

Higher Education Learning Experiences Pre-, Peri- and Post-COVID-19: What Will Evolve, and What Will Survive?

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Mark Warnes¹, Simon Pratt-Adams¹, and
Claire V. S. Pike¹

Abstract

This article reports the results of a mixed-methods research project at one UK university to explore student experiences before, during, and after the COVID-19 lockdowns. The research questions were ‘Which HE learning experiences will be retained?’ and ‘Which HE learning experiences will evolve?’. All final-year undergraduates in the 2021/22 academic year ($n \approx 3,000$) were asked, via a survey and focus groups, to rate various formats of learning and teaching for their effectiveness for learning, building positive learning communities, and overall satisfaction. Students were also asked to list any features of their learning from before the pandemic that the University should reinstate, and any from during the pandemic that should be retained. Quantitative data were analysed using SPSS, and qualitative data were analysed using NVivo. Analysis suggests that prior to the lockdowns, students felt they had the full ‘university experience’ as they had anticipated. During lockdowns, students faced disorientation, isolation, and a lack of motivation, but appreciated not having to commute, and an improved work/life balance. After lockdown ended, students wanted to return to on-campus teaching, particularly for the social aspects, and to experience higher-quality teaching. Although large-group lectures on campus scored highly for both effectiveness and satisfaction, students wanted to retain recordings of live lectures for revision and unanticipated absences. Analysis by demographics indicated variations by gender, study mode (i.e. Part-Time/Full-time), learning difficulties, and caring responsibilities, emphasising the imperative to meet the differing learning needs of diverse student populations.

Keywords

student experience, online learning, learning communities, COVID-19 pandemic, emergency remote teaching

Introduction

The COVID-19 pandemic stimulated a ‘Cambrian Explosion’ of innovation in Higher Education (HE) teaching and learning approaches. Teachers, students, and universities were all actants, each having interests in sustaining valuable learning experiences. While unpredictability defined the pandemic, it featured ongoing commitments to educational values supported by beliefs about educational experience.

Final-year undergraduates in the 2021/22 academic year were uniquely positioned to reflect upon and evaluate pre-, peri- and post-pandemic learning experiences (i.e. pre = 2019/20 Academic Year (AY), peri = 2020/21 AY, post = 2021/22 AY). Thus, participants were Level 6 students ($n \approx 3,000$) at one UK university with a strong widening-participation agenda, featuring four Faculties that together cover a wide breadth of subject disciplines. This study uses both survey and focus group methods to understand, from the student’s perspective, how learning and teaching were

affected by the COVID-19 lockdowns. The research questions for this study are:

- Which HE learning experiences from before and/or during the pandemic will be retained?
- Which HE learning experiences will evolve?

Literature Review

The lockdown measures introduced by the UK government to address the spread of the COVID-19 virus came into force on 26 March 2020 (Institute for Government, 2022), and

¹Anglia Ruskin University, Cambridge, UK

Corresponding Author:

Mark Warnes, Centre for Innovation in Higher Education, Anglia Learning & Teaching, Anglia Ruskin University, East Road, Cambridge, CB1 1PT, UK.
Email: mark.warnes@aru.ac.uk



were lifted on 24 February 2022. Despite an uncertain hiatus characterised by conflicting government communiqués (Kyriakidou et al., 2020), university campuses were effectively closed from the second half of the 2020/21 academic year, resulting in the introduction of a range of online, distance teaching, primarily via video conferencing software. This resulted in the introduction of blended and ‘hyflex’ (i.e. *hybrid* and *flexible*) approaches to learning and teaching (Lee, 2022), which some saw as a panacea, particularly those institutions which had been reluctant to shift from traditional learning approaches (Dhawan, 2020). However, the rapid pivot to ‘Emergency Remote Teaching’ (ERT) (Khanal, 2021) presented a challenge to some students and university staff who, in many instances, were not prepared (Erlam et al., 2021) and had to acquire or improve their skills to operate in the digital context. Moreover, ERT differs from typical online delivery as it ‘is a *temporary* shift of instructional delivery to an alternate mode due to crisis circumstances’ (Hodges et al., 2020, para. 13 [emphasis added]). The pandemic also required instructional designers and developers to provide support strategies to staff to repurpose course content initially designed for face-to-face sessions to achieve effective online delivery (Svihus, 2024). As Abramenk-Lachheb et al., (2021, p. 295) explain, ‘Faculty and instructional designers were challenged to develop high-quality learning experiences in less than 2 weeks at almost every campus globally’.

Online Learning

The switch to online learning meant that, in many institutions, vocational education, work-based projects, professional placements, internships, and dissertations involving primary research, had to halt or to be adapted to use online platforms, where possible (Thanawala et al., 2021). This learning experience was quite different to that expected by students when they applied to university (GuildHE, 2020). Furthermore, for some, the inability to remain engaged resulted in negative student perceptions, leading to their questioning of the value of the experience (Varela & Desiderio, 2021).

The move to virtual learning had both positive and negative pedagogic consequences for students (Dhawan, 2020; Khanal, 2021). In addition, the mandatory requirement to work from home posed significant problems for both staff and students, including practical and behavioural challenges. This important work included converting these challenges into opportunities and benefits to learning (Erlam et al., 2021), such as empowering students to be responsible for their own learning (Sharma, 2020).

Working from home revealed ‘a deep digital divide between the most technically and least technically aware and between those with adequate and inadequate access to suitable technology resources’ (Khan, 2021, p. 1173). This inequality was particularly true of student digital accessibility, which increased

during the period of the pandemic (Liasidou, 2022), and while ‘it is assumed that students will engage with technology seamlessly and with little difficulty . . . a proportion of the student population will now encounter difficulties with the technology-heavy approach to learning’ (Burns et al., 2020, p. 6).

The home environment presented practical difficulties for some students, including privacy, space to work, caring responsibilities, or reluctance to show their home environment on camera (Arrove, 2020). These concerns may relate to their social and economic status and their perceived judgement by others, however, lack of student engagement and visibility can have psychological consequences and deprive them of their education (Neuwirth et al., 2020).

Student Health and Wellbeing

Student physical health (Borkin, 2021) and mental and psychological wellbeing were negatively affected during and after the pandemic, including social isolation, poverty, grief, loss, and anxiety (Montacute & Holt-White, 2021; Morris et al., 2021, Liverpool et al., 2023) with increased levels of anxiety between pre-pandemic 2019 and 1 year into the pandemic in 2021 (Bennett et al., 2022). Furthermore, physical location changes and disruption resulted in reduced interaction and isolation (Khan, 2021), such as campus closure, and no in-person contact with and support from staff. Along with the inability to meet with fellow students and friends, this meant that ‘[t]he likelihood that students will experience more frequent and intense feelings of loneliness, anxiety and isolation is high, owing to the disconnectedness many will feel as a result of leaving the university campus’ (Burns et al., 2020, p. 7). Alghamdi (2021), for example, found that the social impact of the pandemic on students’ lives was greater than the educational impact.

