



In²STEM

2024 Programme Impact

A detailed report providing insight into the impact data

In this report, we provide insight into the impact of the 2024 In2STEM programme including a section about the longer-term impact on our most recent alumni cohorts. This report is to be read in conjunction with our 2024 In2STEM impact report, which provides impressive overall statistics for the 2024 In2STEM programme.

Methodology

Pre- and post-programme survey analysis

Participants received a survey before the start of the programme to assess the baseline. They received another survey straight after the programme. To evaluate the impact of the In2STEM programme, we assessed the answers of respondents who submitted a pre- and post-programme survey and attended at least three days of their work experience placement. To evaluate the extended trial of the online version of the programme, we included all participants who completed both surveys.

Within the surveys, all impact-related questions required an answer to allow survey submission. Hence, all questions will have been answered by all respondents. There are two exceptions to this: two questions which are specific to university application processes were only shown to those >94% of respondents who indicated that they intend to go to university:

1. *“Have you drafted your personal statement for your UCAS application?”*
2. *“Do you know someone outside of school that could give you feedback on my UCAS application and personal statement?”*

Respondents were presented with a list of answers in either the Likert scale format or a binary format (yes/no) depending on the question. Answers in Likert scale format are indicated within figures with “°”, and those to binary questions with “▪”. We used a Likert scale in the following format: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree.

Responses in the Likert scale format are presented showing how many participants (in percentage of the total) were in agreement with a statement, summarising answers stating “Agree” and “Strongly agree”. Answers stating “Strongly disagree”, “disagree”, and “Neither agree nor disagree” are not shown.

Responses of the binary format are presented by showing how many participants (in percentage of the total) answered with “yes”. Answers stating “no” are not shown.

The figures show the level of agreement before the programme (“Before”) and after the programme (“After”) as well as the “Change”, which is represented as “Percentage Point Change”. In the text, we will also refer to the “%change”. When we use %change, we indicate that we do so.

All numbers are rounded numbers (zero decimal points).

Longer-term impact evaluation

We are presenting data from the UCAS Outreach Evaluator report and a customised UCAS EXACT report. We analysed the data from the last three cohorts for which UCAS data was available when this report was published, cohorts 2020-2022. The comparison of our cohorts to

the UCAS matched benchmarking group¹ and the testing for significance has been provided by the UCAS Outreach Evaluator report.

The 2024 In2STEM programme

The 2024 In2STEM programme supported 851 participants from low socioeconomic backgrounds, providing them with the opportunity to attend an in-person work experience placement, 36 different workshops, and public engagement competitions.

698 of our participants completed the programme and filled in our pre-programme and post-programme survey. Their survey responses were included in the impact assessment of the 2024 In2STEM programme.

The programme aims to enable young people from low socioeconomic backgrounds to make informed decisions about their careers by providing them with:

- **hands-on experience**
- **knowledge about career access and destinations**
- **confidence that they can pursue a career in STEM.**

This year, 95% of participants attended a work experience placement, which allowed participants to experience a real-life STEM environment, facilitated their interaction with people who chose a STEM career, and provided them with hands-on experience in a STEM area of their interest.

Throughout the programme, participants were also offered a series of 36 workshops that they could either attend online in a live setting or watch as a recording either during the programme or up until the beginning of next year, enabling them to benefit from the workshops far beyond the end of the programme.

In2STEM participants are highly motivated to go to university and become a STEM professional. More than 90% of participants intend to go to university, would like to study a STEM degree or apprenticeship and would like to have a job that uses STEM (Figure 1). The In2STEM programme is designed to provide these highly motivated young people with the experience, knowledge and confidence to succeed with their plans.

¹ The data compares a database of UCAS applicants matched with the In2STEM programme (formerly In2science summer programme) using characteristics such as age, ethnicity, gender, postcode, proportion eligible for free school meals and academic achievement.

