

The Choices that Connect Uncertainty and Sustainability: Student-Centred Agile Decision-Making Approaches Used by Universities in Australia and the UK during the COVID-19 Pandemic



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ABSTRACT

Given that universities have significant choices to make about what is retained from our emergency measures, the authors set out to use the record of our biweekly meetings to examine the choices that we have made during the pandemic and how we have made them. In this collaborative reflective article from authors from five different institutions in the UK and Australia, we demonstrate that student-centred decision making emerged unanimously as the core value driving our decision making during the pandemic. In our reflections, supported by our diary notes, we explore and document our decision-making processes relating to educational technology through the lens of agile values and principles in the context of crisis leadership during the COVID-19 pandemic. We discuss four prominent drivers for student-centred decision making: a) collecting and rapidly sharing student voice data, b) offering more choice in anticipation of diverse needs, c) giving a high priority to equalising access to technology and d) taking responsibility for students in difficult circumstances. In addition, we discuss five emerging data-driven themes – leadership, operational continuity, student welfare, pedagogy and technology infrastructure – and offer insights into student-driven decision making with examples from our respective institutions. The ultimate aim for our reflection is to establish approaches that we value in higher education leadership that we should sustain and to formulate principles for student-centred agile leadership for university education which can serve us during the pandemic and beyond.

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It has long been recognised that higher education (HE) leaders, like leaders in other sectors, need to be prepared to navigate an environment that Johansen (2009) described as volatile, uncertain, complex and ambiguous (VUCA: Hemsall 2014). Those of us working in education are used to calls for innovation to keep pace with changes around us in society, demographics and culture (Hughes 2014). Within the context of technology-enhanced learning, such an environment has been discussed as an ‘emergent crisis’ with factors including the industrialisation of education, openness, mobility, equality and access (Traxler & Lally 2016). As it turned out, none of these were the crises that educational technology leaders needed to be prepared to face in 2020. Instead, the COVID-19 pandemic has been a test of crisis leadership in VUCA environments where educational technology has been at the forefront of the response sector-wide. Decisions have been made about which tools to procure to support remote teaching and assessment, how to integrate them within a university infrastructure and how to prepare and support staff and students to adapt their teaching and learning practices for remote and blended scenarios – for instance as detailed by Bozkurt et al. (2020). In their synthesis of 31 countries’ educational responses to COVID-19 they noted, for example, that it was the way in which a technology was *used* rather than the technology itself, that made a difference to education. Crucially, these decisions have been made rapidly in the context of a dynamic and prolonged emergency, demonstrating the capacity for HE to be much more agile in its response than previously thought possible.

As universities across the globe emerge from the pandemic, many with reduced financial resources, sustainable learning and teaching practices will need to be adopted, many of which will be supported by a range of technologies. The leadership teams making those decisions have already experienced a challenging year when familiar structures and processes of decision making were largely replaced by emergency ‘agile’ governance processes. Future leaders will need to decide which of the processes, practices and technologies adopted during the crisis they will retain.

Much of the analysis of university leadership has focussed on styles and approaches that are suitable for an HE environment which had become characterised by ‘an increase in managerial control, market competition, government scrutiny and organisational restructuring’ (Jones et al. 2012: 67). The pandemic brought a seismic shift that rendered these strategic drivers all but irrelevant. They were superseded within a matter of weeks by the need for universities to maintain financial viability and ensure sustained student engagement in an era of unprecedented uncertainty and volatility. The priorities for managing educational technology within institutions also shifted. Prior to the pandemic, a key concern was developing effective strategies for technology adoption often with a focus on removing barriers to implementation within organisational structures (e.g. Singh & Hardaker 2014). With a burning platform clearly apparent, the question was no longer *whether* to adopt educational technology, but *how*, and again, how to do so in a way that met students’ needs, particularly making sure to do this in a way that removed students’ barriers to participation. This focus on the needs of students shares similarities with ‘student-centred school leadership’, a broad collection of approaches including learning-centred, instructional and pedagogic leadership which “share a common philosophical underpinning, which is to design learning experiences that address the needs of the student” (Harris et al. 2013: 6).

In this ‘experiences’-type article, we reflect critically on our own leadership and decision-making in HE during the COVID-19 pandemic, drawing on a powerful, contemporaneous data source in the form of notes from biweekly meetings of the authors throughout 2020. Often studies of educational leadership rely on interviews with innovators and leaders after an initiative has been deemed successful. By then we have constructed narratives of the stories we want to tell, and we rarely have the opportunity to share the complexities and uncertainties during the process. The paper focuses on how we approached decisions in an uncertain, rapidly changing situation and on formulating aspects of our leadership as a set of values and principles that are easy to digest and share.

CONCEPTUAL FRAMEWORK

In identifying relevant theories to inform our analysis, we worked from the observation that decision making during the pandemic became more student centred with the express aim of creating a learning and teaching environment which would better serve the needs of students

and sustain their involvement in HE with a focus on reducing inequity and the digital divide (Bozkurt et al. 2020). This was within the context of an unfolding health, economic and social crisis that required rapid decision making and novel adaptations. Our conceptual framework brings together crisis leadership, agile values and principles, and student-centred decision making. In the next sections, we take each in turn, demonstrating that this combination is a novel approach to educational technology leadership.

