University Teachers' Learning Experiences During Emergency-Remote-Teaching Through a Networked Learning Lens: A Phenomenography

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Abstract

This paper presents part of the preliminary findings of an investigation into higher education (HE) teachers' perceptions of personal learning networks in the context of the recent emergency-remote-teaching (ERT) scenario caused by Covid19. Technology had been increasingly permeating HE long before the pandemic, blurring the lines between online and offline spaces as students and teachers engaged across both mediums in a complex web of connections to people and online resources. The pandemic induced ERT period has magnified university teachers' use of learning networks, as many have been forced to increasingly rely on them throughout this unexpected interruption of the HE status quo. With an absence of a coherent institutionalized approach to ERT and teachers' professional development, there has been a great diversity of teachers' networked learning experiences during that period. This phenomenography, therefore, explores the perceptions of 18 Academic English instructors at a leading English-instruction university in Kazakhstan that was, like many other institutions worldwide, forced to abruptly go online. The semi-structured interviews targeted the teacher's diversified views on the benefits and challenges of network use and how these networks can be used to connect to others and online resources, using the Networked Learning lens. The present paper includes some of the preliminary findings from the ongoing research project focusing on several interlinked aspects of teachers' perceptions and experiences of networked learning during the ERT period. The results thus far show that Academic English instructors perceive the core benefits of their network use at least in four different ways as enabling flexible access to online resources, enabling flexible access to others, facilitating personalised and focussed one-to-one pedagogical interactions (both with their colleagues and students), and maintaining and developing a sense of belonging to different academic communities (removing temporal-and-spatial barriers). The authors expect to provide more comprehensive (if not final) findings and insights during the presentation.

Keywords

Networked Learning; Emergency Remote Teaching; Personal Learning Networks; Phenomenography; Covid19.

Research Background

Higher education (HE) has long been experiencing a general trend towards digitalization, as technology has continued penetrating university campuses across the globe (Englund et al., 2017; John, 2015). The benefits luring universities towards digitization include greater individualization (Castañeda & Selwyn, 2018) as teachers enjoy increased autonomy over when and how they access information, as well as the possibility of interacting with large groups of individuals who may be geographically dispersed (Egiewela et al., 2022). This trend has often manifested itself in university teachers' pedagogical contexts as the promotion of technology-enhanced-learning (TEL) (Kirkwood & Price, 2014). For example, teachers are encouraged to enrich their face-to-face classroom experience by incorporating tools like interactive whiteboards (Kim et al., 2013) or game-based platforms such as 'Kahoot.' The digitalizing effort in HE has also produced the increasing variation of course delivery modes, such as blended learning (BL) (Ryberg et al., 2017) whereby teachers are asked to engage with students across a combination of both online and offline spaces on a single programme. Despite this long-term trend towards a more technologized HE environment, not all university teachers have embraced this paradigm shift, and in fact, some have been resisted the trend (Englund et al., 2017; John, 2015; Krumsvik, 2014). Whether teachers' resistance to TEL integration is born out of low digital competence (Krumsvik, 2014)

as they feel under-equipped to follow this trend, or whether it is a more attitudinal challenge for teachers who fundamentally or critically disagree with the imposing of technology on their pedagogical practice (Kim et al., 2013), the long-term digitalizing efforts in HE has not been successful as many teaching activities remain rather analogue (at least until the recent Covid-19 outbreak).

University administrators and leaderships have responded to teacher resistance by increasingly adapting their institutions' professional development (PD) programmes to include a greater focus on TEL (Dysart & Weckerle, 2015). Examples can range from the relatively practical training of teachers to operate new learning management systems such as Moodle (Kim et al., 2013) to the more fundamental tasks of discussing the pedagogical implications of smoothly integrating video-sharing platforms such as YouTube into their face-to-face lessons (Dysart & Weckerle, 2015). In parallel with such formal training activities, the practice of Networked Learning (NL), whereby teachers develop professionally through informal interactions with colleagues and online resources (Goodyear et al., 2004), has also taken place to one degree or another, especially ever since technology started penetrating teachers' everyday practice. Nevertheless, the impacts of teachers' NL on the changes in their pedagogical beliefs and practices related to TEL has remained relatively under-researched due to the informal (and often private and personal) nature of NL practices. In other words, NL-oriented PD activities and their impacts are less tangible than more traditional forms of institutionalized PD or training activities, whereby teachers' participation and engagement are officially observed, measured, and evaluated (and often certificated). Thus, it can be argued that despite the great potential for teacher changes, particularly in TEL settings, NL has been under-represented and under-focused as a PD mechanism across universities.