Many students experienced financial difficulties during the pandemic as part-time employment was terminated, and their families were less able to support them financially (Edge Foundation, 2020). The Sutton Trust identified assessment, support, and finance issues as the main concerns for incoming students (Montacute & Holt-White, 2021). Students also demanded justification for the cost of tuition fees, considering that tuition was online (Silveus & Ekpe, 2021), plus rent refunds as they were sent home during lockdowns (Tyler, 2021).

While the internet and social media provided social networks, online nonfactual content and misinformation, and confusing governmental messaging and political spin about COVID-19, was overwhelming (Kyriakidou et al., 2020). These concerns were coupled with students’ fear of contracting COVID-19 and uncertainty about their future following graduation, which affected student wellbeing (Evans et al., 2021; Goldstone et al., 2021). Montacute & Holt-White (2021) raised the negative impact of the lack of opportunities for students’ skills development in the longer term as a serious concern for future employability and

social mobility. In addition, negative outcomes for graduating students, such as delayed ceremonies, loss of jobs or internships, or job offers in an unpredictable job market (Varela & Desiderio, 2021), affected students from lower socio-economic groups more than their higher-income peers (Aucejo et al., 2020).

Lockdown had a negative effect on student mental health and wellbeing, with students reporting isolation, loneliness, decreased motivation and increased stress (Borkin, 2021). Studies found that students were knowledgeable about the global problems and used various strategies to cope with mental health issues (Baloran, 2020). Universities set up a range of support services during the pandemic, such as online wellbeing services, mental health resources, and counselling services to support vulnerable students who were physically distant but needed to be socially close (Thanawala et al., 2021). Bennett et al. (2022, p. 603), however, demonstrated ‘improvements in mental health outcomes in 2020, followed by worsened levels of anxiety and lower levels of [Subjective Well-being] in 2021, compared to pre-pandemic data collected in 2019’, suggesting that the problems increased over time. However, for some students who felt anxiety from the social judgement of others, the lack of face-to-face meetings was seen as a positive outcome of moving online (Burns et al., 2020).

Student Experience

The pandemic created shifts in a previously streamlined student learning experience, which disrupted student experiences to which they were accustomed or had expected when they came to university (Edge Foundation, 2020). Many students entering university during the pandemic had experienced extended periods of school closures and found their transition to university was negatively impacted (Borkin, 2021). Disabled students experienced delays with their Disabled Students’ Allowance, with one report stating that over three-quarters of these students were not offered interim support by their university (Borkin, 2021). Moreover, the Disabled Students’ Commission (DSC) notes that the challenges faced by disabled students entering university during the pandemic were more severe than before the pandemic (DSC, 2021). Consequently, there are concerns that attrition of disabled students from the university before completion will increase.

While it is a university aspiration that students will develop and rely upon their own resources during their student journeys (Thomas et al., 2015), the imposition of self-directed online learning (Sharma, 2020) was accelerated by the pandemic (Organisation for Economic Co-operation and Development (OECD), 2020). While some students found online learning natural, it did not suit others. This response is particularly true of students with learning difficulties who found the move to online learning more challenging (Sutton, 2020; Homanen, 2021). Borkin (2021) reported the majority

of disabled students supported a blended learning model that includes some face-to-face interaction.

Tejedor et al. (2021) explain that many students rely on regular communication, mentoring, and ongoing feedback about progress with their learning, yet this may not be so readily accessible online. They also refer to reports of shorter and more sporadic tutorials. While most universities trained Faculty staff to teach online using virtual classrooms (Rapanta et al., 2020), Neuwirth et al. (2021) suggested that universities should have also considered training students to adapt to, and engage with, the changes in curriculum delivery. Morris (2021) raised questions about whether students had the necessary skills to adapt to self-directed learning, and whether future curriculum design should provide students with competencies for a rapidly changing and complex social world. For this reason, some students reported an absence of support from university staff during lockdown (Khan, 2021), with staff relying on textual and audio-visual material rather than an innovative mix of multimedia resources and options, which some students requested (Tejedor et al., 2021). An understanding of the structure of student support networks, and the formal and informal support that students used during the pandemic, will be pivotal to maintaining and improving future student commitment to their learning (Homanen, 2021).

During the pandemic, students experienced a changing assessment landscape, with some experiencing new and novel approaches to assessment (Mottiara et al., 2024). However, unbalanced transition, lack of communication, and uncertainty about assessments caused challenges for universities, such as safeguarding academic integrity and practices during online delivery and assessment (Gamage et al., 2020) as well as creating anxiety among students (Burns et al., 2020).

Post-lockdown Return

Since returning to campus, universities have focused on how to re-engage students in campus spaces so they can once again take part in both organised and informal social activities. Homanen (2021), for instance, anticipated that universities would need to continue to provide easily accessible, flexible, and timely support and guidance for existing and future students for some time to come. These adjustments will include staff finding new ways of working with students and being provided with the tools to offer ‘good enough’ responses to promote and support student mental health (Morris et al., 2021, p. 14).

Thanawala et al. (2021) indicated some student satisfaction with online learning during the pandemic. However, students also faced a series of challenges including ‘responsibility for their study, self-discipline to complete assignments, and the fact that all materials had to be studied online . . . [and] distractions at home or changes in daily routines’ (Homanen, 2021, p. 31), and, where feasible, universities attempted to address these issues (Crawford, 2023). Some students, for

example, value the flexibility and ‘anytime, anywhere’ opportunities for online study (Lall & Singh, 2020). One Indian study found a statistically different perception towards pre- and post-pandemic learning methods, with a better perception of a pre-pandemic mixed mode of blended learning than post-pandemic online learning (Sharma & Alvi, 2021).

The ‘New Normal’

Zhao and Watterston (2021, p. 3) summarise three significant post-COVID-19 changes: ‘Curriculum that is developmental, personalised, and evolving; pedagogy that is student-centred, inquiry-based, authentic, and purposeful; and delivery of instruction that capitalises on the strengths of both synchronous and asynchronous learning’.

The impact of COVID-19 on HE and the process of transforming to a ‘new normal’ broadened conceptions of online learning to include all students (Tesar, 2020). Transferring to online learning could encourage greater participation and engagement by more diverse student groups, although some fear a shift to online learning would result in ‘the loss of education as an embodied and communal experience . . . a dystopian outcome of the pandemic’ (Eringfeld, 2021, p. 146). Nevertheless, as Liasidou (2022, p. 2) points out,

Despite the ways in which “online teaching and learning” has been portrayed as the “new normal” in the post-COVID-19 higher education landscape, it is questionable whether this is a realistic scenario, given that face-to-face teaching seems to have re-emerged as the preferred pedagogical *modus operandi* in higher education.

