"We can't see your slides!"

Undergraduate Psychology Students' Perceptions of Emergency Remote Teaching

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Abstract

The COVID-19 pandemic precipitated a national lockdown, and the implementation of Emergency Remote Teaching (ERT) in higher education (HE), but there is a gap in the literature in terms of how Psychology students, studying a single-honours degree in the UK, responded to ERT for practical lab classes. The aim of this study was to assess the experiences of first year Psychology students undertaking practical lab classes via ERT. Ninety-one participants completed a Qualtrics survey asking them to record challenges to engaging in lab classes delivered through ERT, and to suggest improvements for these. Responses were analyzed using Thematic analysis. A novel finding in the study was that a large proportion students discussed issues relating to the structure, format and content of practical classes, to a greater extent than other issues reported in similar studies involving psychology students (e.g., communication, motivational and digital issues). Other novel findings were that students either witnessed or admitted to engagement in social loafing occurred during online group activities, and there was disagreement amongst students regarding the role of groupwork in improving ERT. These results have implications for online teaching provision in higher education institutions.

Key words:

Emergency Remote Learning; Online learning; Psychology students

Introduction

A national lockdown was imposed in October 2020 in response to rising COVID-19 cases in Northern Ireland (Roberts, 2020). Consequently, Higher Education (HE) institutions implemented a system of Emergency Remote Teaching (ERT), a system of online learning implemented in response to an emergency. This involved the rapid conversion of resources into an online format, which contrasts with planned online learning whereby assessment and delivery in an online format is pre-planned (Hodges et al., 2020). While many HE institutions have now completed two academic years in a format that includes online delivery, this is arguably wholly insufficient time in which to optimally adjust assessment and delivery from a starting point dictated by circumstances (e.g., Johnston et al., 2020). In the current study, we were interested in the impact of ERT on first-year undergraduate Psychology students in 2020-21, who were learning to adjust to university life and ERT (unlike the previous cohort who had to adjust to ERT during the second semester in their first year), and were studying a single-honours psychology degree in the UK. Furthermore, we were specifically interested in first year students' experiences of ERT in practical (lab) classes, which involve the teaching of research methods and statistics, often using statistical software such as SPSS (IBM Corp, 2021). We investigated the specific challenges to engaging in ERT faced by first year undergraduate students during these practical lab classes, and elicited their suggestions for improvements regarding how teaching is delivered in these classes in an online format. These findings will have implications not just for understanding learning and teaching experiences of psychology students during a pandemic, but for improving future online teaching of psychology.

A small and emerging body of international research has begun to investigate experiences of psychology students during the pandemic and the switch to ERT (Emam et al., 2021; Gravelle et al., 2022; Laher et al., 2021; Limniou et al., 2021; Usher et al., 2021).

Laher et al. (2021) investigated the experiences of first and second year Psychology students during the pandemic in South Africa. The authors found that students reported challenges to remote learning which fell into three categories: psychological wellbeing (e.g., feelings of isolation), challenges linked to online learning (e.g., time management) and home dynamics (e.g., having multiple responsibilities). Furthermore, Usher et al. (2021) assessed the psychological and academic impact of COVID-19 on students in the USA. The results demonstrated that since the implementation of lockdown, students experienced a decrease in their ability to focus and to stay motivated, as well as an increase in their levels of stress. Furthermore, students also reported a wide range of issues about being forced to stay at home to study (e.g., issues with motivation, social isolation, emotional challenges, their home environment). Gravelle et al. (2022) surveyed a large number of students in the USA who were studying an introductory psychology course. Some of the most widely reported challenges to online learning included issues with digital access (issues with accessing digital devices and/or a reliable Wi-Fi connection), a perceived lack of support and inferior quality of instruction), issues relating to attention and motivation, and a disruptive learning environment. Emam (2021) surveyed Psychology undergraduate and Master's students in Pakistan on their perceptions of ERT and found that students were generally receptive towards online learning in comparison to face-to-face learning on several indices (e.g., lecturing and class participation, thesis supervision, classroom resources for student engagement). Finally, in a UK-based study of Psychology and Veterinary Science students (Limniou et al., 2021), students reported difficulties with time management, motivation, poor Wi-Fi, and lacking access to reliable technology as being influential in the extent to which they utilized digital skills to help with independent learning during COVID-19. Together, these results suggest that for Psychology students, there are a range of motivational issues

(e.g., motivation, isolation) and external issues (e.g., difficulties with digital devices) which may have a negative impact on their ability to engage with ERT.