The aforementioned challenges have continued until the recent spread of the Covid-19 virus worldwide, creating a global pandemic, which interrupts all forms of face-to-face human activities, including teaching and learning (UNESCO, 2020; Adedoyin & Soykan, 2020). As the majority of HE institutions had largely operated in their long-accustomed face-to-face settings up to that point, the early part of 2020 delivered an unexpected blow to this sense of normality (Acuyo, 2021; Lee et al., 2021). This has led to many of these universities being forced to abruptly suspend their operations in the physical classroom and swiftly adapt to the online medium to meet the newly introduced social-distancing regulations. The many faculty-related challenges brought about by this disruption have ranged from their inadequate pedagogical preparation for operating online at such short notice (Carrillo & Flores, 2020) to the mental health strain caused by the physical isolation and stress that many of these teachers suddenly found themselves living under (Van Der Feltz-Cornelis et al., 2020; Leal Filho et al., 2021). Despite these hurdles, the wide consensus is that most universities have successfully continued operating in this relatively under-explored online environment throughout this emergency remote teaching (ERT) period. In other words, teachers may not have all been perfect 'swimmers', but few seem to have 'sunk' throughout this period.

While it may be true that, since then, some universities have reverted to face-to-face operations, questions remain about how the same faculty who had long demonstrated a certain resistance to technological integration suddenly managed to 'stay afloat' during the ERT event (authors, 2020). Many would argue that their learning networks, both in connection to other people and online resources, played a significant role during this disruptive event since institutional support was deemed minimal as universities were caught off guard (Rapanta et al., 2020; Hodges et al., 2020). That is to say, the notion that teachers were able to continue operating in this online environment that they were unexpectedly thrust into with little guidance from their institution may suggest that these university teachers relied on their NL connections in the absence of more traditional forms of university support and PD (authors, 2021; Green et al., 2020). That is, we argue that NL can be developed as a dominant PD platform to help teachers with the continuing transition to digitalization (during and after the Covid-19 pandemic). This calls for greater exploration into the use of personal learning networks during the ERT period in order to better understand how this NL-based PD platform can be exploited in the longer-term future. By informing university administrators (as well as teachers) of how to promote and support NL practices among their faculty, this investigation ultimately seeks to facilitate teachers' effective transitions into an increasingly technologized HE environment.

Research Problems and Question

The three interrelated research problems have directly emerged from the above teacher NL scenario during the ERT period. Firstly, the practical (and individual level) problems include the notion that university teachers may not fully realise the important roles that online forms of collegial collaboration and resource utilisation have played in their day-to-day pedagogical practice. This means that they are less likely to, for instance, proactively tap into their network connections for support and thus may feel more isolated as a result (especially in ERT-like situations). Secondly, there is a gap in our theoretical understanding of university teachers' learning practice

since a significant weight of existing PD literature focuses on NL from a student perspective (Mensa & Grow, 2020; Shim & Lee, 2020; Elmer et al., 2020), as opposed to a faculty one. This partly neglects university teachers who unexpectedly or unintentionally find themselves in this online environment, either gradually as technology seeps into HE campuses (or abruptly as a result of Covid-19-like scenarios). Finally, at the institutional level, HE institutions often prioritize overt and tangible PD practices such as certificated courses or documented observations at the expense of less visible practices such as collegial collaboration or the use of online resources. This status quo of placing little value and emphasis on NL activities (or personal and private interactions) is likely to lead to an increase in the slow and less smooth move towards digitization of HE. It may also be fair to say that teachers are less likely to put sustainable effort to use and develop those networks without the approval and support of their institution once their immediate needs are gone.
To address these problems, this study will answer the following research question: “How can university teachers' different perceptions and uses of networks for learning and teaching throughout the ERT period be explained?” More specifically, the present authors are interested in understanding 18 teachers’ perceived benefits of using their personal networks for adopting (and coping with) the ERT during the Covid-19 pandemic. Using NL as a theoretical lens and phenomenography as a methodological approach, this study intends to uncover meaningful differences in teachers’ perceptions and experiences with NL during the Covid-19 pandemic. Before introducing the study design, the following sections will briefly summarize two sets of literature closely related to the present phenomenographic investigation.