During this period of post-pandemic reflection and evaluation, universities have been considering a possible to return to the old models of teaching and learning, or to maintain a blended approach (Imran et al., 2023). There has been greater awareness of issues related to wellbeing and loneliness among students (Liverpool et al., 2023) and understanding of the student experience flexibly to support the diverse needs of students through greater freedom, accessibility, and global collaborations to ‘come together as neighbours both locally and globally, to build a better future together’ (Ammigan et al., 2021, p. xxii).

Post-pandemic challenges have included rebuilding student engagement and community, given the apprehension of returning to on-campus instruction and the greater latitude created by combining virtual and on-campus educational options following disrupted student experiences (Imran et al., 2023).

Methodology

Taking a pragmatist position, data were collected using a sequential mixed methods approach (Cresswell, 2003) incorporating both quantitative and qualitative research methods,

to obtain findings with both breadth and depth. Responses to a survey distributed to all Level 6 students at the University ($n \sim 3,000$) were used to develop questions for the subsequent focus groups. Focus group participants were those who responded to a request for volunteers in the survey and were therefore a subset of the original sample.

Ethical Approval

Upon receipt of ethical approval, data were collected using a student survey and student focus groups. Participants were provided with a Participant Information Sheet containing full project details, including their right to withdraw at any time during data collection for any reason without penalty. We also provided participants with details about the university’s Counselling and Wellbeing Service. Survey respondents indicated their informed consent by clicking the appropriate response on the survey, and as focus group participants were drawn from survey respondents, they had already given their consent. Focus group participant consent was, however, restated at the beginning of the focus groups. The risk of harm to participants was minimal but the benefits of the research are of great value for determining the future direction of HE, in the UK and beyond.

Quantitative Data Collection

Level 6 students were invited by email to complete an online survey between 7 November and 7 December 2021. Administered via Jisc Online Surveys, the survey contained both quantitative and qualitative questions (see Appendix A: Survey Questions). Quantitative questions probed the types of educational delivery and informal learning opportunities experienced before, during, and after the pandemic, and participant ratings (Likert scale, 1–10) of the types of teaching and learning experienced for *Effectiveness for Learning*, *Effectiveness for Building Positive Learning Communities*, and *Overall Satisfaction*.

Z-Tests for Proportions were performed on the data using SPSS (with a significance threshold of $p < .05$) to identify significant differences between group ratings of types of educational delivery for their *Effectiveness for Learning*, *Effectiveness for Building Positive Learning Communities*, and *Overall Satisfaction*.

Demographics of Survey Respondents. Tables 1 to 4 show the demographic data for the 177 valid survey respondents:

Additional participant data were also collected for *Choice of study mode during COVID-19* (Q6) (i.e., when some on-campus teaching was permitted but partial national restrictions continued, students could choose between on-campus or online learning and teaching), *Ethnicity* (Q18), and *Physical Disability* (Q19), but analyses of these data are not included in this article.

Table 1. Study Mode (Q5).

Study mode	Count	Percentage
Full Time (FT)	157	88.7
Part Time (PT)	20	11.3
Total	177	100

Table 2. Gender (Q16).

Gender	Count	Percentage
Female	112	63.3
Male	56	31.6
Other	3	1.7
Prefer not to say (PNTS)	6	3.4
Total	177	100

Table 3. Learning Difficulty (Q20).

Learning difficulty	Count	Percentage
Yes	26	14.7
No	140	79.1
PNTS	10	5.6
Missing	1	0.6
Total	177	100

Table 4. Caring Responsibilities (Q21).

Caring responsibilities	Count	Percentage
Yes	26	14.7
No	146	82.5
PNTS	4	2.3
Missing	1	0.6
Total	177	100

Qualitative data collection

The survey also asked whether respondents would be willing to participate in a subsequent focus group, to which 76 participants responded positively. A series of five semi-structured focus groups were set up and these participants were asked to indicate their availability. Participants were offered a £20 Amazon Gift Token for their involvement, and 16 agreed to participate. Consequently, four semi-structured focus groups were conducted during week commencing 28 March 2022. Focus group questions were derived from survey responses (see Appendix B: Focus Group Aide Memoire). The focus groups (labelled FG1-FG4) were recorded and transcribed, and analysed using Thematic Analysis (Braun & Clark, 2006) assisted by NVivo 12.

Demographics of focus group participants. Tables 5 to 8 show the data for the focus group participants, which were drawn from their survey responses:

Table 5. Study Mode (Q5).

Study mode	Count	Percentage
FT	16	100.0
PT	0	0.0
Total	16	100

Table 6. Gender (Q16).

Gender	Count	Percentage
Female	10	62.5
Male	6	37.5
Total	16	100

Table 7. Learning Difficulty (Q20).

Learning difficulty	Count	Percentage
Yes	2	12.5
No	12	75.0
PNTS	2	12.5
Total	16	100

Table 8. Caring Responsibilities (Q21).

Caring responsibilities	Count	Percentage
Yes	3	18.8
No	13	81.3
Total	16	100

Findings

Quantitative Findings

Types of Educational Delivery and Informal Learning Opportunities. Students were asked to indicate the types of educational delivery and informal learning opportunities they experienced before (Q7), during (Q8), and after (Q9) the COVID-19 pandemic.

As Figure 1 shows, the frequency of campus-based activities decreased from pre-COVID-19 rates during the lockdown period and, although increasing, did not regain pre-COVID-19 levels in the immediate post-pandemic period. At the same time, the frequency of online deliveries increased during lockdown, and, although decreasing after lockdown, remained higher than pre-COVID-19 levels at the point of the survey.

Student Ratings of Types of Educational Delivery and Informal Learning Opportunities

Students were asked to rate each type of educational delivery and learning opportunity for its *Effectiveness for Learning* (Q10), *Effectiveness for Building Positive Learning*

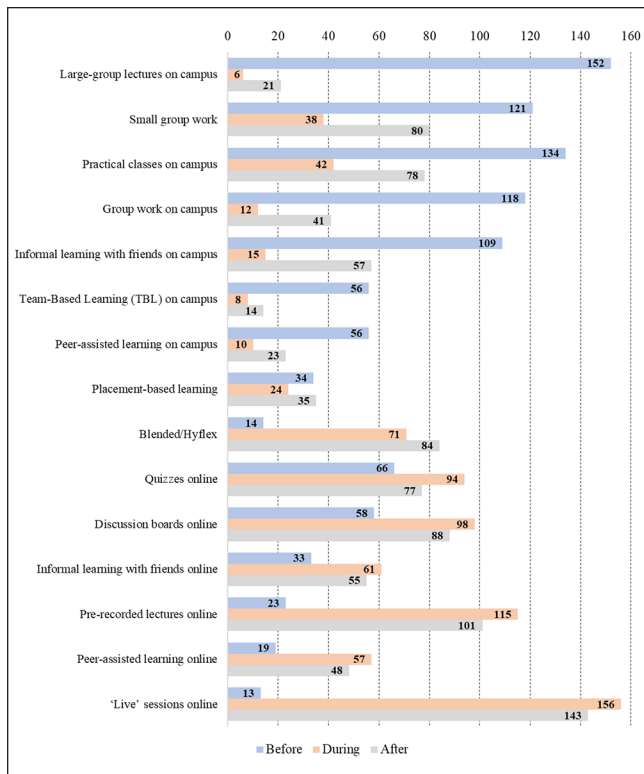


Figure 1. Frequencies of educational delivery and informal learning opportunity types, before, during, and after COVID-19 lockdowns.

