



# Enrichment Workshops to Enhance Student Engagement and Employability

## eSTeEM Final Report

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School of Life, Health and Chemical Sciences, July 2024

Keywords: Employability, Skills-development, Enrichment, Community-building, Active learning

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# Executive Summary

The aim of this project was to evaluate the programme of enrichment workshops which had been offered to biology and health sciences students in the School of Life, Health and Chemical sciences at the Open University during the summer months in 2022 and 2023. The aims of the enrichment workshops had been to enhance and enrich our students' experience, help them to understand and appreciate the employability benefits of engaging with practical science investigations in their modules, recognise their employability skills and employment possibilities, and feel a sense of belonging to a scientific community.

The project involved evaluating the success of the programme. This was done by scrutiny of feedback comments submitted by students who attended the workshops in a pilot programme of workshops presented in June and July 2022 and in a more extensive programme which was presented in 2023, and through informal discussions with one student who was a regular attendee at the 2023 workshops, and helped represent the student perspective at the 2024 eSTEEem conference workshop who is, therefore, listed here as a project coauthor.

Feedback comments were submitted by participating students in response to a survey which was provided via a link to those who attended the live event. Some of the survey questions related to the individual workshops and their content, and others related to the programme as a whole. In this project, we scrutinised all the comments, and grouped them into themes. This was conducted by

manual tagging rather than use of software. Comments from the student coauthor were gathered through verbal and email communication with the other project team members whilst planning for the eSTeEM workshop. Suggestions for possible future improvements and additions to the programme were discussed by workshop attendees. Evaluation of the programme indicated that it had been successful in helping students to appreciate and articulate their employability skills, especially those gained through engagement with the practical investigations on their modules. Moreover, it led to an increased sense of community among students, and provided an opportunity to maintain engagement over the summer months when there is a break in module presentation and when many students tend to lose their study momentum.

Following the success of the programme as demonstrated by this evaluation, the LHCS Board of Studies agreed to continue to fund the enrichment programme. A further series of workshops were held in the summer of 2024, and it is hoped that the programme will continue.

Recommendations for the future include involving OU graduates who are now in employment, and encouraging more tutors to join as participants to gain more understanding of the student viewpoint. These actions could enrich the online community of participants in the programme.

Other recommendations include exploring the reasons why many students did not engage with the online enrichment programme, and what might make our online offering more attractive to a larger number of students.

A similar online enrichment programme could potentially enhance employability, engagement and community building in other OU Schools, and also on a more extensive STEM-wide basis and at other HE Institutions.

## **Aims and scope of the project**

The aims of the programme of enrichment workshops were to help students recognise the employability skills they are developing – in particular the practical investigations within their modules – as they progress with their studies, to feel a sense of belonging to a scientific student community, and to keep their study momentum going over the summer months. This project was undertaken in order to evaluate how effective both the pilot programme of workshops of June and July 2022, and the expanded programme of 2023, had been in achieving these aims.

## **Background and literature review**

Employability is crucially important in contemporary Higher Education (HE). The Office for Students (OfS) has proposed numerical thresholds to underpin requirements for minimum acceptable student outcomes (Advance HE, 2022). HE institutions have striven to develop and strengthen activities which relate to employability because potential students are increasingly and rightly interested

in graduate destination data. However, employability is not always interpreted or measured in the same way by different institutions and employers (Osmani et al, 2019; Abelha et al, 2020). For example, it may relate to the ability to keep a current job or progress to another job rather than to get a first graduate job (Clifton and Kellet, 2017).

Student success in HE is dependent on a wide range of factors. The method and practice of teaching needs to support the development of appropriate skills to enable students to succeed in their studies, pass their modules and return to take their next ones, and hence achieve their study goals. Extra-curricular enrichment opportunities can add enormous value to a core curriculum which equips students with appropriate employability skills, by broadening perspectives and helping students to relate degree work to life in the outside world (e.g. Wilson et al, (2014); Arnold (2019)).

The Open University (OU) is a distance learning university where students rarely, if ever, meet their fellow students or tutors face-to-face, and this presents additional challenges, especially for helping students to develop practical and collaborative skills. This is particularly important since the demise of week-long science residential schools, where laboratory practical investigations were undertaken. A survey of OU biology students which explored students' perceptions of their practical skills progression and employability (Haresnape, 2022) revealed that many students do not appreciate the employability benefits of engaging with remote practical investigations which they undertake at home or in a garden or other local field site or realise that undertaking practical work

can help them to develop creativity, resilience and perseverance as well as practical, problem-solving and numerical skills.