Emergency Remote Teaching

The tendency to use the term ERT synonymously, and often inaccurately, with similar labels such as remote teaching (Bozkurt & Sharma, 2020), BL or technology-enhanced-learning (TEL), means that a clear definition is needed early on in this paper. A contrast between ERT and these other forms of online teaching is challenging to present, given the overlap among them, however it is important as a clarifying starting point. Hodges et al. (2020) claim that ERT was born out of necessity at the beginning of the Covid19 pandemic, in order to differentiate between the hurried struggle to rapidly shift courses that were originally intended for face-to-face delivery to online format, from the carefully designed courses that are delivered by teachers experienced in online pedagogy. That is to say, ERT is reactionary and improvisational in nature (Bozkurt & Sharma, 2020), whereas other forms of online teaching are generally planned ahead for (Kentnor, 2015). Hence, for the purposes of this investigation ERT is defined as "the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has been abated" (Hodges et al., 2020, p.7). This definition encapsulates both the unforeseen nature of the phenomenon, as well as its acceptance as a temporary measure; albeit lasting longer than initially predicted by many institutions.

HE programs that are originally intended for online delivery of some kind, whether this is entirely remotely, using a combination of face-to-face and online delivery as BL suggests (Garrison & Vaughan, 2008), or by using technology in the classroom to improve elements of a face-to-face course as TEL implies (Kirkwood & Price, 2014), undergo rigorous preparation before the start date (Kentnor, 2015). Means et al. (2014) describe the range of moderating variables that are considered when designing an online course, including the synchrony of the program (asynchronous vs synchronous), the pacing (self-paced vs class-paced), instructor role (active vs passive) and so forth. The 'emergency' part of the ERT acronym on the other hand, highlights that, in many ways, it is the very opposite of a conscientiously designed course intentioned for delivery in an online space, since there is little time to consider these variables in advance (Rapanta et al., 2020; Mohmmed et al., 2020). A rapid and unforeseen shift from physical to virtual learning spaces, such as the one experienced across HE institutions during the initial Covid19 lockdown (Green et al., 2020), meant that teachers who are inexperienced in online teaching were left to deliver improvised versions of their courses (Carrillo & Flores, 2020), that were originally intended for face-to-face settings, using little more than their home computers and support networks. It could thus be argued that the recent ERT period has produced a stressful scenario whereby teachers "are building the plane while they fly it" (Trust & Whalen, 2020, p.193).

Aside from the unplanned nature of ERT, another key factor that differentiates it from other forms of online teaching is its association of temporariness. Planned online courses in various forms, whether they adopt a BL, completely online or any other format, have existed since the early 1990s (Kentnor, 2015). This means that these courses have benefitted from multiple rounds of feedback over the years (Meikleham & Hugo, 2020), whether that is from student evaluation surveys or from instructor input on the overall success of the courses in meeting their aims. These courses are therefore continually adapted (Boud & Molloy, 2013), since the understanding among the stakeholders is that the programmes are there to stay in the long-term. ERT on the other hand, is seen as a temporary measure taken by institutions to help them cope with an unforeseen event that is causing disruption to face-to-face courses (Hodges et al., 2020; Toquero, 2020). The mutual understanding

among students, faculty and other stakeholders is that ERT is to be used as a crutch that will enable programmes to continue, albeit under a 'new reality' that is assumably less than optimum. The common association of this 'new reality' of ERT as resulting in an inferior experience for students and teachers alike, is often excused by the calculated assurance that face-to-face teaching will resume in the near future. In other words, the collective assumption that ERT is a short interim before returning to 'normal,' means that the HE community is more likely to overlook gaffes on Zoom as faculty experiment with this tool for the first time, forgive lower attendance from students who struggle to access a computer and exercise patience with institutions who take longer than expected to organize the relevant training.

Networked Learning

NL exists in an educational context in which different technologies are embedded in HE (Gourlay et al., 2021; Cutajar & Montebello, 2018), in order to create a learning space that is non-binary. That is to say, technology has permeated HE to the extent where no course can be seen as either purely face-to-face or online, since technology is often integrated into face-to-face courses, in the same way that online courses often include face-to-face elements. Face-to-face course participants are just as likely to collaborate in the virtual world via social media outside the classroom, as online course participants are to arrange physical meetups. Given the rapid development of the NL field (Jones, 2015), it is important to adopt a clear definition early on in this paper, which will then be referred back to in subsequent sections. Hence for the purposes of this study, NL is defined as "Learning in which information and communications technology (ICT) is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources" (Goodyear et al., 2004, p.1).