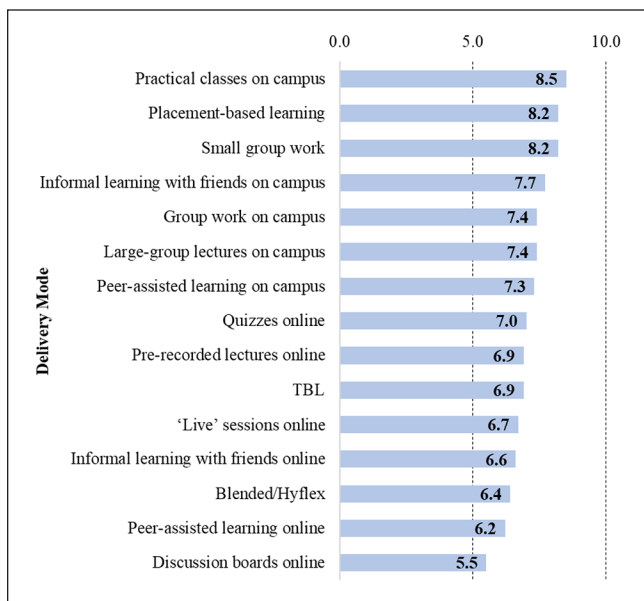


Figure 2. Mean student ratings for Effectiveness for Learning.

Communities (Q11), and for *Overall Satisfaction* (Q12). Students provided ratings using a Likert-type scale 1 to 10, where 1 is 'not effective at all', and 10 is 'entirely effective'. Consequently, student evaluations of effectiveness and satisfaction are presented as mean ratings (M).

Effectiveness for Learning. Students generally rated campus-based activities more highly than online activities for their *Effectiveness for Learning* (see Figure 2). The only exception was *Team-based learning* (TBL) ($M=6.9$), which was rated lower than two online activities. The most highly rated activity was *Practical classes on campus* ($M=8.5$), and the lowest rated was *Online discussion boards* ($M=5.5$). However, Z-Tests revealed no statistically significant differences within any of the demographic groups.

Gender. Both female and male students rated on-campus activities more highly than online activities, with *TBL* as the only exception. Female students rated on-campus activities more highly than male students and for some learning activities, the difference exceeded one scale point.

Five online activities (i.e. *Pre-recorded lectures online*, *Quizzes online*, *TBL*, *Blended/Hyflex*, and *Online discussion boards*) were rated more highly by male students than female students. Three online activities were rated slightly more highly by female than male students (i.e. *Live sessions online*, *Informal learning with friends online*, and *Peer-assisted learning online*), however the differences between the genders is less marked.

Both female and male students rated *Online discussion boards* as the least effective for learning (Female $M=5.3$; Male $M=5.6$), and *Practical classes on campus* as the most effective (Female $M=8.7$; Male $M=8.0$).

Study Mode. FT students rated almost all types of educational delivery more highly than PT students, in some cases the difference exceeds one scale point. Some forms of online teaching were, however, rated more highly by PT students than FT students, including *Pre-recorded lectures* (PT $M=7.3$; FT $M=6.9$), *Peer-assisted learning* (PT $M=6.5$; FT $M=6.1$), and *Online discussion boards* (PT $M=5.9$; FT $M=5.5$).

The most highly rated educational delivery type by FT students was *Practical classes on campus* ($M=8.6$), while PT students most highly rated *Pre-recorded lectures* ($M=7.3$). The lowest rating given by PT students was for *TBL* ($M=5.8$), and the lowest rating given by FT students was *Online discussion boards* ($M=5.5$).

Learning Difficulties. Respondents with learning difficulties rated seven of the 15 educational delivery types more highly than respondents without learning difficulties (i.e. *Practical classes on campus* (Yes $M=8.7$; No $M=8.4$), *Small group work on campus* (Yes $M=8.7$; No $M=8.1$), *Informal learning with friends online* (Yes $M=8.2$; No $M=7.6$), *TBL* (Yes $M=8.1$; No $M=6.6$), *Peer-assisted learning online* (Yes $M=7.9$; No $M=7.0$), *Group work on campus* (Yes $M=7.7$; No $M=7.3$), and *Informal learning with friends on campus* (Yes $M=6.4$; No $M=6.1$)).

Respondents with and without learning difficulties rated four delivery types very similarly (i.e. within 0.1 scale point) (i.e., *Large-group lectures on campus*, *Placement-based*

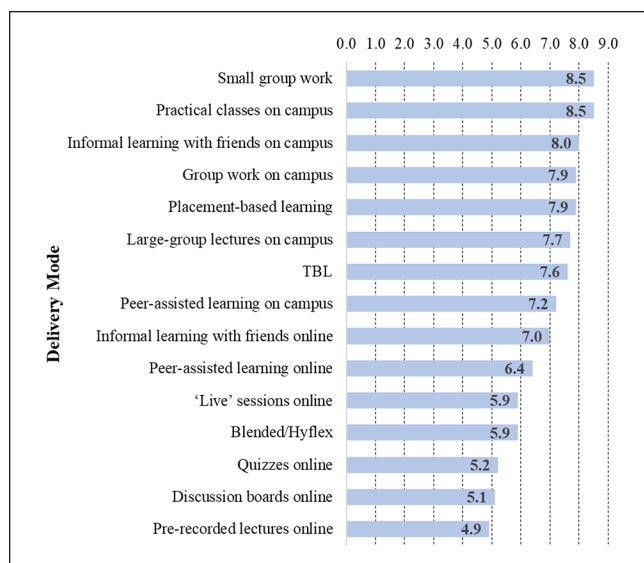


Figure 3. Mean student ratings for effectiveness for building positive learning communities.

learning, Blended/Hyflex, and Informal learning with friends online). Students without learning difficulties rated four types of delivery more highly than those with learning difficulties, with differences exceeding one scale point (i.e. *Pre-recorded lectures online* (With $M=6.0$; Without $M=7.2$), *'Live' sessions online* (With $M=5.7$; Without $M=7.0$), *Online discussion boards* (With $M=5.1$; Without $M=7.4$), and *Peer-assisted learning on campus* (With $M=4.8$; Without $M=5.6$)). *Peer-assisted learning on campus* was the lowest-rated item by students both with and without learning difficulties.