CRISIS LEADERSHIP

We start by analysing our decision-making from the vantage point of crisis leadership. Gigliotti (2019: 49) defines crises to be “events or situations of significant magnitude that threaten reputations, impact the lives of those involved in the institution, disrupt the ways in which the organization functions, ... and require an immediate response from leaders”. In his work, university crises include natural disasters, race or identity conflicts, reputational, financial, legal, human resource, technological crises or those arising from malevolent human actions. These examples of university crises are limited and local, whereas the COVID-19 pandemic is sustained and global in nature. Gigliotti also posits that effective crisis leadership in HE needs to be value-based, advising educational leaders “to take the time to carefully consider your personal, departmental, and institutional values, and use these values as an anchor to inform the decisions you make” (2020: 14). Consequently, our analysis set out to trace and offer examples of values-based decision making within universities where we have leadership responsibility.

AGILE LEADERSHIP

One approach to values-based leadership is the agile concept that derives from software development and which takes an iterative approach in order to more effectively respond to customer requirements. This approach is underpinned by explicit values and principles and has been applied to managing services in higher education (Agile Manifesto 2001; Pope-Ruark 2017), although agile processes do not come naturally to university governance. Twiddle and Nichols argue that any university should “really be doing more research on itself to innovate new ways of operating” (2013: 27). They explore agile methods to processes in a university, and offer a first draft for an agile manifesto for university teaching. In their adaptation, they focus on creating the conditions which make it possible for students to learn, with implications for educational development. Although they do not state student-centredness explicitly as a core value, they put value on “dynamic learning discussions with students, (as well as parents, government employers and other stakeholders) over documents, metrics and policies” (2013: 36). Pope-Ruark (2017) also attempts to apply agile principles to the practices of a university faculty, e.g. for committee working, developing a course, running one’s research agenda or collaborative research projects. Bridgman (2020) also uses agile principles to support effective production of online learning content. A key principle spanning all three studies is collaboration with students, colleagues, and communities over isolated productivity.

These examples of agile educational leadership in HE are, however, drawn from the ‘peace’-time of university life. During the COVID19 pandemic in 2020, the usual university governance processes and shared leadership could not be sufficiently responsive, and were replaced or supplemented by agile teams and decision-making practices. Contingency planning and decision making in our universities took place on a frequent, often daily basis. It was appropriate then to analyse our universities’ decision-making processes against the agile approach, extracting our own manifesto of the values and principles of agile educational leadership.

STUDENT-CENTRED LEADERSHIP

Student-centred leadership operates from an established evidence-base of studies relating to school-based education. Its purpose is to lead schools to adopt student-centred pedagogies which are associated with more effective teaching and learning strategies in the classroom, and which impact on student outcomes and hence school performance (Robinson 2011). As with the crisis and agile approaches, values based, ethical leadership is a key principle underpinning this approach (Harris et al. 2013).

Another feature student-centred leadership shares with the crisis and agile approach is the recommendation to enact these approaches through a distributed or collective leadership

style which emphasises transparency and inclusive involvement of partners in decision making processes (Gronn 2000; Jones & Harvey 2017). Thus far, however, student-centredness has not been articulated explicitly as a dimension of distributed leadership. Similarly, the literature on educational technology leadership tends to focus on transformation and change management, and lacks student-centredness as a core value or principle. Beyond characteristics of adaptability, transparency and inclusive involvement of partners (e.g. Potter & Devecchi 2020), student-centredness is missing from these dimensions as a core value. This student-centred dimension is what we have set out to explore and document through the lens of agile values and principles in the context of crisis leadership during the COVID-19 pandemic.

METHODOLOGICAL APPROACH

This paper draws on the experiences of the authors over the course of the COVID-19 pandemic from March until December 2020. As a group, we had known each other through previous collaborations or professional networks as educational technology leaders. We organised biweekly meetings to allow us to connect with each other for peer support during COVID-19. Such peer support between leaders was also found useful by Odegard-Koester, Alexander and Pace (2020). We decided to document our experiences in a ‘Covid Diary’, which developed a continuous and contemporaneous record available to us for analysis as the basis of this ‘experiences’ paper.

INSTITUTIONAL CONTEXTS

We work within five different HE institutions: three in the UK and two in Australia (see [Table 1](#) for a summary of profiles and teaching approaches), with the following responsibilities:

UNIVERSITY	INSTITUTIONAL TYPE	PRE-COVID-19 L&T APPROACH	COVID-19 APPROACH
University College London (UCL), UK	Research intensive	Majority of undergraduate teaching on campus with practical sessions in laboratories, studios, etc.	Fully online designed as ‘connected learning’ through which students were connected to the academic community. Prioritised practical courses for on campus, in person learning.
University Technology Sydney (UTS), Australia	Teaching and research university	Majority of teaching on campus, some blended learning, small percentage is fully online.	Fully online in 2020 except some practicals. Library and one building remained open for students with needs for space, bandwidth and/or technology. First semester 2021 38% were fully online, 26% were fully on-campus and 35% were blended.
University of Wollongong (UoW), Australia	Teaching and research university	Majority of teaching on campus, some blended learning, small % fully online.	Fully online teaching first semester, shifted to some in-person of practical classes in second session.
University of Liverpool (UoL), UK	Research intensive	Majority of teaching on campus, some blended learning, some programmes fully online (with online partnership); transnational campus in China.	Prioritised practical courses for in-person, otherwise fully online teaching in Sem 1, using the principle of Hybrid Active Learning.
University of Oxford, UK	Research intensive	Majority of teaching in-person. A combination of college based tutoring/supervision and departmental lectures and small group teaching supporting a personalised educational approach. Some online courses with residential weeks in Oxford.	A flexible and inclusive educational approach which recognises and minimises the barriers to participation for staff and students. A strong focus on individual and small group teaching, in-person where possible. Large group teaching online.