It should be clarified that the technology itself is not the focus, but rather the way in which it is used to bridge these connections (Gourlay et al., 2021; Goodyear et al., 2004) for the purposes of learning. In fact, the interactions between network connections may not always be purely online (Dohn et al., 2018), given that NL can, for instance, occur in a BL context which partly involves face-to-face contact with physical people and resources. While this web of connections is unarguably central to NL (Jones, 2015), it should be emphasized that the link between an individual and resources, rather than to other people, alone is not enough to constitute NL (Carvalho & Goodyear, 2014). After all, technological advancements, such as the ability to quickly share a useful resource link on an SNS like Twitter, have shifted focus away from content and pushed it towards connecting likeminded individuals who are likely to share resources and expertise (Brown & Adler, 2007). This implies that NL places emphasis on social learning and dialogue (Ryberg et al., 2012) that requires person-to-person interaction of some kind and that human connections are generally perceived as more valuable than resource ones (Goodyear et al., 2004). This contrasts with the independent online learning that is sometimes associated with open educational resources (Tuomi, 2013), whereby an individual may trawl information-rich resources online such as Wikipedia without discussing this material with others.

NL can manifest itself in different forms according to different scenarios, as well as on the purpose for which an individual taps into their personal network(s). For instance, Lave and Wenger's (1991) Communities of Practice (CoPs) concept revolves around the close collaboration of individuals on a common task (Hofer et al., 2021). This relates to NL in the sense that interactions between CoP members can take place across a blend of virtual and physical spaces (Gourlay et al., 2021). However, this narrow use of NL within a single intimate learning community contrasts somewhat with NL's broader concept of networked individualism (Jones, 2012), which portrays a different use of networks, whereby an individual dips in and out of a range of much wider webs than the single tight-knit set of connections (Lave & Wenger, 1991) that is characteristic of CoP member interaction.

This investigation is more focused on this latter flexible use of PLNs (Dirckinck-Holmfeld et al., 2011; Jones, 2015) to maintain bridges to multiple connections (Jones, 2012), whereby a teacher might, for example, be asked something by a close colleague from one network on Moodle and then use Twitter to reach out to a wider web for the answer. As previously mentioned, technology's penetration into HE (Cutajar & Montebello, 2018) means that the use of PLNs is likely to take place both online as well as offline, now that technology has become omnipresent in many university campuses. The focus of this research is thus on how this set of micro-interactions with a wide variety of people and resources over the ERT period has been perceived and approached by different EAP teachers.

Methodological Framework

Phenomenography is a research approach that seeks to unveil a plurality of ways in which a single phenomenon can be perceived (Cutajar & Montebello, 2018; Akerlind, 2008). The methodological focus is on the participants' self-articulation of how they themselves view the subject in focus at that particular time, usually

through the channel of a semi-structured interview (Yates et al., 2012). While this perception is likely to differ from one participant to the next, some individuals tend to share certain perceptions with others. This results in a finite number of differentiable themes, known as categories of description (Örnek, 2008), representing the varieties of the participant group's perceptions. At the end of the phenomenographic investigation, the structural relationships between these categories are established in the form of visual representations known as outcome spaces (Hajar, 2020). As a result of the present investigation, four outcome spaces were established regarding how the participants perceived the phenomena of NL in the context of ERT during the Covid-19 pandemic, with a particular focus on the benefits of network use.

The main reason for adopting a phenomenographic research method for this investigation is that it is *not* our aim to unveil a single narrative about the NL phenomenon shared among the teacher participants *but* a variety of different ways in which the participants perceive the same phenomenon (Rands & Gansemer-Topf, 2016; Marton, 1986). It is grounded in our belief that the NL phenomenon has been experienced by individual participants rather differently during the Covid-19 pandemic when they were physically separated (and isolated), thus consequently, there should be a great diversity of their perceived value of the phenomenon. Phenomenography is a non-dualist method (Hajar, 2020), which is well-aligned with the constructivist and interpretivist research paradigm employed in this study. We accept a plurality of different 'truths' according to each individuals' beliefs, rather than a dichotomy between 'good' and 'bad' versions. Even for those who reject these ontological and epistemological assumptions by believing that there is only one objective truth, it is difficult to deny the value of having insight into an array of different interpretations. By reviewing alternative perspectives to one's own belief, one may eventually change their own view (Örnek, 2008). Therefore, we argue that it is valuable to all researchers, regardless of their research paradigm, to gain a more informed collective understanding of the different ways in which their focused phenomenon can be experienced, rather than be blinded to all but a single one of these interpretations.