Caring Responsibilities. The type of educational experience rated most highly by students with caring responsibilities was *Placement-based learning* ($M=8.3$), which received the third highest rating from students without caring responsibilities ($M=8.2$). *Practical classes on campus* was the highest rated learning type for students without caring responsibilities ($M=8.6$), which was the second highest rated learning experience for students with caring responsibilities ($M=8.2$).

Students with caring responsibilities rated *Informal learning with friends* higher than those without both on campus (With $M=8.1$; Without $M=7.6$), and online (With $M=7.3$; Without $M=6.4$). In general, both groups of students rated campus-based activities more highly than online activities, with the exception of *'Live' sessions online*, which was rated above some forms of campus-based activities by students with caring responsibilities ($M=7.4$), although not by those without ($M=6.6$).

Effectiveness for Building Positive Learning Communities. Students rated campus-based activities more highly than online activities for their *Effectiveness for Building Positive*

Learning Communities (see Figure 3). The most highly rated activity was *Practical classes on campus* ($M=8.5$), and the lowest rating was given to *Pre-recorded lectures online* ($M=4.9$). However, Z-Tests revealed no statistically significant differences within any of the demographic groups.

Gender. Both male and female students rated on-campus activities more highly for their *Effectiveness for Building Positive Learning Communities* than online activities, with both genders rating *Practical classes* as the most effective (Female $M=8.6$; Male $M=8.4$). The second highest rated activity for both genders was *Small group work* (Female $M=8.6$; Male $M=8.3$). The least effective activity for both genders was *Pre-recorded lectures* (Female $M=4.6$; Male $M=5.4$).

Although differences in gender-based ratings for most activities were less than one scale point, male students rated two activities as more effective than female students, by more than one scale point. These activities were *Peer-assisted learning online* (Female $M=6.0$; Male $M=7.1$) and *Blended/hyflex* (Female $M=5.6$; Male $M=6.9$).

Study Mode. Both FT and PT students rated on-campus activities as more effective than online activities for building positive learning communities. However, ratings of campus-based activities by FT students were more positive than those by PT students, notably *Small group work* (FT $M=8.7$; PT $M=7.1$), *Informal learning with friends* (FT $M=8.2$; PT $M=6.9$), *Placement-based learning* (FT $M=8.0$; PT $M=7.0$), and *TBL* (FT $M=7.7$; PT $M=6.7$). Conversely, PT students found online activities more effective than FT students, notably *Pre-recorded lectures* (FT $M=4.7$; PT $M=6.3$).

Learning Difficulties. Respondents both with and without declared learning difficulties rated practical classes and small group work as the two most effective activities for building positive learning communities (All $M=8.5$). Effectiveness ratings for the five least effective activities by respondents with learning difficulties were considerably lower than ratings by those without. These activities were *Blended/Hyflex* (Yes $M=5.3$; No $M=6.0$), *'Live' sessions online* (Yes $M=5.0$; No $M=6.1$), *Peer-assisted learning on campus* (Yes $M=4.4$; No $M=5.2$), *Pre-recorded lectures* (Yes $M=3.8$; No $M=5.0$), and *Online discussion boards* (Yes $M=3.5$; No $M=5.4$).

Caring Responsibilities. Although students both with and without caring responsibilities rated campus-based activities as more effective than online activities, students with caring responsibilities rated some online activities considerably more highly than those without. These activities were *'Live' sessions online* (With $M=7.3$; Without $M=5.7$), *Online quizzes* (With $M=6.6$; Without $M=5.0$), *Pre-recorded lectures* (With $M=6.1$; Without $M=4.6$), and *Online discussion boards* (With $M=6.0$; Without $M=5.0$).

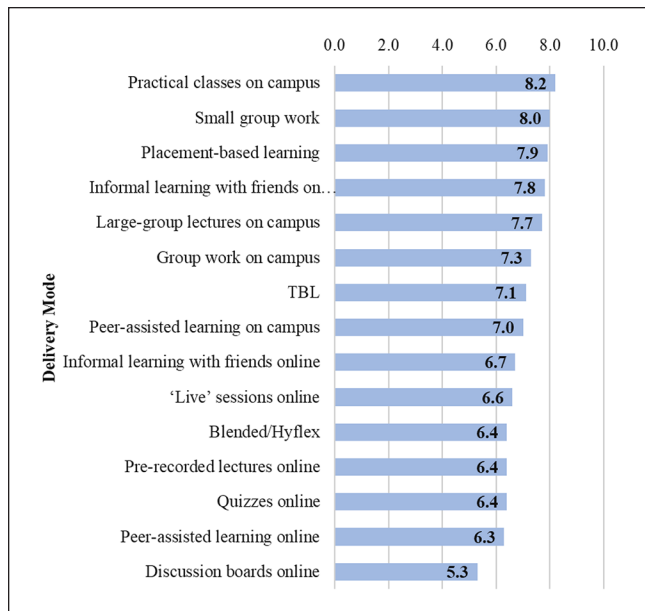


Figure 4. Mean student ratings for Overall Satisfaction.

Overall Satisfaction. Students rated campus-based educational delivery and learning opportunities more highly than online activities, in terms of *Overall Satisfaction* (see Figure 4). Students were most satisfied with *Practical classes on campus* ($M=8.2$), and least satisfied with *Online discussion boards* ($M=5.3$).

Z-Tests show a significant difference between male and female students for *Practical classes on campus* (Difference: -0.186 , $Z=-2.417$, $p=0.016$) for *Overall Satisfaction*. Z-Tests also revealed a significant difference between students with and without learning difficulties for *Pre-recorded lectures* (Difference: -0.263 , $Z=-2.246$, $p=.025$) for *Overall Satisfaction*. Z-Tests revealed no other statistically significant differences.

Gender. Female students rated most on-campus activities more highly than male students, with the exceptions of *Placement-based learning* (Female $M=7.6$; Male $M=8.2$), which was the highest rated activity for satisfaction by male students, and *TBL* (Female $M=6.9$; Male $M=7.4$).

Conversely, male students rated most online activities more highly than female students, with the exceptions of *Informal learning with friends online* (Female $M=6.8$; Male $M=6.4$), and *'Live' sessions online* (Female $M=6.6$; Male $M=6.3$). Students of both genders rated *Online discussion boards* the lowest for *Overall Satisfaction* (Female $M=5.1$; Male $M=5.6$).

Study Mode. With the exception of *Pre-recorded lectures online* (FT $M=6.4$; PT $M=6.9$), FT students were more satisfied than PT students. FT students were especially more satisfied than PT students with on-campus activities, with

differences for some types of educational delivery exceeding one scale point. These activities were *Small group work* (FT $M=8.2$; PT $M=6.7$), *Placement-based learning* (FT $M=8.0$; PT $M=6.5$), *Informal learning with friends on campus* (FT $M=7.9$; PT $M=6.1$), *Large-group lectures on campus* (FT $M=7.7$; PT $M=6.7$), and *Group work on campus* (FT $M=7.4$; PT $M=6.1$).

