NAVIGATING THE TRANSITION TO ONLINE TEACHING AT THE UNIVERSITY OF MELBOURNE DURING COVID-19: APPROACHES, REFLECTIONS AND INSIGHTS

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Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 2 of 32

TABLE OF CONTENTS

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 3 of 32

EXECUTIVE SUMMARY

The COVID-19 pandemic was the most profoundly disruptive event experienced by university teachers in living memory. In a matter of weeks, delivery of every subject had to transition from predominantly face-to-face to online. In this paper, we sought to understand the nature and variation of approaches taken to online delivery by academic staff at the University of Melbourne, what motivated their delivery decisions, their perceptions of how the move online impacted learning and teaching, and their thoughts about how the experience of transitioning to online learning has shaped their future teaching plans and approaches. Educators adopted a range of synchronous and asynchronous delivery methods and refined these in subsequent iterations of their subjects. While most educators felt that their teaching experiences - and the learning experiences of their students - worsened during the pandemic, there were also positive outcomes. These included new initiatives in teaching, learning and assessment and a significant increase in the capacity and skills of academics in online teaching. Drawing on what they learned from pandemic teaching, most educators felt that a blended approach to their future teaching would be most effective, potentially in tension with university directives to commit to minimum levels of on-campus face-to-face teaching. The insights from our study will help to inform future teaching and learning strategies at the University of Melbourne and across the Australian higher educator sector.

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 4 of 32

INTRODUCTION

The 2020 COVID-19 pandemic profoundly disrupted teaching and learning activities at Australian universities, necessitating a rapid pivot from primarily campus-based delivery to fully online. Educators largely unfamiliar with the online context were faced with complex challenges as they rapidly adapted their subjects for online design and delivery. While the move online created potential opportunities for teaching innovation, especially in relation to the use of educational technologies, the urgency of the transition meant that educators were forced to carry out emergency remote teaching, often leaving them without sufficient time to intentionally design and deliver high-quality online learning and support (Hodges et al., 2020; Rapanta et al., 2020). Early reports revealed a predominantly instructional approach to online teaching (Hall et al., 2020) that prioritised learner-content interactions, but provided only limited opportunities for learner-instructor or learner-learner interaction (Kennedy, 2020; Moore, 1989). However, as the need for remote teaching continued, increased attention was given to creating more active and interactive learning opportunities for students using a broad variety of online platforms (Godber & Atkins, 2021).

Our study sought to gain deeper insights into the nature and variation of approaches to COVID-responsive online teaching and learning across the undergraduate curriculum at the University of Melbourne, both in the initial phases of the move to remote learning in early 2020, and as need for online teaching continued throughout 2020 and 2021. Drawing on results from an institution-wide survey of teaching academics, we aimed to quantify the different approaches that were employed to conduct online teaching, learning and assessment. While there were very limited opportunities for on-campus teaching in 2020 and 2021, a range of synchronous and asynchronous teaching modes were available to teaching staff, including live lectures and Q & A sessions via Zoom, full lecture recordings and purpose-designed videos. We examined the extent to which these various modalities were employed as well as the ways in which they were combined.

We were also interested in the personal experiences and perceptions of academic teaching staff, and their perceptions of the student experience. Moving to online teaching was a difficult transition for teaching academics, that was often accompanied by strong emotional responses, including discomfort, anxiety and grief and feelings of disconnection and a loss of agency (Cain et al., 2022; Fox et al., 2021; Taylor et al., 2022). Such emotions were often exacerbated by educators' concerns for their students' wellbeing as well as their learning (Mutch et al., 2021). On the other hand, educators also found unique opportunities to develop and enhance their teaching (Damşa et al., 2021). We sought to discover whether the experiences of educators and students improved or worsened during the pandemic. However, as we discuss in this paper, qualitative responses to our survey highlighted the complexity of experiences, which were often simultaneously positive and negative. While enabling factors such as support from departments and colleagues were critical for educators, there were also constraining factors such as immense workloads and challenges associated with leaning new technologies and adapting to online platforms.

Our research also aimed to understand the likely impact of the pandemic on the future of teaching and learning at the University. Predictions of the impact of the pandemic on higher education globally suggest that experiences of remote learning have offered valuable lessons for the future of higher education that have the potential to improve teaching and learning (Anderson & Berhtram, 2022; Phillips, 2021). Similarly, a report commissioned by the Department of Education (Lodge et al., 2022, p. 8) suggests that although online learning is not new, the changes in modes of delivery brought about by the pandemic represent a 'fundamental shift in the ways that educational experiences will be offered to Australian higher education students.' While the report highlights some opportunities to emerge from the changes, including increased flexibility for students and enhancements in teaching and learning through digital technologies, it also identifies risks to be mitigated if online modes of delivery are to be retained. These include concerns of potential reduced student engagement, interaction, equity and mental health, as well as a need to ensure that learning resources and support are of high-quality and tailored to the modes offered. The insights provided by

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 5 of 32

the educators in our study provide further important insights into which approaches employed during the pandemic worked and which did not. This will help to inform future teaching and learning strategies at the University of Melbourne and across the Australian higher educator sector.

BACKGROUND

Although the pandemic accelerated and diversified uses of online learning, the move towards an increased use of online learning technologies as part of a 'blended learning' offering had grown considerably throughout the 2000s and 2010s (Jowsey et al., 2020; O'Brien, 2021). This growth was stimulated in large part by students' preference for flexible modes of learning that could accommodate work and family commitments (Baik et al., 2015) and individualised learning schedules and pace (Okoye et al., 2021; Palvia et al., 2018). Increasing the availability of online and remote modes of learning also allowed universities to market to and attract students limited by time or distance (Palvia et al., 2018; Seaman & Allen, 2018). The growth in online study options over the 2000s led to a gradual but significant shift in the ways in which students accessed their studies, resulting in an increase in blended learning approaches and a concurrent decline in on-campus attendance (Baik et al., 2015). Yet, despite such trends, most Australian universities retained predominantly campus-based education provision prior to the onset of the pandemic.

The move to emergency remote learning took place on 30 March 2020, three weeks into the first semester of teaching. The shift was unfortunately-timed, rapid, and affected a cohort of educators who were by and large inexperienced in online learning. Although creating more flexibility for students was a strategic priority for the University prior to the pandemic (including through an increase in online resources) the University also maintains an especially strong commitment to providing a rich on-campus student experience and prior to 2020 offered only limited blended and online learning options. The disruptive impact of the move online was perhaps especially pronounced at institutions like the University of Melbourne, where teaching and learning was previously conducted almost entirely in-person. The absence of pre-established online curricula and resources, as well as the limited infrastructure to support online modalities, presented a daunting challenge for educators.

As we explore in this paper, educators at the University of Melbourne adopted a broad range of synchronous and asynchronous approaches to teaching and learning online. Synchronous modes involve learning in real-time via video conferencing or other live communication tools, and function in a similar manner to face-to-face learning, occurring on a set schedule, ensuring students learn the same content at the same pace (Kumar et al., 2021), and allowing for but not necessarily requiring engagement with both instructors and peers (Fabriz et al., 2021; Hrastinski, 2010). Synchronous learning is easier to develop, as the live format allows teachers to adapt teaching materials previously used for in-person teaching (Rad et al., 2021). However, translation to the online setting comes with challenges, especially when there are interactive or practical components.

Asynchronous learning utilises previously developed online materials that students' access at their own pace and on their own schedules (Fabriz et al., 2021). Asynchronous curricula are especially well suited to the online setting as they provide students with flexibility, and while they require a significant initial time investment from educators, once created, teaching materials no longer need teacher input, at least while the content remains current and relevant. Nevertheless, the time required to develop high-quality asynchronous online learning materials is often underestimated, as is the level of skill and knowledge of digital design principles needed (Engeness, 2021).

The rapidity of the move online that occurred with the onset of the pandemic in early 2020 limited the capacity for educators to develop high-quality asynchronous materials, often necessitating a much heavier reliance on synchronous learning than would usually be employed in online learning contexts. Educator's choices were often impacted by time pressures and determined by logistics and efficiencies rather than by

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 6 of 32

their understanding of best pedagogical practice. The literature documenting approaches to teaching in higher education during the pandemic shows that the use of synchronous online modalities was overwhelmingly prominent (Pilkington & Hanif, 2021; Suneja et al., 2020; Vatier et al., 2021), but also suggests that educators often adapted synchronous, face-to-face instructions to the online format without adequate attention to the differences between in-person and online teaching modalities (Henriksen et al., 2020).

As the need to remain online continued throughout 2020 and 2021, the focus for educators shifted from pure content delivery, to facilitating increased interactions between students and between students and teachers using online platforms. For example, research shows a shift towards the use of workshops instead of traditional lectures (Anzovino et al., 2020; Milovanović et al., 2020; Ng & Harrison, 2020), often conducted using breakout rooms to allow closer interactions between students and teachers, and between peers (Milovanović et al., 2020; Stadelmann et al., 2021)). However, students' experiences of feeling socially isolated often contributed to a lack of engagement in online synchronous classes. Anecdotal reports of students keeping their cameras off during online classes are common, reducing the potential for interaction and removing a primary way of measuring engagement for teachers. Concerns about anxiety, stress, privacy and 'zoom fatigue' illustrate some of the complexities and challenges of synchronous online learning from the student perspective (Moses, 2020). Nevertheless, video conferencing had many positive benefits; for example, it allowed office hours to be conducted online, and many found that online sessions were attended in higher numbers than traditional face-to-face sessions (Howitz et al., 2020).

While asynchronous teaching strategies were not used as frequently as synchronous ones, primarily due to the time required to develop online materials (Schlenz et al., 2020), some educators did move away from synchronous live lectures and instead used video recording software to produce either full lecture recordings (Pilkington & Hanif, 2021) or pre-recorded 'minilectures' (Bose, 2021; Nackers et al., 2021). While full lecture recordings allow for the quick translation of previously developed material to video or audio format, mini lectures provide educators an opportunity to fine tune their design and delivery and to develop more succinct and accessible lectures in 'bite-sized' fragments (Bose, 2021; Kidess et al., 2021; Nieto-Escamez & Roldán-Tapia, 2021; Pilkington & Hanif, 2021). These short format videos have been found to increase engagement and allow students opportunities to take more breaks to reduce screen fatigue (Bose, 2021; Tuma et al., 2021).

