

IMPLEMENTING REMOTE TEACHING IN RESPONSE TO THE COVID-19 CRISIS: ENABLING FACTORS AND CHALLENGES EXPERIENCED BY THREE GHANAIAN TEACHER EDUCATORS

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ABSTRACT

The emergence of COVID-19 across the globe has redefined education and technology. The purpose of this article is to report on teacher educators' conception and experiences of remote teaching. Understanding teacher educators' conception is significant because one's conception does influence one's practices. In addition, understanding the enabling factors and challenges encountered would be of benefit in designing sustainable instructional practices to enhance the quality of online teaching and learning. Data presented here was generated from three Ghanaian teacher educators through semi-structured interviews. While the sample is small the findings are crucial for the enhancement of the current higher education policy practices. Based on the findings it could be argued that teacher educators' conception of remote teaching as a temporary substitute for traditional face-to-face teaching suggest that they do not view it as something that could be sustained for a longer period. While they consider this form of teaching to be a temporary substitute they all agree that it has some advantages. For example, teaching using online platforms is not restricted by venue constraints thus teaching large classes is more possible and assist with recovering lost time since the teaching mode of teaching can be synchronous and asynchronous. While managing larger classes and recovering lost time was considered a major advantage of remote teaching, teacher educators alluded to the fact that being trained to use the online tools does not equip them with pedagogies to teach. Thus, there is a need to enhance policies to ensure

that teacher educators are well equipped with the online pedagogies to ensure that quality teaching is not compromised. In addition, the system factors (e.g., the high cost of data and unstable Internet connectivity) are considered barriers to the effective implementation of remote teaching. The findings of this study have implications for the sustainability of remote teaching not only in underdeveloped countries but globally because the ill-preparedness of teacher educators with the pedagogies of remote teaching means that the quality of education offered to students might not be of an acceptable standard. In addition, the system factors do not only hinder teaching but also add to the burden already experienced with losing teaching and learning time. The insight from this article can help advance the debates about the sustainability of remote teaching.

Keywords: emergency remote teaching, enabling factors, challenges, teacher education, COVID-19.

INTRODUCTION

The World Health Organization (WHO) declared the infectious respiratory disease COVID-19 a pandemic on 11 March 2020 (WHO 2020). At the time of data collection, eight months on, COVID-19 has sickened nearly 60 million people globally and has claimed the lives of over 1,4 million (WHO 2020). As a result, schools, teacher colleges, universities, and businesses have been closed; conferences have been postponed; large gatherings, including religious activities, have been suspended; preventative hygiene measures, such as regular hand washing and the wearing of face masks, have been widely implemented; and social distancing has been practised. Public alarm in response to the health threat posed by the pandemic, and the necessary practices of social and physical distancing that are required to prevent its further spread have emphasised the important role of technology in our lives as individuals and as society at large. Where possible, businesses have adopted remote working strategies, in compliance with the WHO's (2020) approved safety protocols that recommend minimal social and physical contact. The rationale is to prevent the spread of COVID-19. The practice of social distancing during this crisis has not been "an avoidance of communication and social relations, but the substitution of face-to-face communication that bears the risk of contagion by mediated communication" (Fuchs 2020, 396).

The emergence of COVID-19 across the globe has redefined education, as, like all other businesses and activities, educational places of instruction have had to adhere to these disease-mitigation practices. In many places, education that could have been delivered face to face or using a blended learning approach now has to be delivered through the remote teaching approach (Hodges et al. 2020). Implementing this approach has necessitated a paradigm shift away from conventional approaches to teaching, learning and assessment. Teacher educators are being asked to deliver education by using various technologies to facilitate both

synchronous and asynchronous communication, and the use of technology in education is therefore in the process of being redefined. While all sectors of society have had to adapt to the new norms, teacher training institutions have been under particular pressure to model their adaptations constructively, as they are responsible for training future teachers. It is vitally important that teacher educators themselves can adjust to these new teaching norms, for the future teachers they are training to do likewise. *While universities are putting in place measures to adapt to the new normal, the question about teacher educators' conception of remote teaching and their preparedness to implement remote teaching have not been understood especially from the context of underdeveloped countries like Ghana where technical constraints existed pre-COVID 19.* This article, therefore, explores the enabling factors and challenges experienced by teacher educators in facilitating learning through virtual teaching platforms during the COVID-19 crisis. The study is relevant moreover that in most underdeveloped countries in Africa the practices and experiences with online teaching is limited however, being forced to transition to purely remote teaching requires the adaptation of policies and practices.

