevant work experience. The students are matched to placements based on their interests and aspirations. These students then complete a 5-day work experience placement. Following this they have a work experience debrief with a CSW Group co-ordinator who has gained detailed feedback from the employer. The ten students who did not gain a place on this particular programme go through usual school process to find an alternative placement. CSW Group assists if necessary to ensure these pupils get a placement somewhere. Gen Stem aims to improve students' life skills such as ability to see the relevance of their school work to their chosen career path, greater motivation to engage in school work, punctuality, confidence, and maturity. Students then are more ready and able to focus on their studies and potentially their attainment in STEM subjects improves.

What are the possible benefits and risks of participating?

Participation presents an excellent opportunity for pupils in Intervention Group schools to take part in work experience, and understand the 'real life' elements of an application and interview. By participating, schools are helping to increase understanding of the importance of work experience placements to young people, their attainment and motivation, and ultimately their post-16 destination choices. No risks associated with participation are foreseen. All work experience placements are fully checked by CSW Group to ensure that Duty of Care standards are met.

Where is the study run from?

The study is run by NFER who are the independent evaluator. The developer, CSW group, is the main centre doing the recruitment and delivering the intervention.

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

May 2017 to December 2020

Who is funding the study?

Education Endowment Foundation (EEF) (UK)

Who is the main contact?

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Contact information

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Additional identifiers**Protocol serial number**

EFWE Gen STEM

Study information

Scientific Title

Generation STEM - a cluster randomised controlled trial of a STEM-related work experience intervention

Acronym

Gen STEM

Study objectives

Students who attend the work experience programme will be better engaged in their studies and will have gained improved life skills which will lead to better attainment in their GCSEs than students who do not receive the work experience programme.

Ethics approval required

Old ethics approval format

Ethics approval(s)

NFER project set up meeting, 05/07/2017

Primary study design

Interventional

Study design

School randomised efficacy multi-centre trial

Study type(s)

Other

Health condition(s) or problem(s) studied

Education - pupils' attainment

Interventions

Geographical areas that the developer can deliver in: Cornwall and the Isles of Scilly, Heart of the South West (Devon, Somerset, Plymouth and Torbay), Dorset (including Bournemouth and Poole), Swindon and Wiltshire, West of England (Bristol, Bath and NE Somerset, North Somerset, South Gloucestershire) and Gloucestershire. Nine schools receiving the intervention must be in Cornwall because of CSW Group's funding agreements with Careers Enterprise Company (CEC). Schools will get their pupils to complete a baseline survey and then they will be randomised to receive the intervention or be in the control group. An equal number of schools will be allocated to the intervention and control groups within each geographical area. Randomisation will be carried out in SPSS with a full audit trail available.

The control group won't receive the intervention and pupils in these schools will carry on with their normal work experience week. These control schools will receive £1000 for completing end-point surveys.

The intervention group take part in the Generation STEM work experience programme. Generation STEM (Gen Stem) is a work experience (WE) programme developed by CSW Group to provide quality, relevant work experience to students in year 10. The aim is for students with an

interest in STEM to get a placement in a job area related to their specific interests and career aspirations and to complete relevant work whilst they are at the placement. The programme has a structured schedule which students follow from beginning to end. The first part is a work preparation day delivered to the whole of year 10 if possible by CSW Group and local employers who can offer a STEM related placement. If schools are unable to accommodate the work preparation day for the whole of year 10 then at a minimum it will be delivered to the 15 students interested in STEM who intend to take part in the entire process – see below. During this work preparation day students learn more about the world of work, what's expected of them in a work experience placement, how best to prepare for their work experience, and have chance to think about the local opportunities available for them. Following this, 15 students with an interest in STEM and the placements available are offered an interview with a small panel of local employers and a CSW Group co-ordinator. This interview takes place at the school and is an opportunity for the students to gain experience of an interview situation, and for CSW Group to learn more about the students' particular interests and reasons for wishing to complete a placement. Following this stage, all 15 students are given detailed feedback in a post interview debrief by the CSW Group co-ordinator. Five of these students are chosen to continue on to the bespoke work experience placement. An example of a placement would be a role as a Railway Assistant Engineer working for Great Western Railway. Students on this placement would be engaged as a trainee engineer dealing with servicing and repair of railway rolling stock. The student would shadow engineering staff and gain hands on experience with assembly of parts, cleaning components, and oil sampling. Thus a student with an interest in engineering would gain a relevant work experience. The students are matched to placements based on their interests and aspirations. These students then complete a 5 day work experience placement. Following this they have a work experience debrief with a CSW Group co-ordinator who has gained detailed feedback from the employer. The ten students who did not gain a place on this particular programme will go through usual school process to find an alternative placement. CSW Group will assist if necessary to ensure these pupils get a placement somewhere. Gen Stem aims to improve students' life skills such as ability to see the relevance of their school work to their chosen career path, greater motivation to engage in school work, punctuality, confidence, and maturity. Students then are more ready and able to focus on their studies and potentially their attainment in STEM subjects improves.

Intervention Type

Behavioural

Primary outcome(s)

Attainment in science and maths measured by KS4 outcomes at the end of the academic year 2018/19

Key secondary outcome(s)

Attitudes to learning and engagement in studies, measured by the NFER survey at the end of the academic year 2018/19

Completion date

31/12/2020

Eligibility

Key inclusion criteria

1. Schools with year 10 pupils
2. Students in year 10 with an interest in STEM-related subjects/careers with a particular focus

on students that might be disadvantaged in some way e.g. students eligible for free school meals, students who would not otherwise find an appropriate placement

Participant type(s)

Other

Healthy volunteers allowed

No

Age group

Child

Sex

All

Key exclusion criteria

Participants must be in year 10 and in certain geographical areas listed above

Date of first enrolment

01/07/2017

Date of final enrolment

22/12/2017

Locations**Countries of recruitment**

United Kingdom

England

Study participating centre

CSW Group

United Kingdom

PL4 0SJ

Sponsor information**Organisation**

Education Endowment Foundation

ROR

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

Funder(s)

Funder type

Charity

Funder Name

Education Endowment Foundation

Alternative Name(s)

EducEndowFoundn, The Education Endowment Foundation (EEF), Education Endowment Foundation | London, EEF

Funding Body Type

Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location

United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

The data sharing plans for the current study are unknown and will be made available at a later date.

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol article	Study website	11/11/2025	14/12/2021	Yes	No
Funder report results			14/12/2021	No	No
Statistical Analysis Plan			14/12/2021	No	No
Study website			11/11/2025	No	Yes