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Research

A retrospective snapshot of academic staff preparation at the onset of COVID

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Abstract:

The abrupt emergence and spread of the COVID-19 virus compelled institutions worldwide to swiftly suspend face-to-face instruction in favor of a remote teaching mode. This extraordinary shift of instructional delivery created one of the biggest infrastructural, pedagogical and operational challenges for universities in recent history. As institutions that traditionally have been slow to respond to sudden external influences, universities struggled to respond effectively to COVID-19. Using the Human Systems Dynamics approach as conceptual framework, this paper retrospectively explores how academic staff adapted their Emergency Remote Teaching strategies and became more learning-agile to respond to such challenges in the future. This exploratory case-study article summarizes the results of a survey of teaching staff's readiness, experience and struggles with Emergency Remote Teaching during COVID-19 in the United States, the United Kingdom and Australia, at the height of the pandemic. A total of 73 usable responses were received between July 17 and August 7, 2020. The results were classified into four categories: (1) Preparation and training; (2) Faculty impressions of own teaching; (3) Faculty experience; and (4) Faculty impressions of student experience.

Keywords: COVID-19, Emergency remote teaching, Human systems dynamics, Academic development

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INTRODUCTION

"Crises are, at least while they are happening, not educational opportunities, but there are still things to learn" (Callard, 2020)

Crises and outbreaks, such as SARS and H1N1 (Cauchemez et al., 2014), have dominated media headlines for decades. However, previous crises have not had the same global impact on education as the COVID-19 pandemic. The magnitude and scope of changes that resulted in the education field from the COVID-19 pandemic are unprecedented and likely to be long-lasting. Between January and March 2020, most universities around the world were forced to cancel face-to-face classes and close their campus. As a result, 1.5 billion students across 165 countries (UNESCO, 2020) were asked to return home and academic staff were requested to move all their courses fully online, in what Hodges et al. (2020: 13) described as *Emergency Remote Teaching*, "a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances."

Higher education institutions were taken by surprise and thus faced significant challenges when implementing Emergency Remote Teaching (ERT) initiatives: urgently upskill academic staff on how to interact, engage and assess students online, enhance their classrooms technologically (with a quick response system to fix tech issues encountered by staff and students), somehow gauge students' digital capabilities for learning, implement the effective and active use of Learning Management Systems (LMS), and support the adaptation of all pedagogical content to an online environment (Watermayer et al., 2020: 2). As indicated in a survey during COVID-19 by Watermayer et al. (2020), in the United Kingdom, only 47.5 percent of academics felt prepared to deliver online learning, teaching, and assessment, compared with 62.5 percent in the United States and 81.5 percent in the European Union.

COVID-19 is a paradigm shift that has radically challenged our thinking and reshaped the way we approach learning and teaching (Devlin & Samarawickrema, 2022): There is no doubt that the aftermath of this public health crisis has structurally affected higher education institutions. The "biggest distance-learning experiment in history" has created a new education environment that determines teaching, research and outreach decisions (Kamenetz, 2020). In other words, COVID-19 has forced academics to rethink and work in a different way. As educational practitioners have interrogated the benefits and drawbacks of Emergency Remote Teaching, there has been a need to investigate faculty preparedness and concerns.

Many would contend that it was not a matter of whether to implement ERT, but rather how best to do so in such circumstances. In this study, we consider the constraints, challenges and limitations that impacted education in the COVID-19 context, as this study retrospectively traces the development of ERT in 2020 and attempts to gauge academic staff

readiness, learning-agility and struggles with ERT. As our framework, we chose the Human Dynamic Systems approach, in order to identify patterns between educators' ability to adjust to ERT, and to address the question of how academic staff have adapted their Emergency Remote Teaching strategies to become more learning-agile and hence better able to respond to challenges in the future.

Although considerable literature has been published over the past two decades on academic staff readiness to online environments and, more recently, on ERT during COVID-19 in various academic contexts (Bozkurt & Sharma, 2020; Chuah & Mohamad, 2020; Nae, 2020; Talidong, 2020; Trust & Whalen, 2020; Cesco et al; 2021; Karakaya, 2021), no published study exists which addresses our specific research question using the Human Systems Dynamics (HSD) approach as a framework. HSD is based on the definition of social structures as complex *agents* (in the case of a university: academic/professional staff, teams in departments/programs, senior management, administration, students). These agents interact to form *patterns* (policies, strategic/business plans, directives). Those complex patterns, over time, may constrain the action (s) of those agents (Eoyang, 2006). Eoyang (2006: 128) argued that "HSD assessment tracks changes at individual, group, departmental, and organizational levels simultaneously and considers how each of the levels may influence the others".

We conducted a survey, distributed to university campuses in three countries (The UK, The U.S. and Australia), to capture some of the complexities of the issues. Results from the survey were used to inform recommendations about systematic adoption of ERT and the provision of professional development to academic staff.

Given the stated research question, we proceed as follows: section two provides a brief background and an overview of the origins of Emergency Remote Teaching; section three outlines the conceptual framework used for this study; the next two sections present the methodology and the findings of the research, respectively. Section six analyses and discusses the results, while section seven concludes and provides implications for practice.