Studies show that throughout 2020 and 2021, it was common for educators to combine asynchronous materials and activities with synchronous sessions that allowed for questions, discussion and interaction (Alves et al., 2021; Schlenz et al., 2020). In medical schools, for example, pre-recorded lectures were paired with live scenario-based learning, including virtual consultations and case studies (Nackers et al., 2021; Paul et al., 2020; Wang et al., 2021). In the sciences, video recordings were oten paired with live virtual lab simulations allowing educators and students to interact (Anzovino et al., 2020; Guiter et al., 2021; Haridy et al., 2021). Our study similarly found that varied synchronous and asynchronous teaching modes were most often used in combination rather than in isolation, as we discuss below.

METHODS

An institution-wide survey was distributed to teaching staff at the University in early December 2021, which received responses from 413 coordinators across 371 subjects. With the exception of the Faculty of Architecture, Building and Planning, all academic divisions were represented in the survey responses (Figure 1). All academic appointment levels were represented, with the majority of respondents at level C ($n = 140$), followed by level B ($n = 99$), D ($n = 73$), E ($n = 70$) and A ($n = 35$). At levels B–E, the majority of respondents indicated their role as teaching and research, whereas most level A academics were teaching specialists (Figure 2).
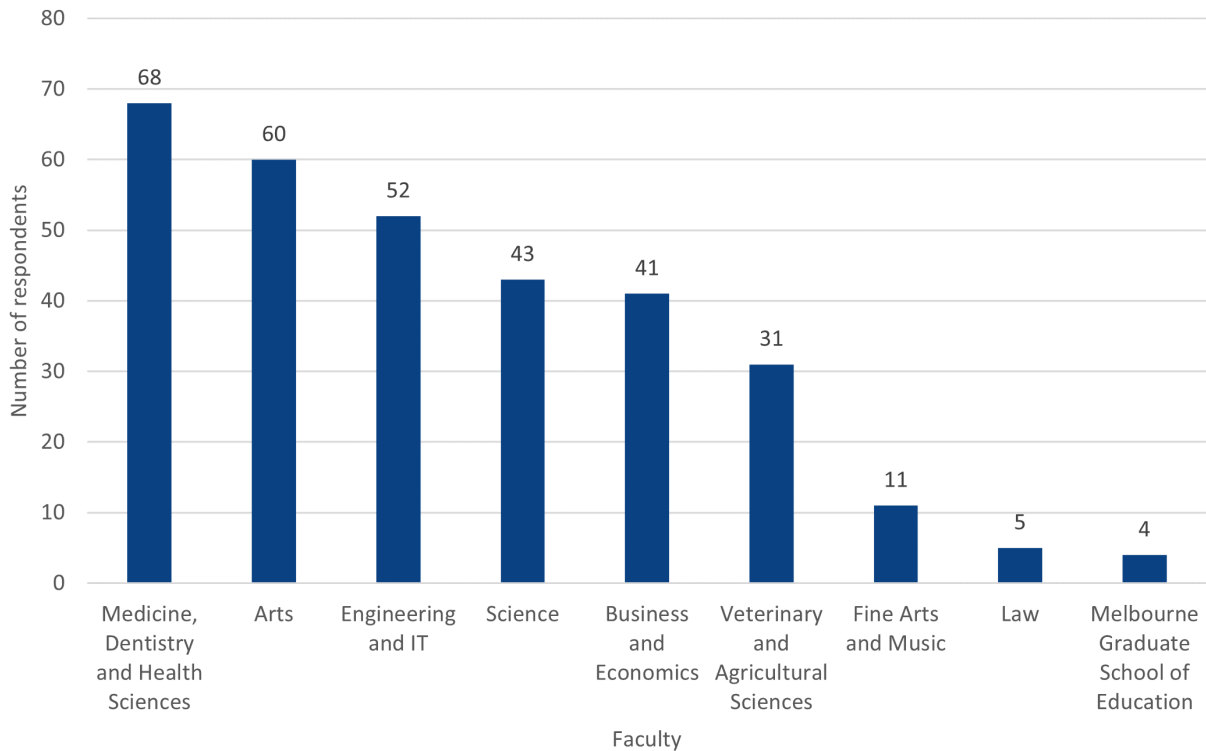
Figure 1. Distribution of respondents to the online delivery during COVID survey across academic divisions at the University of Melbourne.
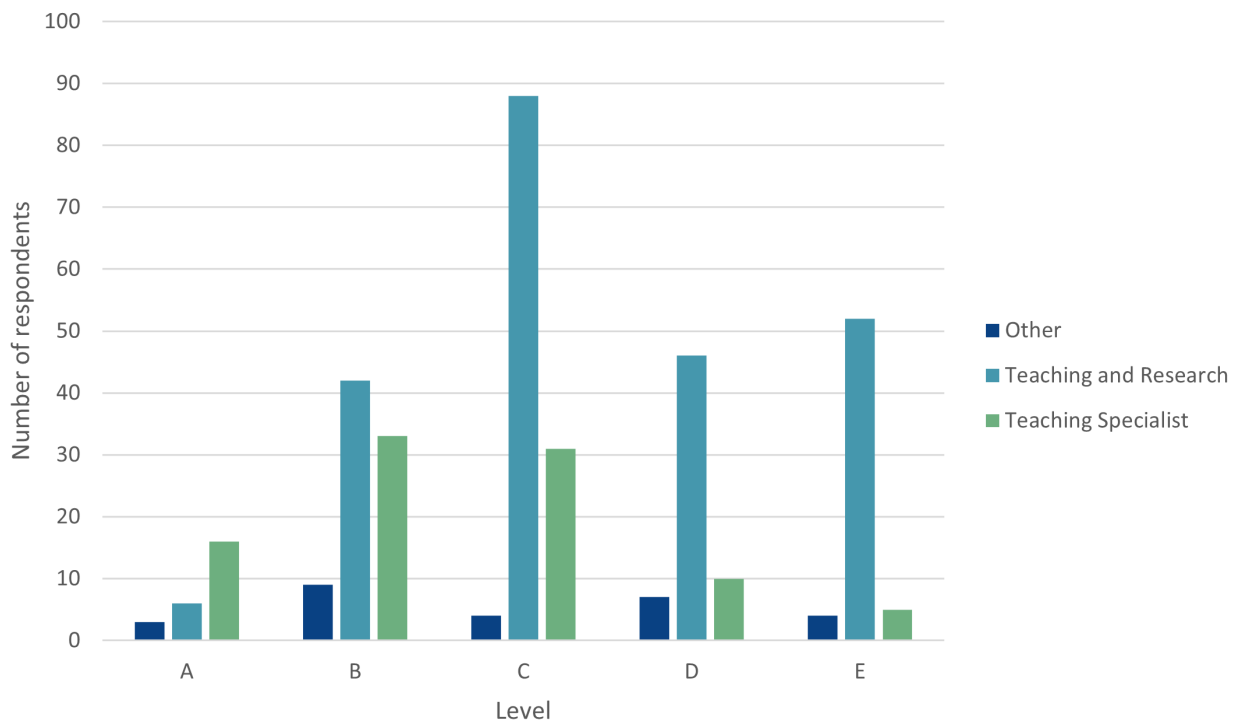
Figure 2. Distribution of participants' role types and levels at the University.

The survey aimed to identify and classify the variation of approaches to online design and delivery, allow us to gain insights into educators' perceptions of their own and their students experiences of online learning in 2020 and 2021, and to understand which approaches to teaching, learning and curriculum design adopted during the pandemic might be enduring.

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 8 of 32

FINDINGS & DISCUSSION

PRIOR EXPERIENCE IN ONLINE TEACHING

Over half of the 413 respondents (53%) reported that they had no experience in implementing online teaching and learning prior to 2020, with only 15% reporting they had considerable experience (Figure 3).
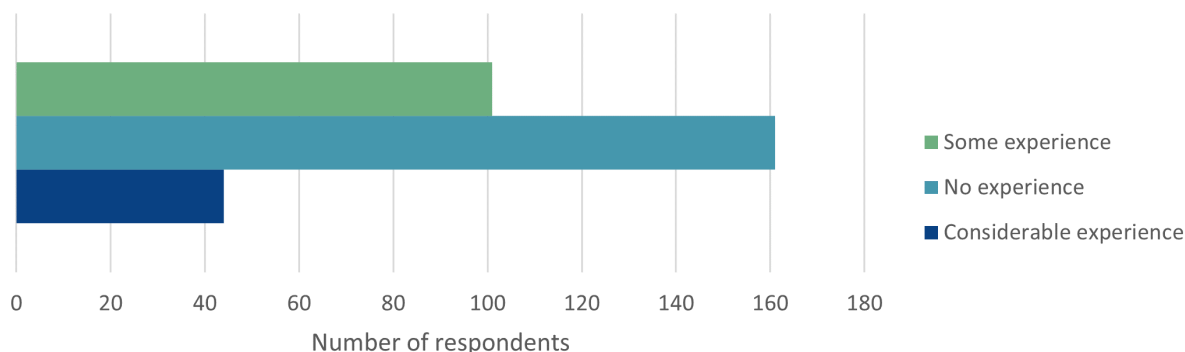
Figure 3. Self-reported experience in online teaching and learning across all respondents to the survey.

CHANGES TO MODES OF DELIVERY

Changes to lectures

Despite increasing concerns about low lecture attendance and the value of lectures (French & Kennedy, 2017), prior to the pandemic in-person lectures played a central role in the curriculum at the University of Melbourne and were the dominant class type comprising 55.2% of the total undergraduate contact hours (Kennedy et al., 2017). In 2019, the year before the pandemic disrupted teaching and learning at the University, the majority of respondents, who were able to provide detailed information about their lecture delivery modes across all three years, utilised in-person lectures (161 of 200, 80.5%). The remaining respondents utilised a combination of in-person and recorded full lectures (14%), recordings only (0.5%) or some other delivery mode (5%) (Figure 4).