Table 1 The profiles and teaching approaches of the five institutions (pre and during COVID-19).

- a senior educational developer responsible for supporting staff with digital education;
- the head of an academic development centre with responsibility for coordinating support and guidance for teaching and collecting student feedback during the pandemic which informed this guidance and university policy;
- the head of a research centre exploring the future of learning and communication with technology. The centre held responsibility for gathering data about the experiences of academic and professional service staff as they worked from home which was used to inform university policy and support for teaching online;
- the head of an academic unit responsible for teaching and research in the broad field of education including early childhood, school and adult education; and
- a deputy vice-chancellor (DVC) of education and students.

We shared the perspectives emerging from our different roles and institutional contexts, the different phases of the academic year and the different stages of the pandemic and response. Members of our group were also operating in very different contexts in the two countries (see also Bozkurt et al. 2020). At the time of writing (January 2021) our countries, the UK and Australia, were still experiencing the pandemic very differently almost one year on from when we first began our regular discussions. Much of the UK was in lockdown with ~56K cases of COVID-19 per 1M population, and Australia had had 17 days with zero new cases of COVID-19 in the community and ~1K cases per 1M population. As shown above, our group also had varying responsibilities for determining responses to the crisis, including university-wide (as DVC), faculty (Head), department, and teaching and learning support.

DIARY ENTRIES

Our hour-long meetings were held in MS Teams at 08:00 GMT/BST. We kept notes in a shared Google Doc which grew to nearly 15,000 words. Seeing our diary entries as a form of field notes helped us to work out a way of analysing them, moving backwards and forwards between concept-driven and qualitative data-driven analysis (Corwin & Clemens 2012; Gibbs 2007). Student-centredness and agility emerged as drivers for decision making and crisis leadership early in our analysis and we used these concepts to develop a series of guiding questions:

- What choices did we make this year and what drove those choices?
- What decision making approaches were used?
- How did these reflect agile values and principles?
- How were the needs of students prioritised?
- What approaches do we value in HE leadership that we should sustain?
- Could we use the results towards formulating student-centred agile leadership, during crises and beyond for university education?

The close reading of diary entries resulted in the identification of six initial themes: leadership, operational continuity, student welfare, pedagogy, and technology infrastructure. These themes were used in subsequent coding, as in collaborative autoethnography, data collection and analysis were done as a group activity between the authors (as in Arnold & Norton 2020). The process of writing also elicited further explanation, examples and reflections that we wove into our interpretations.

FINDINGS

CONCEPT-DRIVEN THEMES

The most frequently discussed theme in the Covid Diary was student welfare. It was evident that decision making had often foregrounded student needs. Drawing on the concept of student-centred decision making as enacted within HE during the pandemic, our initial reading of diary entries was guided by the question: How did consideration of students' needs shape decisions made during the pandemic? *Figure 1* summarises four prominent drivers for student-centred decision making about educational technology which was evident in the diary entries. The grey boxes extending from these provide examples of how these drivers were enacted in our five institutions.

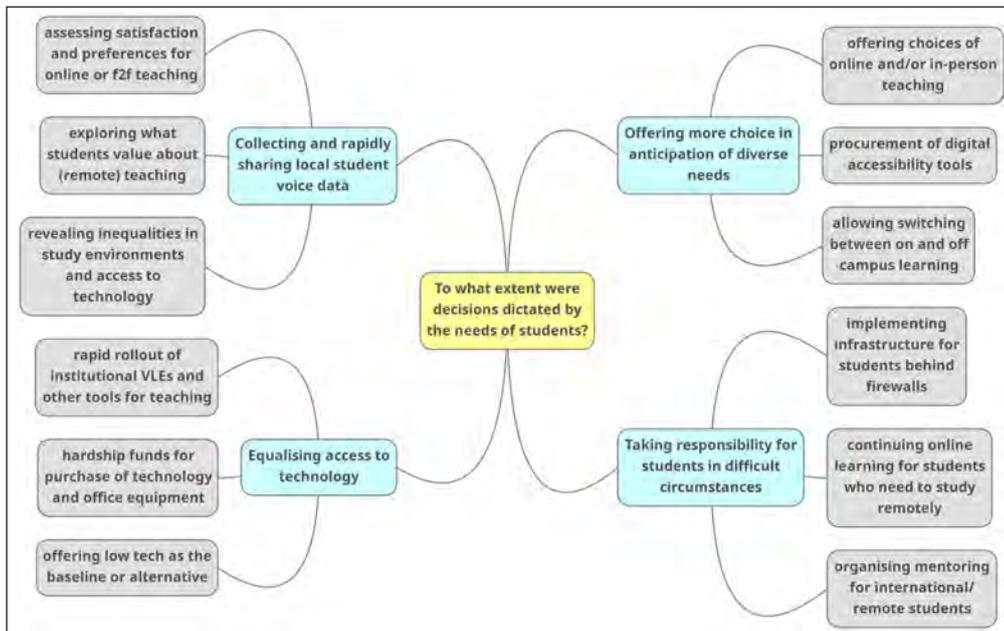


Figure 1 Student-centred drivers for decision making during the pandemic.