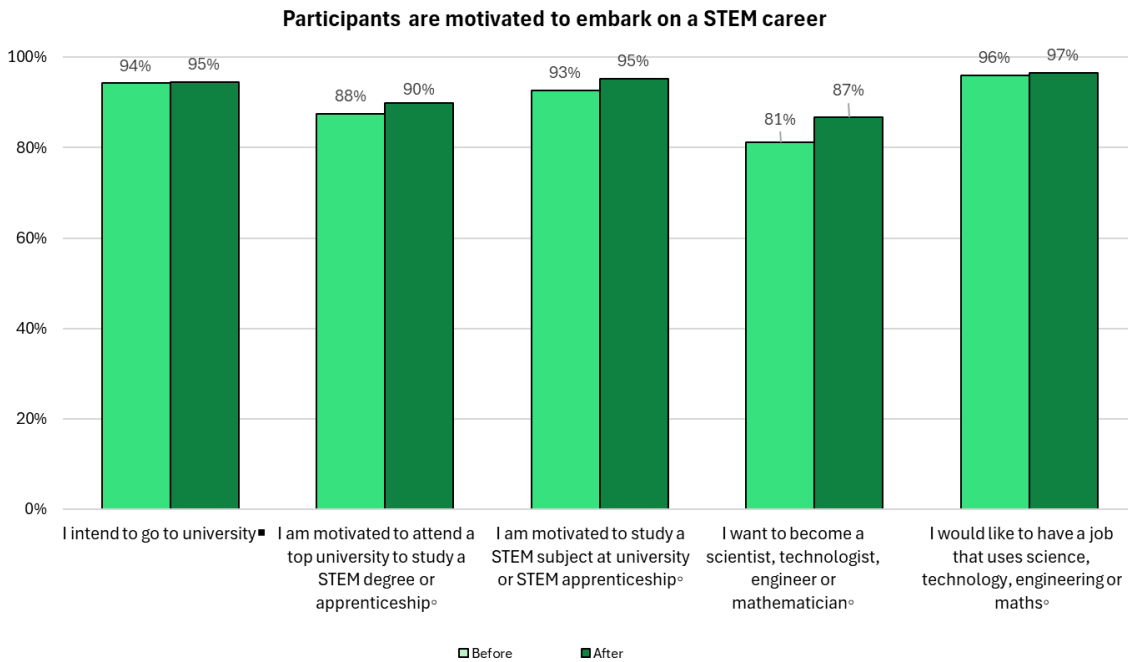


Figure 1

The extent of agreement is already very high before the programme, with limited scope to increase during the programme. However, 53% of participants said after the programme that the programme has changed their career aspirations (data not shown) and there is an increase of 11% of participants who said after the programme that they are sure about their career aspirations (Figure 2), indicating that the programme supports beneficiaries to make informed decisions regarding their career.

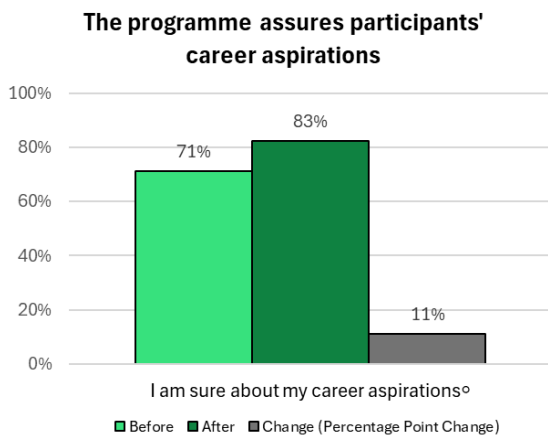


Figure 2

Hands-on experience:

The in-person placement in combination with the workshops provides participants with invaluable experience. This very practical experience can be used for their personal statement as part of the UCAS application and allows them to judge if a career in STEM is something they want to pursue. Meeting a researcher or STEM professional and/or being involved in a science experiment are key experiences for young people with an interest in STEM. After the programme, there was an increase of 45% of participants who met a researcher/STEM professional and 147% of participants who participated in an experiment (%change). Figure 3 summarises the experiences that participants gained during the programme.