Prior to the move online, the majority of respondents (90 of 133, 68%) presented their lectures in person, with some also using a full-length recording of the lecture (18 of 133, 14%). With the move online in 2020, those same respondents indicated their main modes of lecture delivery as live Zoom lectures (65 of 133, 49%) and live Zoom Q&A sessions (60 of 133, 45%). Some educators directly translated the face-to-face lecture into the online context by providing full lecture recordings for students to view or listen to asynchronously in their own time. These were mostly developed afresh in the year of delivery (53 of 133, 40%), although a small number (7 of 133, 5%) used lecture recordings from the previous year.

Live zoom lectures were widely used (65 of 133, 49%), in which educators could translate the live lecture to the synchronous online setting. The kinds of approaches employed within the live zoom lectures are likely to have varied considerably and it is not possible to ascertain the extent to which these lectures facilitated active or interactive approaches to learning. However, unlike the asynchronous lecture recording, the synchronous live lecture does have the potential to be a more active learning experience for students and might include activities such as polling, small breakout group sessions, whiteboards or other interactive tools, and opportunities for asking questions.

In some cases, lectures were repurposed or replaced with other teaching formats, including short instructional videos posted online, in which the content of lectures was broken down into smaller 'bite-sized' chunks, or modules that utilised other interactive formats such as H5P - herein, we refer to these elements as 'online mini-instructional videos or modules.' A substantial proportion of our respondents (43 of 133, 32%)

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 9 of 32

indicated that they had employed this approach, suggesting that the pandemic initiated a statistically significant use of this teaching method which was rarely employed prior to the pandemic in 2019.
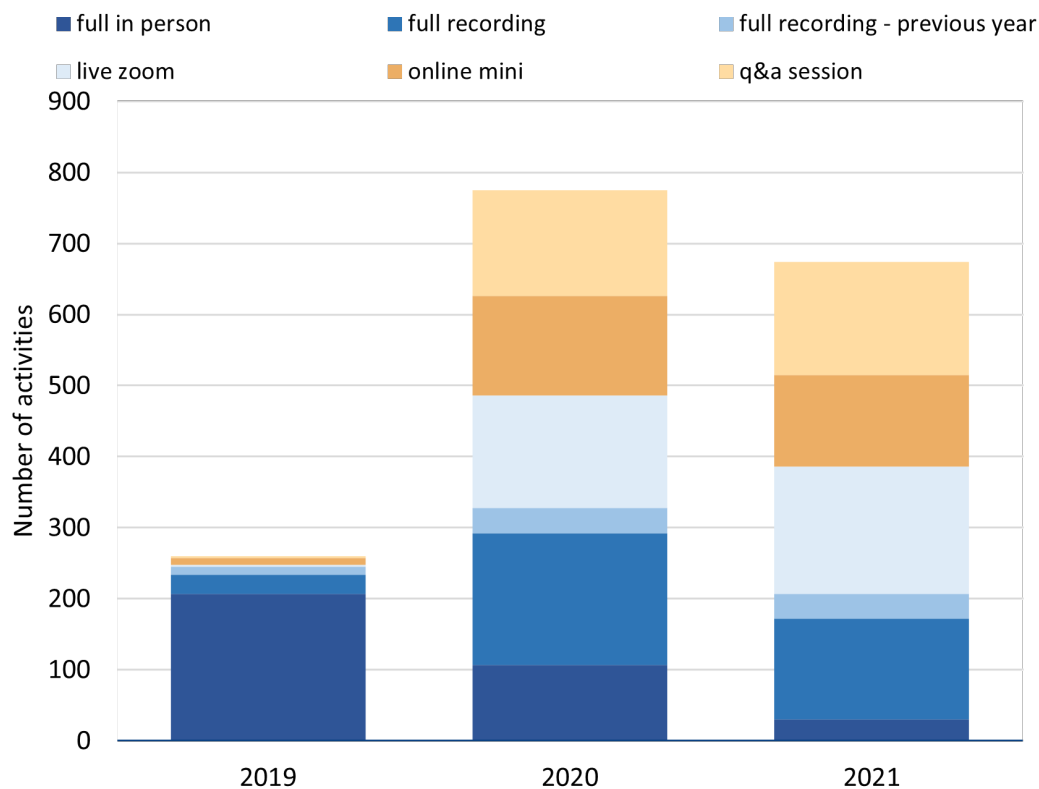

Figure 4. Overall changes to the numbers of delivery modes utilised by coordinators in delivering their lectures across 2019, 2020 and 2021.

In 2019, prior to the pandemic, the most common mode used for lectures was in-person lectures (n = 193, 81% of respondents), with relatively few subjects utilising full lecture recordings (n = 31, 13%), online mini-instructional videos or modules (n = 9, 4%), live Zoom (n = 3, 1%) or Q&A sessions (n = 3, 1%). Some subjects used in-person lectures in combination with lecture recordings (n = 28, 12%). Importantly, only those subjects that were already utilising lecture recordings also used other formats, including online mini-instructional videos or modules, live Zoom or Q&A sessions.

In 2020, as expected, there was a distinct shift away from in-person lectures, which were the least common mode of delivery in that year (n = 16, 4%), given that there were limited options for in-person delivery during the COVID-19 lockdowns. Approaches were varied with relatively similar numbers of subjects utilising lecture recordings (n = 88, 23%), online mini-instructional videos or modules (n = 77, 21%), live Zoom (n = 95, 26%) or Q&A sessions (n = 85, 24%). In 2020, live Zoom sessions were often used in combination with other modes, including full recordings (n = 34, 9%) and online mini-instructional videos or modules (n = 34, 9%), but were also used as the sole mode of lecture delivery (n = 30, 8%).

In 2021, full in-person lectures were again uncommon, as expected (n = 12, 3%), while the other modes: full lecture recordings (n = 83, 23%), online mini-instructional videos or modules (n = 79, 22%), live Zoom (n = 89, 25%) and Q&A sessions (n = 90, 25%), were again utilised in similar numbers as for 2020. Recordings were commonly used in combination with live Zoom (n = 48, 14%) and Q&A sessions (n = 51, 14%), whilst combinations of online mini-instructional videos or modules and Q&A sessions (n = 50, 14%) and of live Zoom and online mini-instructional videos or modules(n = 43, 12%) were also common ways in which subject coordinators chose to deliver their lecture content. Overall, subject coordinators tended towards using a greater number of teaching modes to deliver their lectures and small group classes across 2020 and 2021,

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 10 of 32

following the move to online teaching in early 2020 (Figure 5). This illustrates a growth in the use of diverse modes of delivery that is likely to have an impact on the future of teaching and learning, as we discuss later in this paper.
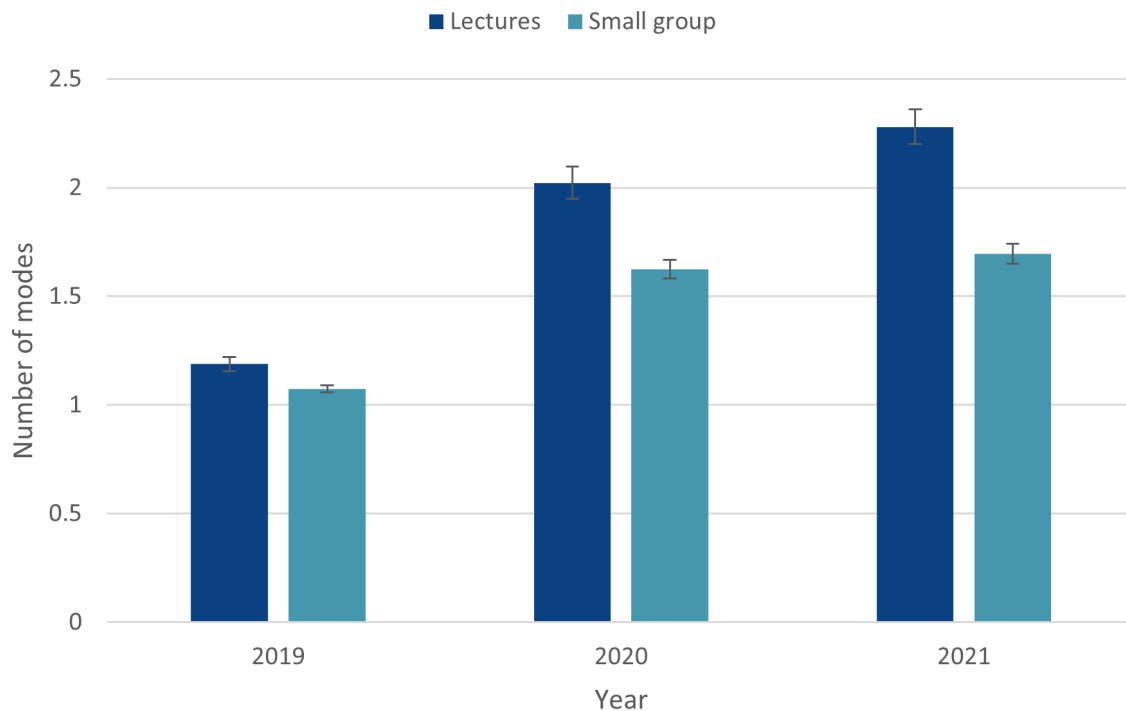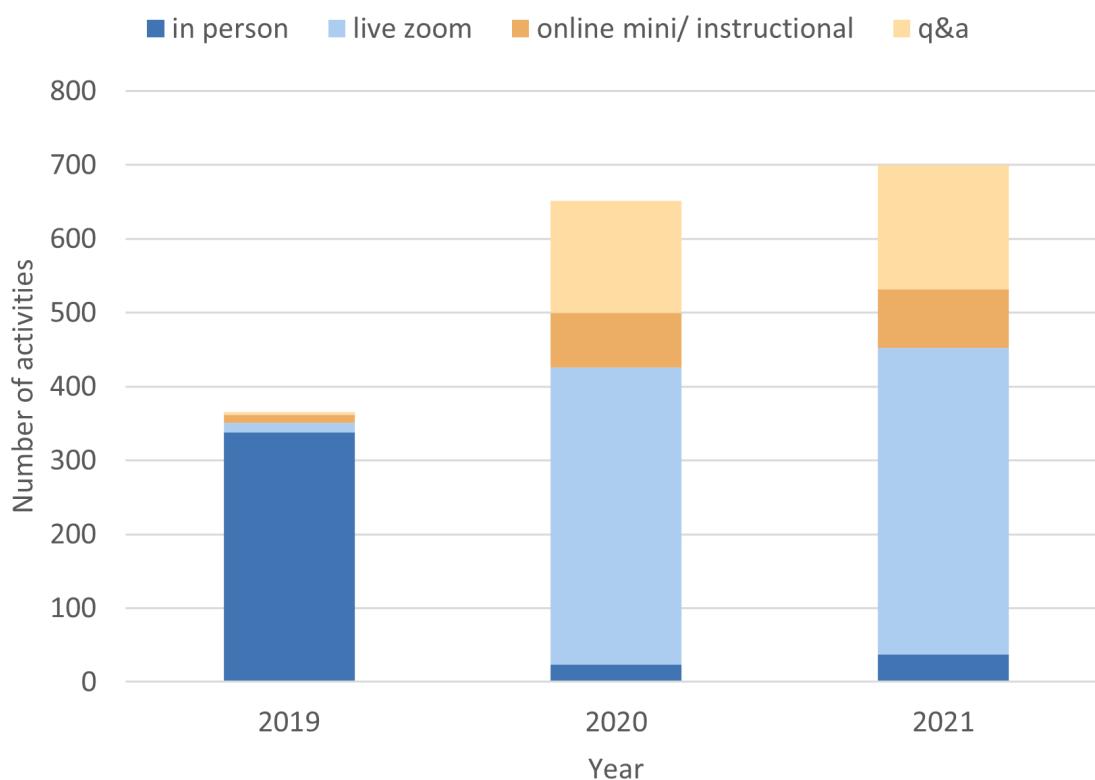

