A Novel Framework for Facilitating Emergency Remote Learning During the COVID-19 Pandemic

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Abstract

In today's educational landscape educators and administrators are confronted with unprecedented challenges as they have to hastily move education online. Emergency remote teaching is a response to this crisis. However, the research about the efficacy of remote teaching is scarce because of COVID-19 which is a rapidly evolving situation and also because of a lack of clarity about what constitutes instruction during an emergency. Moreover, the actual practices for emergency remote teaching are unclear in the context of Kuwait. This study aims to investigate how educators are implementing emergency remote instruction in order to reshape education during the COVID-19 pandemic in Kuwait where traditional instructional approaches and practices are dominant. Using a case study research design, the researchers delve into educators' perspectives by collecting qualitative data from interviews. The results indicate that educators used multiple pedagogical approaches to enhance student participation and learning. It also revealed the problematic aspects of remote or distance education. Finally, the results were used to construct and present a Novel Remote Learning Framework, which is an empirically-grounded, theoretically-informed conceptualization of emergency remote instruction which is expected to reshape instruction during the COVID-19 pandemic.

Keywords: emergency remote teaching, online education, distance learning, COVID-19 pandemic, pedagogical rationale, flexible

1. Introduction

1.1 Background

COVID-19 or novel coronavirus, a ravaging pandemic, caused high mortality rates and resulted in temporary closure of businesses and educational institutions (Prem et al., 2020; Wu, Chen, & Chan, 2020). While students remain at home protecting themselves as well as the rest of the citizens from the pandemic, educators are being advised to rapidly respond to the situation by shifting to remote teaching or distance learning using digital technologies (World Bank, 2020). In other words, there is the growing feeling that only technology and emergency remote teaching can help mitigate the impact of COVID-19 on education systems.

Emergency remote instruction is meaningfully different from courses offered online (Hodges et al., 2020). When making the change from traditional methods to remote teaching, which incidentally has to be done at an unprecedented pace, educators who use these formal and informal learning platforms will require experimenting with new teaching methods (Heggart & Yoo, 2018). Teachers and faculty have to improvise quickly and therefore this approach is referred to as emergency remote teaching (Hodges et al., 2020). Unlike formal distance learning or online learning, emergency remote teaching is not the result of a carefully planned instructional design. It is very different from effective online instruction. Emergency remote teaching is an alternative delivery mode in the formal education system which is deemed crucial due to crisis circumstances (Hodges et al., 2020). The main goal in these circumstances is not to redesign the educational system but rather to provide temporary access to instruction and learner support.

1.2 Teachers' Expectations and Self-Efficacy in Remote Education

Teacher expectations represent subjective teacher estimates about student achievement and are typically predictions about future achievement (Meissel et al., 2017). When teachers' expectations increase, their attitudes, beliefs, and teaching practices change. In general, high expectation teachers employ more effective teaching

practices. When students are given more advanced opportunities to learn, they can make more progress (Rubie-Davies, 2009, 2014). Research claims that teachers with positive expectations can promote self-directed learning and thus help students learn on their own (Du Toit-Brits, 2019). However, teachers need to be aware of the consequences of different student expectations and understand how to correct them (de Boer, Timmermans, & van der Werf, 2018).

Teachers' self-efficacy is said to influence the behaviour of teachers and the effort put in the endeavor (Barni, Danioni & Benevene, 2019). Literature also suggests that teachers with high self-efficacy are open to change and that a substantial relationship exists between teacher confidence in implementing pedagogical practices and teacher self-efficacy in online or remote education (Barni et al., 2019; Corry & Stella, 2018). Research that ties teacher self-efficacy and technology integration together may be especially important in emergency remote education, where technology is central to both teaching and learning (Corry & Stella, 2018). The factors that influence teachers' technology self-efficacy are lack of training and philosophical beliefs about technology (Blackwell et al., 2013; Bulman & Fairlie, 2016).

1.3 Pedagogical Approaches for Emergency Remote Instruction

Pedagogical approaches can be contextualized in practices supported by distance or online learning environments. Emergency Remote Instruction, like online learning, supports flexible and adaptive pedagogies. Adaptability is the willingness to respond to changing trends while flexibility is the inclination to adapt and provide learners with increased choice, convenience, and personalization to suit their needs by using a range of technologies to support the teaching and learning process (Ambrose et al., 2010; Lee & McLoughlin, 2010). Teacher flexibility includes making decisions and planning, or it can emerge in specific pedagogical strategies (Lee & McLoughlin, 2010; Huang et al., 2020). While adaptability is one of the dimensions of flexible learning, other dimensions include delivery of instruction, the strategies that could be used for organizing learning activities, the types of learning resources that should be provided to students, identifying technologies that should be used for learning and teaching and ways of providing assessment and evaluation (Huang et al., 2020; Gordon, 2014). To sum up, flexibility and adaptability are not only attributes of teachers, but also a feature of educational strategies that can be used to impart remote instruction.