However, there are several questions regarding the ERT experiences of first year Psychology students in particular that are left unanswered by these studies. One question concerns how UK Psychology students, studying a single honours Psychology degree, perceived ERT as an alternative teaching method. The majority of studies mentioned previously concerned international samples, mainly from the USA. Furthermore, the only UK-based study (Limniou et al., 2021) involved students studying a joint-honours degree, which may detract from the generalizability of their results to other students studying Psychology as their sole degree.

A further question concerns whether engaging in ERT is especially difficult for first-year undergraduate students, who were adjusting both to ERT and to university life at the same time. The participants in most of the previous studies involving Psychology students are largely sampled from across a range of levels (e.g., first and second years, undergraduate and master's students). Hoss et al. (2021) found that prior to the implementation of ERT, undergraduate students (including Psychology students) in Germany anticipated a greater number of negative aspects (compared to positive aspects) to the change in teaching format (such as decreased teaching and learning quality, decreased social interaction and communication and impeded access to university resources), suggesting a high level of anticipatory skepticism about the move to ERT.

Furthermore, previous studies have investigated challenges to online learning in general amongst Psychology students, without asking students to distinguish between ERT experiences for different types of classes that they engage in. In other courses, such as dentistry, first year students preferred online learning more than their more experienced peers (Amir et al., 2020). This may reflect differences in the curriculum: students beyond first year

in a subject such as dentistry focus on developing their practical skills, which they did not have the opportunity to do during ERT, whereas the curriculum for first year students focused more on developing theoretical knowledge (Amir et al., 2020). The importance of laboratory (henceforth, 'lab') classes for Psychology students is clearly outlined by the British Psychological Society (BPS): "Research methods are integral to Psychology and students obtain a sound knowledge of, and a proven ability to use, a range of methods appropriately. Knowledge and understanding of how to obtain and analyze evidence is best acquired and demonstrated through extensive and progressive empirical work in laboratory and naturalistic settings through all stages of a degree" (BPS, 2019; p. 12). The compulsory empirical research project completed at the end of the degree by Psychology students requires a range of skills that are developed during these lab classes. Given that these classes have been shown often to pose difficulties to Psychology students (Allen et al., 2016; Murtonen et al., 2008), and given also that there is a possibility that students may find learning research methods more challenging in an online class, as opposed to in a face-to-face environment (e.g., Al-Amin et al., 2021), we were interested in investigating the ERT experiences of Psychology students taking practical lab classes.

The aim of the current study was to assess first-year Psychology undergraduate students' perceptions of engaging in ERT during lab classes. We focused on 1) the ERT perceptions of first-year, single-honours Psychology students , studying a UK-based Psychology degree, and who were adjusting to university life at a time when all teaching was delivered via ERT; and 2) practical lab classes owing to their importance in the curriculum, and given their focus on developing more practical skills in research methods (Allen et al., 2016). The study was exploratory in nature, given that to the best of our knowledge, this is the first study of entry-level, single-honours Psychology students studying in the UK that

focuses specifically on their experiences of ERT whilst they engage in practical classes online.

Method

Participants. The sample consisted of 91 first year Psychology students (82 females, 8 males, 1 non-binary; Mean = 19.93 years; *SD* = 3.90). Participants volunteered to take part in the study in exchange for course credit. Ethical approval for the study was granted by the Queen's University Belfast Faculty of Engineering and Physical Sciences Research Ethics Committee.

Materials. The data was collected between November 2020 and January 2021. The study was presented via Qualtrics. Participants were asked whether they personally faced any challenges when taking part in lab classes online, and whether they could suggest any improvements for online lab classes. The response boxes were open-ended, allowing participants the freedom to include as much information as they wished.

Procedure. Upon signing up for the study, participants clicked on a link to access the Qualtrics questionnaire. Participants read an information sheet and gave their consent to take part in the study. After answering the questions in the study, participants were then shown a debrief sheet onscreen and thanked for their participation.