Figure 5. Numbers of modes utilised by subject coordinators for delivering lectures and small-group classes across 2019, 2020 and 2021.

Changes to small group teaching

Small group teaching sessions, comprising tutorials, seminars, workshops and practicals were largely taught in person in 2019. With the move online, the vast majority of these were delivered as live zoom sessions (62% of all small group sessions in 2020 and 59% in 2021). Online Q&A sessions were also a relatively popular mode of delivery for small group sessions (23% in 2020 and 24% in 2021), while online mini-instructional videos or modules were less commonly used (11% in both 2020 and 2021) (Figure 6).

The effectiveness of adapting in-person small group sessions to online synchronous sessions is likely to vary considerably, depending upon a range of factors that include the disciplinary context, learning objectives, teaching practices and technologies employed. Small group sessions that included practical components were especially challenging to deliver in an online setting and often required innovative approaches. As we explore in our discussion of the experiences and perceptions of teachers and students below, perspectives on the pedagogical efficacy and satisfaction of the small group sessions conducted online are diverse and complex. Staff report a broad mix of both limitations and opportunities for facilitating cohort connections in the online setting.

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 11 of 32

Figure 6. Overall changes to the numbers of delivery modes utilised by coordinators in delivering their small group classes across 2019, 2020 and 2021.

Changes to assessment

Respondents to our survey were asked about the modes they utilised for the assessment tasks employed within their subjects before and after the move to online learning and teaching. Asked to choose between modes for common task types such as assignments, exams, quizzes and presentations, many (21%) respondents indicated that they utilised in-person closed book exams prior to the move online, along with written assignments (21%), in-person quizzes or polls (5%) or presentations (9%), and a range of other modes including attendance (12%). Following the move online, there was a significant decrease in the proportion of respondents utilising in-person closed book exams (0.38%) and a concomitant increase in those utilising online exams, in both closed book (3%) and open-book (21%) formats.

Table 1. Reported changes to assessment task delivery modes before and after the move to online teaching and learning.

Category	Mode	Before	After
Exam	Closed in-person exam	45	1
	Closed online exam	0	9
	Open-book online exam	2	54
Quiz	In-person quiz	11	2
	Live online quiz	0	15
	Canvas quiz	12	32
Presentation	In-person presentation	20	1
	Live online presentation	0	15

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 12 of 32

	Pre-recorded presentation	2	15
Written	Assignment	60	66
	Research project	14	12
	Practical exam	11	14

These broad-brush data provide an indication of the types of changes coordinators may have made to assessment in response to the wholesale move to online teaching and learning, with expected moves to the usage of online formats. Studies on the modes of assessment employed by university educators during the pandemic show that assessment tasks frequently needed to be redesigned and that the vast majority were designed to be completed asynchronously (Abdullah Sharadgah & Abdulatif Sa'di, 2020; Youmans, 2020). For example, assessment tasks previously delivered as closed book, in person exams and quizzes were often replaced with open book and online multiple choice or short answer assessments (Khalil et al., 2020; Stadelmann et al., 2021; Youmans, 2020), as found in our survey responses.

Further elucidation of coordinators' attitudes towards assessment was possible through open-ended questions in which coordinators were asked to share any other aspect of their experience not captured within the survey. This resulted in a significant number of comments about the challenges facing coordinators around assessment, especially in relation to online exams and increased instances of plagiarism and academic misconduct. Respondents indicated that it was very difficult to ensure academic integrity in an online environment; one educator found their exam questions released on an open access website, another observed that the need to write new exam questions that dissuaded cheating was challenging and time-consuming, and another estimated that "*more than 25% of the class may have engaged in some form of plagiarism*", which they suggested was a result of disengagement and pressure to use online essay writing and exam completion services. Such comments are consistent with research findings that academic misconduct increased during the COVID-19 pandemic (Hill et al., 2021; Peh et al., 2021; Reedy et al., 2021), and discussions around e-cheating via the use of online platforms remain prominent in the media.

PERSONAL EXPERIENCES OF TEACHERS

Most respondents to our survey (*n* = 168, 53%) perceived that their personal experience of teaching worsened with the move to online learning, while only 21% (*n* = 67) felt it improved and 25% (*n* = 81) felt it remained about the same (Figure 7).
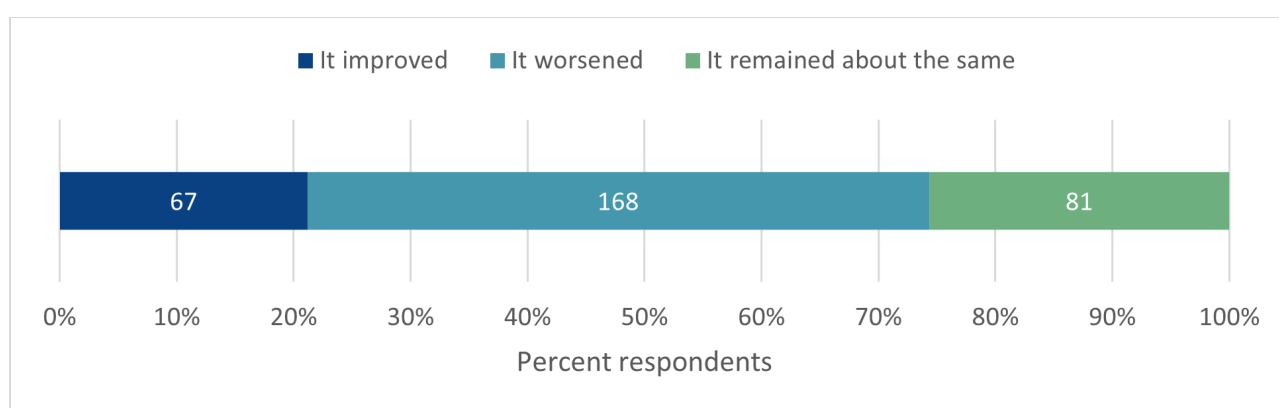
Figure 7. Respondents' perceptions of the changes to their personal experiences as teaching academics following the move online.

These findings support numerous studies that reported teachers had an overall negative experience teaching online during COVID-19 and that they show a preference for face-to-face teaching over online teaching

(Kefalaki et al., 2021; Tuma et al., 2021; Vatier et al., 2021; Villanueva et al., 2020). The challenges of transitioning online impacted the teaching experience for educators, who were often teaching online for the first time and had to rapidly learn new skills. Two of the most common challenges reported were a lack of preparedness, often in the form of digital literacy (Almazova et al., 2020), and a lack of time (Almazova et al., 2020; Anzovino et al., 2020; Longhurst et al., 2020). Teachers who underwent training courses for online learning prior to COIVD-19 tended to be more satisfied with the rapid transition to online learning (Rad et al., 2021). Other recurring difficulties encountered by educators documented in the literature include class management, lack of guidance and support, limited resources, lack of technical skills, and difficulty communicating with students (Akram et al., 2021; Almazova et al., 2020; Cahyadi et al., 2021; Schlenz et al., 2020). Each of these issues were reported by educators in our survey.

The survey included the option for educators to provide further details on their experience. Sixty-eight respondents to our survey chose to provide comments. This qualitative data illuminated the diversity of experiences, while broadly supporting the quantitative data presented above, with 62% (*n* =42) of the comments detailing negative experiences, whilst 20% (*n* = 14) of the comments were positive, and 18% (*n*= 12) were neutral or balanced.

The negative comments illustrated varied reasons as to why many educators felt their experience of teaching worsened with the move online. However, the most common cited reason was the loss of the relational aspects of teaching of teaching and learning, especially due to reduced interactions with students.

> *The vast majority of my interaction with students was removed in the move to online teaching, unless I was taking a tutorial. This removed the direct relational element of teaching, which is a key part of my enjoyment and an energising aspect of my teaching experience.*

> *Teaching online was extremely emotionally draining due to the lack of feedback and responsiveness of the students.*

Others suggested that their teaching was less effective or satisfying online than in a face-to-face setting.