Self-paced remote learning or asynchronized learning, which stems from constructivist learning theory, allows students to access online content or take part in learning from anywhere and at their convenience, independent of the teacher (Dada, Alkali, & Oyewola, 2019). Although, asynchronized learning is said to give the learners great flexibility in term of learning time, process and content, it is suitable only for self-motivated learners who do not need instructors to guide them (Garrison et al., 2015). Instructor led remote learning or synchronized learning, which is in line with social constructivist theory of learning, is facilitated by the teacher. Learning occurs when a group of students and a teacher interact, and learning takes place in real-time (Raes et al., 2019).

Whether the distance learning environment is synchronous or asynchronous, teachers should establish a strong presence, even in emergency remote instruction as it influences student motivation (Hajibayova, 2017; Florescu & Pop-Pacurar, 2016). Experts say that faculty can rely on synchronous, asynchronous or a combination of the two approaches (Watts, 2016; Yamagata-Lynch, 2018). This requires significant changes to pedagogy and a new flexible pedagogy that focuses on collaborative approaches to the knowledge construction (Hong & Kim, 2018; Huang et al., 2020).

One of the approaches that involve synchronous and asynchronous learning is the dialogical model, which is a more persuasive pedagogical approach that demands social interaction and involves students in the collaborative construction of meaning (Institute for Adult Learning, 2017; Ruhalahti, Korhonen, & Rasi, 2017). It is claimed that scaffolding and real-time communication between students, and between students and teachers, can lead to greater dialogue and discussion, enable prompt content delivery and enhance learners' autonomy especially in the context of remote education (Delgaty, 2018; Cho & Cho, 2016; Alharbi, 2017). Proponents of dialogic teaching see the learning process that involves participation, discussions and engaging students in productive dialogue (Anderson, 2017; Wegerif, 2013). However, it is argued that dialogical actions and dialogical participation are a difficult approach in distance or online education but not impossible (Ruhalahti, Korhonen, & Ruokamo, 2016). This could also be the same in remote instruction. In this context, the model requires a genuine dialogical learning community, a commitment on the part of learners and the teacher, and a solid presence on the net. In other words, dialogical collaborative knowledge construction requires more practical scaffolding (Ruhalahti, Korhonen, & Ruokamo, 2016).

Implementing trialogical elements into remote teaching allows students to collaboratively develop shared objects (or the outcome of the learning process) within the community (Paavola, 2015). Communication in the educational

space is controlled by both teacher and students, who co-create knowledge through sharing ideas and concepts (Paavola & Hakkarainen, 2014). It is claimed that teachers are visible in the digital environment and their presence is crucial for the design, facilitation, and direction of cognitive and social processes (Hajibayova, 2017; Garrison, 2011; Garrison, Anderson, & Archer, 2010). In remote or distance learning contexts, the teacher interact with students, by acknowledging, making his/her presence felt, through understanding, not just emotionally but cognitively and physically (Scott, 2016).

This proposed study argues for a combination of diverse models of teaching and learning. A hybrid remote teaching model that incorporates the aforementioned concepts and models can create opportunities for authentic, dialogical, and collaborative learning experiences (Ruhalahti et al., 2017). Research suggests that a blend of dialogic and trialogical models can advance learning by encouraging open-ended inquiry and feedback to expand the interaction and using the concept of authenticity to not only enhance the pedagogical approach but also to improve student-centred scaffolding and guidance (Ruhalahti et al., 2016; Kathard, Pillay, & Pillay, 2015). This suggests that teachers will have to be the main point of contact for students in remote teaching and learning.

1.4 Challenges Presented by Emergency Remote Instruction

The problematic aspects of remote or distance education have been identified by researchers, for example students' and teachers' anxiety in web-based learning environments (Bektas & Yardimci, 2018), as well as lack of presence when recorded lecture videos are used (Trenholm et al., 2019). However, the phenomenon of cheating when students are not supervised during asynchronous online tests (Feinman, 2018; Sullivan, 2016) and and lack of formative assessments (Liberman, Levin, & Luna-Bazaldua, 2020; Wiliam, 2018) are seen as the most challenging aspects of remote or distance education. If students are not supervised during online tests, the cheating that occurs will erode the validity of evaluation and, ultimately, corrupt the legitimacy of remote learning (Sullivan, 2016). However, Sullivan argues that when various technological and social solutions can be used to prevent academic dishonesty (Sullivan, 2016).

Another challenge that teachers face is associated with developing formative assessments (Liberman et al., 2020). Prior to the COVID-19 crisis, all modalities of learning assessment were strongly dependent on students' physical presence. With school and university closures formative assessment can help teachers monitor students online and provide feedback. Formative assessment can be administered in synchronous and asynchronous forms and can help support the learning process (Liberman et al., 2020).

