

Making virtual programmes engaging, effective and inspiring: the charity In2scienceUK takes outreach online

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(Founder and CEO of In2science, UK)

The charity In2scienceUK has a mission to empower young people from lower socio-economic backgrounds to achieve their potential and become the next generation of scientists, technologists, engineers and mathematicians. For the last 10 years, In2scienceUK has worked in collaboration with the Biochemical Society to leverage the passion and expertise of researchers to make the difference and provide inspiring work placements and high-quality advice and guidance to hundreds of young people in need. In March 2020, when COVID-19 put a halt to a programme that was delivered entirely face-to-face, the team took to the challenge of transforming the programme for online delivery. Here, Dr Rebecca McKelvey, Founder and CEO, discusses this transformation.

Challenges for young people from lower socio-economic backgrounds

Young people from lower socio-economic backgrounds are less likely to go to top universities or become an academic or life science professional than their wealthier peers (see [Figure 1](#)).

COVID-19 has highlighted these inequalities in education and careers further. Those who live in the poorest regions and have neither the money nor connections from family and friends to access placements and support are those who have lost invaluable educational opportunities. We found that many more young people were consequently seeking support and we had more students on the programme than ever before.



Figure 1.

The In2scienceUK Virtual Placement Programme

The team was also inundated with researchers signing up to make the difference as mentors and in turn developed an inspiring programme that had researchers and their exciting research at the heart of the scheme. Over 560 young people entered a subject stream of their choice and completed the programme, which included:

1. Completing two research modules formed and delivered by researchers. Each module included information about the researcher, an outline of objectives and keywords, a pre-reading task and a quiz, which young participants had a week to complete. This was followed by a live lecture, a home-based research task and a follow-up lecture. We had 43 research modules in total. One such research module was delivered by Dr Richard Horniblow, a researcher at the University of Birmingham in the Department of Biochemistry and Molecular Biology, which had participation from 66 students (see Figure 2).
2. Online mentoring which paired small groups of students with a researcher, developing their soft skills, meeting a professional who is not their teacher, and finding out more about science research and careers. In total, 217 hours of mentoring was delivered.
3. Online workshops which gave students access to 39 different workshops, featuring subjects such as science, technology, engineering and mathematics (STEM) careers, employability skills and university access, and enabling young people to gain high-quality information, guidance and support.
4. Public engagement competitions which all young people complete to develop writing and communication skills.



Figure 2.



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The engagement of all young people across the programme was excellent and the impact of the programme can be [read here](#). As a result of this success, our 2021 programme will continue to run research modules and mentoring online, even when face-to-face placements can return. The additional benefit of a digital programme is that it enables young people, wherever they live, to gain an insight into research that interests them, connecting them with a relevant researcher even if that person is on the other side of the country.

For individuals aiming to deliver online outreach, we suggest the following tips:

- **Pedagogy is queen**
Research shows that *how* you convey information online is even more important than the content itself, and we could not agree more. The delivery of anything must be engaging, so always have a high-energy, fun icebreaker at the start. The use of live polls, Q&A in the chats, quizzes and discussion boards are also recommended.
- **Young people get embarrassed online**
Although we know young people are digitally savvy, they still need guidance on online etiquette in a professional setting. We found that young people were unsure what to do during mentoring and would often keep their videos and mics off. Therefore, preparing young people for mentoring or workshops and increasing their confidence online are just as important online as it would be for face-to-face equivalents.
- **Researchers also get embarrassed online**
Make sure there is a member of the team at the start of workshops to introduce your volunteer and ensure a smooth launch of the session. Although many researchers know how to deliver lectures in person, online can be more complicated. Provide your volunteers with guidance on how to pitch content and how to create engaging quizzes, Q&As and so on.

Get involved and make a difference

Following the successful transformation to online formats, we have realized the benefits of virtual delivery, which we will maintain alongside the return of face-to-face placements. If you are a researcher or STEM professional and would like to sign up, please go to our website at in2scienceuk.org and tick that you are a member of the Biochemical Society. ■