Both FT and PT students were most satisfied with *Practical classes on campus* (FT $M=8.3$; PT $M=7.0$), and least satisfied with *Online discussion boards* (FT $M=5.3$; PT $M=5.1$).

Learning Difficulties. Respondents who declared learning difficulties were overall more satisfied with campus-based activities than were those who did not, particularly *TBL* (Yes $M=8.2$; No $M=6.9$). Respondents without learning difficulties were, in general, more satisfied than were those with learning difficulties regarding online activities, particularly *Online discussion boards* (Yes $M=4.9$; No $M=6.8$).

Caring Responsibilities. *Overall Satisfaction* ratings for students with and without caring responsibilities are broadly similar for all types of educational delivery, with campus-based activities outperforming online activities across the board.

Students with caring responsibilities were most satisfied with *Small group work* (With $M=8.6$; Without $M=8.0$), while those without were most satisfied with *Practical classes on campus* (With $M=8.4$; Without $M=8.2$). All students, regardless of caring responsibilities, were least satisfied with *Online discussion boards* (With $M=5.8$; Without $M=5.2$).

Qualitative findings

Qualitative data were gathered from both the free text survey questions and the focus groups.

Qualitative Survey Data

Features to Keep or Bring Back. Students were asked if there were any features of their learning from before the pandemic that they missed, and which should be brought back (Q13). Over half of the respondents replied that the University should bring back on-campus teaching (56%). Student comments included:

- Personally, I do much better attending on-campus classes, the environment, the commitment, and the interaction between the class and the teacher.
- It was more effective, gave everyone a chance to bounce off each other and made sure that everyone in a class was actively taking part in discussions.
- Lectures fully face-to-face without the mixture of online students.

The second most frequent comment referred to class size, both large and small. Student comments included a 'Sense of community learning in larger groups, living the "university"

experience', how 'Large and small lectures are much better for interactive learning, for example, answering questions, and keep students engaged', and a request for 'Small-group seminars/discussions/debates/case studies on campus'.

Other activities that students asked to be reinstated included practical sessions (4.2%), field trips (3.1%), group work (1.0%), spread teaching (2.1%), block study weeks (particularly for Degree Apprentices) (2.1%), teaching hours (i.e. more desired) (1.0%), TBL (2.1%), more varied teaching methods (2.1%), later start times (2.1%), and the social aspect (1.0%).

Students were also asked if there were any features of their learning from during the pandemic that the University should keep after the pandemic (Q14). The most frequent feature that students wanted to be kept was recorded teaching sessions (50.3%). Student comments included:

- Routinely uploading recorded lectures is hugely helpful to anyone that misses a week due to illness/personal commitments/work commitments.
- That the recorded lectures are placed on Canvas where it's very beneficial to me due to [my] learning disability.
- Recording the lessons for those who cannot attend, or even for later playback when revising for assignments, have been extremely useful. This should definitely be kept for students' benefits.

Comments about online teaching were varied with several students requesting an online option (18.4%):

- The option to learn online if we cannot attend.
- Option of being online; good if you are ill or living life gets you.
- Some people have really bad social anxiety which puts them off coming or don't feel comfortable coming in that day as they are having a bad mental health day. If there was an option to still participate and watch the live lecture that would take a lot of pressure off of students struggling with mental health.

Some students requested a continuation of blended learning (6.8%) (i.e. 'I think the mixture of a pre-recorded lecture and on-campus seminar session works well'), while others suggested that all teaching should be online only (6.1%). Other references to online teaching were the continued use of online assessments (2.7%) and online tools (2.7%) (i.e. 'Quizzes and discussion boards'), plus the use of online tutorials (2.7%).

Any Other Comments. Students were asked to provide any other comments or reflections about their learning before, during and after the pandemic (Q15). Almost one in ten students commented that they preferred being on campus (9.6%) (i.e., 'I am a very practical-based learner, I

take in more information from seeing it in front of me, not just looking at slides or a screen'), while others enjoyed the opportunity to engage in on-campus practical sessions (5.3%) (i.e., 'Some modules can't be taught without practice: I struggled a lot to understand test protocols/results due to not physically doing them or seeing it').

Roughly 10% of students commented that the quality of online teaching needed improvement (9.6%) (e.g. 'Even though the lecturers and tutors have made the most of the situation, the standard of teaching and learning has not been as engaging or effective with online delivery').

Some students commented that they had a positive experience with online teaching (7.4%), while others were dissatisfied (4.3%). Four students praised the recording of sessions (4.3%), and another made a positive comment about blended learning (1.1%). Similarly, twice as many students described the level of support they received as poor (6.4%) than those who described it as good (3.2%). A further two students had unhappy experiences with self-study (2.1%).

Focus Groups. Several themes emerged from thematic analysis of the focus group transcripts. While some themes were related to the structure and sequence of questions, others emerged spontaneously from discussion among the participants.

Pre-COVID-19 (2019/20 Academic Year). Almost all focus group participants described their first year as 'normal', and the typical on-campus, face-to-face university experience that they expected, and enjoyed (i.e., a 'mixture of lectures, seminars, and actual lab practical' (FG3)). FG1 commented that,

my first year, I quite enjoyed that, because one of the things I like mostly about. . . schooling in general is that I actually get to interact with people and the environment itself, so having classes, and having after discussions with course mates and stuff, that I enjoy.

Peri-COVID-19 (2020/21 Academic Year). Student comments concerning the move to remote teaching were less homogenous. Five students felt disengaged from their studies and/or negatively affected by distractions at home. FG2 commented, 'my work level [has] dropped massively, since [the] first year, 'cause just motivation, and trying to sort of crack on with things from home with so many different distractions'. FG4 noted how, 'I liked having the difference between working and relaxing: home turned into work, and I would feel bad about relaxing and not working'. Conversely, four students preferred working from home as it improved their work/life balance. One student found it easier to access their lecturers, and also to avoid a costly, exhausting commute. Another participant had transferred to the University from the Open University (OU) and was used to working from home.

Six students were disappointed that they could not attend on-campus practicals, although others praised the University for making up for this after the national restrictions had been relaxed.

Some students also noted the lack of interaction with peers (e.g. ‘it took a lot more effort to keep going, because you didn’t have that ability to turn around to the person beside you and say, “I’m stuck, can you help me?”’ (FG1)).

Three students referred to paying for ‘proper teaching’ rather than self-directed learning (Morris, 2021) by reading from a textbook and felt that the University should have reduced their fees.

Post-COVID-19 (2021/22 Academic Year). Students reported mixed responses to hybrid/blended teaching. Three preferred the mix (e.g. ‘big lectures have all been online, and then smaller seminars in person’ (FG1)), with FG2 noting how this improves their work/life balance (e.g. ‘blended learning, because I did opt to do face-to-face but the days that I can’t make it, I stay at home and do the online sessions’. Others were happy to be back on campus, particularly for practical sessions, and because, for one student, face-to-face teaching is better for their wellbeing. Only one student reported that all their lectures were still online.