Background

"One hundred years later, tremendous advances have been made, no doubt, in science, in technology, and in health. It is a striking fact that in spite of all of these many advances, we are globally still underprepared for the next pandemic" (Williams, 2018)

Since the start of the COVID-19 outbreak, the published literature on Emergency Remote Teaching (ERT) has flourished. A common definition for ERT has emerged as an unplanned, quick need to implement online teaching initiatives rather than face-to-face courses on the campus. Bozkurt and Sharma (2020) analyzed the difference between ERT and online teaching and concluded that the latter concept refers to an established pedagogical method that is planned since the beginning to be delivered online. In other words, online teaching is a planned activity, while ERT is an emergency solution taken at

the last minute to face an urgent crisis, such as higher education institutions resorting to adopting ERT to address an extraordinary crisis (natural disaster, public health emergency, security issue, etc.).

The implementation of ERT predated COVID-19. It was for instance used in Hong Kong in 2003 during the SARS outbreak and in 2015 when the Middle East Respiratory Syndrome (MERS) struck South Korea (Calonge & Grando, 2013). Once the crisis is over, these institutions abandon ERT, revert to a face-to-face mode, and pause online teaching. Shisley (2020) highlighted that this quick change embraces all pedagogical activities implemented by universities, such as teaching, course design, assessments, labs, academic advising, workshops with students, etc. Since the beginning of the COVID-19 crisis, universities were forced to resort to ERT to ensure learning continuity and the delivery of courses to students who could no longer physically attend the campus: in other words, these institutions, in many cases, had neither the time nor the necessary resources to carefully strategize and plan these courses, as they would normally do when implementing online courses (Vlachopoulos, 2020).

The early literature on the impact of COVID-19 on university teaching suggests that for many teaching staff the pandemic presented their first experience with delivering teaching remotely and online (Toquero, 2021; SUMS Consulting, 2020; Trust & Whalen, 2020). For example, a survey of Norwegian teaching staff showed that 70% of teaching staff had their first experience of teaching online due to COVID-19 (Langford & Damsa, 2020). Another survey of the impact of the pandemic on teaching staff revealed that ERT was their first time facilitating learning online, as well as using Zoom (SUMS Consulting, 2020). Trust and Whalen (2020: 193) indicated that "the COVID-19 outbreak exposed a significant variation in educators' readiness to use technology to support learners at a distance". More recently, Devlin and McKay (2021: 2) stated that COVID-19 had "brought about sudden, unplanned and widespread shifts to remote teaching and learning, with many educators and students having limited knowledge of online pedagogy".

Higher education institutions tried to implement upskilling initiatives to help academic staff improve their confidence and adapt to an online context in a more efficient way; that is, ERT and the COVID-19 crisis acted as a sort of an "activator" for these organizations to understand how important continuing professional development (CPD) is (Langford & Damsa, 2020; Hodges et al.; 2020). Nevertheless, because of the emergency and, in some cases, a lack of substantial CPD budgets, a significant number of universities could not implement structured academic development sessions on the (pedagogical) use of digital learning tools, which may have impacted on academic staff confidence to successfully engage with remote teaching (Mohmmed et al.; 2020, Flores & Gago, 2020). Clearly, ERT requires adaptability, resourcefulness and flexibility (Karakaya, 2021). In contrast, teaching staff facing lack of training, IT support and even connectivity, were often stressed, working around the clock, and without access to support teams or specific professional development to help with tasks such as course design or multimedia creation

development (Mohmmed et al., 2020). As Hodges et al. (2020: 2) write "faculty might feel like instructional MacGyvers, having to improvise quick solutions in less-than-ideal circumstances".

Despite the obvious pressures on institutions, their budgets or lack thereof, and teaching staff to move rapidly online, it has been suggested that educational continuity in the face of COVID-19 contexts had support from institutions and teachers in their adaptation to ERT (Manca & Delfino, 2021). A Malaysian study outlined the rapid adaptability of the "majority" of educators to ERT was based on their emphasis on "online teaching", and thus minimizing the concept and sudden impact of "emergency" (Juhary, 2020 : 17-18). Similar positive sentiments towards the adaptation to ERT were found in a study by Talidong (2020). Mobilizing to ERT in this case was in part due to the ability of instructors to rapidly contextualize learners' needs and make changes in educational requirements due to the pandemic (Talidong, 2020). The mindset of educators towards ERT, coupled with the ability to contextualize students needs and transform 'fear' of fully online technology to the 'use' of fully online technology, therefore shifting away from "traditional methods" of learning and teaching (Can & Silman-Karanfil, 2021: 2), appear to be some of the supporting mechanisms that enabled swift and effective uptakes of ERT at the onset of COVID-19.

Conceptual Framework

Based on Complex Adaptive Systems theory, Human Systems Dynamics (HSD) are defined by Solow and Fake (2010: 31) as a "series of complex interactions between various individuals and groups within the whole", which may emerge in chaotic, intractable, unordered contexts and uncertain environments, leading to higher levels of disagreement and unpredictable outcomes. HSD considers problems to be approached as patterns, or more precisely *shifting* patterns. HSD is relevant here, in a *supercomplex* (Barnett, 2000) COVID-19 induced Emergency Remote Teaching era, especially as we explored patterns of groups and individuals, gauged readiness, evolving relationships, and complex interactions (e.g., academic staff-management-students) of ever-changing components (e.g., digital tools; operational models; remediation plans; instruction; assessment) within a system (e.g., university; LMS; communication and collaboration tools). HSD emphasizes three principles, which again are relevant to the context of this article: 1. *Adaptability* defined as the ability of agents (an individual, a team, an institution) to respond to (expected/unexpected) change, opportunities, and challenges in the environment, 2. *Communication* (during interactions), to avoid misunderstandings, disaccord and conflicts. Calonge et al. (2021) argued for instance that the pandemic highlighted the challenges communications and marketing staff encounter when dealing with internal (academic/professional/administrative, students) and external (industry, community, government, parents) stakeholders during complex, unexpected and sudden health crisis (: 1); and 3. *Problem-solving*, following a thorough analysis and sense-making of the patterns, their dynamics and their granularity.