Also crucially important for employability is being able to be sensitive to the feelings of peers, given that there is growing realisation that future graduates will need empathy as well as technical skills (Brett, 2018). Helping undergraduates to develop such sensitivity is likely to require development of a sense of community and of belonging. It has been suggested that learners are unable to make use of the wider academic developmental possibilities offered through higher education without acquiring a sense of belonging (Strayhorn, 2012), and consequently the concept of sense of belonging has become increasingly recognised as important in recent years. Those who feel a sense of belonging tend to be more motivated and more engaged with their studies (Matheson & Sutcliffe, 2017; Meehan & Howells, 2018), and there is evidence that a sense of belonging is associated with not only improved learner satisfaction and lower attrition rates, but also with increased student attainment (O’Keefe, 2013).

Enabling students to develop a sense of belonging and feel part of a community is more of a challenge in distance learning environments such as at the OU than at campus-based institutions where students have regular opportunities to meet face-to-face. Online learning can be a lonely experience, especially to start with. Encouraging students to develop connections with their peers helps online learners to flourish and avoid the sense of isolation and disengagement which distance learners may feel (Thomas, Herbert & Teras, 2014). The series of



interactive workshops piloted over the summer of 2022, and expanded during 2023, were perceived as a means of helping students to form such connections.

# Activities

## Pilot programme of enrichment workshops, 2022

We offered eleven online workshops to biology and health sciences students from the OU during June and July 2022 when most were 'between modules'. They were facilitated by OU tutors, and focussed primarily on practical employability skills, through the tutors' experiences of working in a biology or health-related laboratory or engaging with field work in a biological context.

All OU tutors in LHCS were invited to submit a proposal for one or more workshops which they would be willing and available to facilitate, and which would incorporate something relating to the employability skills required in a particular field or line of work. All respondents were invited to facilitate a workshop, in some cases after further clarification of what the purpose of the programme was and how their proposal might most appropriately fit the criteria outlined.

The workshops took place in an online room designated for OU Science students. Some focussed on biology-related jobs, with the facilitators giving first-hand knowledge of what a particular job was like (e.g. field-based job, lab-based job, and working in bioinformatics), elaborating on the particular skills

required in each case. Others focussed on a biology or health science related topic of general interest (e.g. foodborne pathogens, microbiology of fermented foods, the state of the global HIV epidemic). One tutor was appointed to coordinate the programme; she ensured that each workshop was recorded, introduced the facilitator of each one, welcomed the students, encouraged active participation, posted the link to a feedback survey at the end of each workshop, and passed follow-up questions from participants on to the facilitators. There was also an online forum which was available for communication with and between students to follow up discussions.

Invitations to the workshops were sent by email to students after the June 2022 exams had finished. They were initially sent to those studying Level 5 (equivalent to 3<sup>rd</sup> Year undergraduate) biology modules (1446 students), who would be continuing further Level 5 study the following year. The invitation was later extended to all students studying Level 4 and 5 (equivalent to 2<sup>nd</sup> and 3<sup>rd</sup> Year undergraduate) biology and health science modules (2750 students). Details of the programme of workshops were also posted on the appropriate forum for each of the biology and health science modules.

Despite the large number of students invited to attend, the average number attending each workshop was between 10 and 15. However, all workshops were recorded, and a total of 149 different students either attended or accessed the recording of at least one workshop in the programme. Thirty-two students either attended or watched the recording of at least four of the workshops, and six students either attended or accessed the recording of all eleven workshops.

## **Extended programme of enrichment workshops, 2023**

Following the successful student engagement with the June–July 2022 pilot, the programme was expanded for 2023. It was launched earlier in the year, in May 2023, and following a pause for the exam fortnight in June, continued until the end of September. It was expanded to include workshops covering chemistry as well as biology and health science topics, and three tutors were appointed rather than just one because of the additional work involved – one to lead the organisation and coordination of the programme and two to help support and facilitate the sessions. A much larger number of students were invited to attend – email invitations were sent to all students studying modules in the School of Life, Health and Chemical Sciences (approximately 6,000 students). The programme was advertised earlier in the year, and reminders were sent more frequently – via an email at the beginning of each month advertising those workshops scheduled during the coming four weeks. Module tutors were also asked to promote the programme to their students.

The 2023 programme included a wider range of workshop topics and styles, covering not only generic employability skills and included some different workshop approaches and styles as listed below.

- Overviews of research being undertaken at the OU.
- Coverage of transferable and technical employability skills, and the availability of advice and guidance from the OU Careers and Employability Service.