1.5 Problem Statement

Education in Kuwait is currently undergoing major changes, largely driven by the outbreak of coronavirus. The pressure to move courses online quickly is overwhelming, for example, educators' and institutional readiness to implement remote learning, which includes teachers' knowledge about best practices for using technologies for teaching and learning. Setting up online learning management systems, for example Kuwait e-learning portal "Seraj" https://seraj.org.kw/ developed by the Ministry of Education with built in activities such as discussion forums and quizzes are crucial for institutions if they are to meet the challenge of moving courses online for remote instruction. However, teaching and learning online involves more than just uploading files and video links to a learning management system. Teaching remotely during an emergency requires a different approach. Teachers require skills and knowledge of specific pedagogies and practices that can help make remote learning effective. Moreover, the remote learning environment is also a unique cultural context in itself. Most educational institutions, teachers and students in Kuwait will be new to this context. Teachers and faculty, in particular, may venture into this environment with preconceptions gathered from their experience in traditional environments. Some of their pedagogical practices may not be appropriate to a remote reaching context. Therefore, the research question that guided this study was: How can educators implement emergency remote instruction in order to reshape education during the COVID-19 pandemic in Kuwait where traditional instructional approaches and practices are dominant? In order to capture the basic goals of the study, three sub-questions were formulated.

1) What are the pedagogical rationales for moving instruction online at a rapid pace?

2) How will emergency remote instruction influence or change educators' pedagogical approaches when providing academic support to learners during the COVID-19 pandemic?

3) What are the issues and challenges faced by educators when they make the transition to emergency remote instruction?

In addressing these research questions, this proposed research aims to build a framework for the use and implementation of remote teaching by considering the perspectives of educators.

2. Research Methodology

A case study research design was used for this study. The case being examined was the implementation of emergency remote instruction. Another reason for selecting a case study approach was that emergency remote instruction is a fairly new concept and theoretical knowledge of this phenomenon is limited in Kuwait. The rationale for a case study design arose from its capacity to provide an intensive holistic description and analysis (Ponelis, 2015) of the implementation of emergency remote instruction within the context or natural setting of the research.

2.1 Participants and Research Instrument

The 14 interviewees consisted of teachers and faculty members from higher educational institutions in Kuwait. They were interviewed via Skype and Cisco Webex. Interviews were used to gain in-depth understanding of phenomenon being studied from the personal experiences of the participants although the interviews were semi-structured, an interview schedule was developed to focus the conversation on the phenomenon being investigated and included follow-up questions to probe for further explanation from research participants. The interview schedule was developed by reviewing literature related to the research topic. The interview transcripts were thematically analysed as described by Braun & Clarke (2006). The process involved reading the data, identifying emerging patterns, coding data by sorting text into meaningful categories, and reviewing and defining themes.

2.2 Ethical Considerations

In order to adhere to research ethics, an information sheet highlighting the importance of the research was distributed to the research participants. Besides, the participants were informed about the research, most specifically the research instruments and the way the data would be analysed.

The participants were assured that they had the right to withdraw from participation at any time, as well as withdrawing any information that they had provided for this research without being disadvantaged in any way. They were also informed that the information collected from them would be kept confidential. In order to maintain their anonymity, pseudonyms were used.

3. Results

Thematic analysis of qualitative interview data occurred on completion of transcription. Notes that were taken during and after the interview were compared with the transcribed text. Transcripts were then shared with two interview participants to determine their accuracy.

The qualitative research analytic strategy consisted of thematic and pattern coding. Thematic and pattern coding allowed summarising groups of data into a smaller number of sets, themes, or constructs. Thematic analysis helped identify patterns and themes within the qualitative data. Thematic and pattern coding allowed for the categorization of the data. The end result was 3 broad categories and ten themes.

3.1 Category 1: Readiness in a landscape of Affordances

The category "readiness in a landscape of affordances" emerged through asking the interviewees how they and their institutions will support continuity of teaching and learning during the COVID-19 pandemic and how they intend to make the transition from face-to-face classroom teaching/learning to emergency remote teaching and learning. The coding of the interview data lead to the discovery of six themes.

3.1.1 Theme: Faculty Digital Readiness

Faculty digital readiness refers to preparedness of faculty and the actions they were intending to take for immediately shifting all courses to fully online environments. The responses of the faculty indicate that some educational institutions are taking initiatives and that they were individually ready for using technology to deliver instruction.

According to one professor institutions were "ready", had "capabilities" such as an "LMS or an online platform for education management" (P1). Although "Moodle" as well as "Zoom, Microsoft Teams, and Google classroom" were being used "in these urgent circumstances" (P5). Another faculty was of the opinion that he was "personally ready and familiar with the use of e-learning tools" (P2). Similar views were expressed by another faculty who claimed that most teachers are "accustomed to using the technology and digital tools" and that. they were "ready to resume instruction through remote education" (P4)..