After enforced periods of fully remote teaching at the start of the pandemic, all institutions were faced with choices about educational approaches once a return to campus teaching was possible. Although the results of these decision-making processes were different for each of our five universities, each was underpinned by the student-centred driver to support student engagement, and to offer students more choice about where and when they studied where that was possible. For UCL this meant designing courses that could be fully online or blended (partly online and partly in-person), depending on what was possible during the pandemic, with a focus on ‘Connected Learning’, using technology to connect students with academics and with other students. At UTS in the second half of 2020, some classes were available in either in-person or online mode and notably, students were offered the choice of which mode to take and the ability to switch rapidly between the two. Students made use of this option with 600 students deciding to switch to remote only modules on the first day of second semester (which coincided with a small COVID-19 outbreak in another state of Australia). At UoW and UoL on-campus classes were selectively made available to prioritise practical components or accreditation requirements. At Oxford the expectation was to maintain the usual level of student engagement with academic teaching staff including opportunity to discuss their work regularly with tutors or supervisors and receive personalised feedback on it. Across the sector there was much increased use of asynchronous online learning activities to accommodate students’ needs for flexibility during periods of illness, self-isolation, additional caring responsibilities or local restrictions.

The larger online component in each of our educational approaches saw more consideration being given to students’ needs to be able to access digital resources in different formats. Various responses noted in our Covid Diary included the rapid procurement and implementation of dedicated digital accessibility software tools, a focus on publication and/or promotion of relevant guidance and training for staff, and maintaining some access to on-campus spaces such as libraries while in-person teaching was suspended. The need for accessible versions of digital content for students (and staff) with disabilities, long known but often the minority, was given greater priority as our universities sought to proactively address their needs for increased online learning. Other student groups facing difficult circumstances were given considerable attention, including international students who had returned to other countries at the start of the pandemic and now found themselves behind IT firewalls and domestic students who were unable to return to campus because of health vulnerabilities or financial hardship. As has been widely reported (e.g. Czerniewicz et al. 2020), the pandemic exposed inequalities in students’ study environments both at home and on campus and provision was made to equalise access to technology as much as possible through the availability of hardship funds and centrally supported software. At UTS one building remained open to enable students with inadequate home environments, technology and/or bandwidth to continue their studies. In many cases low bandwidth solutions were chosen either as the primary mode (e.g. UoW replacing in-

person applicant interviews with phone calls) or as a widely-promoted alternative (e.g. turning on dial-in access to MS Teams meetings).

Harris et al. (2013) added 'listening to the student voice' to the principles of student-centred leadership in schools and this was certainly apparent in our Covid Diary entries. Feedback channels were opened, surveys administered and their results were rapidly analysed, summarised and shared throughout our communities. Where the results shaped decision making, this led to improvements in subsequent student satisfaction, for example at UTS, student satisfaction with subjects in Semester 2 (October to December 2020) was the highest ever recorded, thought to be because of the actions taken in response to Semester 1 survey results (LX.Lab 2020a). Feedback mechanisms often asked students about their preferences for different modes of learning and also explored what they valued about their HE experience, including being physically present in places of learning, clear and organised teaching schedules, and teacher presence and interactivity in online learning. Student feedback from Semester 1 was used by collegial support teams at UoW, established in response to the pandemic, to rapidly redesign their teaching for Semester 2. Student representatives across UCL were proactive in working with academic and professional service colleagues to identify problems students faced with online learning and take steps to overcome these issues. In addition, universities also monitored social media posts made by students.

In general, using student feedback in student-centred decision making revealed two things it would be difficult for us to set aside. First, the feedback dispels the myth that on-campus university teaching and learning had already been optimal. Asking students how our emergency modes of teaching were going for them revealed vividly how difficult some students had previously found accessing traditional forms of teaching and the benefits to them of greater access to digital resources and online learning activities. Students with disabilities, those from non-traditional backgrounds, part-time students and those with caring and work responsibilities were able to raise their voices about their struggles with inflexible assessment formats and deadlines, difficulties in catching up after missed classes, and the pressures of attending and learning from particular dominant forms of teaching, notably lectures. Second, student feedback revealed unequivocally the disparity in students' study environments and the impact this always has on their ability to keep up with coursework, prepare for class and revise during vacations. These insights into students' experiences of managing their learning outside class time should inform our choices about what aspects of teaching during the pandemic are worth keeping.

DATA-DRIVEN THEMES

Leadership

One of the most important aspects of responding to a crisis is the set of leadership strategies adopted. In our discussions the following aspects of leadership were articulated, drawing on Robinson's (2011) framework for student-centred leadership in schools as shown in the italicized items. Firstly, in terms of *establishing goals and expectations*, it was a priority to ensure everyone within our organisations understood the urgent need to move teaching and learning online within a very short period of time. Examples of the way this was done included holding 'town hall' meetings, sending broadcast emails to all staff, and rapid creation and publication of web-based guides. There was little time to develop a single *collective vision* but instead it was co-developed (and continued to evolve) through daily and weekly meetings of the leaders to discuss issues and resolve direction.

Resources were redirected to support the response to the crisis including halting a major teaching and learning project at UTS and reallocating staff resource from a VLE implementation project to remote teaching (Oxford). At other institutions resources usually devoted to routine technology-enhanced learning (TEL) developments were redirected into the shift to remote teaching and often augmented where needed.

Ensuring quality teaching was more difficult. At UTS students are routinely surveyed three weeks into the semester and, although it was a contentious decision, this also took place a couple of weeks after the move to remote teaching. Considerable effort was made to analyse every single one of the 13,000 student comments which were then categorised and published on the COVID-19 Toolkit website (LX.Lab 2020a). This practice of closely analysing all student surveys has continued.

