University of Strathclyde Glasgow

Strathclyde Engineering Scholars – equal outcomes for the most disadvantaged

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Project background and aims

We established a comprehensive programme enabling those from the most disadvantaged backgrounds to access and successfully navigate university engineering education, before transitioning to professional graduate employment with their peers. The project supports students from lower socio-economic backgrounds by providing tutoring in maths and physics whilst in senior years at high school, mentoring and support through their foundation years at University and industry mentoring in final year of their studies to support their transition to industry. Our project supports students to build personal skills to successfully pursue and graduate in the engineering discipline of their choice.

Target population

Our target population included all young people from disadvantaged backgrounds who have an interest in a career in engineering and who meet the criteria of the project.

Project set up process

1. **Recruit a project co-ordinator to manage the set up and day to day workload of the project** - This is a 0.5 FTE position at Grade 6 in the university's professional services scale.

2. **Recruit students to deliver tutoring to senior school pupils** - We created an application form using Microsoft Forms and sent it to all undergraduate engineering students. Students applied with a short personal statement stating their motivation for becoming a tutor and why they believed they were a suitable candidate for the role. Right to work in the UK was also a consideration. Applications were then reviewed by the project team and offers made to students. Students were offered payment for their tutoring hours, the cost of which was covered by the RAE funding. Prior to commencing tutoring, students were PVG checked through Disclosure Scotland (DBS in England) to ensure their eligibility to work with children; work assignments were set up on the University's finance payment system; and students received lessons on tutoring Mathematics and Physics, delivered by Strathclyde's Institute of Education. We successfully recruited 62 and 46 student tutors in Year 1 & 2 respectively.

3. **Recruit school pupils who met project criteria** - An application form aimed at school pupils/teachers/parents or carers was created using Microsoft Forms. This was sent to all secondary schools in Scotland. Applicants were required to be studying Mathematics and Physics at Higher or Advanced Higher level in the current academic session and currently live in one of Scotland's lowest 2 SIMD postcodes. Pupils were asked to tell us how they would benefit from being a Strathclyde Engineering Scholar and why they were interested in studying engineering. We successfully recruited 87 senior school pupils in Year 1 and 94 in Year 2. Note: All tutor and pupil information was gathered under a data privacy statement and was stored under GDPR regulations.

4. **Recruit industry mentors** - Using LinkedIn and existing university partners, we recruited 35 volunteer engineers from industry to mentor our senior students.

5. **Matching** - pupils and tutors were matched according to the department of engineering the pupil was interested in.

6. **Teams classrooms** - The geography meant that face-to-face tutoring wasn't always possible, so Teams classrooms were set up for each student and their tutees. Students completed a lesson on safeguarding prior to tutoring commencing. Students were advised to only contact pupils using their Strathclyde University email and the pupil's school email address and not communicate through social media platforms to safeguard both parties.

7. **STEM engagement and support (10-credit module)** - As part of the programme, students were offered the opportunity to participate in a 10-credit module by completing additional assessments as well as the weekly tutoring hours. Depending on their year of study, this involved creating and maintaining a logbook of activity, delivering a reflective presentation, writing an essay describing their experience and completing the successful planning and delivery of an outreach event in a school noted to have low progression rates to Higher Education. The outreach events were targeted at junior high school pupils (aged 11-13) to explain what engineering is and the variety of engineering disciplines on offer.

8. **Mentoring of 1st year students** - First year students from disadvantaged backgrounds were identified and matched with one of our student tutors. These students were mentored as they settled into university and were offered guidance with areas such as study skills, managing workloads, signposting to relevant support services as required. This ensured a supported environment where new students could settle into their new environment knowing they had someone to help them if they had any issues or questions.

Major achievements and challenges

In the first year of the project, 48% of scholars were in their final year of school and ready to apply to university. Of that 48%, 88.5% went on to achieve the grades required and registered in engineering courses at university. In the 2nd year of the project, 77% of eligible pupils received offers for engineering courses.

In the first year of our project, over 20 outreach events were delivered, reaching 400 young people. In year 2, 17 outreach events were delivered informing 808 young people on engineering careers.

Our students enjoyed the experience of tutoring with many saying their interpersonal skills, communication, empathy and planning skills had improved and they felt more confident in their pathway to becoming professional engineers.

A celebration event took place on our University Campus at the end of the first academic year. This was attended by many of our scholars, some student tutors, industry mentors and project staff. Scholars enjoyed a tour of the engineering departments and had the opportunity to have face-to-face conversations with academic staff.

The start of the process is labour intensive, recruiting students and pupils, arranging PVG checks and matching tutors and tutees. This workload meant tutoring did not commence as quickly as we would have liked. Ideally recruitment of students and school pupils would be completed in June, allowing the matching process and the PVG Disclosures to be completed over the summer academic break. Unfortunately, a few students (4) withdrew from the programme in semester 2 as their course workload increased and they felt they could not fit tutoring into their weekly schedule. This resulted in a re-allocation of school pupils to new student tutors, meaning new trust and familiarity had to be established. In future, we would stress the commitment to the programme to all participating tutors at the recruitment stage.

Further information

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Cohort: 2022

Contact: eng-scholars@strath.ac.uk

Links:

https://www.strath.ac.uk/engineering/outreach/strathclydeengineeringscholars/

https://sway.cloud.microsoft/vv40695GUwttVDuY?ref=Link