Experiences programme participants are exposed to during the programme

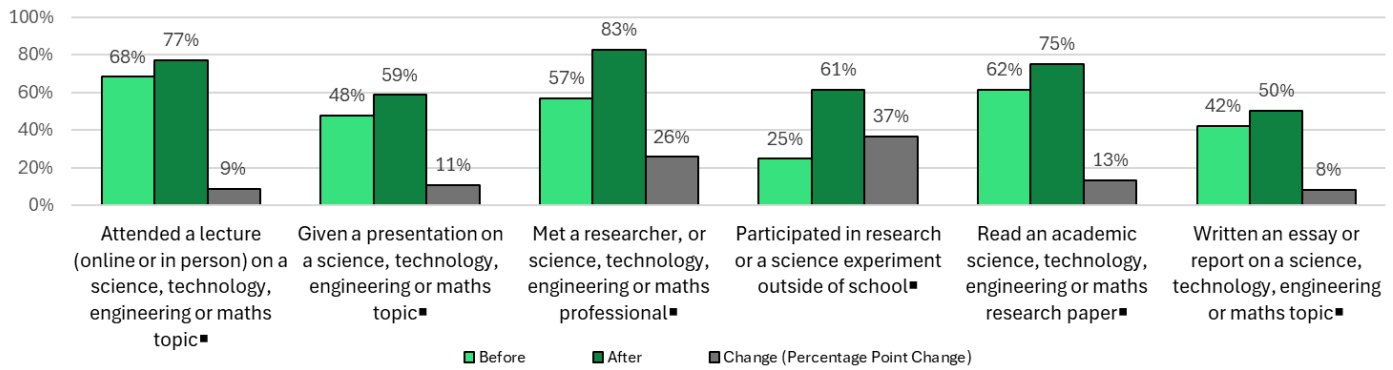


Figure 3

Knowledge about career access and destination:

It is essential that young people know where they can find support and advice during their educational journey. Our programme supports building that highly valuable network by exposing participants during their placement and online workshops to scientists, researchers and other STEM professionals who provide participants with information and advice. After the programme, there is an increase of 49% (%change) of participants who know someone who can give them good advice about possible careers in STEM. Figure 4 shows areas where participants learn to find support and advice.

Participants learn during the programme where they find support and advice

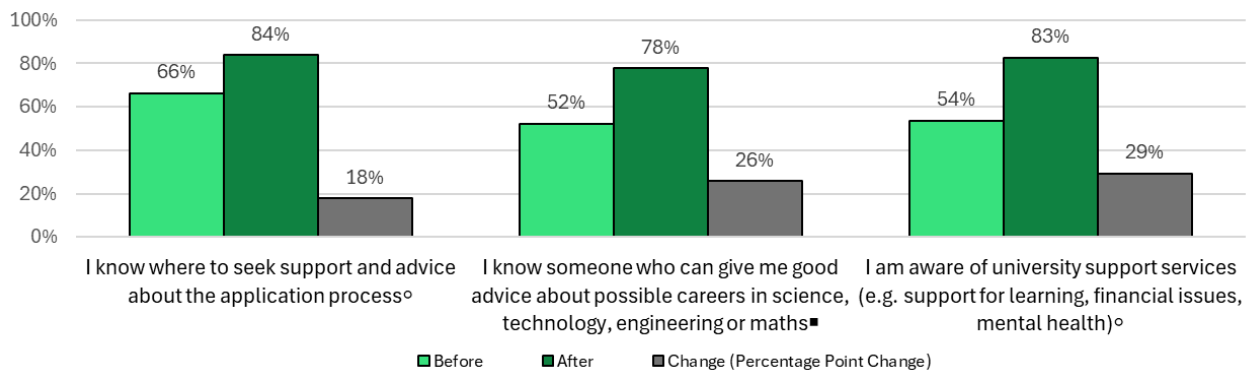


Figure 4

Given that 94% of participants said before the programme that they intend to go to university (please refer to Figure 1), we offer workshops that specifically provide advice on how to draft a compelling personal statement for the UCAS application. Figure 5 shows that participants started to draft their personal statements and learn where they can get feedback on their statement and UCAS application. There is an increase of 228% (%change) of participants who report that they drafted their personal statement.

Participants gain information and contacts that support them with their UCAS application

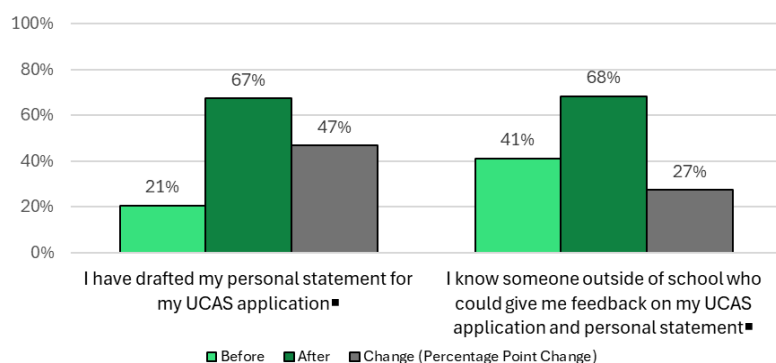


Figure 5

It is important that young people know what their perspectives are when they choose a career path. Exposure to a range of scientists, researchers and other STEM professionals exemplifies that there are various types of STEM careers and that they can be achieved by a multitude of pathways. There is an increase of 60% of participants (%change) who say after the programme that they understand the content and structure of a range of STEM degrees and apprenticeships. This is very important as it shows young people that they have options and can make choices. Figure 6 further shows that participants learn during the programme that there are a variety of STEM degrees and jobs if they want to pursue a career in STEM.