> *Lack of face-to-face teaching was a significant negative for my style of lecturing.*

> *Remote delivery of lectures without any feedback removes most if not all of the fun/value of being involved in teaching.*

Many commented on the high workload associated with the move online and some reported experiencing significant stress and burnout. Such challenges were exacerbated for some by a perceived lack of support for the transition online.

> *The experience was extremely time-consuming – I probably spent 3 times as much time on my teaching.*

> *Workload and capacity was the main issue – it was so much work to move online, with very little support at the local level. Stress and burnout were felt enormously hard by myself and many colleagues.*

Others commented that they were able to access support but found that the need to rapidly learn to use new technologies was challenging and time-consuming, even if the outcome was beneficial.

> *Over the past 2 years I have invested considerable time in learning more about online teaching practice and technologies to enable that. The classes run by Learning Environments have been extremely helpful in the technology side, and some of these did also cover pedagogy. However, this took a huge amount of time, and was extremely challenging.*

The positive comments revealed that some educators perceived their experiences to be in direct contrast to those discussed above. These respondents often commented on similar aspects with the reverse sentiment; for example, some felt that the relational aspects of teaching and learning actually increased with the move online and pointed to the potential for online tools to facilitate connections with students.

Teaching online in Sem 2, 2021 because of lockdowns actually created a camaraderie among the students and myself. Because we had no choice but to interact and learn virtually, we agreed to rise to the challenge and commit to it, in the way that fellow prisoners develop a loyalty to each other.

Breakout rooms enabled me to pay more specific attention to students who needed help.

Similarly, some educators felt that they had gained valuable online teaching skills, and in some cases felt that their teaching was improved by online delivery.

Pre-recorded lectures with live (zoom) Q&A led to much better discussions than I was used to. I'm inclined to keep this.

Some elements of teaching online were beneficial … for example, asynchronous instructional skills video that we utilised online would still be a valuable resource to the students (and in some ways better than 'in person' instruction!).

Although the workload and time-consuming nature of designing and delivering teaching online was predominantly perceived to be a challenge, there were a couple of respondents who felt they were better able to manage their work while teaching online.

I didn't need to manage people on campus, it was all done via emails and zoom links and I didn't have to worry about guest lecturers finding the room or students not showing up for lectures.

Some respondents viewed the forced move online as a positive disruptor that helped to initiate innovations in teaching and learning, as well as an opportunity to learn new technologies and approaches.

Being forced online delivery was perversely helpful in moving colleagues, students and placement providers to accept this as a legitimate approach to teaching.

I learned to split recorded lectures into short segments and to supply audio-only files for podcast delivery.

For many such positive gains were inevitably intertwined with negative experiences.

Learning new technologies and teaching methods contributed positively to my teaching experience, but lack of contact with colleagues and students contributed negatively to my teaching experience, significantly outweighing the other two factors.

Learning about teaching practices was very important to me but I had trouble finding good resources. Finding ways to connect with students was also a top priority but was extremely difficult to achieve.

It's a complicated question about personal experience of teaching. In some ways, it was more intimate and less hierarchical (everyone is sitting, everyone same distance from each other etc), and that enabled some really great trust building and therefore great conversations. But other things were frustrating – it was harder to stop some people from dominating discussions, for example. I can't capture the change of experience in a simple improve/worsen answer.

Such comments illustrate that educators frequently experienced a combination of positive and negative outcomes from the move online and highlight the complexity of their perceptions and experiences.

At the end of the survey, we provided the option for respondents to comment on any aspect of their experience in transitioning to online that they felt was not captured in the survey, with 118 respondents providing a response. The surprising number (and often length) of these responses suggests that educators had a strong desire to share their experiences and perspectives. Of these 118 responses, only 3 could be described as positive, which related to useful technologies and the capacity to implement some positive changes in their teaching. 12 comments conveyed mixed views, and the remaining 103 comments were negative and often vehemently negative.

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 15 of 32

By far the most prevalent issue raised related to workload. Many respondents wanted to emphasise the extent of the increase in workload that was required to design and deliver online teaching. The workload was described as 'excessive,' 'immense,' 'intense,' 'overwhelming,' 'ridiculously high,' 'untenable' and even 'obscene.' Some linked these workload issues to reduced wellbeing and mental health. There was a broad perception among staff that the increase in workload was not fully understood, acknowledged, or appreciated by the Institution. Relatedly, the second most prominent issue raised in the additional responses was a perceived lack of support for the transition online, at both Faculty and Institutional levels.

PERCEPTIONS OF THE STUDENT EXPERIENCE

A broad range of studies have been conducted on the experiences of university students during the pandemic, and their findings are extremely varied. Many reported an overall positive experience with the teaching online modalities employed (Benis et al., 2021; Esposito & Sullivan, 2020; Howitz et al., 2020; Kefalaki et al., 2021; Okoye et al., 2021; Schlenz et al., 2020; Tuma et al., 2021; Vatier et al., 2021). Some found that students preferred online learning to in-person learning (Schlenz et al., 2020), while others showed that students looked forward to returning to face-to-face learning (Humphrey & Wiles, 2021; Kanoksilapatham, 2021; Nesmith et al., 2021; Tuma et al., 2021). Studies on student performance during the pandemic variously report increased performance (Khalil et al., 2020), minor declines in performance (Totlis et al., 2021), and no significant changes to performance (Omodan & Ige, 2021; Youmans, 2020; Zhou et al., 2020). Similarly, reports on student attendance are mixed. Some studies identify a decline in attendance at the onset of COVID-19, with students either choosing not to attend lectures of dropping out entirely (Okoye et al., 2021; Pilkington & Hanif, 2021; Youmans, 2020), while some studies report increased attendance (Totlis et al., 2021). Ultimately the impact of the pandemic on the student experience was highly varied and dependent upon a broad range of individual contexts and preferences.

The educators who responded to our survey also conveyed mixed views, however, on-the-whole their perceptions of the student experience were somewhat worse than their perceptions of their own experiences. The majority of educators (n = 186, 59%) perceived that the learning experiences of their students worsened with the move to online learning, whereas 30% (n = 94) felt it remained about the same and only 11% (n = 35) felt it improved (Figure 8).
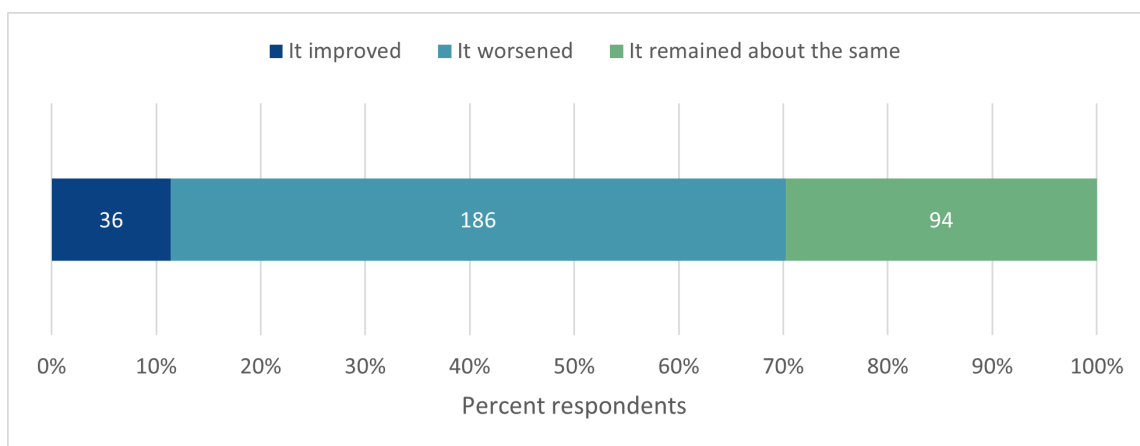
Figure 8. Respondents' perceptions of the changes to their students' experiences following the move online.

Again, respondents were given the option to provide further details, and 86 educators chose to include comments, offering valuable insights into their perceptions of the experiences of their students. Some respondents included lengthy comments illustrating strong concerns for student engagement, learning and wellbeing, and providing discussion on the aspects of online teaching that seemed to work well as well as those that didn't work well for students.

As with their perceptions of their own experiences, the most common perceived disadvantage of the move

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 16 of 32

online for students was the reduced opportunities for interactions with educators and with peers, as well as the inability for students to access on-campus resources and engage in campus life.

> *The students missed meeting each other in a lecture theatre, forming groups and working together on problems they were provided.*

> *Students craved interaction, campus life, casual conversations with other students and teachers.*

> *The capacity for students to interact with other students, a key element of my subject, was massively compromised by the online delivery and even more so in dual delivery.*

> *Students struggled very much with the lack of in person interaction. We compensated for this as best we could, but it was difficult, especially for the cohort who had had very little time in person. It took a tremendous amount of work by staff to keep them engaged and maintain the quality of their learning.*

> *I think our students have really missed the opportunities to interact with peers. We have breakout rooms, and do make efforts to have some social activities, but they miss the incidental contact (e.g., as simple as walking between classes together)*

Conversely, a few respondents stated that the online setting enabled them to better facilitate connections and interactions with and between students.

> *I found that with an on-line environment, it became much easier to meet with entire teams outside of class.*

> *Students reported that our focus on prioritising time in tutorials for connection to each other and to the teaching team, in addition to the planned learning activities, was a key element of creating the conditions for them to learn and thrive in a global pandemic.*

Many educators provided subject-specific reasons as to why they felt the experience for students worsened with the move online, including subjects with practical and creative components and intensive subjects.

> *Authentic interactions of students with their peers and staff is so important to learning, and challenging to replicate online. We also deliver a very practical and hands-on program, which suffered immensely during periods of mandated online delivery, as these experiences could not be replicated remotely.*

> *I feel we achieved the same results teaching this subject online as we did in person. I don't think the students had as good an experience though - they missed out on the creative studio environment as learning online is incredibly isolating.*

Many educators commented on the different styles of learning required in online and face-to-face environments highlighting the need for greater self-direction and self-discipline online, which some felt was a challenging adjustment for many students accustomed to on-campus learning.