This research also explored learning agility, which is defined by Burke (2016: 12) as "dealing with new experiences flexibly and rapidly by trying new behavior, getting feedback on these attempts, and making quick adjustments so new learning will be realized when you do not know exactly what to do", and further refined into three dimensions by Burke and Noumair (2015: 321) as "a) Flexibility (being adaptable, not rigid, when trying something for the first time and getting feedback as soon as possible), b) Speed (trying new approaches quickly and learning about the consequences in the moment, retaining some of the thoughts and behaviors and discarding others that do not appear to add anything to one's learning), and c) Avoiding defensiveness (justifying one's actions regardless of their efficacy regarding the uniqueness of the situation)." Nissim and Simon (2020: 23) vividly report for instance on how the "agile change to distance teaching" for lecturers "took place within 48 hours" in Ohalo College, a tertiary training institution for educators in Israel.

METHOD

This study employed a survey for data collection. Ethical approval to conduct the study was sought and received from the University of Adelaide (Australia) and Kalamazoo College (United States). We adopted instruments derived from a 20-item Classroom Community Scale published by Rovai (2002) and a University of Wisconsin survey of faculty and instructional staff concerning their use of technology in teaching and learning (Hartman et al., 2014). Most items were retained in their original form, other items were adapted or added to obtain additional data, relevant to the specific context of our research on ERT and based on the practical Human Systems Dynamics' principle, such as distinctive processes of adapting (Q 3, 7, 10, 19), communicating (Q 8, 12, 20, 36, 36), and problem-solving (Q 6).

The survey consisted of 48 items, including 47 multiple-choice and multi-select items and one open-ended item. The first part of the survey asked for background information, including current academic position, the discipline(s) and courses taught, the delivery format of the course, as well as gender and age. The survey also collected information about the respondents' readiness and digital competencies. The rest of the survey covered three broad domains: Involvement in curriculum and course development; Use of web conferencing systems; and Interaction and attendance.

The survey was distributed electronically using Qualtrics for three weeks. In total, 77 responses were received but four responses did not contain any answers beyond the initial consent, leaving 73 valid completed survey responses.

Participants

Participants for this study consisted of academics/teaching staff from higher education institutions in the United States (53), Australia (14), and the United Kingdom (5). The distribution of responses across the three nations is represented in Figure 1.

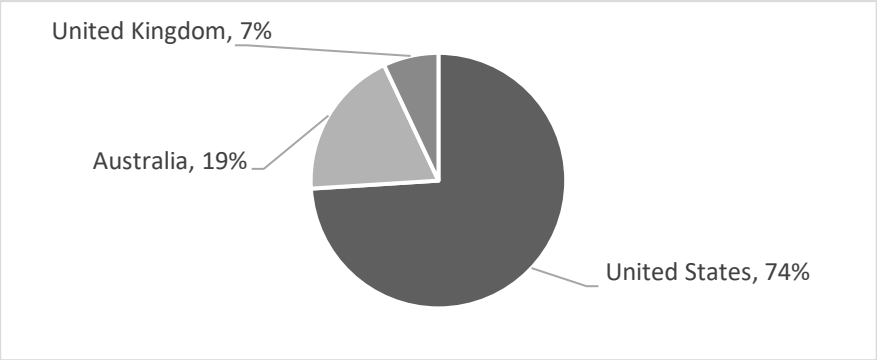

Figure 1. Responses by Geographic Location

As Figure 2 indicates, of the 73 responses, 84% (61) were by faculty members at the rank of Full Professor, Associate Professor, Assistant Professor, Lecturer, and Senior Lecturer. The remaining 16% (12, nine of which were in the United States) were categorized as Visiting Professor, Instructor, Teaching/Lab Assistant, and Other.

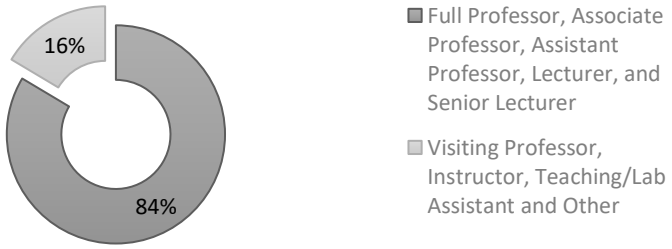

Figure 2. Responses by academic rank and position

The responses were distributed across all disciplines, see Figure 3, with a slight bias toward the humanities (26%), mathematics and natural sciences (16%) and the social sciences (14%). Few respondents chose to list the specific course that they taught remotely. Most responses were from faculty that taught either lectures or tutorials/practicals. Of 69 respondents who chose to answer the question about gender, 62% identified as female and 38% identified as male. Of the 69 respondents that chose to reveal their age, 65% were 45 or above and 35% were under 45. These distributions of responses are shown in Figure 4.