3.1.2 Theme: Faculty Teaching Environment Preference

Faculty teaching environment refers to the diverse virtual places or learning environments, contexts, and cultures

created by faculty and institutions which allow students to learn. Following are excerpts from the interviews which suggest teachers' preference for asynchronous approaches.

"Discussion sessions in virtual places" has to be asynchronous as the teacher can "follow up on the contributions of his students and their progress towards understanding the topic or phenomenon" (P1). However, the faculty added that "they must also understand the nature of the different interaction that occurs in synchronous and asynchronous learning" (P1). Therefore, teachers have to "identify appropriate practices for each of them" (P5) and decide "which practices are suitable" for remote education. (P4)

The rationale for the choice of asynchronous approaches was because it was "most popular with students" and because it "facilitates student learning" (P4). When probed the faculty explained that student participation in asynchronous education will give students more opportunities for effective participation and collaboration. Besides "social platforms and asynchronous discussions can also enhance student engagement" (P4). Another faculty was of the opinions that teachers have to "ensure a balanced use of concurrent and asynchronous education." (P2)

3.1.3 Theme: Expectations That Students Are Resilient

Students who develop resilience are better equipped to learn from failure and adapt to change. Resilience is essential for the development of learners and enables them to adapt to changing situations. The faculty responses indicate that students will be able to emerge from challenging experiences with a positive sense of themselves and their future.

The faculty believed that students may not require rigorous training as they belong to a digital generation and are those who have grown up using technology and the internet, and therefore, feel more at home in the online world (P1). In other words, students already have the "skills and necessary experience to communicate, discuss, interact and deliver tasks electronically in a virtual learning environment" and therefore can quickly "learn good and private practices in the educational context" (P1). The faculty member also added that "I know the levels and performance of my students" (P1). One interviewee who articulated similar views elaborated that "students have positive attitudes towards" remote instruction and "that the process of training students will not be a difficult obstacle" especially when their teachers are "well prepared for that transition" (P2). The faculty had high expectations as they knew that students "prefer visual content" and understood "their needs well" (L1). However, the lecturer felt that digital visual content should be "optimally employed in the educational process in the virtual environment." L1)

3.1.4 Theme: Fostering Connectedness Through Interaction

The construct of connectedness is crucial at all levels of education, particularly during the pandemic where students are faced with insurmountable challenges in the form of isolation and social distancing, and the lack of motivation and engagement.

The faculty understood the importance of interaction in remote instruction. According to one respondent "teachers should be well aware of the nature of the interaction that takes place in traditional spontaneous and natural classes and that interaction that occurs in the virtual classes on the other hand" (P1). The faculty member added that "I am very interested in educational activities" that includes "discussion and dialogue" and "I support interaction and students' repeated attempts to answer the questions that arise during the discussions." (P1)

Although there is the common perception that there is a lack of social presence in regard to online learning, the educators claimed that they can promote social presence by leveraging some of the digital tools available such as "social media platforms" (P1), specifically "Moodle" and "Zoom" (P5) that provide rich spaces and opportunities for student interaction. Overall, these responses show that technology can provide a culture where students feel involved and connected.

3.1.5 Theme: Understanding the Change Process

The faculty shared their thoughts on how the explosion of remote teaching could affect attitudes towards technology. There was the belief that the emergency conditions could "change their attitudes towards technology and enable them to reconsider their capabilities in serving the educational process and its practices" (P2). The faculty were willing to adapt to changes in terms of delivery of instruction and learning. They believed that the success of emergency remote instruction depends on "the ability of teachers and their personal initiatives to develop their teaching practices." (P5)

However, the educators acknowledged that "the educational institution must be aware that any new practice will not be free from defects or shortcomings" (L1). In reference to the importance of communication, participant (P2)

provided this response. "effective communication channels between the teacher and his students and providing technical support are extremely important." (P2)

3.1.6 Theme: Generating Solutions to Intractable Problems

In spite of the lack of skills and pedagogical knowledge required for implementing emergency remote education, the participants in this study were able to think outside the box to generate various possible solutions that help meet the new needs for learners. They adapted their approach so that their students feel supported and involved.

Some of the participants (P1 and P4) stressed that educators have to adapt to the new learning environment and focus on developing content that would improve students' higher order thinking skills such as critical and creative thinking. Furthermore, the professor (P1) recommended that "educational institution and teachers" have "to use Moodle as a system for learning management, either remotely or through blended learning" because it is an "open and free source" and that it can be "used for training programs."

3.2 Category 2: Challenges

The category "challenges" was generated after reviewing the responses to the question regarding the challenges that faculty will face when implementing emergency remote instruction. The three themes pertaining to this category are discussed below.