- A workshop on library skills development facilitated by staff from the OU Library.
- Panel discussion with PhD students – including both current and recently completed students.
- An 'Open for all' online Journal Club.

A total of 22 events took place between May and September 2023. The numbers of students attending each event ranged from 5 to 29, with an average of 13. The number of students accessing the recording of each session by the end of September 2023 ranged from 15 to 63, with the recordings still available for download. If the facilitators were happy to share their slides (most were), they were posted on the Science community forum, which is a forum available for all OU science students, along with a link to the recording.

Although numbers attending each event were still relatively low, over 200 different students attended at least one live event (c.f. 64 in 2022) and 443 different students either attended or viewed the recording of at least one event (c.f. 149 in 2022).

Interaction during each event was excellent with active participation in polls, internet searches, discussions and other online activities. The use of breakout room activities was largely avoided because many students left the 2022 workshops when breakout room activities started.

## **Workshop at the eSTEEeM conference, 2024**

We held a workshop during the 2024 eSTEEeM conference based around the enrichment programmes we had run to try to enhance student engagement and employability. Following an overview of the programme of enrichment workshops held in 2022 and 2023, and of the feedback received, delegates were invited to discuss whether a similar summer programme of interactive online enrichment events might be popular in their Schools or Academic Departments, what further suggestions they had for such a programme, and what they perceived that the potential benefits and challenges might be. Our five facilitators included those who had been involved in running the 2023 programme of enrichment workshops in LHCS and our student coauthor. Each led a different break-out discussion, with two online and three face-to-face groups and one facilitator in each.

Notes from each of the break-out room discussions were collated and a summary of these is presented in the Findings section of this report.

# Findings

## Feedback on the pilot programme of 2022

All respondents to the feedback survey reported that the session they attended had helped them to understand the skills required for a particular field of work (Figure 1(a)), and also that the programme had helped them to feel part of a community of biology students (Figure 1(b)). Nearly all the responses were from students who attended the live events.

### Responses to two survey questions.



(a)



(b)

Figure 1 (a) Responses to 'Did this session help you to understand the skills required for a particular field of work?' (b) Responses to 'Is this programme helping you to feel part of an OU community of biology students?'

The free text comments indicated that the programme had been successful in raising awareness of different possible career paths for some students and had also encouraged students to relate their studies to possible future employment opportunities (Haresnape, Gilbert & Fraser, 2024).

## **Overall summary of feedback, 2022 and 2023 programmes**

The feedback comments from participants in the 2022 and 2023 programmes were very similar and generally all very positive. Following scrutiny of the feedback obtained from the survey responses, and from discussion with our regular student participant and coauthor, three main themes emerged, as detailed in the subsections below:

### **1. Building employability**

Many comments indicated that the sessions had helped students understand both the skills and the challenges involved in undertaking field work, had opened their eyes to opportunities which they were not previously aware of, and led them to consider possible career avenues they had not previously known about – one student had never heard of bioinformatics and was delighted to realise that this could be a possible career path. Our student coauthor

particularly emphasised how inspiring she found it that many of the facilitators shared a short history of their own personal career journeys to date.

The workshops had highlighted many different aspects of employability to the students who engaged with them, as illustrated in the following examples:

- Invaluable skills students developed during their studies and how to emphasise these in CVs/job applications and at interviews.
- Use of practical investigation experience to demonstrate not only problem solving, communication and numerical skills, but also creativity, networking and resilience.
- Resources and support available via the University Careers and Employability Services, including a professional planning tool, FutureYOU.
- The concept of Global Citizenship and what it entails in the context of Life, Health and Chemical Sciences.

## **2. Bringing studies to life**

Our student coauthor reported that every workshop she attended had included content which she could relate to material from her OU modules, and that this provided deeper insight into various different specialist areas. Other students reported that the real experience of the facilitators had brought individual topics to life and enabled them to relate their degree work to the outside world, for example in illustrating how a biological technique they had learnt about is used in research to explore real-world problems.



By participating in these workshops led by OU experts, students were able to better appreciate the relevance of their studies and feel more connected to the broader scientific community at OU. This engagement not only enhances their learning experience but also reinforces their identity as part of a vibrant research-driven institution.

### **3. Feeling part of a community**

The students reported that the workshop facilitators were all very approachable and open to questions. The wide range of interaction techniques used in the enrichment sessions including polls, anonymously typing a keyword to create a word cloud, and the use of drawing tools, led our student coauthor to report that she had felt entirely comfortable about asking questions and engaging in further discussion on each topic during the workshops. The interactive tasks and questioning style, which asked student participants for their own views, had led her to feel very much part of a scientific research community.