The fifth aspect of Robinson's framework, *leading teacher learning and development*, largely entailed planning and developing a full range of development opportunities for staff including: face-to-face and online workshops, production of online guides and toolkits (LX.Lab 2020b), live chat, as well as drop-in sessions both face-to-face and online.

Finally, pivotal to *ensuring a safe and orderly environment* was effective communication that was regular, clear and consistent (with a commitment to 'single source of truth' resources). For example, at UTS, the communications that received the highest praise were the daily emails from the Deputy Vice-Chancellor to all staff who signed up to receive them (over 900 staff). These daily messages communicated decisions made, seeking input to imminent decisions where possible, advising of staff development opportunities, and providing links to communications to students.

Operational continuity

The pandemic placed enormous pressure on university finances (see e.g. Ross 2020; Odegard-Koester, Alexander & Pace 2020) and will continue to do so for some time. In Australia, the closure of the national border to non-citizens and residents since March 2020 meant that even while many international students were already on-shore by the beginning of the academic year, no new arrivals were possible. Where there was such a decline in international student numbers, this has had a major impact on income, with no quick recovery anticipated. Financial pressure was also felt on management of campus spaces and estates. At UoW, the library remained open with limited capacity in accordance with public health restrictions, even while teaching shifted online, so as to not fully close the campus. However, with limited campus traffic on-campus businesses suffered and university accommodation experienced significantly reduced demand.

We found evidence too that crisis management plans were not fit for purpose for a global pandemic. Australian universities developed plans after the 2002–04 SARS epidemic, but these did not anticipate the ongoing nature of a global public health crisis. Both UTS and UoW had been responding to the impact of severe summer bushfires at the time COVID-19 hit. These provided some experience of rapidly responding to a natural disaster where the immediate threat passes relatively quickly but is followed by a long, but more stable recovery phase. The COVID-19 pandemic has been of a different nature, requiring repeated rapid response as the virus spread and understanding increased, sustained for a significant period. UK HE leaders needed to respond to repeated surges in infection and changes in government policy. Emergency governance is still largely in operation (at the time of writing, Jan 2021), with many 'business-as-usual' processes and delegations remaining suspended. Our Covid Diary bears witness to the tensions and confusions that arise when 'command and control' modes clash with more traditional notions of academic governance based on consultation and debate. To support this, we noted the importance of documenting all decisions made where the time frame did not permit the use of regular governance and decision making processes. At UTS, a file was maintained regarding every such decision made, where it was made, and by whom. This was later tabled at the relevant governance committee such as Academic Board.

Rapid organisational restructuring and downsizing are occurring in a climate shaped by anxiety about the future of HE and a wider decline in trust in public institutions. It is unclear how long emergency governance will continue and whether it will leave a legacy by shaping future modes of university governance.

Student welfare

Ensuring student welfare was another primary concern for university leadership. This meant rapid planning and implementation of support for students continuing their study off-campus, and tackling the challenge of supporting students to self-manage these changes. In the UK, despite a lack of government support, our institutions offered hardship funds, fee reductions for student accommodation and care packages for isolating students. In spring 2020 in both the UK and Australia, significant efforts were made to assist international students to travel home, and support those staying. In autumn in the UK, student support and volunteering staff were tasked to contact and check-in with international students in one-to-one phone calls in their first few weeks of arrival to make sure they were well. Staff in halls of residences also played a key pastoral support role.

As part of welfare support during the pandemic, some of our UK universities, working together with the national public health agency, developed their own local track-and-trace systems to ensure the health and safety of students. Our universities also invested further in mental health services for students suffering from feelings of isolation, anxiety or dealing with major disruptions to their work and study routines. Many Australian and UK students experienced financial pressures due to losing their part-time work. At UoW, tutorials started with a 15-minute welfare check-in to make sure students were okay.

Student welfare services increased their online footprint. Access to online services, resources and guidance had already existed, but were expanded. See for example, a purpose-developed portal of all online academic services, support as well as social and other wellbeing opportunities at UTS. Counselling and advice sessions were conducted via video calls. At UoL, reading clubs were organised via MS Teams to nurture wellbeing; student union societies organised online networking events; the careers service ran webinars on helping students to manage their finances, and departments arranged their own bespoke support to promote belonging and wellbeing. In terms of their mental health, Australian students seemed to have been less affected by the pandemic than those studying in the UK (Ross 2020).

Student welfare started to embrace technology as a contributing factor. During the first, Spring 2020, lockdown in the UK students were not able to utilise on-campus study spaces, wifi/broadband and access to computer hardware. Universities had to move fast to mitigate the inequalities exposed. Computing and information services responded with guidance and many services were enabled for virtual access. In addition, IT difficulties were included as grounds for claiming extenuating circumstances in assessments to reduce students' anxiety. As the Spring 2020 lockdown lifted in the UK, campus spaces such as libraries were made accessible to students with the appropriate safety measures. At UTS in Australia, for instance, one building remained open throughout for these purposes.

Supporting students to develop capabilities for online learning was another way our universities offered help. Library services were particularly agile in responding to changing circumstances, providing socially distanced physical spaces, off-campus access to online resources, digitising resources on-demand, and ensuring access to printed books/journals via home delivery or Click & Collect services (UTS, UoL, Oxford). In addition to moving academic skills training online, specific resources on studying remotely were developed by specialist study advisers.