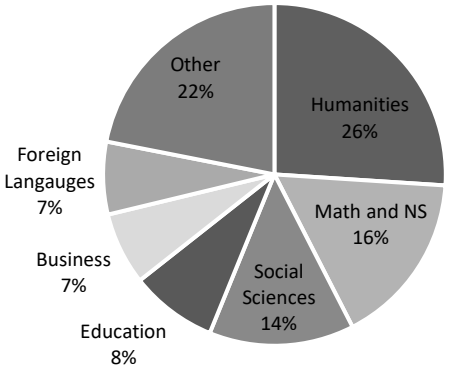

Figure 3. Responses by Discipline

Figure 4. Responses by Gender and Age

Data Collection Tools

Due to the short (3 weeks) timeframe for completing the survey, non-probability purposive and snowball sampling was used. Academic staff and personnel with teaching/facilitating responsibilities at all levels (Teaching/Lab Assistant - Instructor - Lecturer – Senior Lecturer - Assistant Professor - Associate Professor - Professor - Full Professor - Part-Time /Adjunct) were contacted via email and asked to complete the survey. To increase participation, the survey was also posted on LinkedIn (snowball sampling).

Data Analysis

Data analysis is primarily qualitative and descriptive, focusing on the frequency of the respondents' choices in order to better understand their readiness, experience, learning-agility and struggles with ERT. Data were triangulated with *open-ended* qualitative comments received, op-eds, and the published literature, including policy briefs. The authors also employed thematic analysis to explore participants' experience with ERT and deduce patterns. The four categories (results section) derived from identifying, analysing and interpreting data.

Ethical considerations

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. All of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were taken.

The questionnaire and methodology for this study were approved by the Human Research Ethics committee of the University of Adelaide (Australia). Date of ethics review decision: 09/07/2020; Ethics assessment document issue number: H-2020-114.

Institutional Review Board approval (Kalamazoo College, U.S.) was also received on July 17, 2020 (email).

RESULTS

Data are reported here anonymously. Given the research question "*How can academic staff adapt their Emergency Remote Teaching strategies and become more learning-agile to respond to such challenges in the future?"* the results were classified into four categories: (1) Preparation and training; (2) Faculty impressions of own teaching; (3) Faculty experience; and (4) Faculty impressions of student experience.

Preparation and training

Approximately two-thirds of all respondents had never taught fully online courses before the switch to ERT due to COVID-19. Although the reported experience was similar across the three locations (Australia: 54%; UK: 60%; US: 72%), it was slightly higher among the respondents in the United States who taught at small, liberal arts colleges. The same general result applied also to the respondents' experience with blended courses, but it was even more pronounced for staff located in the United States, 79% of whom reported no experience with blended courses (corresponding numbers were 46% for Australia and 40% for the UK).

In line with their lack of personal experience with blended or fully online courses, only 40% of respondents reported at the least some familiarity with effective pedagogy for online teaching. The degree of familiarity was, however, higher for respondents located in Australia and the UK (72% and 60%, respectively), compared to the United States (30%), which may reflect a greater emphasis on small class sizes at the liberal arts institutions. Slightly fewer than two-thirds reported that they had attended IT/online/remote training courses, with a greater percentage of attendance reported for staff located in Australia (71%). However, the results were different in terms of technical support, where approximately one-third of all respondents reported not receiving adequate support. Approximately 46% of all respondents expressed that they had not received adequate support for delivering their remote courses, and these numbers were slightly lower for the Australian respondents (36%,

5 out of 14). These results indicate that faculty were ill-prepared due to a lack of training and preparation prior to shift to ERT.

Fewer than one-fifth of the respondents reported having adequate opportunity to experiment with the technology required for teaching online prior to the switch to remote teaching, and the answers were comparable across the three locations (see Figure 5). This indicates a lack of pre-pandemic support from the institutions' Information Services departments, and possibly a lack of administrative preparedness. Similarly, one-fourth of the respondents felt that they had an adequate opportunity to discuss with other faculty the use of technology for online teaching prior to engaging in emergency remote teaching (see Figure 6).

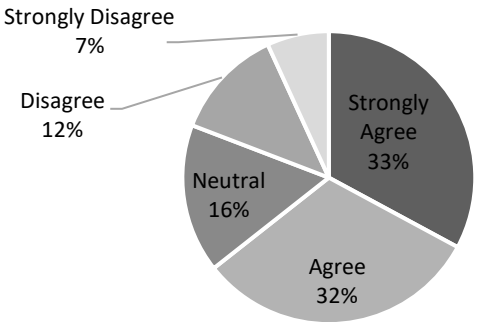

Figure 5. There was little or no opportunity to experiment with the technology for teaching online prior to COVID-19

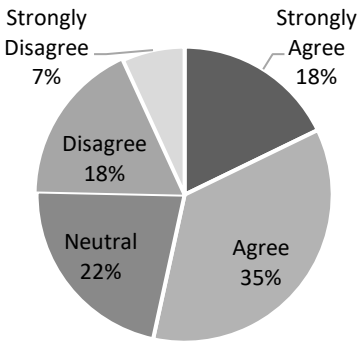

Figure 6. There was little or no opportunity to discuss with other faculty the use of technology for online teaching prior to COVID-19

The responses were evenly split regarding the type of resources that were most important to prepare the faculty for remote teaching, 42.5% identified IT help as most important and 42.5% identified pedagogical support as most important. In terms of the amount of

preparation time required for emergency remote teaching the responses were clearly skewed, with less than 10% reported spending less time in preparation compared to time spent preparing a face-to-face course. In fact, more than 50% reported spending *much* more time in preparation, which seems to confirm research by Zapata-Garibay et al. (2021) on teaching practices experience in Mexico when it stated that [teachers'] working hours have become more strenuous, that they did not have the tools to optimally manage their time, that they did not find a balance between the time dedicated to teaching and home activities" (para.56). Although answers were similar across the three locations, there were some differences as seen in Table 1.