Analysis. Following similar approaches used by other researchers investigating Psychology students' perceptions of the challenges to remote learning (e.g., Laher et al, 2021; Limniou et al., 2021), participants' responses were analysed using content and thematic analysis (Braun et al., 2019). Participants' responses were not included in the analysis if they gave a positive comment about ERT (e.g., I have no problems with online learning in this class), or if the participant gave a nonsensical response or no response. Participant responses

were initially coded inductively (Chandra & Shang, 2019) by a first rater, who created an initial list of codes from the responses. The rater then embarked on several iterations of working through the data in order to reduce the distinct codes to the smallest manageable number, without losing the meaningfulness of the data. To establish inter-rater reliability, a second, independent rater coded one-third of all responses using the final list of codes generated by the initial rater. For the challenges to ERT, there was 88% agreement between the coders on the assignment of codes to participant responses. There was 83% agreement between the coders for the recommendations to improve ERT. Disagreements were resolved in discussion between the two coders. Further analysis was performed to identify the number of participants who did or did not report each of the codes for challenges and recommendations regarding lab classes. Thematic analysis was then applied to these finalised codes in order categorise these codes into meaningful themes. In the thematic analysis for both challenges and recommendations, each code was assigned to a single theme.

Results

Overall, there were responses from 70 participants concerning the challenges to online learning and from these responses, four themes emerged from the data:

Challenges to ERT during practical lab classes

The thematic analysis revealed four themes that reflected different challenges to engaging in ERT for lab classes. Table 1 shows the percentage of respondents who reported codes that comprised each theme.

Class issues: The largest theme was class issues, with 45% of respondents discussing issues regarding the structure, format or timing of practical classes. The most reported code that fell within this theme was in relation to student's perception that they found it hard to

follow what was going on during the class; *"Only challenge is trying to follow any exercises we are doing as it was a lot easier in person"* [Participant 32]. Students also felt that the duration of lab classes was a challenge; *"Lab classes can be very long and tedious"* [P44]. Another issue was that some students also found the material covered in the class to be quite difficult; *"It can sometimes be difficult to fully understand the statistics and tasks that are being completed in the Lab classes"* [P89]. There were also some students who found it difficult to multitask during the class; *"I have had to have the lab streaming on my iPad and SPSS up on my laptop. It is hard to navigate both at the same time whilst following along"* [P64]. Finally, there were also some students who felt that the time at which these classes occurred was a negative; *"I am less willing to engage as my lap (sic) class is in the evening"* [P66].

Communication issues: This was the second largest theme regarding issues with ERT. The main source of communication issues for students in this area was that the nature of ERT meant it was easy for some students to engage in social loafing, by taking a back seat during group activities and letting others do the work; *"I hate breakout rooms. they are so difficult for some people, so people will just not speak in them and no work is done"* [P74], with some students even admitting to engaging in social loafing themselves during these classes; *"It's easier to sit back and let everyone else do it"* [P22]. Students also reported that the online format of these lab classes made it more difficult to ask for help from the tutor and/or teaching assistant; *"Yes, as maths is definitely not a strong point of mine and it is hard to get clarification on what is confusing me"* [P48], or to ask questions during the class; "*lab classes are the hardest online …It has been harder to ask questions."* [P5].

Digital issues: This was the third largest reported theme and reflected the challenges faced by students in accessing ERT owing to technology problems. Within this theme, the main issue related to difficulties with accessing a reliable Wi-Fi connection; *"sometimes, if*

the Wi-Fi is bad it can disrupt me from engaging with my class" [P57]; problems with the video conferencing software; "*... I am kicked out of the lab and cannot re-join"* [P63]; and issues with using SPSS; "*Getting SPSS to work was a real challenge, and I had a lot of issues with it, whereas if I was in a real lab class there would be people to help."* [P45].

Motivational issues: The fourth largest theme reflected personal characteristics which may have inhibited students' ability to fully engage with online learning in practical classes. Within this theme, the most commonly reported code related to students feeling that it was difficult to maintain focus during ERT; *"...it is easy to switch off when looking at a screen for a long period of time"* [P52]; they also discussed how it was also difficult to inhibit potential distractions; "*Again, it can be very easy to get distracted in classes by something external such as TikTok or texting friends etc.*" [P29], and students also reported issues with being able to maintain focus due to factors relating to the environment in which they engage in online learning; *"...my home environment is stressful so it is hard for me to concentrate*" [P19]. Another consequence of ERT was that students found interactions to be quite awkward, in terms of interacting with their peers; *"It can be awkward to interact with students you haven't met and complete tasks"* [P3], as well as in terms of responding to questions set by the tutor; *"It is awkward answering over mic but I feel over time that would get less awkward and I would get used to it"* [P17]. Finally, students also discussed how ERT had somewhat impacted upon their confidence to contribute to the class; *"Again, watching the amount of people on the lab class makes it difficult to find the courage to speak up"* [P75]).

[INSERT TABLE 1]

Recommendations for improving ERT during practical lab classes.