Pedagogy

A recurring question posed by our education leaders at pivotal decision points was "What would be the kindest thing to do?". Emphasis was placed on the most immediate concerns, one of which for UK universities nearing the end of the academic year when the pandemic hit, was assessment. At UoL and UCL, the principle of 'no detriment' to students was applied when reviewing the upcoming assessments, as also discussed in Bozkurt et al. (2020). This involved reducing assessment loads and/or switching to alternative modes of assessment. Closed-book, time-limited exams were converted into open-book exams over a longer time period, or different forms of assessment were created. Module approval processes were fast-tracked to allow for these changes to take place. All this proved that it was possible to apply agile principles to quality assurance processes. Students were supported with technology, including the rapid roll-out of tools for teaching and assessment.

Focusing on what students value about their learning experience was another key consideration. Our institutions created high-level principles to support staff in shifting their pedagogies to emergency online teaching and beyond, e.g. flexible and inclusive teaching at Oxford. These principles were cascaded and adapted by academics in line with the needs of the students in specific disciplines. Synchronous (real-time), remote lectures were adapted and policies agreed for these to be recorded and the recordings made available. Academics and students missed the real-time interaction, so pedagogy was adapted in ways that enabled students and academics to keep hold of the much-valued small-group teaching, providing students with the opportunity to interact and connect with their lecturers (LX.Lab 2020a). The advice at UCL encouraged academics to provide pre-recorded resources and use timetabled sessions to 'connect' synchronously with students, allowing for time differences, though this advice was modified due to feedback from students and academics in some disciplines who

wanted to continue real-time (synchronous) lecturing and discussions online. UTS produced an emergency remote teaching toolkit to provide advice and guidance to academics on a range of matters including pedagogy. UoW drew on internal expertise which was made available institution wide and small departmental/unit teams were established. Much of the advice and guidance provided to staff concerned connecting, engaging students, creating a sense of belonging in an online environment. A plethora of guides and resources were provided and shared on these topics, as well as on creating digital resources, recordings, chunking, flipped classroom sessions. Oxford surveyed staff to find out how such resources were used and what other sources of support were valuable, revealing the importance of being able to access local experts and informal interactions with colleagues who were more experienced in online teaching. UCL set up a network of Learning Leads who advised fellow academics on how to use technology systems to connect with students.

Triaging learning to enable students to graduate was another student-centred principle operating during the pandemic. This especially concerned degrees with clinical, placement or practical components and professional body requirements. For instance, in the early stages of the pandemic, UCL medical and nursing students were supported in volunteering to work in the London hospitals to help the National Health Service deal with the growing number of COVID-19 patients in Intensive Care Units. When most campus services and education service were suspended, special provision was made for clinical teaching to take place in socially distanced environments. Another example, at UoL, was to find a local solution for students who had opted for a credit-bearing semester abroad, but were not able to travel. Staff found local placement projects within the university and the city and designed the module from scratch, very much in the spirit of agile development, so that students were able to complete the placement virtually. The module was facilitated and assessed by a cross-university team, with some outstanding student projects as a result. At UTS those students who failed a subject and could demonstrate difficult circumstances during COVID-19 could apply to have their fail grade removed from their transcript. In professional programmes, like teacher education at UoW, restrictions on accessing professional placements meant that final year students were prioritised when access to workplaces became possible.

The common theme in these pedagogical decisions has been valuing and foregrounding students' needs. That is not to say that implementing these was straight-forward. Various tensions occurred. Inequalities between students became unmissable in that some students were more able to be present online and to have space to focus on their learning (similar to reports from Czerniewicz et al. 2020). Tensions between student needs and what was pragmatically possible needed to be balanced. Staff were teaching cohorts online with a large number of international students connecting in from their home country, requiring problem solving at technological, temporal and pedagogical levels. At the same time a palpable imprint in our Covid Diary was the determination, goodwill and positivity by staff at all levels – leadership, academic and professional – to make it all work for students.

Technology infrastructure

When campuses were closed, there were concerns about students' network access to allow them to connect synchronously with academics and with other students. To reduce this problem, UoW and UTS kept wifi availability on campus so students could have access to high speed networks by coming onto campus. This solution did not meet the needs of international students who returned to their home countries, including some who had returned to countries where access to teaching materials was blocked. Rapid workarounds had to be found by using third party sites or hosting online materials locally. Not all students had access to reliable computers and a proportion of students were reliant on phones and tablets, leading our universities to lend out or purchase hardware where needed.

Access to hardware and broadband was also problematic for some staff. Some academics did not already have home offices set up and had to take computers and other office equipment home (Littlejohn 2020). Although IT support was available from campus, academics had to take responsibility for setting up and maintaining home office spaces. Some staff did not have the space at home to accommodate office equipment, and had to improvise by using home equipment, such as kitchen tables and dining chairs. Some had to share spaces with other working adults or with children not in school, which led to difficulties in lecturing synchronously or recording lectures for streaming.

A clear message from students and from academics was that they wanted to be able to connect using technologies that would allow synchronous, real-time interactions. The university leadership allowed agile adoption of software to support remote teaching. At UTS a teaching and learning planning group was set up and made decisions on the recommended and supported tools for teaching remotely. At UCL a working group was formed to provide advice to the senior management on which educational technologies would be reliable for those students in China who were unable to return. Each of these recommended technologies was tested extensively by student volunteers in China.

There was a concern that a consequence of universities making agile decisions about the adoption of technologies would lead to less scrutiny of security and privacy because extensive testing, consultation and approval processes would be sidetracked (Fleming 2021; Williamson & Hogan 2020). However, there was little evidence this was happening in the HE sector. Initial problems, where unauthorised participants would join live streamed calls, were eliminated through privacy and security checks as well as staff learning to use tools effectively. However, there are remaining issues associated with proctoring tools, with unresolved tensions between connectivity and student welfare and safety.