> *Many students struggled with having to adapt to an environment where self-discipline to keep up with studies was key. I think many students did not realise how important social learning and peer support are to their success and squandered the opportunities provided to them to connect with other students.*

> *Students were initially relying on their tutors to provide them with learning . . . I had to convince them that they need to put in their own time to learn what is provided online asynchronously in order to cover all teaching contents for this subject.*

Some educators saw a shift in the capacity of their students to adapt to the online environment over the course of the pandemic.

> *By Sem 2, 2021, students had more than a year's worth of experience learning online, so they really*

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 17 of 32

became the masters of making it work . . . They were very astute at advising me on how to run a live midterm assessment test and an examination over ZOOM, and how to use LMS Canvas to facilitate this.

The comments reveal that educators were especially concerned about student wellbeing during the pandemic, and cognisant of the need to provide enhanced support, pastoral care, and opportunities to connect, to support wellbeing as well as learning.

Empathy and support were very important factors, in conjunction with providing the student with the academic support they needed. It was particularly important to provide opportunities for students to connect online with each other and to connect with me outside of the seminar each week. Students did not always feel comfortable asking for support, so I felt that it was important that students knew they could email me about any questions or concerns they had . . . Students appreciated being heard and it being recognised that this was a difficult study time.

There is just no way to effectively support the learning of 1200 young adults who are each going through their own trauma and their own version of the pandemic, let alone studying from home in isolation being taught by teams who are not online teaching experts and who are dealing with their own experiences of the pandemic. It wasn't ideal. We have learned things from it, some of which we will take forward (facilitating thoughtful interactions in video conferencing) and some of which we will never touch again (video lectures); but I don't think anyone sees any of it as good online learning.

On face value, the mostly negative perceptions of the student experience reported by educators would seem to contradict the generally positive experiences reported in the University's Student Experience Surveys (SES). While, as noted above, 56% of educators who responded to our survey suggested the experiences of students had worsened with the move online, the SES results for these same subjects show that 74.9% of students either agreed or strongly agreed with the statement: 'Overall, I had a very good learning experience in this subject.' However, the qualitative responses from educators frequently suggest that student experiences are likely to have comprised both positive and negative aspects. These nuances relating to the student experience are not able to be captured by the SES, or by the quantitative data collected in our survey. It is also likely that many students simultaneously had a very good learning experience (the question posed by the SES survey) *and* a worsened experience when compared with on-campus learning, as many of the educator's comments suggest.

I think students might struggle to separate their dissatisfaction of the online learning experience from a lack of identity and community/ socialisation. There are aspects of online learning and online learning pedagogy that significantly improve teaching and learning above passive/ didactic learning strategies though compounded by the isolation of the last 2 years students do not feel a connection with their peers and the university or sense of belonging.

Students struggled with the lack of person-to-person engagement, but they enjoyed no commutes (some students travel hours a day) which gave them more study time. Additionally, students who would never ask a question in person would be comfortable putting something in the chat, or asking it to the staff member via private message rather than in front of the class - I think this (and weekly Q&A with the lecturers) really helped students to grasp the concepts.

The "improved" or "worsened" question doesn't capture much. Some aspects improved: I found many more students came to online Zoom office hours, for example. But discussion was more difficult to manage, particularly in larger groups.

The comments also highlight the diversity of students' experiences as well as their varied preferences for different modes of learning.

Many students liked the flexibility of online learning and would continue that way even when not locked down, for others it was a huge burden and effected their study and general well being.

Students reported [a] preference for online lectures and on campus tutorials.

I couldn't decide whether to say worsened or improved for students, as its much more complicated. Some students did much better out of it. Some withdrew. My class from 2020 are still in touch, and we met up again in person at the end of 2021 - that's an indication of how well they bonded with each other, perhaps even more so than in usual F2F.

In general, most students coped fairly well but they also suffered lockdown fatigue & stress. It was also important to recognise and be understanding that not all students were comfortable with online teaching.

As discussed earlier, the move online resulted in many teaching innovations and initiatives, and many of the qualitative comments highlight the value of new approaches adopted, as well as some of the new opportunities remote learning provides.

Overall I think online learning sucks, but it did force me to create mini online lectures, which I think are actually great for students.

Live zoom drop- in sessions were important to offer the students to give them opportunity for engagement. Flexible times for live zooms was also important.
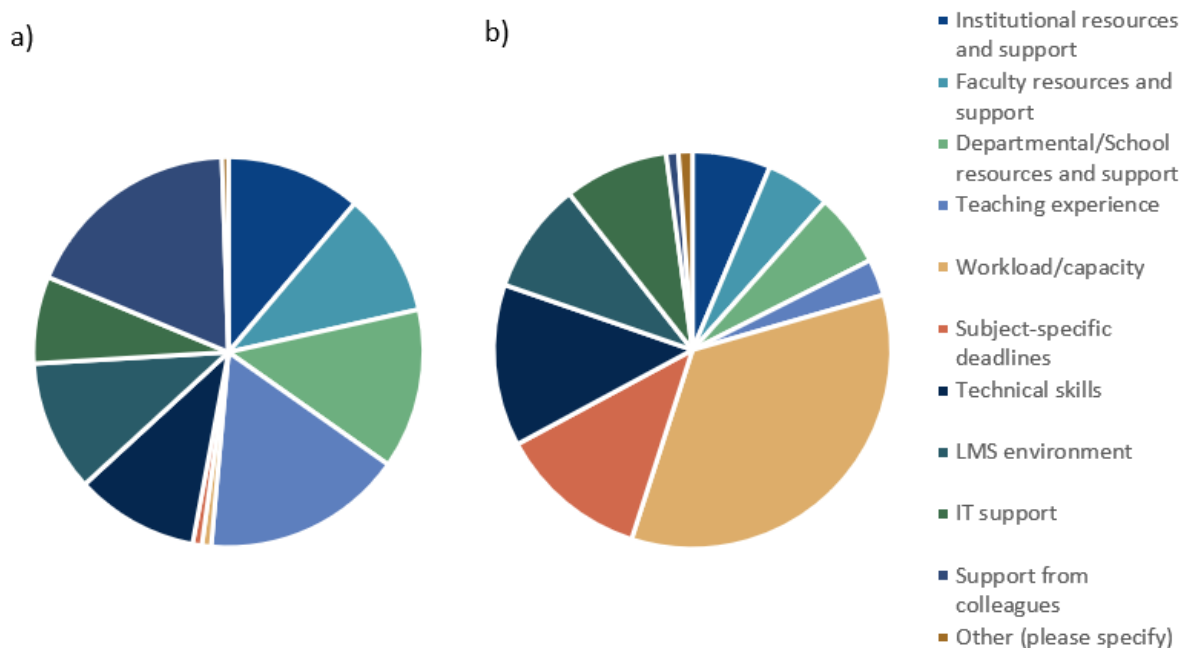
Opportunity to engage with experts outside of Melb/Vic/Aust extremely enriching.

Despite some of the benefits of the online format, importantly, educators recognised that the online learning developed as a result of the pandemic differs significantly from online learning that is carefully and intentionally designed and delivered. Responses also highlighted that the sudden move online was far from ideal for a predominantly on-campus institution that was not well positioned to provide wholly online learning.

This subject is not designed to be an online subject. It is an on-campus subject that we have adapted to be able to run online. I think it is important to recognise that although we are utilising an online learning space for students, our subjects are largely not designed for this type of environment … whilst technology has enabled us to try to replicate in-class activities online, the learning experience cannot be replicated directly.

ENABLING AND CONSTRAINING FACTORS

Participants were asked to rank factors that may have contributed to the success of their transition to online teaching and learning, including resources from the institution, Faculty, Department or School, their own level of experience in teaching, their workload or own capacity, the presence of technical support or support from colleagues. Participants reported a range of factors that made the transition easier for them, including support from colleagues (n= 237, 18%), their own teaching experience (n = 217, 16%), and resources from the institution (n = 146, 11%), Faculty (n = 134, 10%) or Department (n = 173, 13%) (Figure 9a). Most commonly, participants (n = 243, 34%) reported that their workload or capacity was constraining factor for their move to online teaching and learning, making the transition more difficult (Figure 9b).

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 19 of 32

a)   b)

- Institutional resources and support
- Faculty resources and support
- Departmental/School resources and support
- Teaching experience
- Workload/capacity
- Subject-specific deadlines
- Technical skills
- LMS environment
- IT support
- Support from colleagues
- Other (please specify)

Figure 9. Respondents' identification of factors that enabled (a) or constrained (b) the transition to online teaching and learning at the University.

A further 98 participants chose to provide additional information about the factors enabling or constraining the move to online learning and teaching. Many responses remarked on the constraints of personal workload, or inadequacies of support mechanisms.

Workloads, and personal burnout stress.

It was incredibly stressful at the beginning of semester to have our teaching budgets constantly monitored… Using the BSL money to get support during lectures improved student experience. The stress of learning how to use BSL equipment and arrange classes for that format, and then not get to use it, made it stressful.

Others were concerned that the University's strategic direction and management operations were adding to their difficulties.

I think one of the greatest constraints was the universities push for "dual teaching" when it was quite clear that we were not out of the pandemic yet. In doing so it just made unnecessary additional work for those who were willing to stay as online only for this year.

In 2021 I was enrolled in a faculty run 'LMS upgrade' (they picked some random subjects each year to work with learning environments). The idea was noble, but it required an immense increase in workload only a year after I'd developed the whole LMS from scratch for the shift to online. There is a disconnect between the realities of online learning and what management thinks about online learning!

The constant change to semester key dates, and 'pauses' to the academic teaching announced by Chancellery in late March, made scheduling very difficult; and the constant need to update LMS Canvas (which was an untried system for most of us at that time!) was stress-inducing. Also, the chain of communication from the top down caused delays and was very frustrating.

Others highlighted their personal experience in digital technologies or online teaching, and/or the mode of the subject itself, enabled them to smoothly transition to a fully online mode of teaching during 2020.