Participants acquire knowledge about STEM careers and jobs during the course of the programme

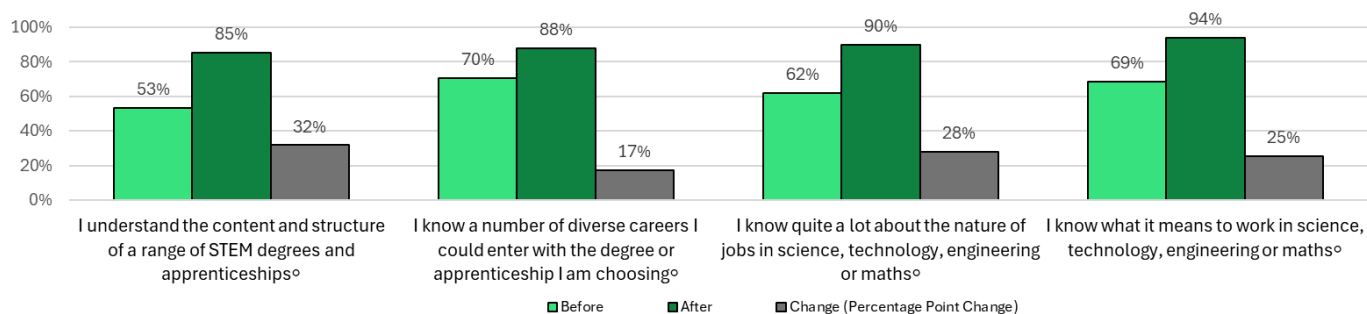


Figure 6

Confidence that they can pursue a career in STEM:

The programme aims to instil confidence in our participants that they can pursue a career in STEM and positively change their belief system about their potential as STEM professionals. After the programme, 95% of participants said that they would like to pursue a career in STEM (data not shown). It is essential that they are confident that this is achievable and that they can see themselves as part of the STEM community.

After the programme, there is an increase of 64% of participants (%change) that feel confident that they can write a high-quality UCAS personal statement or application. Furthermore, there is an increase of 27% of participants (%change) that feel confident about using scientific evidence to make an argument. Figure 7 summarises how the confidence of participants changes during the programme regarding what they think they are capable of, while Figure 8 depicts how their belief system changes regarding people who work in STEM and themselves as part of the STEM community.