For recommendations on how to improve ERT for practical lab classes, there were responses from 44 participants. Based on the data, four themes emerged regarding potential recommendations:

Enhanced provision and support: This was the largest theme, with 35% of the sample reporting recommendations that fell within this theme. The most reported suggestion for improvement concerned including more opportunities for students to take part in interactive tasks during these classes, which may involve the use of specific programs; *"Use of Socrative"* [P15 & P20]; *"Keep using activities such as Socrative to get everyone to join in"* [P84]").

Enhanced communication: This was the second largest theme regarding improvements to ERT**.** Students indicated that they would like to see opportunities to improve communication between themselves and their peers on the course; *"more interaction with each other"* [P42]. Furthermore, students also reported that they would like more opportunities to work in groups with fellow students; "*maybe get students to go into a group each time something new is explained"* [P8]. Finally, a smaller percentage of students recommended that students should be encouraged to interact with each other during breakout group activities" *Really encourage people to participate in breakout rooms*…[P40]".

Format of class: Within the third largest theme, a small number of students reported the same practical recommendation for improving the format of practical classes, which was to reduce the number of people who were in each of these classes, possibly as a means to increase the frequency of interaction with other students and/or the lecturer; *"Having smaller groups may help people engage more"* [A66].

Reduced group activities: The fourth largest theme reflected how there were some students who expressed a preference for a reduced number of group activities and/or more

individual activities; *"Less use of breakout rooms, more use of doing activities alone and posting answers in chat box"* [A27]; *"Less breakout rooms and ask more questions over the main call"* [P26].

[INSERT TABLE 2]

Discussion

The aim of the current study was to assess perceptions of engaging in ERT during practical lab classes amongst first-year Psychology undergraduate students, who were studying a single-honours degree course in the UK. In particular, we were interested in what challenges students reported facing when engaging in ERT for these classes, as well as their suggestions for how ERT could be improved in the future. Four themes emerged from the data for both the former and the latter.

The biggest issue concerning ERT that students reported was related to the structure, content and format of the practical class itself, with 45% of students expressing difficulties related to this theme. The novel finding in the current study was that students focused on issues with the structure, content and format of the class itself to a greater extent than they focused on other issues (e.g., communication, motivational and digital issues) that have arisen in previous studies involving undergraduate Psychology students (Gravelle et al., 2022; Hoss et al., 2021; Laher et al., 2021; Limniou et al., 2021; Usher et al., 2021). This issue is consistent with the proposition that students may find learning research methods more challenging in an online class, as opposed to in a face-to-face environment (e.g., Al-Amin et al., 2021). As previously mentioned, students tend to struggle with practical lab classes (Allen et al., 2016; Murtonen et al., 2008), perhaps because students who are not studying for a degree that includes significant mathematics content (as is the case for Psychology

students) tend to report anxiety about learning statistics and minimal associated mathematics (e.g., Field., 2014), which are an integral part of these practical-based classes. Some of these issues (e.g., regarding the duration and timing of classes) could hypothetically be addressed in a relatively straightforward manner. In regard to improving ERT in the future, one-fifth of students made suggestions which mostly focused on reducing the number of students in the class, possibly so that students may be more willing to engage in the class. Just such an intervention was tested by Thompson et al. (2016), who longitudinally assessed whether teaching first and second year students in small groups during lab classes would reduce their level of math anxiety. The authors found this intervention was not as successful as one which involved students being given a short talk by the instructor on the topic being covered, although impact on engagement and attainment was not assessed. However, issues regarding the material itself, how it is taught, and the skills required to follow these classes, are perhaps more difficult to address. The switch to ERT for first year undergraduate students coincided with the introduction of potentially more challenging material (e.g., SPSS, descriptive statistics, data visualisation, probability theory, chi-square and correlation), and specific interventions may be required to reduce anxiety associated with learning difficult research methods and statistical content (e.g. Thompson et al., 2016). Indeed, given that math anxiety has been found to negatively impact numerical performance amongst psychology students (Thompson et al., 2015), perhaps further work might also investigate whether ERT further exacerbates feelings of anxiousness during these practical lab classes, compared to face-to-face classes.