Data Collection

The qualitative data was collected from a leading English-instruction university in Kazakhstan. 18 English-as-Academic-Purpose (EAP) instructors from the university's foundation program were chosen using a purposive sampling strategy (Khan et al., 2019). It is a common approach to participant selection in qualitative investigations, where each interviewee can yield rich information (Palinkas et al., 2015; Yates et al., 2012). Participants were recruited via an email sent by the first author. The email provided a detailed description of the study in the attached 'participant information sheet', which emphasized the optional nature of participation. 18 participants in total, which fits within the recommended 15 to 20 range for phenomenography (Trigwell, 2000), agreed to participate in a semi-structured interview. All agreed participants signed a participant consent form. Lancaster University's research ethics committee granted the ethical clearance for the project. The interview duration was intentionally left open (between 30 and 60 minutes in the participation information sheet) in order to cater for both loquacious participants who may easily have discussed their perceptions of networks for a full hour and laconic interviewees who may have struggled to reach half an hour (and for everyone in between these two ends of the spectrum). In the end, most interviews lasted around the 45-to-50-minute marker. After conducting 18 interviews, we became confident in reaching the data saturation as the repetition of themes emerged and noticed and thus, began the data analysis process.

Data analysis

Phenomenographic analysis requires the researcher to engage multiple times with transcriptions and produce "qualitatively different conceptions of the phenomenon of interest collectively rather than the conceptions of individual participants" (Sin, 2010, p1). This iterative process (Akerlind, 2005) means that phenomenographers have to stand back and analyze each participant's perceptions both individually within the confinements of each separate interview, as well as in relation to the perceptions of the other participants' interviews (Hatch, 2002). This latter collective interpretation of data is particularly important (Cutajar & Montebello, 2018) as similarities and differences in the perception of the phenomenon cannot be identified by merely analyzing each participant's transcript individually in disconnection from the others. We have followed the steps below, but these steps do not represent a rigid and linear process but rather a "circular and iterative" process (Casey, 2016, p.77). It has also been our attempt to be led by the data without relying on pre-existing assumptions.

Step 1 – Transcript RQ Summarizing Excerpts

Despite the researcher (the first author of the present paper) being somewhat familiar with the participants' individual accounts from the preceding transcription process, it was decided that short, summarizing excerpts for each transcript would provide a useful starting point. This involved reading each transcript, whereby the researcher skimmed through it with the RQ in focus. All excerpts deemed relevant and summative of the participant's perception of the area of the phenomenon targeted by the particular RQ were highlighted according

to a colour code. Once all summarizing (and related) excerpts had been highlighted in one transcript, the process was repeated with the subsequent transcript.

Step 2 – Tabled RQ Excerpt Comparison
Still within the context of their respective transcripts, summative RQ excerpts were selected from the colour-coded data and tabled. Despite the excerpts still being divided according to individual participants' transcripts at this stage, the tabling of this data facilitated the comparison and contrasting necessary to progress onto the subsequent step of identifying categories of description from a combined data pool. That is, the side-by-side presentation of excerpts that resulted from this second step enabled the researcher to remove the boundaries between separate transcripts in the subsequent third step.

Step 3 – Generating Initial Categories of Description
Through the combination of reviewing the excerpts in the tables above and re-visiting the individual transcripts, the researcher began to produce preliminary categories of description to represent qualitatively different ways in which the sample group of participants could experience the target phenomena. This required a step away from individual transcript context and towards identifying perceptions identified at a collective level from the participants as a whole (Hajar, 2020). This step resulted in 4 draft description categories applicable to multiple participants. Again, these categories were placed into a table with matching representative excerpts extracted from different transcripts.

Step 4 – Refining Categories of Description
Before producing an outcome space, the description categories that resulted from Step 3 were reviewed one by one and re-enforced with evidence from the transcripts. This connection between the two steps is highlighted by Rands and Gansemer-Topf (2016) in their statement that "initial descriptive, or "draft," categories help guide the next phase of the analysis" (p.11). Thus, the researcher cross-checked the preliminary description categories against the information from each transcript, both coded and uncoded (Bowden & Green, 2005), in case the researcher had missed items in the initial coding.

Step 5 – Determining Outcome Spaces & Step 6 - Determining Structural Relationships
The outcome space is essentially a visual presentation of the description categories (Hajar, 2020). the outcome space brings together all of the different descriptions to determine the structural relationships between these variations in how the single phenomenon in question can be perceived (Akerlind, 2005). Instead of stating these in list form, the outcome space uses visual cues (such as arrows or boxes) to present how these categories are interconnected. Once outcome spaces were established, the researchers began to look for possible connections and relationships between them. Two authors of the paper collaboratively conducted these two steps.