Recorded Lectures. All participants supported either pre-recorded lectures (whether for TBL sessions or otherwise) or recordings of live lectures (e.g., ‘really good that you can kind of access all the recordings; that’s one of the best things’ (FG2)). Participant comments included the value of recordings to students unable to attend because of mental health problems, and/or sickness.

Students liked being able to repeat sections of a lecture to fully understand challenging topics (e.g., ‘having it all recorded when it was online made a huge difference and I know it made a huge difference to my marks, ‘cause you can just stop, start, look at it, and also sometimes they have the notes on the bottom as well’ (FG2)). Students also referred to the benefits of watching recordings for revision. FG3 noted that providing recordings made the University better, in their view, than the OU ‘cause that’s something that the Open University didn’t even do’.

FG3 also noted that one disadvantage of recordings is not being able to ask questions. FG2 noted that ‘sometimes the echo of the classrooms when you’re listening online can impact on understanding what’s being said’.

Teaching Quality/Use of Technology. Some students felt that they received a lower standard of teaching online. Two students, for example, referred to teachers apparently showing reduced effort: ‘my teachers would only go through the PowerPoints and the same thing again and most people stopped coming to the lectures’ (FG4).

Others found that some teachers were less ‘tech savvy’ than others. One lecturer, for example, was writing on the

whiteboard, which was unreadable via MS Teams. Other students reported how different lecturers inadvertently set up different online ‘rooms’ or used the wrong links. Due to a requirement to authenticate apps via their mobile device each time they log into a new computer, it sometimes took lecturers 20 to 30 minutes to set up the technology (e.g. ‘one day it took about 30 min just to set up the entire lecture. And then they get flustered and so it’s just a bit of a nightmare’ (FG2)).

Perfect Course. When asked to describe their perfect course, six students expressed a preference for hybrid/blended learning. One student, for example, appreciated not having to commute. Two students, while happy with some online delivery, would prefer spending less than eight hours a day online. Another two students suggested being on campus for practical sessions. One student expressed a preference for online assessments, and another preferred online lecturer contact.

None of the students described a perfect course as being permanently online, and four students requested a full return to on-campus teaching, making particular reference to lecturer and peer interaction. Another four students asked for all lectures to be recorded.

Belonging. Participants were asked to comment on the extent to which they felt they ‘belonged’ to the University community. Two students felt that they fully belonged (e.g., ‘the university is definitely doing their part to make you feel included or you belong to . . . our community’ (FG1), and ‘I felt so welcomed into the university and very welcomed and helped by peers; I don’t feel judged or anything like that it’s amazing: so much better than college’ (FG4). A further two also felt they belonged, one through social activities, and the other because lecturers included students in their research.

Three students reported a decrease in their sense of belonging across their years of study, two of whom commented that they felt they belonged during their first year, but that campus was deserted in their second year. Similarly, FG2 noted the difference between their first and third years:

if the social aspect is not there . . . now that I’ve come to third year it’s like, what’s the point? I’m going to graduate anyway, so it’s that kind of mood . . . but social life is one thing that is hugely affected.

Overall Satisfaction. One student reported a consistently high level of satisfaction, and another four, despite minor grumbles, were satisfied with their experience. Another student reported a high level of satisfaction with their first year, a lower level in the second, and even lower in the third (due to still being entirely online without satisfactory explanation). FG3 reported an equally high level of satisfaction with their first year, decreased satisfaction in the second year (due to a lack of structure and more self-directed learning), but an increase in the third year, stating, ‘Yeah, yeah, I’m fairly satisfied, yeah. Can’t complain too much’.

Discussion

The 'New Normal'

Despite predictions that the post-lockdown 'new normal' would result in a persistent shift away from in-person to online teaching (Tesar, 2020), findings suggest that Liasidou's (2022) observation about students' preferred teaching method is true for more than half of survey respondents, who requested a full return to on-campus teaching.

Students consistently rated on-campus activities more highly than online activities. Four of the top five teaching activities that students rated highly for both their *Effectiveness for Learning* and *Building Positive Learning Communities*, and for *Overall Satisfaction* were *Practical classes on campus*, *Placement-based learning*, *Small group work*, and *Informal learning with friends on campus*.

Similarly, a third of focus group participants requested a full return to on-campus teaching. In line with the studies by Sutton (2020) and Homanen (2021), online activities were rated poorly by students with learning difficulties.

Large Group Lectures

In contrast to the contemporary pedagogical move away from in-person large-group lectures (Pratt-Adams et al., 2020), this form of learning delivery was popular among survey participants. *Large group lectures on campus* were, in fact, the most requested pre-pandemic form of learning to bring back. Students rated *Large group lectures on campus* highly in all criteria:

- *Effectiveness for your learning* ($M = 7.4$)
- *Building positive learning communities* ($M = 7.7$)
- *Overall satisfaction* ($M = 7.7$)

A return to on-campus teaching would address students' feelings of isolation (Khan, 2021) and address students' concerns about the social element of on-campus activities (Eringfeld, 2021).

Recorded Lectures

Over half of the survey respondents wanted the University to continue to record live lectures, both for revision purposes and unanticipated absences. However, taken together with the general preference for on-campus forms of learning, such recordings should be considered as *complementary* to, rather than a *replacement* of, on-campus delivery, as an integral part of an evolving concept of face-to-face provision.

Focus group participants were divided in their opinions about online learning, with some appreciating its flexibility (Lall & Singh, 2020) and the opportunity to avoid commuting, while others simply wanted to return to campus, but requested a continuation of lecture capture (Imran et al., 2023).

This contrasts with students' negative attitudes towards *Pre-recorded lectures* which, along with *'Live' sessions online* and *Blended/Hyflex*, were given very low ratings by students.

Demographic Analyses

Subgroup analyses, which in some cases reveal distinct views otherwise obscured in whole-cohort data analyses, suggest, in contrast to the general findings, that universities should make greater use of online forms of learning in courses with significant populations of PT students (Fiorini et al., 2022) and students with caring responsibilities (Kubiak et al., 2021). In contrast, universities should be aware that students with learning difficulties tend to find on-campus forms of learning particularly beneficial, and online forms of learning particularly disadvantageous (Goegan et al., 2022).

Conclusion and Recommendations

The impact of the lockdowns caused by the COVID-19 virus were wide-ranging and far-reaching. The pivot to ERT caused disruption for both staff, who had to rapidly upskill and switch content from face-to-face to online delivery, and students, whose anticipated university experience was hugely disrupted, and who similarly had to expand their digital fluency to learn online.