DISCUSSION

This analysis of our experiences provides examples of the myriad ways in which the responses of our institutions were shaped by the prioritisation of student needs during the pandemic. The quick decisions and rapid changes reflect the unpredictable nature of the pandemic, where planning ahead was both necessary and difficult. Not all activities were well connected, but they appeared mobilised around the central concern for ensuring educational continuity. Concern for maintaining student engagement was palpable across all levels from senior and middle leaders to teaching staff in direct contact with students and administrative and support services. This was evident in a number of ways, for example UCL adopted a 'Connected Learning' approach to emphasise the connection of students and academics while at UTS the author was in a position (as Deputy Vice-Chancellor) to influence and lead a whole-of-university approach to connection. This included gaining an understanding of how students were experiencing the initial lockdown (analysis of early feedback on subject survey comments) and then addressing each of the categories of experiences that were less than satisfactory (such as, in some cases, lack of student to student and/or staff to student opportunities for communication) via a university-wide approach.

Although our institutions might have had different responses, which confirms leadership to be highly contextual and culturally dependent (Outram & Parkin 2020), processes and considerations of decision-making showed similarities: focusing on students' welfare and benefit. We each had very different roles and decision-making powers (whether making, supporting or influencing decisions) within our respective institutions, and this allowed us to compare and contrast our experiences as the pandemic evolved. Bringing these perspectives into conversation with each other was a powerful way to develop our own thinking about how to proceed practically and what to take from the experience into the future. Our experience and that of others (e.g. Odegard-Koester, Alexander & Pace 2020) highlights the potential of this approach for peer support and self-reflection.

As we make progress, sometimes haltingly, towards recovery we propose three key principles for student-centred leadership in HE which can serve us well in crisis and beyond. These are:

1. Prioritising student needs in decision-making.
2. Integrating agile practices.
3. Building a supportive work culture.

The principles are focused on students, practices and culture. We have taken all three types of leadership in the conceptual framework (crisis, agile and student-centred leadership) and formulated principles for each of these from our evidence similarly to the Agile Manifesto adapted by Twidale and Nichols (2013) and Pope-Ruark (2017). These principles have arisen from analysing our documented observations of HE leadership during 2020. As Gigliotti (2019) suggests good crisis leadership also addresses post-crisis needs as well. It is with this intention

that we have extrapolated these principles to identify the following three practical implications for now and into the future and to identify what can be retained, further questioned and improved upon.

PRIORITISING STUDENTS' NEEDS

The first and foremost practical implication going forward is prioritising students' needs as much as possible. Students' needs become a focal point in decision-making, underpinned by commitments to inclusion, equity and addressing disadvantage. Our chief goal has been to create the conditions that make it possible for students to learn and thrive, also observed by Bebbington (2021). We have termed this 'student-centred educational leadership' in line with numerous 'calls to action' at institutional, national and international levels for education leaders and policymakers to prioritise students' needs and tackle digital inequity (Czerniewicz et al. 2020; Bozkurt et al. 2020).

There is a long tradition of student-centred learning in the HE literature to draw on and apply more widely to university operation. For instance, Parkin (2017) highlights this as the focus on the 'three Es': student experiences, engagement and expectations. Whereas we have taken this forward by applying the concept of student-centredness to our leadership approach, beyond a narrow focus on students' learning experiences to a broader overview of their life experience. Outram and Parkin (2020) note that successful leadership is multidimensional and needs to be contextualised. This is confirmed by our evidence, which showed that prioritising students' needs took shape in different ways at our respective institutions.

While the school-based literature on student-centred leadership provides a valuable resource, the ways in which HE fundamentally differs across institutions (and even from student to student) raises questions about whether such a student-centred leadership approach is sustainable over the longer term. There are numerous tensions to navigate, such as the fit with research as the other core activity of the university – an important tension that has been observed between educational values and government prescription (Hammersley-Fletcher 2015) – and more fundamental questions about the role of universities in society and the sustainability of current university operational and funding models.

In practical terms, though, student-centred leadership in educational technology will be critical for the HE sector to flourish in the future. As our findings discuss above, prioritising students' needs will be even more crucial where educational technology leadership is concerned. In our findings, we have shown five areas where educational technology decisions during COVID-19 were led by students' needs. These included taking responsibility for students in difficult circumstances, offering more choice to cater for students' diverse needs (whether accessibility or mode of attendance), evidence-based decision making via rapid collection of student feedback on preferences and equalising access to technology and platforms. In addition to wifi and device access, the pandemic highlighted that students' own digital devices for learning have a significant role (Gierdowski, Brooks & Galanek 2020), resulting in educators thinking creatively and effectively to leverage student devices in the learning process. Equally, conversations about offering learning in a safe, secure and protected space for students are likely to continue. Post-pandemic, existing and continued research into student experiences of learning with technology and effective practice in online learning design will be more important than ever and will need to be embedded in a sustainable way.

INTEGRATING AGILE PRACTICES

The second practical implication regards integrating agile practices into higher education leadership. Our findings provide evidence that, by integrating agile practices, student-centred leadership takes on the values of being responsive and collaborative. This is in line not only with Twidale and Nichols (2013), who posit that collaboration is key to agile practices, but also with Menon and Suresh (2020) whose conceptual framework identifies the different enablers, criteria and attributes of organisational agility. Many of our COVID-19 responses in terms of institutional practices and processes decision making discussed above demonstrate agile attributes defined by Menon and Suresh (2020) in the areas of organisational structure, culture, learning and adoption of ICT.