Step 7 - Review
This final step involved the researcher revisiting the transcripts and the tables generated in the previous steps to ensure that the categories and structural relationships were constructed as accurately as possible. To achieve this, the researcher took a break from the data analysis process to clear his mind and then re-attempted steps 2 and 3. This allowed the researcher to compare his earlier outcome space with the revised one and make changes until stability was achieved in terms of categories and their relationships to one another (Trigwell, 2006). By this stage, the researcher had engaged in multiple reiterations of the data, involving the non-linear analysis cycle of re-reading, re-testing and re-comparing described above (Rands & Gansemer-Topf, 2016). Therefore, he could be reasonably confident that no key categories or structures had been overlooked.

Findings
The categories of description presented below represent the refined themes that emerged at the end of the data analysis process for the study's RQ: What are the qualitatively different ways in which HE teachers perceive that their use of networks has been beneficial for the purposes of learning and teaching during the recent ERT period?

The four inter-related themes below represent the respondents' perceived variation of how NL can be advantageous to them as teachers in one form or another. The hierarchical relationship between these categories is presented in ascending order of complexity and sophistication. That is to say, the first category represents the most basic benefit associated with network use, whereas the fourth category depicts the most advanced NL reward. In order to scale to the highest category, teachers must first perceive and access the first three themes. Before detailing each theme and presenting the corresponding evidence in the form of supporting transcript excerpts, a general overview is provided in the pyramid figure below.

Figure 1 Description Categories Pyramid

Category 1: Flexible Access to Online Resources
The main features associated with this first description category revolve around the use of networks as a bridge to existing material that can be retrieved conveniently from one's home workstation. This appears to be the most basic benefit that teachers associate with their use of networks. These sources include official PD webinar recordings, that are part of ongoing developmental courses for teachers tackling the latest issues that have emerged or raising debate over current trends in practice. Despite their being other teachers on these online courses with whom to participate with, faculty appear to exploit asynchronous engagement with the resource banks attached to the programmes instead, since this can be done more flexibly and without having to rely on another person. Some teachers even archive some of the course material themselves by recording or screenshotting important elements, to then be able to access flexibly at a later date.

- "webinars and conferences that are almost weekly there Thursday one or two TELSIG, I would go to those almost every week… …Because yeah so everything was online and on zoom basically at this point so um I attended conferences webinars a lot more than I normally do… …Almost every week, I was doing something oh yeah then also I also did two courses online courses for you know they were… …professional development type courses specifically related with EAP" (Participant 1).

- "I actually record the lessons… …On my just on our little recorder, and I also um print the screen… …So I made it So to that extent I'm doing something I'm engaging more I'm able to go over the lesson again and listen to what the tutor said and what we said and look at the print on the on the screen"
(Participant 3).

- "My hours are a little bit more flexible now. I feel like I have a yeah it's mostly with time, I have a greater choice in when I want to do things" (Participant 6).

- "professional development, I suppose it's made it easier in a way, because you can attend various conferences or seminars, or whatever from wherever you are, irrespective of where it's being held" (Participant 7).

Online resources can also be accessed via comparatively informal channels, such as media-sharing websites like YouTube, for teachers to readily access at a time that suits them without the need to formally join an online course. These platforms contain instructional videos that offer guidance to faculty on using the latest online platforms for instance. Similarly, teachers can access online material via other channels outside of a formal PD course, such as an editable wiki page or a forum that posts step-by-step guides on trouble-shooting commonly used tools like Moodle.

- "I'm… …being very thankful for Russell's Stannard's… …website where he goes through lots and lots of tutorials on things that I wasn't familiar with" (Participant 11).

- “I’ve learned a lot about Moodle through… …almost like a wiki they have this… …Information page and that's kind of where I learned things and then also there's Moodle forums… …And that's where that's where I usually find the answers to questions that I don't know” (Participant 6).

Lastly, it can be noted that some teachers access online resources via social media repositories. These can come in the form of videos or instructions that are regularly uploaded to a popular platform such as Instagram or Facebook for instance. Teachers can ‘follow’ influential figures in their field and thus access their material asynchronously if and when they feel the need.

- “when it came to this like psychology and hobby because I follow, like many… …professionals in this field by Instagram they have… … it's very useful in terms of psychology and coaching… …That they have their own lectures online and then they save it, you can watch it, so I think that was very helpful for me” (Participant 18).

Category 2: Flexible Access to Others

This second description category is centred on teachers’ use of their personal networks to interact with other like-minded professionals, as opposed to only engaging with online resources as in the first category. Rather than limiting engagement to the basic asynchronous access of material, teachers describe their networks as tools with which they can keep their fingers on the pulse of current trends and practice by staying informed on how other faculty are tackling emerging issues. This includes interacting with current colleagues and acquaintances, but also extends to connections from previous workplaces and institutions with whom some faculty seem to maintain contact with even after they move onto a new job.