Since the end of lockdown, most teaching has returned to on-campus delivery, which should aid the learning of, and satisfy, most students, especially those students with learning difficulties. However greater retention of online learning opportunities should be considered for courses with significant numbers of PT students and those with caring responsibilities. Findings suggest that large on-campus lectures should continue to be considered within the balance of other appropriate learning activities, confirm the value that students place upon on-campus practical classes, and suggest that universities should keep blended/hyflex teaching to a minimum. Universities should, however, continue to record lectures and make these recordings available to students. Conversely, students should be invited to suggest a suitable alternative to the overwhelmingly unpopular *Online discussion boards*. In addition, although considered helpful by a few students, the prevalence of pre-recorded lectures should also be reduced.

Limitations and Future Directions

Quantitative data for this study were collected in November and December 2021, and qualitative data were collected in March 2022. Analysis of these data were used to inform policy and practice at the University in the immediate post-lockdown period. Thus decisions made at the time might need to be reviewed in the light of the evolution of learning and teaching practices which have been implemented since then. Greater sample sizes for quantitative analyses would likely reveal more statistically significant differences between groups.

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ORCID iDs

Mark Warnes  <https://orcid.org/0000-0002-7310-6688>

Simon Pratt-Adams  <https://orcid.org/0000-0002-7227-7848>

Claire V. S. Pike  <https://orcid.org/0000-0002-4642-7427>

Ethical Consideration

The School of Life Sciences Research Ethics Panel at Anglia Ruskin University approved our surveys and focus groups (approval: BS SREP21-125) on July 24, 2019. Respondents gave informed consent online via the survey and verbally confirmed their consent before starting the focus groups.

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Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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Appendices

Appendix A: Survey Questions

NB. Responses to this survey are presented in Tables 1, 2, and 3

1. Do you agree to participate in this survey?
2. Are you a Level 6 student?
3. In which Faculty do you study?
4. In which School do you study?
5. Do you study full-time or part-time?
6. During the COVID-19 pandemic, if a choice of study mode was available, in which mode did you choose to study?
7. Before the COVID-19 pandemic (for example, in the first year of your course), which types of educational delivery and informal learning opportunities did you experience?
 - 7.a. If you selected Other, please specify:
8. During the COVID-19 pandemic (for example, in the second year of your course), which types of educational delivery and informal learning opportunities did you experience?
 - 8.a. If you selected Other, please specify:
9. In the current year of your course, which types of educational delivery and informal learning opportunities are you experiencing?
 - 9.a. If you selected Other, please specify:
10. Please rate each type of educational delivery and learning opportunity that you have experienced for its effectiveness for your learning. (scale 1-10, where 1 is 'not effective at all', and 10 is 'entirely effective'. For any category that you have not experienced, please choose 'N/A'. Please select one number for each row).
 - 10.1. Large-group lectures on campus
 - 10.2. Small-group seminars/discussions/debates/case studies on campus
 - 10.3. Practical classes on campus
 - 10.4. Group work on campus
 - 10.5. Team-Based Learning (TBL) on campus
 - 10.6. Placement-based learning
 - 10.7. Pre-recorded lectures online
 - 10.8. 'Live' sessions online
 - 10.9. 'Live' sessions with some students on campus and some students online, learning together
 - 10.11. Quizzes online
 - 10.12. Discussion boards online
 - 10.13. Peer-assisted learning on campus
 - 10.14. Peer-assisted learning online
 - 10.15. Informal learning with friends on campus
 - 10.16. Informal learning with friends online
11. Please rate each type of educational delivery and learning opportunity that you have experienced for its effectiveness for building positive learning communities. (scale 1-10, where 1 is 'not effective at all', and 10 is 'entirely effective'. For any category that you have not experienced, please choose 'N/A'. Please select one number for each row).
 - 11.1. Large-group lectures on campus
 - 11.2. Small-group seminars/discussions/debates/case studies on campus
 - 11.3. Practical classes on campus
 - 11.4. Group work on campus
 - 11.5. Team-Based Learning (TBL) on campus
 - 11.6. Placement-based learning
 - 11.7. Pre-recorded lectures online
 - 11.8. 'Live' sessions online
 - 11.9. 'Live' sessions with some students on campus and some students online, learning together
 - 11.10. together
 - 11.11. Quizzes online
 - 11.12. Discussion boards online
 - 11.13. Peer-assisted learning on campus
 - 11.14. Peer-assisted learning online
 - 11.15. Informal learning with friends on campus
 - 11.16. Informal learning with friends online

12. Please rate each type of educational delivery and learning opportunity that you have experienced for your overall satisfaction. (scale 1-10, where 1 is 'not satisfied at all', and 10 is 'entirely satisfied'. For any category that you have not experienced, please choose 'N/A'. Please select one number for each row).
 - 12.1. Large-group lectures on campus
 - 12.2. Small-group seminars/discussions/debates/case studies on campus
 - 12.3. Practical classes on campus
 - 12.4. Group work on campus
 - 12.5. Team-Based Learning (TBL) on campus
 - 12.6. Placement-based learning
 - 12.7. Pre-recorded lectures online
 - 12.8. 'Live' sessions online
 - 12.9. 'Live' sessions with some students on campus and some students online, learning together
 - 12.10. Quizzes online
 - 12.12. Discussion boards online
 - 12.13. Peer-assisted learning on campus
 - 12.14. Peer-assisted learning online
 - 12.15. Informal learning with friends on campus
 - 12.16. Informal learning with friends online
13. Are there any features of your learning from before the COVID-19 pandemic that you miss, and you think we should bring back? If so, please tell us what these are.
 - 13.a. If you selected Yes, please specify:
14. Are there any features of your learning from during the COVID-19 pandemic that you think we should keep, even when the pandemic is over? If so, please tell us what these are.
 - 14.a. If you selected Yes, please specify:
15. If you have any other comments or reflections about your learning before, during and after the COVID-19 pandemic, please add them here.
16. Please indicate your gender.
17. Please indicate your age.
18. Please indicate your ethnicity.
19. Do you have a physical disability?
20. Do you have a learning difficulty (e.g. dyslexia)?
21. Do you have significant responsibilities of care for another person, for example a child or an older person?

Appendix B: Focus Group Aide Memoire

1. Please tell us about your course. How was it delivered before and during the pandemic, and in the current year?
2. How did these different delivery modes and methods work for you? How did you learn best? What were the challenges? Are there any personal factors or preferences that feed-in to your views on this?
3. If you could design a perfect delivery of your course, what would it look like and why?
4. What are your views on large group 'lectures' on campus?
5. What are your views on pre-recorded 'lectures'/lecture segments online?
6. What are your views on sessions where some students are on campus with the lecturer, and some students are online, at the same time?
7. How connected did you/do you feel with the university learning community before and during the pandemic, and in the current year? This could be at course-level or considering the university more broadly.
8. What could we do to help you feel more connected to the learning community – within your course, and within the university more broadly?
9. Which factors are most important in determining your overall satisfaction with your course?
10. How would you rate your overall satisfaction with your course before and during the pandemic, and in the current year of study?
11. What could we do in the current year of study to improve your overall satisfaction further?
12. Any other comments, or questions for us?