3.2.1 Theme: Effects of the Forced Adoption of Technology-Delivered Instruction

Some of the challenges facing the institution is to "facilitate learning for learners such as the nature of educational activities, tasks and assignments, methods of student assessment and evaluation of those practices compared to the desired learning outputs" (P1). Another challenge facing the educational institution was related to the "acceptance of new practices by the students and their parents." (P2)

Participants (P1 and L1) discussed the "phenomenon of cheating" which was originally associated with traditional education. The belief was that when students are not in the presence of teachers and when teachers who depend entirely on the "test tool as a single tool for assessment" there would a higher "chance of cheating" (P1).

One faculty (L1) mentioned that the challenges posed by technology-delivered instruction included "students' confusion, anxiety, mental distraction" when making "the transition to a remote learning environment". Other challenges facing educational institutions include monitoring "attendance, absenteeism, behaviour, cheating", issue "warnings" and assessing "homework, research projects" (P2). This may impact "student's comprehension and critical thinking skills" and therefore it is suggested that "the testing and assessment strategies" have to be reviewed (P5).

The aforementioned challenges are further compounded by the preparedness of the Ministry of Education. One special education teacher commented that "the MOE's preparation for distance learning is less than 5%" (T1). The narrow preparation window had also exposed the weakness of the policy maker. One participant who works for the Ministry of Education aptly states that the "MOE has no clear vision regarding distance learning" (MoE2).

3.2.2 Theme: Change in Teachers' Physical Presence

Teaching presence is the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educational worthwhile learning outcomes. This involves interaction between students and teachers. However, the pandemic has compelled teachers to adjust and adapt to emergency remote teaching without physical presence. For example, one participant elaborated: "The presence and availability of an electronic platform does not necessarily mean increased teacher presence in remote education. Therefore, the teacher has to process and adapt that place to create an appropriate learning and teaching environment for his students." (P1)

The role of teachers was considered crucial by the faculty. Teachers have to play a greater role in remote education by "motivating" students "towards effective participation in the educational process" and using "digital technology and tools" to increase "student engagement" (P1). This involves "monitoring the students' performance, assistance, and their continuous support in the new environment and encouraging them to participate" (P4). Teacher's teaching or physical presence can only be enhanced when they "invite students for discussion and group activities" even if students are "unfamiliar with these practices" (P4)

3.2.3 Theme: Inadequacy of Training

Teacher training programs developed by the policy makers never envisioned this "new normal" and suddenly there is a desire to support teachers in their professional development. The following set of quotes illustrates the lack of teachers' pedagogical skills and the need for comprehensive training programs.

"The teachers are not yet ready to use technology or distance learning" (MoE1). "Not only are the institutions ready but the faculty are not fully equipped and lack training" (P1).Training programs should take into account these deficiencies so that teachers "understand some of the necessary concepts related to remote education and the nature of VLE and its functions" (P1). Other participants (P3 and P4) also shared the intuitions of P1 and accentuated the importance of training.

3.3 Category 3: Confusion and Uncertainty

The category "confusion and uncertainty" was generated from the responses to the question about the opportunities of remote instruction. This category yielded one theme.

3.3.1 Theme: Uncertainties Caused by the Abrupt Move to Emergency Remote Instruction

This theme emerged from the responses of the participants who seemed to confuse emergency teaching with robust online education. They did not understand that well-planned online learning experiences are meaningfully different from courses offered online in response to a crisis or disaster.

The following responses reflect the confusion that exists largely due to lack of knowledge of the significance of emergency remote instruction:

"I do not see any fundamental difference in educational practices between traditional education and remote education…..whoever knows this profession can adapt himself to do it in any way" (P2). Another professor shared his views by stating that "virtual classes" are not "very different from the traditional classes" (P2). They felt that they could "quickly understand and adapt" to the situation (P1). To add to the confusion, the faculty also claimed that that "we do not think it is a difficult process" (P4).

4. Key Findings and Discussion

This study explored and conceptualized educators' perspectives on adopting emergency remote teaching for reshaping education during the COVID-19 pandemic. The themes generated from interviews served as an overarching framework for a discussion of the findings.

4.1 RQ1: What Are the Pedagogical Rationales for Moving Instruction Online at a Rapid Pace?

The data identified that the educators' self-efficacy and digital readiness as well as their high expectations of students were the factors that influenced them to move instruction to virtual settings. They are similar to previous research which indicates that there is a relationship between teacher confidence in implementing pedagogical practices and teacher self-efficacy (Barni et al., 2019; Corry & Stella, 2018; Meissel et al., 2017). These self-efficacy beliefs are educators' expectations that they can help students learn on their own and suggests that their expectations could influence students' self-directed learning willingness. Self-directed learning is suited for emergency remote instruction where learning is dependent on positive educators' expectations that students can learn trough their involvement (Du Toit-Brits, 2019).

The educators' expectations seemed to rest on their beliefs that students are capable of learning in the remote learning environments. They believed that they can provide appropriate learning opportunities and support. However, this study argues that teachers also need to strategically reduce their expectations for all students and identify a few specific areas they want students to focus on, while ensuring that expectations are clear on both sides. In other words, teachers should set clear and realistic goals, which should come from education ministries, and tailor these for students depending on their abilities. Professional development may assist teachers to make fair and consistent judgements.