Seminar-based subject was already fairly suited to shift to online mode; I had experience using Zoom for overseas guest lecturers prior to pandemic; I had experience live-streaming events and running a podcast so had

good quality audio-visual equipment I could use at home.

This subject is a summer intensive so was fully in person in 2021, but I had always had online Q&As and guest lectures as part of the in-person subject to give the students access to regional practitioners. So it was easy to incorporate these elements in 2021, when it was taught online for the first time, plus I also had two semesters of teaching online under the belt by then.
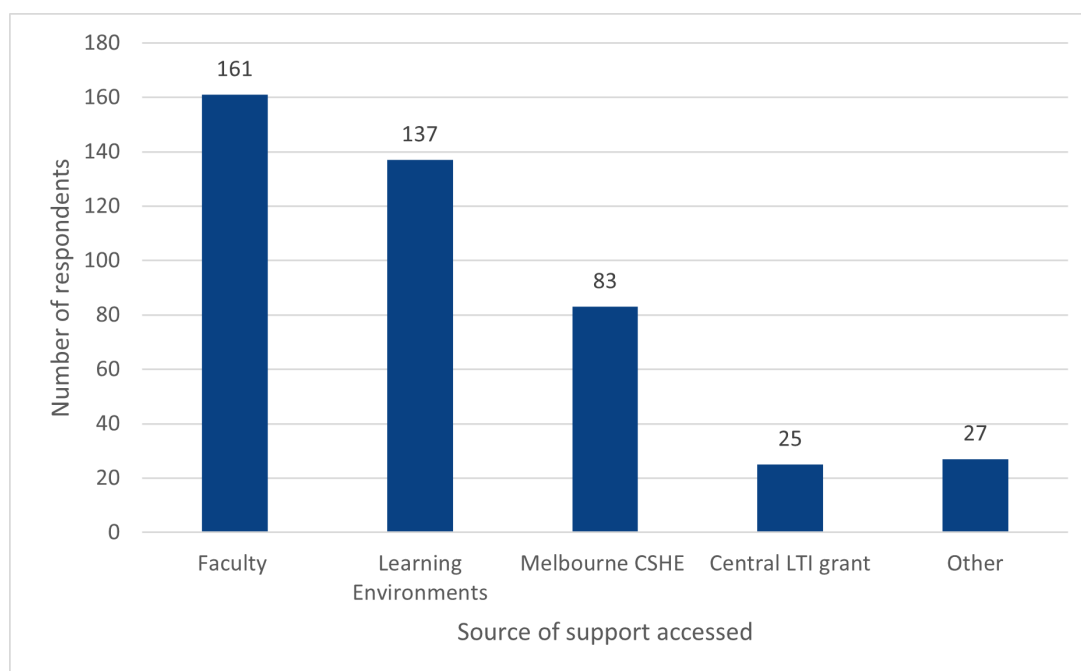
ACCESS TO SUPPORT

Of the 413 respondents to our survey 314 answered the question 'Were you able to access any training or support around the transition to online delivery.' Of these respondents, 75% (*n* = 234) indicated that they were able to access support, whereas 15% (*n* = 48) indicated that they were not able to access support. 10% of respondents (*n* = 32) indicated that they were not aware of any available support or training (Figure 10).
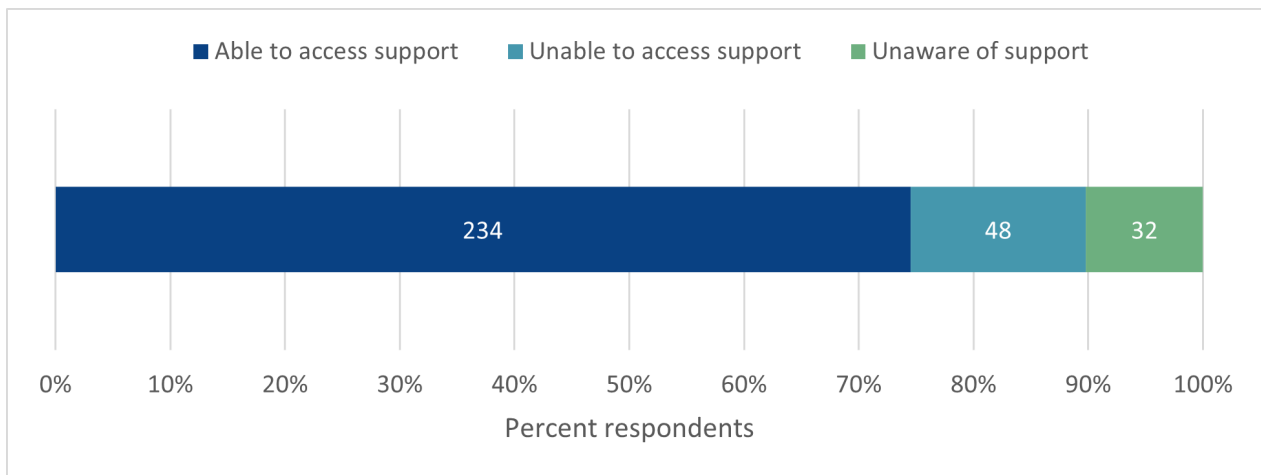
Figure 10. Distribution of respondents who accessed training or support for the transition to online delivery.

The most common form of support accessed was Faculty, School or Departmental workshops or resources, with 161 respondents reporting accessing these supports (Figure 11). Workshops, consultations, and resources provided by Learning Environments was the second highest form of support accessed. A total of 83 respondents accessed Melbourne CSHE workshops and 25 were awarded LTI grants, however, these figures may reflect the relatively high number of respondents who had worked with the CSHE project team conducting the survey, who supported LTI grant recipients, and may not be entirely representative of the University more broadly.

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 21 of 32

Figure 11. Distribution of the forms of training or support accessed to aid the transition to online delivery.

Some respondents to our survey also accessed supports in combination, most commonly accessing Faculty resources in combination with Learning Environments resources (36 of 234, 15%), followed by Faculty, Learning Environments and Melbourne CSHE resources (19 of 234, 8%) and Faculty, Learning Environments, Melbourne CSHE in combination with an LTI Grant (17 of 234, 7%).

For those respondents who didn't access support, most (27 of 45, 60%) indicated time constraints as the main reason for not accessing support.

I was too busy recording and editing lectures! And typically I found with the support that you had to wade through a lot of obvious info to get to anything useful.

Others indicated that the available support didn't meet their needs (9 of 45, 20%), or that they didn't access support owing to poor communication of the available offerings (4 of 45, 9%).

Often overwhelming. Extra work to have to sort through. Information overload but not tailored to need.

*Services not publicised to casual staff.*

Several indicated they were able to teach themselves the necessary skills (5 of 45, 11%).

I jumped 1st and was ahead of the curve – self learnt many of the tools required.

FUTURE INTENTIONS AND PREDICTIONS

Researchers suggest that the changes to teaching and learning brought about by the pandemic have resulted in fundamental shifts to the ways in which higher education experiences will be offered to students in the future, especially in relation to the modes of delivery that will be deployed (Lodge et al., 2022). For the participants in our study, the necessity to explore online modes led to increased knowledge of the possibilities of online teaching and often to teaching and learning enhancements and innovations, despite some of the significant drawbacks and limitations discussed earlier. Perspectives on the extent to which the changes made during the pandemic would ultimately change approaches to teaching in the future were mixed.

Participants were asked about their intentions and predications for the future delivery of their subject and provided with the options of (a) reverting to the delivery model utilised pre-COVID; (b) remaining completely online, or (c) changing to a more blended delivery model, with the retention of some online elements implemented during COVID, combined with face-to-face activities. The majority (69%) of participants predicted that they would move to a more blended approach to their subject delivery, with 25% expressing they would revert to the delivery model from before COVID, and only 6% predicting their subjects would remain fully online. Interestingly, participants who were more experienced in online teaching and learning appeared no more likely to select a blended future delivery approach to their subjects than their less experienced colleagues (Figure 13). However, they were slightly more likely to retain a fully online approach (Figure 13), whereas participants with no self-reported experience in online teaching were slightly more likely to predict a delivery approach that reverted to pre-COVID conditions (Figure 12).
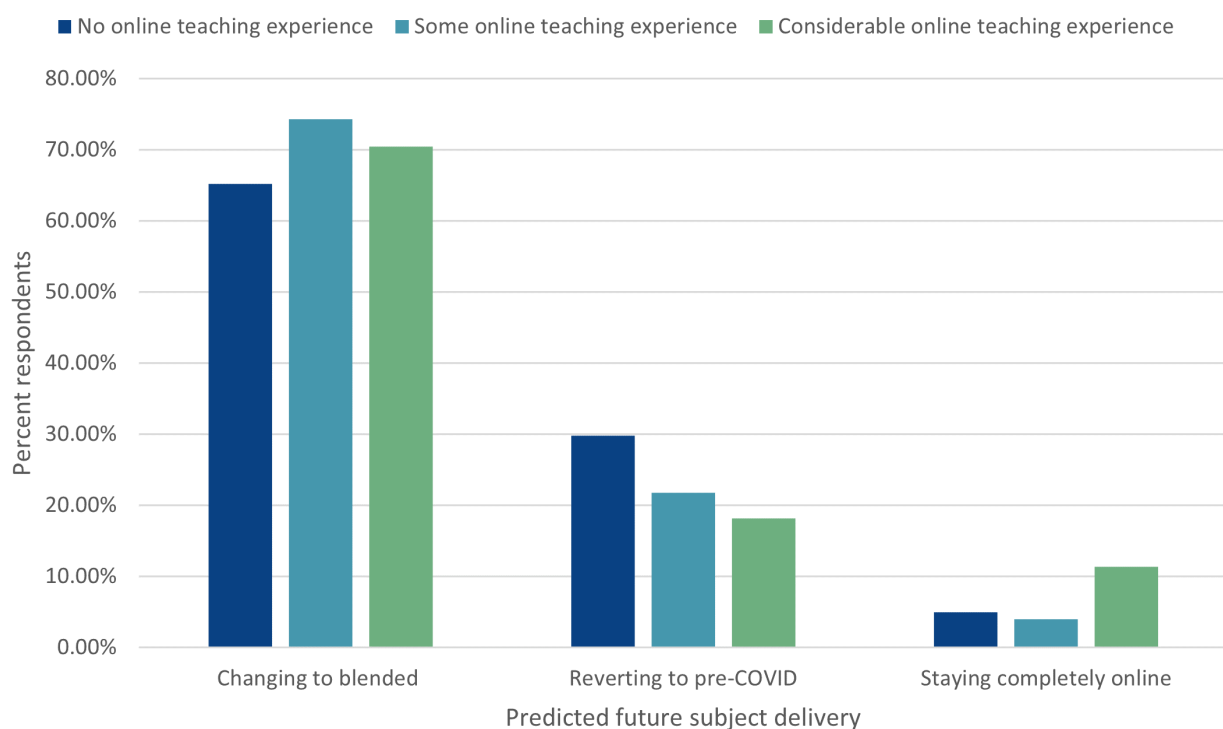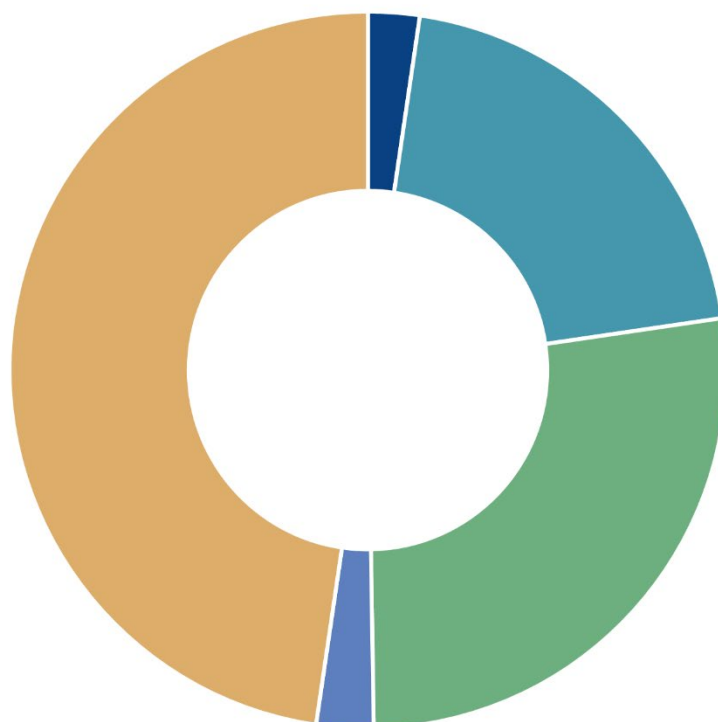