Table 1

Think of a similar course you have developed and taught in the classroom, compared to that course the preparation time for this remote teaching course took…

	USA	**Australia**	**UK**	**Combined**
Much more time	55.6% (30)	42.9% (6)	40% (2)	52.1% (38)
More time	22.2% (12)	28.6% (4)	40% (2)	24.7% (18)
About the same amount of time	14.8% (8)	14.3% (2)	20% (1)	15.1% (11)
Less time	5.6% (3)	7.1% (1)	0	5.5% (4)
Much less time	0	7.1% (1)	0	1.4% (1)
Choose not to answer	1.9% (1)	0	0	1.4% (1)
Total	100% (54)	100.0% (14)	100% (5)	100.0% (73)

Faculty impressions of own teaching

Although faculty and staff reported a lack of knowledge and support, as well as inadequate opportunities to learn and prepare for the Emergency Remote Teaching experience, they felt more confident in their ability to effectively teach their online courses. Faculty overwhelmingly reported (eight out of ten) that they had clearly and regularly communicated the intended learning outcomes of their course to the students. Similarly, more than 90% of respondents reported that they clearly and regularly communicated important course topics to their students. In addition, more than nine in ten reported that they provided their students clear instructions on how to participate in online course learning activities. Almost all teaching staff (97%) across the three locations either agreed or strongly agreed that they had clearly communicated important due dates/time frames for learning activities to their students (see Figure 7).

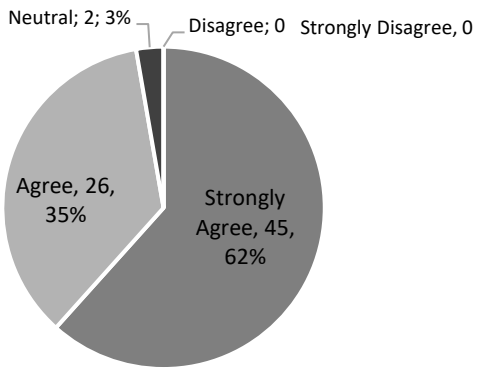

Figure 7. Overall, I clearly communicated important due dates/time frames for learning activities that helped my students keep pace with this course…

The teaching staff clearly felt that they had effectively communicated learning goals and instructions that would help students successfully learn the content material. However, teachers were less confident in their ability to help students understand and practice behaviors that are acceptable in an online learning environment. Overall, approximately four in ten reported that they helped students learn such behaviors, but staff in Australia and the United Kingdom reported higher levels of ability (71% and 60%, respectively). The overall impression was that faculty members felt that they were able to effectively teach their course content online, despite their concerns regarding knowledge and preparation for such teaching.

Faculty experience

Although the vast majority of faculty felt that they had been effective in communicating goals and instructions, they reported that technical difficulties had made it more difficult to teach. Overall, approximately 6 in ten reported that technical issues made it more difficult to teach than in a regular classroom and answers were roughly similar across the three locations. A breakdown of the responses can be found in Figure 8.

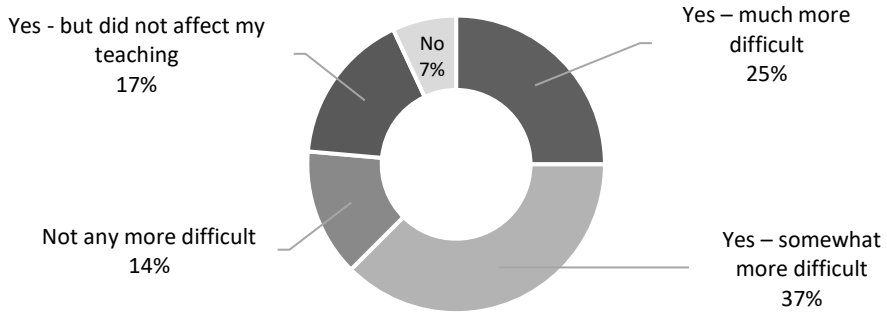

Figure 8. Do you feel technical difficulties made it more difficult to teach than a regular classroom?

An interesting result was that one third of the respondents reported that remote teaching had prompted them to be more systematic in their design of instruction, however a significant number (12.3%) also reported that they had been either less or much less systematic in their course design. Although the general results were similar across the three locations, 77% of Australian respondents reported that their design had remained about the same, while responses from the United States indicated that 45% became more systematic in their design of instruction. These results do suggest the possibility of a silver lining to the Emergency Remote Teaching experience, namely that teaching staff revisited the instructional design of their courses.

In terms of the use of Web conferencing system (such as Zoom or Microsoft Teams), 96% of the respondents reported that they had used such systems in their online courses. Despite the adoption of these techniques, more than 50% of the respondents either agreed or strongly agreed to the statement that they were not familiar with Web Conferencing Systems for online teaching prior to the switch. The platforms of Zoom and Microsoft Teams were the most popular among the participants of the survey. Of those who did use a Web conferencing system, approximately eight out of ten used them to contact students either twice a week or during the scheduled class sessions. In fact, just over 50% reported that they used the Web conferencing systems for regular lectures, one third also used the system for student group work. However, the most popular use of Web conferencing was to hold virtual office hours, which approximately seven out of ten of the respondents did. In terms of satisfaction with the Web conferencing technology, only ten percent of the respondents reported being dissatisfied (all located at institutions in the United States).