In line with previous literature, the interview responses suggest teachers' preference for asynchronous approaches over synchronous activities as the latter requires innovative skills (Peachey, 2017). The educators were flexible and felt that asynchronous activities were more reasonable than synchronous learning as students might not be able to attend to courses immediately.

One of the findings was educators' understanding of the change process. The data demonstrates that they understood the complexities of educational scale-making and were able to adapt to changes. The faculty believed that the pandemic was helping faculty rethink the way technology can be used. The educators were cognizant of the possibilities for action provided by the environment and were intent on taking advantage of the affordances and possibilities of the remote instruction format. This finding also indicates the emergency remote teaching was not only a coping mechanism but a valuable exercise in developing a coherent online education strategy for the future.

4.2 RQ2: How Will Emergency Remote Instruction Influence or Change Educators' Pedagogical Approaches When Providing Academic Support To Learners During the COVID-19 Pandemic?

Concerning the level of e-learning implementation, it can be stated that all the educators did use pedagogical approaches for knowledge creation. Findings indicate that the educators intended to facilitate student groups through group communications. This is in line with research which suggests that creating groups of students can help the construction of dialogic learning communities (Anderson, 2017). Literature also shows that dialogic interaction creates opportunities to enrich students dialogue (Ruhalahti et al., 2016).

One of the significant findings was fostering connectedness through interaction which is crucial for knowledge creation. A related finding was related to educators emphasizing the importance of a sense of community. Sense of community in this study was the result of interaction. Overall the theme 'fostering connectedness through interaction' suggests that communication plays a key role in many virtual learning environments and is congruent with theories that tend toward social constructivism, where emphasis is placed on student interactions within a group rather than an instructor-led learning experience. In the process of a gradual transformation of teaching practices, the concept of dialogic teaching, which is rooted in socio-constructivist theory, has evolved. This dialogic teaching approach is based on such teacher-student communication (Paavola & Hakkarainen, 2014).

Another finding was flexibility and adaptability of educators who generated solutions to intractable problems. The pandemic had changed teaching practices and given opportunities for educators to experiment, create, and implement new ideas. Through discussions and engaging students in productive dialogue the educators implemented emergency remote instruction in ways that contributed to student learning. One of the strategies used was providing prompt feedback as part of scaffolding. This finding corroborates the results of another study from the region (Alharbi, 2017). Some of the instances of scaffolding included providing examples, using models and demonstrations, describing concepts in multiple ways, incorporating visual aids and engaging students in productive dialogue. In other words, the educators, were confident of encouraging students find relevant information online and helping them resolve problems. In addition, the faculty indicated that they changed their pedagogy in the transition to remote education; they were more flexible with their time, were more prepared and responded more quickly to student feedback. As literature suggests, the educators were successful in implementing scaffolding as they were flexible, adaptable and understood their students' abilities (Ambrose et al., 2010; Gordon, 2014; Huang et al., 2020).

Overall, the educators' pedagogical approaches suggest that emergency remote instruction was being established as a means to replace traditional teaching in face-to-face environments. The teachers used collaborative formats as mandatory supplements and digitally driven assessment-formats.

4.3 RQ3: What Are the Issues and Challenges Faced by Educators When They Make the Transition to Emergency Remote Instruction?

The themes derived from interviews, namely the effects of the forced adoption of technology-delivered instruction, inadequacy of training, change in teachers' physical presence, and uncertainties caused by the abrupt move to emergency remote instruction provided the responses to the research question on issues and challenges faced by educators.

The results highlight that there is the need for providing continuous professional development for the teaching staff which is dealing with the development and implementation of emergency teaching scenarios. That this is important was also postulated by Bulman and Fairlie (2016) who stressed the need for teacher professional development in the use of current tools and ongoing training in emerging technologies.

Another finding was associated with teacher presence, and all participants considered that faculty members are responsible contact persons for remote learning matters. While instructor presence is important in both face-to-face and online courses, promoting instructor presence, for example visual cues and eye-contact in online courses can present some unique challenges because of the lack of traditional face-to-face interaction (Scott, 2016). This finding corroborates existing research which states that most current online learning models are based upon a strong belief that the presence of an instructor is tremendously important to the learning experience (Scott, 2016; Hajibayova, 2017). In remote learning, an instructor is seen as more of a facilitator who guides student learning. The lack of physical or social presence is thus a concern in regard to online learning; however, educators can promote social presence by leveraging some of the digital tools available such as Microsoft Teams, WhatsApp, videos etc.