Participants gain confidence in their abilities during the programme

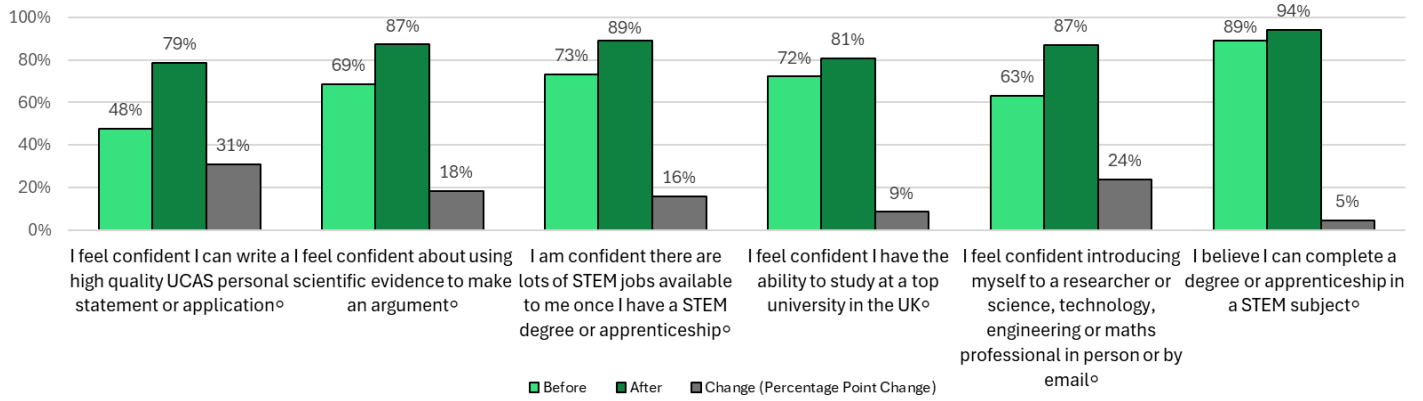


Figure 7

Participants believe that they can become part of the STEM community

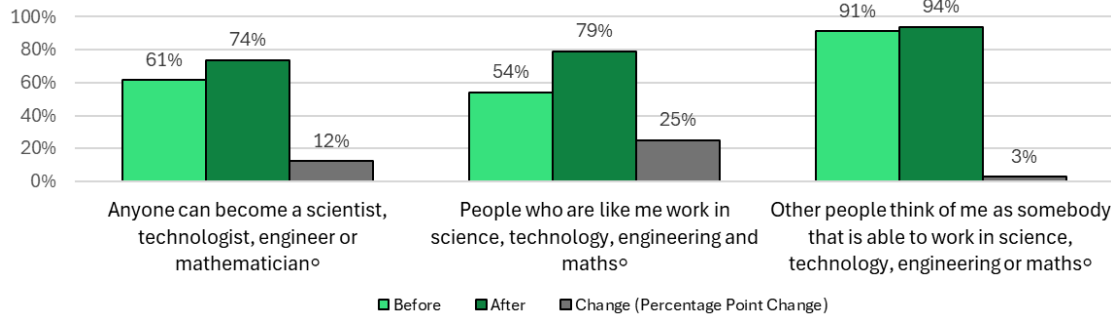


Figure 8

In our surveys, we also encourage participants to consider the more distant future. More than 60% of participants aspire to do a Master's degree and more than 40% aspire to do a PhD one day (Figure 9).

Longer-term career intentions

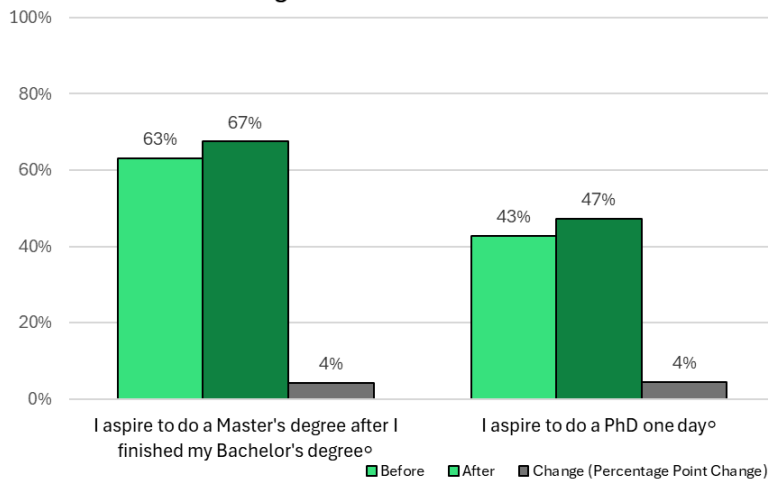


Figure 9

Longer term impact

Since the launch of In2scienceUK in 2010, the In2STEM (formerly In2science summer) programme has supported 5350 students, who have all taken part in cutting-edge STEM research and innovation. We are working with fantastic young people who are very motivated and eager to embark on a career in STEM. To understand where the next steps of their careers are taking them, we are collaborating with UCAS Outreach Evaluator² and UCAS EXACT.

We analysed the three most recent cohorts for which UCAS data was available, cohorts 2020-2022, comprising 1760 In2science summer programme alumni to understand:

- if they are going on to study at university in year 13
- how successful their applications are
- what subjects they chose for their undergraduate degrees.

Many of our alumni are applying to university one year after the programme

Interrogating the UCAS Outreach Evaluator reports, 90% of our alumni applied to universities through UCAS one year after the programme ended (Figure 10). Since this does not account for those who decide to take a gap year, it aligns well with our surveys right after the programme where more than 90% of students said that they intend to go to university.

The data from a customised UCAS EXACT report reveals that 92% of these applications were made for STEM degrees (Figure 10). Furthermore, the report shows that in comparison to the respective matched benchmarking group³, In2science summer programme participants had a statistically significantly higher rate of application to universities, including the application rate to higher tariff universities⁴ (data not shown). 91% of alumni that applied to university applied to a higher tariff university (Figure 10).