The Online Journal Club (OJC) sessions also helped to create a sense of belonging among those who participated. In the first session, two tutors and one student each presented a summary of a paper they had read. Through leading by example, the tutors were able to encourage students to join in themselves. Although OJCs at the OU are not usually recorded (New et al, 2024), the first one in this programme was recorded so that students could watch the recording before committing to giving a presentation themselves. Fifty-one different

students accessed the recording. Subsequent Online Journal Clubs were held monthly but not recorded so that participation was less intimidating for students, and had an enthusiastic following of regular attendees and contributors.

## **Reflections on student engagement**

Similar programmes of interactive online enrichment events could provide valuable opportunities for both students and facilitators to make connections, build community reflect on their learning and see it in a wider context, both within LHCS, but also in other OU Schools and other HE Institutions.

Many different such opportunities were discussed during both face-to-face and online breakout room activities at a workshop at the eSTeEM conference in April 2024. Workshop participants could see the value of introducing online enrichment programmes in their Schools, for example:

- As a valuable replacement for the OU Summer Schools which no longer take place and where enrichment activities were a regular feature
- To inform students about the work of OU researchers – this is important since many students are not aware that research is undertaken at the OU.
- To cover particular topics such as ‘OpenSTEM behind the scenes’, to help explain how online science experiments can be created.

Recommendations from participants at the eSTeEM conference workshop included:

- Advertise through multiple channels, since emails are easy to miss or ignore.
- Use a medium other than Adobe Connect that the students are more likely to engage, such as perhaps a live digital whiteboard.
- Use a mobile phone layout since many students don't use laptops regularly.
- To motivate more students to attend events and involve a wider range of participants, multidisciplinary sessions could be valuable
- Expand enrichment events to take place regularly throughout the year – there is not necessarily any requirement for them to be restricted to the summer months.
- Introduce more direct links to employability by including input from industry, involving OU graduates now working in industry, embedding graduate interview videos.
- Link events to conferences taking place, for example on Women in maths, physics or engineering.
- The panel Q & A format is useful because it does not involve much preparation. One STEM School (School of Physical Sciences) already runs a PhD forum, which could perhaps be expanded to include this.
- Ask students what would interest them.
- Invite tutors to attend the workshops alongside students as this could not only encourage the development of an improved sense of a STEM

academic community but could help tutors gain a better understanding of student perspectives.

- Make titles catchier to attract students to attend, especially for topics which might at first seem rather dry.
- Promote workshops on specialist topics to students on related modules.
- Award badges for active participation in workshops such as the one on Excel skills.

The number of attendees per workshop was similar in 2022 and 2023 despite extending the programme over a longer period and inviting a larger cohort of students in 2023. Tutorial participation at the OU is not compulsory, and an attendance of 10–20 percent of a cohort can be the norm, even when tutorials are part of the core teaching within a module. For enrichment workshops which are not part of the core curriculum, we would generally expect a lower proportion of students to engage. Nevertheless over 440 different students either attended or downloaded the recording of at least one event from the 2023 programme (compared with 149 in 2022), which was very pleasing, and which we were able to report back to the Board of Studies who had funded the programme. Including a greater variety of events in the 2023 programme and spreading them out over a longer period had therefore widened access to different enrichment opportunities for our students and enabled more of them to find something of interest within the programme.

The feedback we collected was provided by the students who attended the workshops. As with online tutorials, it is relatively straightforward to collect feedback from participants but much more challenging to explore the reasons

behind non-attendance. One interesting point made by our student coauthor, was that she always saved the links which were in the reminder emails she received, so that she could be sure of finding the online room on the Science Study Site where the enrichment events were taking place. She reported that she didn't find it easy to navigate to the Science Study Site without the link provided in the email reminders. Emails are easy to miss or ignore, and moreover it can be challenging to navigate the OU websites from a mobile phone. Since many students use mobile phones rather than laptops for their regular engagement with the OU, we suspect that this might be a reason for non-engagement, both with the workshops evaluated here and with OU online tutorials more generally. It is also possible that students would be more likely to engage with a live digital whiteboard than with Adobe Connect, which is the platform currently used for OU tutorials.

# Impact

## Student experience

The evaluation of the 2022 and 2023 programmes of enrichment workshops provided evidence that it had enhanced employability awareness and community building among the OU students who engaged with them. Students who attended gained a deeper understanding of the ways in which they develop their employability skills as they undertake their studies, particularly through undertaking the practical investigations which are embedded in their

modules, and an increased sense of belonging. Developing a sense of community and hence sensitivity towards peers is important for employability as well as for student success (Brett, 2018).