The educators in the current study considered cheating as one of the challenges posed by the forced adoption of technology-delivered instruction. Other challenges included anxiety, students' mental distraction, monitoring attendance online, and assessing homework or assignments. These findings corroborate results from earlier studies, for example, anxiety in web-based education (Bektas & Yardimci, 2018), attendance and absenteeism during recorded online lecture videos (Trenholm et al., 2019), cheating and the credibility of unsupervised exams

in asynchronous online environments (Feinman, 2018; Sullivan, 2016) and the need for formative assessment (Liberman et al., 2020; Wiliam, 2018).

A further problematic aspect was the confusion and uncertainty surrounding emergency remote instruction which is a simple method for delivering content online. The temptation to compare online learning to face-to-face instruction in these circumstances has caused confusion and uncertainty. The educators have to understand that emergency remote teaching is not synonymous with coordinated online learning.

One of the interesting findings was that the research participants seem to think that making the transition to remote instruction will not be difficult. This is interesting because faculty around the world were caught off guard by the restrictive measures caused by the pandemic. While the participants in the current study faced challenges, they did not experience them in the same regular and predictable sequence as proposed in literature.

5. Proposed Novel Remote Learning Framework

The study presents a Novel Remote Learning Framework, which is an empirically-grounded, theoretically-informed conceptualisation of emergency remote instruction which is expected to reshape instruction during the COVID-19 pandemic. The framework was developed from the themes identified in this study. The proposed Novel Remote Learning Framework (Figure 1; Appendix A) highlights the convergence of the philosophy of distance or remote learning espoused by educational institutions and the e-learning pedagogies and technologies adopted by these institutions to enable flexible learning, independent learning, and the building of communities of inquiry.

The model supports synchronous and asynchronous tools for interactive and collaborative learning. It asserts that educators should be aware of the core technological tools they have in place for remote teaching, and the resources and knowledge required supporting teachers/faculty in using these tools to deliver instruction. Although, emergency remote instruction will not replace face-to-face instruction, it can provide an opportunity for teachers and students to remain connected and engaged with the content through the use of LMS and social platforms. Teacher presence will remain a critical factor in the success of emergency remote instruction. Teachers' and students' social presence will also be very important for interaction and collaboration.

The model's conceptualization of teaching, social and cognitive presence offers both clarity about the specific challenges of instruction in remote learning environment and a framework for aligning practice with that setting. At its heart, this model depends on interaction or regular and timely communications between students and teachers and timely delivery of lessons and course materials. It does not support individualization but a combination of individual and collective learning. In other words, some individualization is sacrificed for social negotiation, confirmation, collaboration and development (Anderson, 2017; Garrison et al., 2010). Teachers who adopt individual learning are expected to always provide structure with individual learning.

The model articulates the importance of scaffolding and feedback. Formative feedback and scaffolding are considered as crucial to improving knowledge and skill acquisition in remote learning environments (Basu, Biswas & Kinnebrew, 2017). It suggests that scaffolding and corrective feedback are useful strategies to support students' information acquisition behaviour and academic achievement.

6. Implications

a) The results of this study may provide the basis or incentive to conduct further studies related to remote learning.

b) The results of this study will be important to policymakers because they can formulate policies to provide continued in-service professional development whenever possible, for example in the provision of improved delivery techniques, and assisting educators in making sudden adjustments during a crisis.

c) The results of this study are expected to inform practices. The concepts identified in this study will be useful to educators in institutions who can then adapt their pedagogical practices to make best use of the available technologies for emergency remote learning.

d) The results could be used as a benchmark for comparing levels of e-readiness across institutions.

e) From a pedagogical perspective, the results are expected to suggest that simply introducing remote learning in an emergency will not magically engage students. It will suggest that there is the genuine need for continuous feedback, active monitoring, and support from the educators.

f) The theoretical models, suggestions, experiences and examples described in this research paper can be used for implementation of distance learning when operations go back to normal in the future.

g) Though multiple online teaching frameworks exist, the Novel Remote Learning Framework is innovative as it can be useful for unplanned or responsive remote teaching situations.

7. Significance and Contributions

1) This proposed research is expected to focus on a topic that has never been researched so far.

2) In terms of scientific contribution, the expected results of this research are related to advancement of theoretical understanding of "emergency remote teaching", which is a new concept in distance learning.

3) It is expected to expand the current state of knowledge on remote learning by combining different fields of research, e.g. online learning, distance learning, and e-learning. In doing so, the research will provide holistic understanding of the topic.

8. Limitations

The framework presented is grounded in the experiences of a limited number of teachers but presents a theoretically grounded approach to teaching in an emergent field.