Figure 12. Participant's predictions of the future delivery of their subjects, according to their self-rated degree of experience in online teaching.

Participants were also asked to describe which online aspects of their subject they were likely to retain into the future delivery models. This question generated 388 unique qualitative responses from 271 participants, representing 75% of 361 survey respondents. Responses were broadly sorted into three categories: Online resources; Changes to assessment, and Changes to interactions or activities.

Figure 13 shows the breakdown of responses into these broad categories. Around half (47.7%) of participants responding to this question indicated they would retain online resources such as mini-lectures, pre-recorded materials and interactive modules that were developed during the move online. Around a quarter (27.1%) of participants indicated they would retain online activities such as chat or discussion boards, synchronous online classes or presentations, or Q&A sessions, with another 20% indicating they would retain online assessments including quizzes, exams, problem solving and portfolios. A very small proportion of respondents indicated they would retain either all ($n = 9$, 2.3%) or none ($n = 10$, 2.6%) of the changes or materials developed during the move online in 2020 (Figure 13).

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 23 of 32

Figure 13. Broad types of online resources, materials or interactions likely to be retained by participants in their future subject delivery.

Respondents' statements on changes to their subject that they anticipated would be retained were further sorted into subcategories, with the overall numbers of responses shown in Table 2.

Table 2. Types of online changes to subject resources, assessments and delivery modes that participants indicated they were likely to retain in a future delivery of their subject.

Online resources		Changes to assessment		Changes to interactions/activities		All	None
Type	Number	Type	Number	Type	Number		
General resources	77	Reduced high-stakes tasks	2	Online chat, discussion boards	25	9	10
Improved LMS	13	Online assessments	65	Home practical kits, resources	2		
Mini-lectures, videos	54	Problem-solving tasks, group tasks	4	Polling	4		
Pre-recorded lectures	30	More formative assessments	8	Synchronous classes, presentations	46		
Interactive modules	11	Reflections, portfolios	2	Online Q&A, office hours	26		
Total	**185**		**81**		**103**	**9**	**10**

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 24 of 32

LIMITATIONS

The findings from this investigation in some instances need to be interpreted with consideration of the study limitations. In the first instance, the survey, whilst distributed across the University through multiple channels including Staff News and Faculty news, did not receive respondents from all Faculties in comparable numbers. In addition, to improve the number of responses to the survey, the research team targeted additional recruitment efforts through local distribution channels associated with the FlexAP program. As a result, responses may be somewhat skewed towards participants who are invested in learning and teaching improvements.

For some areas of the survey, comprehensive data were not obtained, and sampling saturation was low; for example, coordinators did not provide data for subject changes across all subject/year/semester combinations, and some questions were not answered by all respondents. Owing to the length of the survey, it was necessary to provide flexible response options to encourage data collection and completion by participants, and the resultant data still provide a good indication of the broad changes made by coordinators over the three academic years of interest. Participants' intention to provide information was otherwise evident in the high rates of responses to open-ended optional questions, in which respondents were invited to provide further information on their experiences.

A more important limitation is the possible discrepancy in participants' interpretation of the definitions and terms provided by the researchers (for example, what characterises a 'lecture') and in some cases a degree of ambiguity or lack of nuance in questioning. As discussed, the complexity of respondents' experiences often couldn't be accurately captured using Likert scales and required explanation in the open-ended responses. Although these issues may be unavoidable in a survey format, they highlight that the complex and varied experiences of academics are not always captured well in quantitative sampling. Therefore, a case is to be made for additional in-depth qualitative investigation into academics' experiences, such as that in progress by Bone, French and colleagues (Bone et al. *in review*).

Despite these limitations, a broad range of subject changes, experiences and future predictions have been identified by participants that will be of interest to teaching and learning managers at the University.

CONCLUSION

Our findings illustrate broad trends in how teaching academics changed their subjects in response to the wholesale move to online teaching and learning across the University. Along with expected reductions in in-person lectures and examinations, educators adopted a range of different delivery modes including online interactive modules, live Zoom classes and Q&A sessions. The number of delivery modes utilised per subject from 2019 to 2020 doubled on average, and these diverse modes were retained into 2021.

Evidently, emergency online teaching approaches adopted during the pandemic did not always align with best pedagogical practice. For example, many respondents to our survey commented on the loss of contact with students, loss of student feedback, and reduced interactions between peers, which might have been alleviated with more opportunities for student-teacher and student-student interaction. However, the need to urgently deliver online teaching within a very short turnaround time largely prevented intentional planning and design, often leading to a focus on ensuring students had access to content over a focus on the relational aspects of teaching and learning. Similarly, with the benefit of hindsight aspects of the institutional response might be reconsidered. For example, a longer pause in teaching at the outset of the pandemic would have allowed more time for academics to prepare online teaching and lessened the negative impacts on staff workloads and wellbeing. However, the capacity for decision making was limited by a range of factors that included uncertainties about timeframes, pressure to maintain continuity of teaching and shifting messages from government and health authorities.

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 25 of 32

Our study reveals that the experiences of teaching academics, and their perceptions of the learning experiences of students varied considerably across the participant cohort, highlighting the unfeasibility of a singular or unified approach. Overall, subject coordinators perceived the teaching and learning experiences of both students and staff to be worse in 2020 compared with 2019. Experiences were, however, contextual; poor experiences were often linked to high workloads and perceptions of low support, a loss of connection to students, and a lack of clarity from institutional guidelines. Nevertheless, some respondents reported that the connections with students were improved with the flexibility in delivery modes, and many felt the move to online teaching helped them explore and implement positive changes to their subjects.

A positive outcome of the need for a wholesale move online was that it led to a significant increase in capacity and skills of academics in online teaching and learning, as well as shifts in the perspectives of many educators as they came to better understand and experience both the benefits and limitations of online teaching modalities. New platforms and approaches to teaching were explored and a broad range of innovations emerged across the University in teaching, learning and assessment. These included the creation online resources, mini-instructional videos and interactive modules, often accompanied by Q & A sessions, which have the potential to offer an advance on traditional instructional lectures. Initiatives in assessment included the use of online quizzes and the redesign of examinations from closed-book to open-book which tend to have less emphasis on questions that require the simple recall of facts and more emphasis on higher-order thinking.

There is an opportunity for the University to harness the enhanced knowledge and skills that educators have built and to further develop many of the teaching and learning initiatives implemented during the pandemic. Combining the best aspects of online teaching with the best of on-campus education has the potential to enrich student engagement and learning as well as create more flexibility for students. However, a clear message from the educators who responded to our survey is that the design and delivery of online teaching requires significant time investment as well as considerable support at departmental and institutional levels.

Despite the diverse experiences of the move to online teaching and learning, subject coordinators overall reported a clear intent to move to a blended approach to their subject delivery, with very few indicating they would either revert to the delivery models used pre-pandemic or retain a fully online approach. However, institutional requirements for minimum levels of face-to-face teaching in 2023 have resulted in a significant reduction in blended delivery and there is a risk that the learnings of the pandemic will be forgotten. The intentions of the educators illuminated in this paper need to be heard and considered by School, Faculty and University teaching and learning leaders and managers as we consider which approaches will best support student learning as we enter the next phase of teaching and learning strategy at the University.

Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 26 of 32

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Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 27 of 32

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Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 28 of 32

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Page 29 of 32

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Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 30 of 32

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Navigating the transition to online teaching at the University of Melbourne during COVID-19: approaches, reflections and insights

Page 31 of 32