Some workshops had provided a valuable partial substitute for the OU science summer schools which no longer take place. Before this, the OU science residential summer schools offered practical and enrichment activities, fostering connections among students and tutors and creating a sense of belonging to the OU scientific community, similar to the enrichment programme.

The 2023 enrichment workshops which included some in which the work of the LHCS research clusters was presented and discussed, provided an opportunity for students to learn more about the research which is undertaken at the OU. Many students are unaware that the OU has ongoing programmes of research, or that in many cases, it is this research which underpins the curriculum. The enrichment programme had given students the opportunity to see this for themselves.

Since the online enrichment programme has started there has also been increased interest in students contributing to and building their own communities. This was evidenced by students who had participated in the enrichment sessions setting up a student-led writing journal club and a student club on biomedical science. It was also interesting that our student coauthor reported that because of her engagement with both the tutors and the students involved in the workshops, she felt part of a community of scientists rather than part of a community of OU students.

## Recommendations and further work

In future programmes, we would recommend including involvement from OU graduates who are now in employment. It might be possible to use Alumni channels to reach out to those who have capitalised on the skills they developed while at the OU and share their experiences with our current students.

Further work is needed to explore additional the reasons why many students did not engage with the online enrichment programme, and what we might do to make our online offering more attractive to a larger number of students. This could also include a deeper exploration of reasons for non-attendance at online tutorials which form part of core module tuition.

We would like to encourage more OU tutors to get involved with the programme, not only as facilitators, but also as participants, attending alongside the students. This would provide enhancement opportunities for tutors to learn more about what works well in an online tutorial, and to gain a better understanding of the student viewpoint, in addition to learning about new and unfamiliar topics. Furthermore, it would expand and enrich the online of community of participants in the programme.

We suggest that summer programmes of interactive online enrichment events similar to those we have reported on here would provide valuable opportunities

for both students and facilitators not only within other Schools at the OU, but also at other HE Institutions, for example:

- For students to make new connections and build community.
- For students to reflect on what they have learnt and see their learning in a wider context.
- For students to continue their learning journey whatever their geographic location, enabling both UK-based and international students who return home over the summer to feel less isolated during the long break.

In summary, a similar online enrichment programme could be beneficial in other STEM schools to enhance employability, community building and engagement. Many students are interested in a wide range of subjects including those beyond the main focus of their study. If resources were available, we would recommend running a more extensive programme to cover more disciplines, involve a wider range of stakeholders, and reach more STEM students, both in other OU Schools and at other HE Institutions.

## **Acknowledgements**

We would like to thank all the tutors and research staff who facilitated the events in the enrichment programmes, and also all the students who participated in them. Thanks also to eSTEEem for providing both financial and logistical support for this project.



# Dissemination

## Deliverables

Haresnape, J. (2023) Enrichment workshops to encourage awareness of employability skills. Presentation at Horizons in STEM conference, Swansea, June 2023

Haresnape, J., Fraser, H., Bown, H., Ruiz, D. and Gandy, H. (2024) Online enrichment workshops: how these can help you engage and enrich your students' experiences. Workshop at eSTEEeM conference 2024, April 2024.

Haresnape, J., Fraser, H., Bown, H., Ruiz, D. and Gandy, H. (2024) Online enrichment workshops – Enhancing Student Engagement and Employability. (submitted for consideration for eSTEEeM conference proceedings)

Haresnape, J., Fraser, H., Bown, H. and Ruiz, D. (2024) Online enrichment workshops: an effective programme to engage and enrich your students' experiences. Poster presented at Horizons in STEM conference, Bristol, June 2024

Haresnape, Janet; Gilbert, Ruth and Fraser, Heather (2024). Enrichment workshops to encourage awareness of employability skills. *New Directions in the Teaching of Natural Sciences*, 19(1) <https://doi.org/10.29311/ndtns.vi19.4560>

## Figures and tables

Figure 1 (a) Responses to 'Did this session help you to understand the skills required for a particular field of work?'

Figure 1 (b) Responses to 'Is this programme helping you to feel part of an OU community of biology students?'

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## University approval processes

This project was supported and funded by eSTeEM – The OU Centre for Scholarship and Innovation in Science, Technology, Engineering and Maths.

Project Reference 22F-JHRGHFHBDR-LHCS-01 and approved by the OU Student Research Project Panel (SRPP). It follows on from a previous eSTeEM project with project reference 17E-JH-LHCS-02.