9. Recommendations

The aim of the Novel Remote Learning Framework is two-fold: firstly, to conceptualise emergency remote instruction and secondly, to provide practical recommendations.

a) Practitioners will be able understand the need to move beyond the affordances of technologies and take a holistic approach in order to promote learning during an emergency.

b) Since learners often lack direct access to a teacher or peer assistance, creating an online forum and/or social learning elements, will allow teachers to encourage group collaboration (Bugaj et al., 2019).

c) Teachers should clearly define what is expected of students, the deadlines that have to be met, and the skill sets they will develop. This will help to keep the learners on track and also motivate them to become active participants (Brame, 2016). The importance of teacher expectations in facilitating students' learning has to be recognized (de Boer et al., 2018).

d) Most importantly, teachers have to communicate clearly, frequently and effectively for students to derive the most from the educational experience (Giesbers et al., 2014). Educators must develop an e-learning environment where learners can discuss and interact. Social media tools are invaluable if teachers are taking an asynchronous learning approach (Delgaty, 2018).

e) Educators must include resource links within e-learning courses and offer interactive elements to make the e-learning course authentic and more engaging (Hew, Qiao & Tang, 2018).. Including Microsoft Teams, Zoom and other tools can enable make the courses authentic, exciting, engaging, and informative.

f) Educators have to acknowledge that teaching at a distance is different. Trying to approach a remote learning situation with the traditional techniques and strategies will not work well.

g) Policy makers have to increase teachers' awareness of remote learning and its significance. This new approach requires teachers to not only integrate technology but also incorporate new skills and capabilities in order to improve students' learning.

h) The TPACK framework is useful in that it can identify the specific knowledge areas that teachers need to possess in order to integrate technology into their practice (Mishra & Koehler, 2006).

i) Lastly, educators have to promote inclusive practices and be conversant in using assistive technologies.

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Appendix A

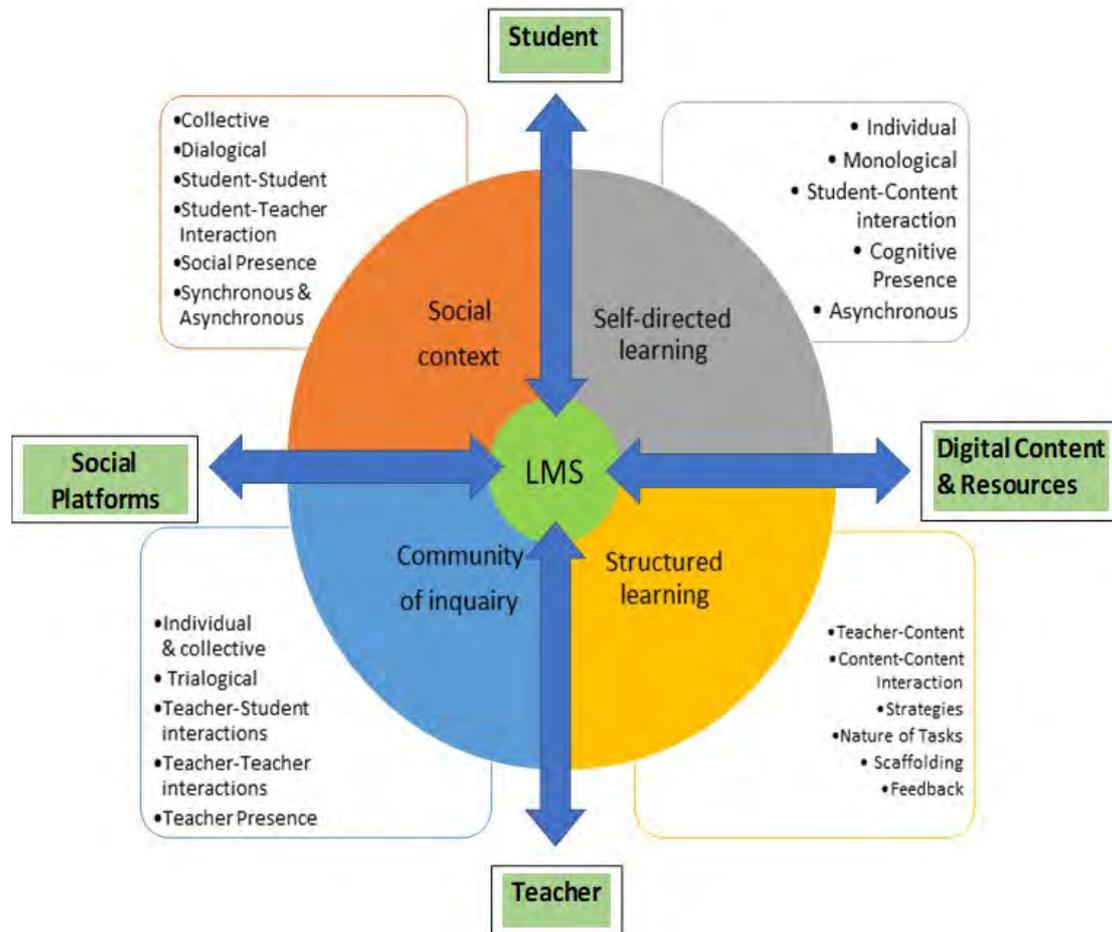**Proposed Novel Remote Learning Framework**

Figure A1. Proposed novel remote learning framework

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