- “[online conferences] it's just great to hear what other people are doing out there… …kind of cool just to see kind of compare yourself okay what how do I match up with what everyone else is doing… …it's nice to hear that actually they face the same challenges that we do” (Participant 1).

- “By the way, I’m engaged each week I meet, I have a Russian course which up with another with our colleague from engineering… …meet our Russian teacher online twice a week for an hour and that has been going on since the pandemic I also meet a cousin of mine and we studied Greek together and online… …This is with zoom with it, no, this is with Skype… …and so I, so I am engaged in online learning” (Participant 3).

- “very well developed network, like in this area yeah in this field, yet, so what I have is my professors and my teachers and the students, with whom I studied in Colorado so… …We asked questions I asked about you know about different things it's like you know my it's my basically foundation” (Participant 5).

Teachers describe how this interaction with others is often undertaken in a flexible manner that can be moulded around their individual commitments. Aside from being able to use online communication to eliminate physical geographical barriers that facilitate engagement with others in faraway destinations, NL also offers flexibility in terms of the number of participants that can join and then leave group activities at their own convenience depending on the evolution of their needs and preferences. It appears that the dipping in and out of online networks is more flexible that in traditional face-to-face engagement with others, given the reduction in planning and physical travel involved when switching between social groups online.

- “I like the flexibility a lot… …More flexible, I mean, for example, there are like some webinars that I had to attend and they were from because of time zone you different time zones, for example, some of them were I didn't know like… …I could attend this webinar… …And then I can switch to like 15 minute break and my lessons for us right which I wouldn't be able to do if I was in class, of course, or I had to go to my office or commute time you know preparation, all this paperwork printing bringing opening classroom and so on… …I just found working from home, but as I said, more productive” (Participant 13).

- “There was a wider group, and then it a few people fell off and now it's just myself and this other colleague” (Participant 3).

Lastly, it appears that some teachers value the flexibility of participation that they associate with online network interactions. Rather than face the pressure of being very actively involved in every discussion, some faculty appreciate the option of more passive interaction that online engagement facilitates. This can enable engagement not only between faculty, but also with their students.

- “there's a bit of a distance, with this online, I think, which allows you a bit more breathing space to think about what you're going to say to prepare a bit without a person actually physically right in front of you observing

you… …Even for me that can make things easier and I think for some students, especially the shy ones that can make them feel about a lot more relaxed" (Participant 15).

Category 3: Personalized One-to-One Interactions

Once teachers have been able to benefit from the increasingly flexible interaction with online resources and with other professionals as described in the previous two categories, they can progress onto the advantages of experiencing more personalized encounters with others. This category of description targets the intimacy that teachers often associate with their use of networks to engage with individuals and even small groups. Some of the participants mentioned colleagues by name, with whom they had experienced helpful and supportive personal interactions with throughout what they perceived to be a challenging ERT period. These one-to-one encounters take place across a combination of different mediums that include online contact, telephone conversations and face-to-face meetings.

- "support from colleagues, I would say that was the key thing to get me through the year… …I contact most Michael, as I said, is a neighbour and a friend… …And he's on the technology team… …And I see you know [teacher 1] and [teacher 2] went out for pizza the other night" (Participant 2).

- "And [teacher 3] too my supervisor [teacher 3] is very supportive and always you know… …a phone call away" (Participant 2).

- "in a team meeting I would open the camera because I would like to see my co workers that I would like them to see me it just feels like Okay, maybe we have to see each other…" (Participant 12).

The interviewed faculty members extended this favourable perception of one-to-one and small group interactions to include engagement with their students, as well as with their colleagues. It appears that individual tutorials for instance, whereby teachers meet their students to discuss bespoke feedback that applies uniquely to the individual pupil, have been notably more personal and intimate during the work from home period. Some teachers attributed this sensation of closeness to the notion that they are connecting to their students from one living room to another with minimal interruption. That is to say, there are minimal physical distractions, such as waiting rooms or noise from the classroom next door, in between the teacher and the student

- "I was amazed at how in tutorials one was able to relate to the students and to stay, true to a create, if you like, a pedagogic encounter are a personal encounter I was, I was taken aback by that" (Participant 3).

- "tutorial it was more personal… …In the group, where you know you're talking to the group so they got into the habit of not putting their video on… …But when it was one to one it probably felt more personal and they wanted to you know to see you" (Participant 4).

- It was a bit, especially given feedback was a bit more direct and easier to do because it was right there the student or yourself could share the screen and you could see it at the same time (Participant 6).