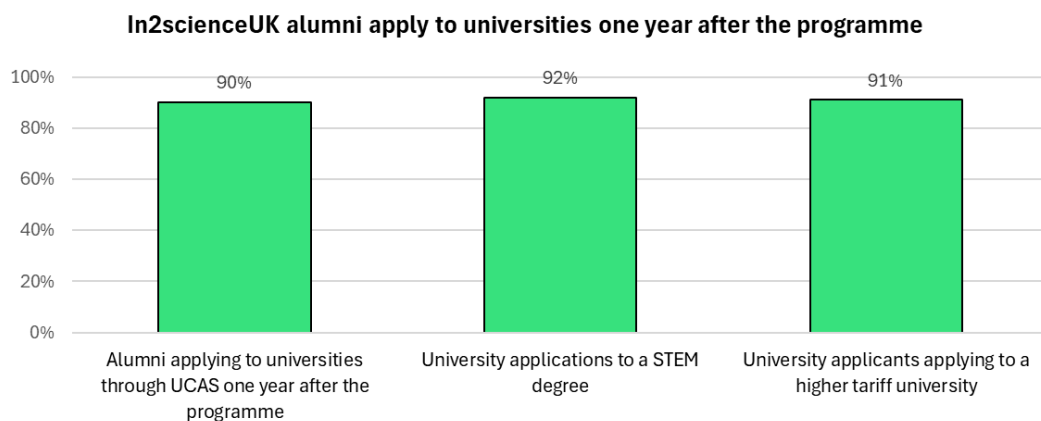


Figure 10

² formerly UCAS STROBE

³ Higher tariff universities are defined by UCAS Outreach Evaluator as representing the highest performing and most competitive institutions.

⁴ The data compares a database of UCAS applicants matched with the In2science summer programme using characteristics such as age, ethnicity, gender, postcode, proportion eligible for free school meals and academic achievement

Alumni are accepted into universities

97% of applicants were offered a place at a university and 77% of those were offered a place at a higher tariff university. Furthermore, 84% of alumni who applied to university accepted a place at university. And 59% of those who were offered a place at a higher tariff university accepted a place at a higher tariff university (Figure 11).

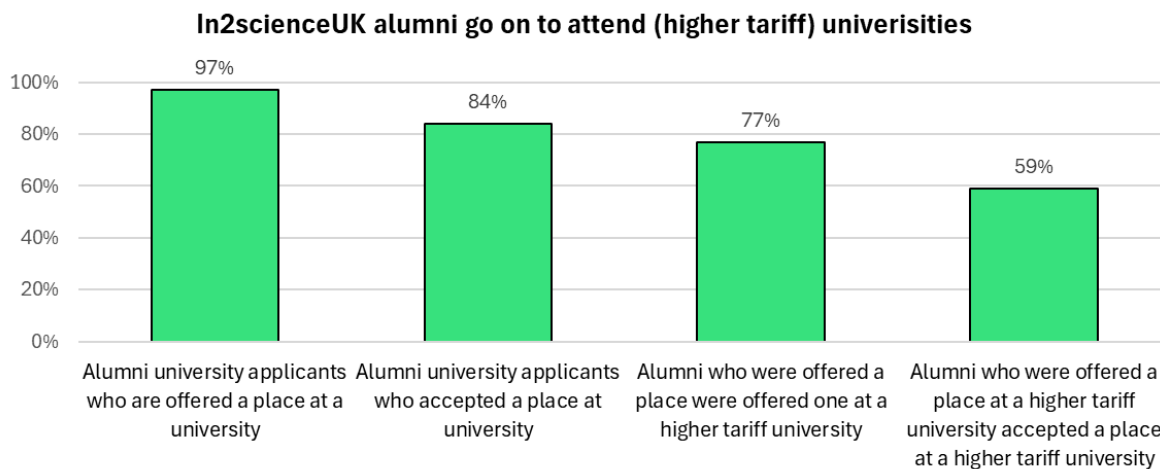


Figure 11

Many alumni go on to study a STEM degree one year after the programme

Data from the UCAS EXACT report shows that 92% of alumni who are accepted to university are accepted to a STEM degree. Table 1 shows a list of degrees that more than 5% of alumni from the 2020-2022 cohorts chose when they accepted a place at university immediately after school:

Table 1⁵

Subjects allied to Medicine	23%
Biological Sciences	20%
Engineering	14%
Physical Sciences	12%
Computer Sciences	7%
Medicine and Dentistry	7%

⁵ The table only shows degree subject that are chosen by more than 5% of alumni.