A large proportion (41%) of students reported communication issues during ERT, such as a lack of engagement with staff and other students, which is consistent with previous findings from Psychology (Hoss et al., 2021; Laher et al., 2021; Usher et al., 2021) and non-Psychology students (Bdair, 2021; Faize & Nawaz, 2020; Leal Filho et al., 2021; Limón-

Vázquez et al., 2020; Lischer et al., 2020; Serhan, 2020). A further novel finding in the study was that 12% of students reported being either witness to, or engaging in social loafing during group activities. Students are relatively anonymous during online group tasks (i.e., they may not have their cameras on, and are then placed in a large group with individuals who they have not met before). This level of anonymity perhaps makes students less likely to engage during group activities, and instead let the rest of the group complete the activity. However, social loafing may, to a certain extent, be the result of how students are allocated to groups. Tosuntaş (2020) demonstrated that lecturer-created groups tend to suffer more from social loafing than student-created groups, suggesting that asking students to complete work in a familiar group may address the issue. Greater opportunities to bond with peers in an online environment may also help to reduce the likelihood of social loafing during groupwork, which students in the sample did not have. More research needs to be done to understand the motivations behind why students engage in social loafing in online lab classes, and whether this is related to factors such as difficulties in developing online relationships with their peers, perceptions of the usefulness of group activities, whether they perceive that there are no repercussions for not engaging, or due to the difficulty of the content covered in the class.

Furthermore, some students reported that they found that the format of ERT did not lend itself well to allowing students to ask questions to consolidate their learning. It is possible that a general lack of engagement during ERT reduces the likelihood that students will ask questions, making it difficult for instructors to assess whether students have understood the content (Subekti, 2021). Video conferencing software usually offers a chat function allowing students to ask questions in real-time, but students' responses are often identifiable, which may further reduce their likelihood of asking questions. The use of anonymous response platforms (such as Padlet) may circumvent this issue.

Thirty-two percent of students reported encountering digital issues during ERT (e.g. issues with the Wi-Fi connection, issues with video conferencing software, issues with SPSS) which is also consistent with similar issues reported in previous research with Psychology students (e.g., Gravelle et al., 2022; Limniou et al., 2021) and students from other degree programmes (e.g., Amir et al., 2020; Lischer et al., 2020; Serhan, 2020). This should be a pertinent issue for HE providers, considering that lower attainment and lower engagement in online classes have been linked to a lack of access to high-speed internet connection (e.g., Hampton et al., 2020; Mac Domhnaill et al., 2021). Furthermore, broadband speeds in Northern Ireland tend to vary across council areas, with the most sparsely populated areas tending to have the slowest broadband speeds (McHugh, 2021) One suggestion is that HE institutions should be responsible for the provision of resources to support online learning, such as ensuring that there are campus areas with Wi-Fi access, access to computers (Faize & Nawaz, 2020), although some of these may be difficult to achieve under certain circumstances (e.g., such as during periods of lockdown, as was the case during the first two years of COVID-19 in the UK).

Motivational issues were reported by 31% of students, which had impacted upon their ability to engage in ERT. In particular, students expressed difficulties with maintaining motivation and ignoring distractions during these classes, which is consistent with previous research with Psychology students (e.g., Gravelle et al., 2022; Hoss et al., 2021; Lahar et al., 2021; Limniou et al., 2021; Usher et al., 2021) and students from other academic disciplines (e.g., Amir et al., 2020; Faize & Nawaz, 2020; Lischer et al., 2020; Serhan, 2020), which has consistently found that students struggled with adapting to the increased requirement for self-discipline when engaging in ERT. This finding points towards the importance of ensuring that students are trained in using the relevant software ahead of engaging in online sessions (Bdair, 2021; Faize & Nawaz, 2020; Nguyen et al., 2021).

In regard to improving ERT in the future, 35% of students reporting suggestions to enhance provision and support for students, with some students suggesting an increased number of interactive tasks to improve their learning experiences, which is consistent with research from other non-psychological disciplines (e.g., Bdair, 2021; Faize & Nawaz. 2020; Mukhtar et al., 2020). Faize and Nawaz (2020) found that Bioscience undergraduate students' recommended that an important aspect of improving ERT may focus on including interactive elements during the classes to facilitate understanding of the practical aspects of a topic, and that lecturers should be trained in how to deliver ERT. Indeed, many HE practitioners tend to be inexperienced in delivering online teaching itself (Johnston et al., 2020), and would indeed require relevant training on how to use technology effectively to deliver interactive teaching sessions (Ali, 2020), which may involve training staff on the use of software designed to increase student participation in class (e.g., Vevox, Padlet, Mentimeter). The use of Personal Response Systems (PCRs; Wilson, 2016a) has now been superseded by the emergence of programs such as Socrative (Wilson, 2016b), which are accessible by mobile phone, making interactive tasks more accessible to students. Furthermore, the inclusion of interactive activities, such as providing students with demonstrations of experimental research via Qualtrics, could improve the learning experiences of students who are engaging in ERT.