In support of the previous result that one third of respondents had been more systematic in the design of their courses, most of the teaching staff (75.4%) either strongly agreed (23.3%) or agreed (52.1%) that developing and teaching a remote teaching course had given them an opportunity to consider alternative means of instruction; that is, new learning and teaching activities. Almost the same number of respondents (71.2%) agreed or strongly agreed that the remote teaching experience had provided an opportunity to consider alternative assessment tasks. Finally, 76.7% of the respondents agreed or strongly agreed with the statement that remote teaching had provided them with an opportunity to consider alternative ways of engaging students. These results are positive examples of how external events may prompt teaching staff to reconsider their instructional design teaching and learning activities; that is, changes prompted by a shift to Emergency Remote Teaching may result in a change in pedagogical approaches in terms of activities used to engage and assess students.

Faculty impressions of student experience

Given the faculty impressions of their own ability to design their courses and communicate goals and instructions, it is interesting to consider how the faculty viewed the

students' experience of these changes and remote teaching and learning in general. First, very few faculty members (4%) *disagreed* with the statement that they had encouraged students to interact and ask questions, in fact one in three strongly agreed that they had encouraged students to interact and ask questions. However, although faculty felt that they had encouraged students to interact, three quarters reported less interaction between students in their online course compared to a regular face-to-face course. Supporting this finding, fewer than two in ten of the faculty either agreed or strongly agreed with the statement that their students felt connected to others in their course. In fact, almost six in ten felt that students were not connected to others in the course (see Figure 9).

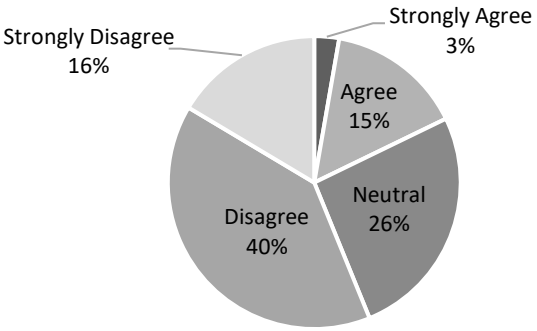

Figure 9. My students felt connected to others in this course…

Although most faculty felt that students were unable to connect with other students in their courses despite their efforts to facilitate those interactions, less than ten percent reported that their students felt that it was hard to get help when they had a question. This is another example where the teaching staff reported that they were able to communicate effectively with their students, and this assessment carried over to faculty's perceived ability to provide timely feedback to their students, which 77% reported having done so.

When it came to students' feelings of isolation during the ERT experience, only about 12% of the respondents disagreed or strongly disagreed with the statement that their students felt isolated in their course (the 12% were all located at institutions in the United States). Thus, the general feeling among the teaching staff was that their students had indeed felt isolated due to the switch to online teaching. Only about one out of ten respondents reported that they had experienced a greater level of student attendance in their online course compared to a regular face-to-face course. Although about half of the teaching staff reported that attendance was about the same, one third reported less attendance.

Except for five percent of the respondents in the United States, all teaching staff reported that they had had contact with their students outside of class sessions, through email, phone calls, and Web conferencing. In addition, three in four respondents reported being aware of students having contact with other students outside of regular, online class activities. Even though most respondents reported having contact with their students

outside of regular class sessions, only about 12 percent reported getting to know their students either better or much better in the online course compared to a regular face-to-face course; in fact, six out of ten respondents reported that they got to know their students less or much less during remote teaching.

An important component of remote teaching and learning is of course the level of student learning. There was no clear response as to whether students had learned more during the emergency remote teaching experience compared to a regular face-to-face course. In fact, more than six in ten reported that they learned less. Similarly, just over four in ten reported that their students did not perform as well in the remote course compared to a regular face-to-face course. However, four in ten also reported that there was no real difference in their students' performance.

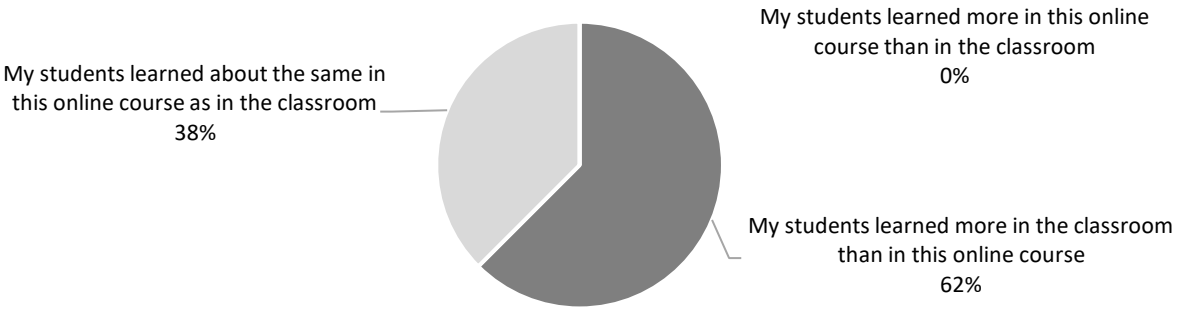

Figure 10. Think of a similar course you have taught in the classroom. Compared to that course, how would you rate the level of learning in this course…

Given that ERT will still be used in times of crises, it is comforting to note that 86.3 percent of the respondents now feel better prepared to teach a remote teaching course if campuses implement another lockdown or if another emergency arises. However, despite feeling better prepared for ERT in the future, a third of the respondents reported that they would not consider remote teaching unless necessary. On the other hand, more than a third did indicate a willingness to teach remote courses in the future, either some additional courses or even as many as possible.