- "I think, being at home, being in whatever they chose to wear which was… …Probably rather than formal attire… …less formal than they would be in class, and you know just they're being able to have their snacks or whatever um… …I think there was a lot more, it was a lot more personable and it was really valuable to see what was going on with the students' lives to be able to observe that in the room" (Participant 14).

Some teachers associated these more personalized encounters as being the result of having longer periods of time to dedicate to the meetings. The eliminated travel time between home and work for instance due to the work from home mandate, meant that tutorials could be extended.

- "I think that the half hour tutorials are very good… …felt was sort of more intimate in a way… …they're facing you they've got to face you they've got to have their cameras on they gotta talk and you know you can ask direct questions, and they have to answer" (Participant 9).

Category 4: Belonging to Academic Communities

The final and most sophisticated benefit associated with network use, once teachers have reaped the rewards of flexible access to resources, others and established more intimate encounters, is a sense of membership to professional communities. Faculty experience increased confidence as their networks enable them to compare their views and practice with those of others. This can help to validate their pre-existing approaches to teaching,

as well as to expose them to novel ideas that they may have not have had the imagination or assertiveness to test out without the feeling of protection and belonging to these professional communities.

- “[online conferences] it's just great to hear what other people are doing out there… …kind of cool just to see kind of compare yourself okay what how do I match up with what everyone else is doing… …it's nice to hear that actually they face the same challenges that we do” (Participant 1).

- “To get you know different sources or different you know opinions, because you know, like it helps it helps me in anchoring my own decision” (Participant 5).

- “I had the opportunity to complete that course and explore different ideas and develop my own awareness, you know, both in terms of training, the learners on doing helping them… …I found it quite useful professional development experience to apply some of the skills that I learned on that course… …just checking your existing knowledge with others… …Whether your interpretations are correct yeah engaging with the Community to certain assumptions that you've built up over time, the extent to which… …There is a consensus about them all, whether you need to adjust your own thinking is always useful” (Participant 17).

Some faculty went further by extending their use of membership to these professional communities to cover personal, non-work-related matters also. This signals the increasing confidence and support that this sense of belonging to a wider-group can offer teachers, as they feel safe enough to share views on aspects of a more personal nature.

- “It was just mutually beneficial that we… …help each other… …teaching and learning so and then, in addition, just some things like personal things came… …that are not directly related to work” (Participant 5).

Conclusion

This investigation aims to contribute to the following three interconnected areas with the problems detailed above in the earlier section of this paper in mind. On a practical level, the aim is to raise awareness of the role that technologically facilitated networks play in the day-to-day activities of university teachers in a bid to encourage greater future collegial collaboration and exploitation of online resources. This is likely to mitigate practical challenges encountered by teachers in future unexpected calamities such as the Covid-19 pandemic ERT, but more importantly to help them adjust to the gradual slide towards the (non-emergency) online environment that HE has been experiencing in the long-term. At a theoretical level, this research seeks to plug the hole in teacher PD literature regarding the uses and perceptions of technology-mediated networks by faculty, rather than students, accustomed to working in a predominantly face-to-face teaching environment. That is, this study puts the spotlight on teachers who would normally perform their PD practices in a physical environment but have suddenly been pushed into the online space by an abrupt event such as Covid19 and have long been experiencing a paradigm shift towards digitalization outside of the ERT period. Lastly, at an institutional level, this study offers universities a clearer path towards establishing future policies that will enable their faculty to better support each other in a HE environment where technology plays an increasingly vital role; be it in an ‘emergency’ or a regular context. Thus, universities may seek to steer their teacher training and PD, legitimizing and promoting informal and personal practices, so-called NL activities.

The four description categories presented in the findings suggest that HE teachers place great value on interaction with both online resources and other people within their networks. While the first category centres on the benefits of accessing online material, it should be noted that NL places emphasis on social learning and dialogue (Ryberg et al., 2012), which means that the connection between an individual and online resources alone is too basic to be considered valuable NL (Carvalho & Goodyear, 2014). The more sophisticated categories in which interaction with others, both close colleagues as well as more distant professionals, is perceived as the main benefit of NL by the interviewed teachers. This aligns with the NL perception that human connections are generally more valuable than resource ones (Goodyear et al., 2004). It should be noted however, that the most sophisticated category of community membership is specifically enabled by the online medium, which facilitates a teacher’s flexible interaction with a higher number of professionals across far away distances. This means that, looking to the future of the digitalization of HE, it is this sense of membership to multiple professional communities that institutions should be promoting among their faculty.

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