A further novel finding in the study was that there were conflicting suggestions regarding groupwork activities. Almost a third of students discussed how communication could be improved during ERT, with respect to engagement with lecturers during the class, as well as having more opportunities to engage in groupwork, and to encourage students to participate in online group activities via breakout rooms. However, this was in direct conflict with the views of a smaller number (10%) of students, who were in favour of reducing the number of group activities during ERT. This disagreement may be reflective of individual differences in the perception of groupwork. For example, Stark et al. (2007) found that

amongst business administration students, group work preference was negatively related to social loafing behaviours. This was moderated by individual differences in competitiveness and by task interdependence, suggesting that one cannot assert that social loafers are simply those students who dislike groupwork. Furthermore, students' contribution to groupwork may be influenced positively, when these activities are accompanied by an individual assessment (Joo, 2017). Individual differences in attainment also appear to be positively related to student's perception of the value of groupwork (Chang and Brickman, 2018). Further research could be carried out to investigate psychology student's perceptions and attitudes towards groupwork, especially given that it is strongly embedded within BPS-accredited degree programmes (British Psychological Society, 2019).

A limitation of the study is that we focused on the negative aspects of ERT, which may not necessarily be felt by all students. For example, Hidalgo et al. (2021) identified four distinct student profiles of students based on the adaptability to ERT and their level of academic performance. 'The Lucky' benefited grade-wise from increased coursework and less reliance on the final exam; 'The Passive' tended not to benefit due to reluctance to undertake independent problem-solving; 'The Autonomous Learners' managed their own remote learning well, despite preferring face-to-face learning; and 'The Harmed' most strongly preferred face-to-face classes. It is possible that in our sample, the implementation of ERT benefited some students, and at the same time disadvantaged others. Furthermore, we did not investigate whether there were specific coping mechanisms that Psychology students used to deal with the potential stressors associated with remote learning (e.g., Gelles et al., 2020; Rotas & Cahapay, 2021). More research is needed to identify whether there are any specific characteristics beyond an affinity for autonomous learning which tend to inoculate students from the possible negative effects of ERT.

In conclusion, the current study addressed the issue of how first year undergraduate students perceived ERT for practical lab classes. Whilst some issues emerged that concord with previous research, both with Psychology students and students from other disciplines (notably digital and motivational issues), our study demonstrated that Psychology students tended to focus on issues relating to the structure and format of the class itself, to a slightly greater extent than other issues (e.g., communication, motivational and digital issues). Whilst we also found that students reported communication issues for ERT, the biggest focus here was on experiences of social loafing during group activities. There was also some evidence of disagreement on the use of groupwork activities to enhance learning during these classes. Whilst this is the first study to demonstrate that issues concerning how lab classes are designed is one of the most widely challenges for first year psychology students engaging in remote learning, further experimental work needs to be done to assess whether or not changes to online research lab classes improve students' experiences of online learning, and reduce any possible anxiety about the course material. The issues raised in the study should be considered by HE institutions in light of developing future policies concerning the delivery of online provision in the future.

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Table 1. Table showing the themes and codes for challenges to online learning, as well as the percentage of participants (n = 70) who reported codes within each theme.

Theme	Codes and percentage of participants reporting each code		Total percentage reported
Class issues	Hard to follow	20.00%	45.71%
	Duration of class	7.14%	
	Difficulty with material	4.29%	
	Multitasking	4.29%	
	Time of class	4.29%	
	Other	5.72%	
Communication issues	Social loafing	12.86%	41.43%
	Asking questions	10.00%	
	Other	18.57%	
Digital issues	Wi-fi, software and device issues	31.43%	32.86%
	Other	1.43%	
Motivational issues	Maintaining focus	10.00%	31.43%
	Awkwardness	5.71%	
	Confidence	4.29%	
	Other	11.43%	

Table 2. Table showing the themes and codes for recommendations to improve online learning, as well as the percentage of participants (n = 40) who reported/did not report codes within each theme.

Theme	Codes and percentage of participants reporting each code		Total percentage reported
Enhance provision and support	More interactive tasks	7.50%	35.00%
	Other	27.50%	
Enhanced communication	More groupwork	7.50%	30.00%
	More engagement	7.50%	
	Encourage participation in breakout rooms	5.00%	
	Other	10.00%	
Format of class	Smaller classes	10.00%	20.00%
	Other	10.00%	
Reduced group activities	Less breakout rooms	5.00%	10.00%
	Other	5.00%	