The agile attributes in terms of organisational structure include a flatter hierarchical structure and cross-functional, self-organised teams (Menon & Suresh 2020). The Covid Diary provides evidence of such agile practices necessitated by the challenges faced by our universities that changed week by week and sometimes daily. Prior to the pandemic our universities did not operate in an agile way, but the experiences of the pandemic show that we became more efficient in self-organising and adapting as needs arose. For example, the pandemic forced us to change our existing assessments to be more inclusive and authentic that better suited our diverse student bodies, and we were able to make these changes via expedited quality assurance processes in an agile manner.

The agile attributes with respect to organisational culture include communication and flow of information, inquiry and dialogue, feedback system, collaboration and team learning (Menon & Suresh 2020). Accordingly, we noted examples of decision-making throughout the pandemic that was informed by data from both staff and students that was rapidly collected, analysed and shared. This suggests that student feedback methods can be faster and more open, and that we need to find ways of working with students more directly so that we better understand the diversity of their needs and perspectives in order to make decisions in their interests. However, we need to be sure we are gathering the right sort of data and interpreting it in robust ways.

Related to agile organisational culture was communication. Effective, transparent and regular communication was another recurrent theme in our organisational responses to COVID-19, echoing Gigliotti, who notes that in crisis “to lead is also to communicate” (2019: 6). Underpinned by collective and collaborative decision-making processes, our institutional communications were a similarly agile response to the unfolding pandemic aimed at keeping students and staff informed. We also discussed agile governance and decision-making processes above.

Agile and flexible practices are also cited as key enablers in institutional digital transformation plans (Brown, Reinitz & Wetzel 2020). Post-pandemic it will be important to retain agility as part of our ‘business as usual’ activities, building on what we have learned. To achieve this aim, it will be important to gather data in ways that inform how agility can be supported, understood and enacted.

BUILDING A SUPPORTIVE WORK CULTURE

The third practical implication in relation to the three principles of student-centred leadership concerns the importance of creating a supportive work culture to ensure we can support the whole academic community. It is difficult to build a supportive study environment without ensuring there is a supportive work culture to underpin it. While there was appropriately significant attention given to student inequalities, the pandemic also exposed a number of systemic inequalities for staff. For example, our institutions had to scale up services and provisions to ensure staff with disabilities or those with limited resources had access to digital devices, wifi, resources and services; they had to support staff to deal with changes in workload and work patterns; had to support staff with their professional learning needs; and had to help them in choosing appropriate technologies and managing the potential technology risks to workplace health and safety. Institutions have responsibilities as an employer in addressing these complex issues. Looking at it from another perspective, that of digital transformation of HEIs, supportive work culture has been cited as pivotal in digital transformation plans aimed at improving the student experience (Brooks & McCormack 2020).

Gigliotti emphasises the importance of leaders “for guidance, hope, and a sense of security” (2019: 137) in times of crisis. An example of where this was evident in our Covid Diary was in the way leaders reduced the threshold for risk around the move to emergency remote teaching. The rapid take-up of online video conferencing tools, while the emerging security issues and concerns were being addressed, showed that imperfect technologies and experiences did not need to be a barrier to implementation. A focus on student-centred leadership as a core value going forward would also ensure that we pay attention to the inclusive and ethical choice, use and evaluation of educational technologies that we engage within our institutions, and address some of the key issues around commercialisation and privacy identified by Williamson and Hogan (2020). A supportive work culture that accepts risk and allows experimentation and adaptation is vital to allow universities to respond quickly to student needs. It is exactly

FINAL REFLECTIONS

Looking back over the responses of our institutions in 2020, we can see that concern for addressing student needs became a prominent driving force for decision making. Many actions were taken that aimed to keep students connected with their learning, teachers and support services – all of them mediated by the educational technologies we chose and how we decided to use them when the pandemic began. Drawing on ideas from crisis, agile and student-centred leadership we have derived a set of principles that can guide our way forward. The principles we propose provide opportunities for researchers to investigate key questions about how student-centredness in leadership might be measured to discover its extent and influence, and to determine the outcomes achieved for students. Likewise, measures could be developed for agility and supportive culture that are specific both to student-centred leadership and to the higher education context and the ways in which educational technology can best be deployed to foster inclusive and ethical use and purchasing of educational technology.

The future remains uncertain and questions remain about prospective educational leadership in higher education. What is clear is that decisions have to be 1) guided and informed by the needs of students, 2) agile and responsive as needs arise and 3) we need to expect and anticipate future crises (this is not a one-off). Our goal for this paper has been to review and share our experiences at a time when attention will continue to be on the performance of our leaders and the decisions they make. We recognise that the space to reflect has been minimal because we have all been dealing with daily changes, crises to solve and the next challenge. But in amongst this, key decisions about educational technology have been made and we wanted to create some space in the writing of this paper, and perhaps even in your reading of it, to pause and reflect. We have tried to show the value of the reflections abstracted from our experiences and hope they will be relevant to those making decisions in the years to come.

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COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

All of the authors made substantial contributions to the conception of this paper, the gathering and interpretation of the data, and joint drafting of the manuscript. This analysis is intended to present the experiences and views of the individual authors, presented collectively, and does not reflect the views of the organisations within which we work.

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