DISCUSSION

The findings above indicated several patterns, commonalities, as well as some discrepancies between the four categories of responses. The results demonstrate that academic staff can become more learning-agile in response to the strategies adapted for ERT, while also reflecting the level of confidence of academic staff with ERT, the need for IT and pedagogical support, and the student experience with ERT.

Faculty members felt that despite their lack of experience, they were able to adapt to the challenging environment of ERT brought on by the unprecedented global COVID-19

phenomenon. This is also in line with the "shifting patterns" found in the Human Dynamics Systems approach. The initial lack of preparedness that teaching staff felt due to factors such as the inadequate experience or opportunities to previously engage with online learning, and insufficient IT and pedagogical support, shifted to an overall impression of being able to effectively teach their online content, as indicated by their responses to questions categorized as Faculty Impressions of Own Teaching. This indicates that faculty members perceived a "steep" learning curve in terms of their ability to use online tools. This result is also confirmed by Ferri et al. (2020), when they advocate "systematic training initiatives" to be "provided to improve teachers' and learners' technological skills in relation to new emerging models and approaches encouraging the effective use of online learning" (p.14).

The need for greater IT support was a pattern that again emerged in responses in the third category, Faculty Experience. Here, faculty members expressed their often-negative experiences with technical difficulties and being unfamiliar with online communication tools such as Web Conferencing Systems. Again, these answers matched the need for greater IT support and instructional training to facilitate a smoother transition into ERT, as conveyed when respondents reflected on their level of preparation. A finding confirmed by research by Cesco et al. (2021: 288) which indicated that most universities, "due to the time pressure but also to the lack of experience and plans for online teaching… just transformed the in-class lessons into online synchronous (streaming) or asynchronous lessons".

Research by Trotter et al. (2022) in the South African context also exemplifies how staff of a center for teaching and learning were overwhelmed by the scale and speed at which they had to respond to faculty issues and queries, how challenging it was to provide "specialist advice to so many in such a condensed timeframe" (: 3). Despite the initial chaotic few days, however, faculty members demonstrated components of adaptability, as found in *learning agility*, as the challenging circumstances of ERT prompted them to explore and research, interact and discuss with colleagues, adjust, and consider alternative means of instruction, new learning activities, as well as considering alternative assessment tasks, better suited to their context and students. In short, ERT, although painful and challenging at times, seems to have positively acted as a sort of catalyst that helped (a) improve their learning-agility and self-reflection practices and (b) change their attitude and behaviors towards the pros (and cons) of online learning and teaching.

Similar to revealed patterns which indicated confidence of faculty members in the shift to ERT and calls for greater IT and pedagogical support prior to and also in the midst of ERT, discrepancies emerged with faculty members instructional design abilities and student experiences of connectedness to others in their courses. By their responses in the second category, Faculty Impressions of Own Teaching, faculty members indicated instructional design abilities in the face of ERT, such as clearly communicating the intended learning outcomes as well as important course topics, providing clear instructions on how to participate in online learning activities, and clear communication on due dates/time frames for assessment activities.

In contrast, responses that we categorized as Faculty Impressions of Student Experience indicated that academic staff judged that their students felt *socially disconnected* to others in their courses. Therefore, despite reflections of their instructional design abilities, there are bound to be some discrepancies between faculty members' perspectives on the design of the courses, the assessment processes within the courses, encouragement towards student participation, and actual "student connectedness" to others in the course. This highlights that although adaptability increased, demonstrated by faculty members' ability to adjust to instructional design elements required for ERT, there is still a need for strong pedagogical support that may benefit the student experience.

Given our findings regarding faculty members response patterns and levels of adjustment, as well as their connections to the framework of Human Systems Dynamics, we must revisit our research question "*How can academic staff adapt their Emergency Remote Teaching strategies and become more learning-agile to respond to such challenges in the future?"* We agree with Greene (2020), when she wrote that the "world of instructional support, design and development that was…pretty much invisible to many people in higher education" (Greene, 2020, para.1) prior to ERT, but now these support centers are "coming roaring into visibility" (para.3). This is also mirrored in our findings. The three dimensions of learning-agility, flexibility, speed, and avoiding defensiveness, requires a shift from a lack of awareness of online or remote teaching leading to the adoption of "coping strategies," which came forth with ERT due to its nature of immediate implementation and emerging out of absolute necessity, towards developing "coherent digital strategies" (M, 2020). One prominent way to achieve this is, as suggested in the findings, to provide greater IT and continuous pedagogical support to academic staff. Predicting, identifying and analyzing difficulties, how academic staff adjusted and the student experience in the ERT space, is a wakeup call and a fundamental process towards designing future digital strategies.