In2STEM Online

We extended last year's trial of In2STEM Online. The online programme has been designed to achieve outcomes similar to those of our In2STEM programme:

- first-hand experience of STEM outside of education
- knowledge about career access and destinations
- confidence that they can pursue a career in STEM.

206 participants benefited from the programme this year.

The online nature of the programme has the potential to reach a greater number of beneficiaries, including those who live in more remote parts of the United Kingdom, where in-person work experience placements are not currently accessible.

The programme offers:

- a series of workshops (in conjunction with the In2STEM programme)
- research lectures, including the opportunity to complete a research task, in one of four scientific areas in line with their subject interest
- Mentoring sessions with a STEM professional who works in the area of their subject interest.

This year's extended trial supported 206 participants and covered four STEM areas:

- Biosciences
- Computer Science
- Engineering
- Medicine, Healthcare and Biomedical Science.

We analysed the impact of the In2STEM online considering the responses of 158 participants that filled in our pre- and post-programme survey.

First-hand experience of STEM outside of education

The research lectures and workshops provide participants with a range of hands-on experiences and expose them to tasks relevant to a career in STEM. After the programme, there was an increase of 138% of participants (%change) who said that they participated in research or a science experiment outside of school. These types of experiences allow young people to gain insight into life as a STEM professional. Figure 12 summarises how participants are benefitting from these experiences throughout the programme.

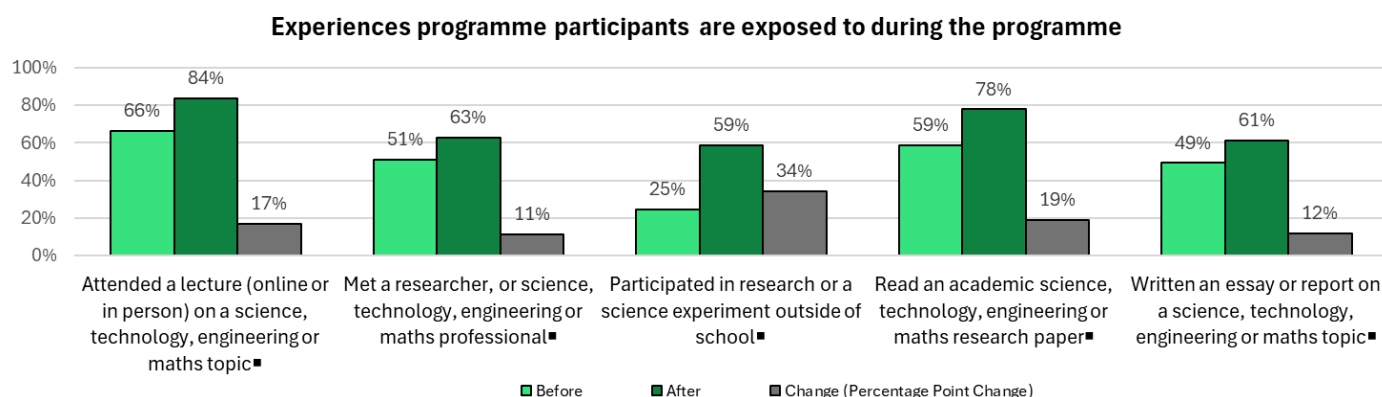


Figure 12

Knowledge about career access and destination:

Figure 13 shows that participants absorb important knowledge about STEM careers and jobs during the programme and that they are exposed to professionals who can give them advice for their UCAS application.

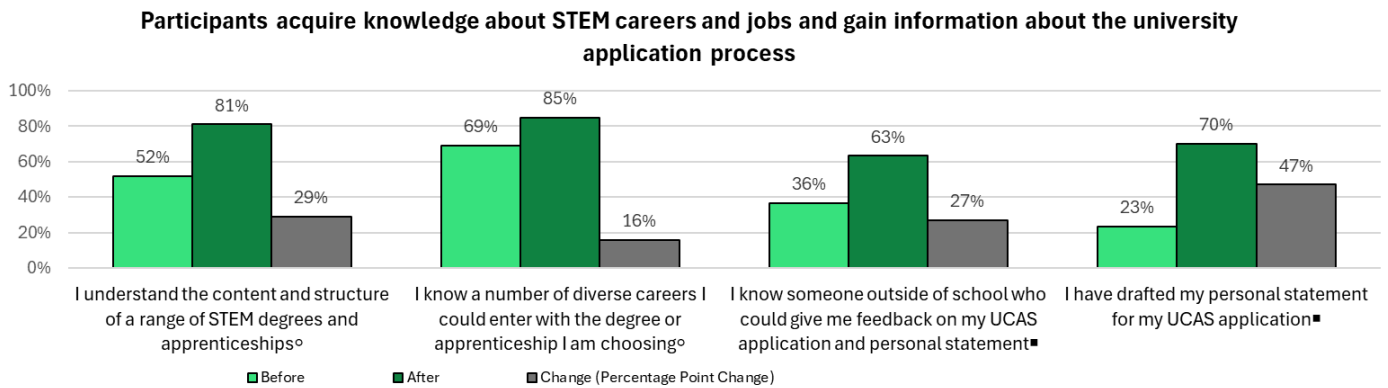


Figure 13

Confidence that they can pursue a career in STEM:

After the programme, 92% of participants said that they would like to pursue a career in STEM. The combination of workshops, mentoring sessions and research lectures increased the confidence of our beneficiaries that they can successfully complete a STEM-focused education and that they can become part of the STEM community. After the programme, there was an increase of 48% of participants (%change) who agreed that people who are like them work in STEM. Figure 14 summarises how participants gain confidence throughout the programme and how their belief system changes.

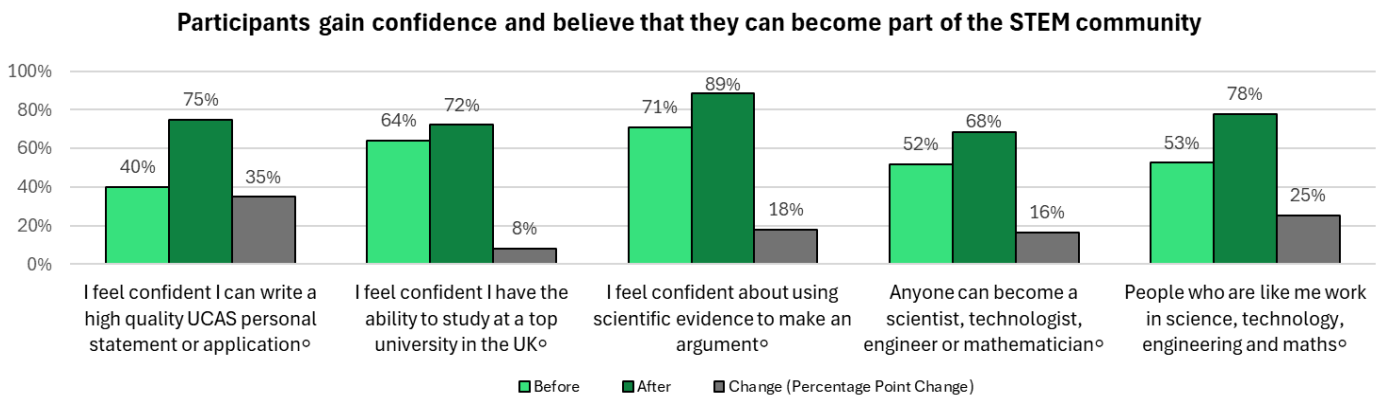


Figure 15

Looking into the more distant future, more than 60% of participants aspire to do a Master’s degree and more than 40% to do a PhD one day (Figure 15).

Longer-term career intentions

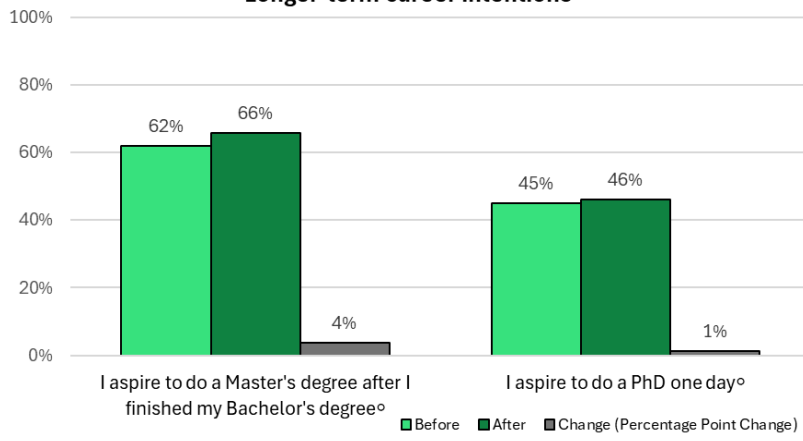


Figure 16