In the ongoing global phenomenon of COVID-19, it is clear that "the pandemic will have complex, unexpected, and long-term implications…that must be anticipated now" (The Lancet, 2020: 1). Studies have shown that contextualizing learning and teaching needs according to unexpected circumstances, is essential in order to adjust to complex and long-term implications as well as to establish stability, engagement and educational continuity for learners (Juhary, 2020; Talidong, 2020; Shah, 2021). In addition, Devlin and Samarawickrema (2022: 32) argue that new models of learning and teaching will need to be developed and wonder whether "future university educators" will "need to demonstrate intense flexibility to teach [the curriculum]". However, the challenge is in the "how to" anticipate these significant disruptions. We suggest that by examining how academic staff have quickly adapted to COVID-19, we can analyze how they became more learning-agile and can retrospectively argue that this unprecedented experience has already empowered them to some degree. Frameworks such as Human Dynamics Systems help us sort through experiences, in terms of abilities and weaknesses, as academic staff struggled to adapt to volatile, complex and ambiguous remote learning environments. This, in turn, can help

inform future "instant" remote teaching concerns, "distance learning experiments" (Kamenetz, 2020), and perhaps allow higher education institutions and academic staff to transition from reactively responding to "emergencies" brought on by a global crisis, to more proactive, stable, sustainable strategic online options. This new understanding should thus help to improve predictions of the impact of future pandemics on higher education.

LIMITATIONS

A significant limitation to this study was the limited number of published articles on the topic (academic development) due to COVID-19 being, still, an emergent issue. This led to additional limitations such as: the practical time constraints of the survey period (3-week campaign) and access to over-stretched academics amid their Emergency Remote Teaching experience. Being limited to academic staff, this study lacks the students' perspectives on their learning experience.

Other limitations to the study include the small sample size and only surveying participants who met the criteria of delivering English-language instruction in Australia, United States and the United Kingdom. The survey was sent during the second Australian COVID wave, the 3rd American COVID wave and strict lockdowns (emergency period) in the UK (The Health Protection (Coronavirus, Restrictions) (No. 2) (England) Regulations 2020), and this has undoubtedly affected the number of responses. Finally, and most importantly, the authors of this study acknowledge that positivity bias may have had an impact on the results of this study. Survey participants may have "biased their recall by transforming content initially" considered "as negative into more neutral or positive content" (Aizpurua et al., 2021).

CONCLUSION

Undoubtedly, the COVID-19 outbreak forced higher education institutions to adjust their pedagogical approach to teaching and learning. The shift to Emergency Remote Teaching (ERT) led academic staff to quickly upskill in digital learning tools in order to adapt to this new professional environment. Nevertheless, many of them did not feel confident when teaching online, and we can retrospectively argue that many are still technology agnostic. In addition, when campuses started closing their doors for safety reasons and courses went online, many students faced several technical and connectivity glitches, as well as mental-health related issues due to feelings of isolation, unemployment, etc., which diminished their abilities to establish rich relations with peers and their professors.

This paper aimed to answer a main research question: "*How have academic staff adapted their Emergency Remote Teaching strategies and become more learning-agile to respond to such challenges in the future?*" Based on the literature review and the quantitative analysis

conducted about academic staff and personnel with teaching/facilitating responsibilities in the United States, the United Kingdom and Australia, this study has shown that teaching staff demonstrated the three dimensions of learning agility (flexibility, speed and avoiding defensiveness) to a certain degree, in their ability to learn new tools, be agile and quickly adapt to the circumstances of remote teaching. A second finding was that while teaching staff were largely confident in their ability to provide structured learning for students, there existed clear gaps in the perceived ability to engage students in the (fully-) online learning space.

The findings of this study indicate several important implications for future practice. First and foremost, and as most campuses return/returned to face-to-face teaching, we advocate to gradually move from what HSD describes as Strategic Adaptive Action, a process that enables coherent planning and action across a complex, self-organizing system, to what HSD calls the Transformation stage. Based on their reflective experience and the challenges encountered with the (often chaotic) ERT implementation, feedback from students and staff and the gradual but inexorable return of students on campus, higher education institutions should now evolve to a more systematic HyFlex approach. Providing additional modalities such as HyFlex (with well-designed learning spaces and hybrid classrooms) will allow universities to future-proof their teaching and research offerings to deal with unpredictable events in a crisis-prone world, and provide increased customization, equitable accessibility (Gkougkoura et al., 2022) to those from disadvantaged backgrounds (Shah & Santandreu Calonge, 2019) more flexibility (synchronous and asynchronous) and better control of their learning experience to students.

Second, we acknowledge the difficulties and the tremendous amount of work done by all the centers of learning and teaching around the world at the onset of and during the pandemic and suggest to higher education institutions to capitalize on this new ERT expertise to design hands-on *pedagogical* continuing professional development programs on HyFlex. These professional development opportunities should be for academics "whose aim will be to foster adaptability to uncertainty" as advocated by Calonge et al. (2022: 29), not "button pushing" workshops but rather sessions that focus on functioning knowledge (e.g. effective use of polling and data analytics, providing constructive feedback in an online discussion forum, feedback podcasts/videos, use of social media as alternate backchannel, synchronous online/class formative/diagnostic assessment, etc.). Despite decades of online learning literature and implementation initiatives, there remains a need among teaching staff to foster confidence in simultaneously engaging and assessing face-to-face (F2F) and online students. As reported in a global Survey on the impact of COVID-19 on higher education around the world (424 universities and other Higher Education Institutions based in 109 countries), the unavailability of "management structure in place to develop the teaching capacities of staff for them to shift towards online learning easily and this therefore often resulted in "learning by doing" approaches" (Marinoni et al, 2020: 25).

In short, we recommend a more strategically planned, practical and professional approach to academic staff development. Notwithstanding the limitations presented earlier, we do hope that this retrospective *snapshot* study will prove useful in expanding our understanding of how academic staff at all levels adapted to ERT at the onset of the pandemic.

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