Training future teachers are complex because it goes beyond ensuring that students acquire the required content knowledge. It entails ensuring that the development of subject matter knowledge as well as pedagogical knowledge which Ball (2017) refer to as the work of teaching. Teacher educators are therefore required to employ different forms of instruction to model a range of pedagogical approaches, thus ensuring that by the time students complete their training they have sufficient knowledge to perform the work of teaching. The outbreak of the COVID-19 pandemic has forced many institutions of higher learning to transition solely to remote teaching, and teacher educators have had to adapt their teaching accordingly. Since this is a new global norm, there is limited research that explores teacher educators' conceptions of remote teaching as well as the enabling factors and challenges encountered. With this in mind, the present study sought to answer the following research questions:

- How do teacher educators conceptualise remote teaching?
- What are the enabling factors and challenges encountered by teacher educators when implementing remote teaching?

EMERGENCY REMOTE TEACHING AND LEARNING

Hodges et al. (2020) have defined remote teaching as a temporary shift of instructional delivery to an alternative delivery mode due to an emergency or crisis. The authors have further posited that the main objective in these conditions is not to re-create a robust educational ecosystem, but rather to offer temporary access to instruction and support in a manner that is fast to set up

and is reliably available during the emergency or crisis. During a crisis, there may be no time to re-create or replicate the current system, but it is possible to find alternative ways of sustaining the core business of teaching and learning. Remote teaching has therefore been adopted globally as an alternative way of ensuring that teaching and learning continue amid a pandemic. However, people experience remote teaching and learning differently according to their specific context.

As purported in literature, remote teaching is not entirely the same as online teaching. According to Oye, Salleh, and Ishad (2012), a single definition for online teaching is yet to be found. However, Wang et al. (2010) have argued that online learning refers to “the use of computer network technology, primarily over or through the Internet to deliver information and instructions to individuals” (Wang et al. 2010, 167). In addition, the University of the People (UoPeople 2020) posit that online learning is an instructional approach that takes place over the Internet and is sometimes referred to as e-learning. One important difference is stated by Milman (2020) that online teaching takes a lot of time and effort to design and develop. Thus educators who are suddenly thrust into emergency remote teaching often do not have the ideal conditions in place to offer well-planned quality online instruction (Milman 2020). Well-planned online learning experiences are therefore meaningfully different from courses offered online in response to a crisis or disaster (Hodges et al. 2020).

In trying to distinguish between emergency remote teaching and online teaching, UoPeople (2020) highlighted four key differences: 1) emergency remote teaching is activated in response to a crisis or something beyond human control, while online learning is purposely designed to be remote and distant; 2) emergency remote teaching is intended to be temporary, but online learning is regarded as the main mode of instruction; 3) online learning generally has full faculty support, while faculty support for emergency remote teaching may be limited; and 4) emergency remote teaching often lacks resources, but since online learning is meant to be a long-term solution, it generally has all the necessary resources in place. Milman (2020) has argued that the medium is not as important as the design of the learning experiences, the quality of the content, and the engagement of the students. Using the Internet for emergency remote teaching does not necessarily constitute online instruction, but is rather a response to a crisis using online tools.

SYNCHRONOUS AND ASYNCHRONOUS MODES OF COMMUNICATION

Online learning can involve both synchronous and asynchronous modes of communication and interaction between teachers and students, and amongst students (Kirkwood and Price 2012). Synchronous interaction is “real-time” interaction that requires all participants to be online at

the same time, while asynchronous communication can accommodate a time delay between communications, and is facilitated by tools such as discussion forums, email and bulletin boards (Oye et al. 2012). Hrastinski (2008) argued that traditional teaching is primarily characterised by synchronous interaction since communication between teachers and students is carried out in real-time.

With synchronous interactions, problem-solving, scheduling and decision making is faster. Examples of synchronous communication include teleconferencing, text-based chat systems, text-based virtual learning environments, Internet voice calls, and instant messaging systems (Oye et al. 2012). Oye et al. (2012) reiterated that synchronous tools should be integrated into the asynchronous environment to allow for the creation of an “any-time” learning model. In 2008, Hrastinski presented an overview of the suitability of synchronous and asynchronous modes in online teaching and learning by explaining “when”, “why” and “how” to employ them. This is presented in Table 1.

Table 1: When, why and how to use synchronous and asynchronous modes of communication

	Synchronous interaction	Asynchronous interaction
<i>When?</i>	<ul style="list-style-type: none"> • Discussion of less complex issues • Getting acquainted • Planning a task. 	<ul style="list-style-type: none"> • Reflecting on complex issues • When asynchronous interaction cannot be scheduled because of incompatible commitments.
<i>Why?</i>	Students become more committed to the interaction, and more motivated because a quick response is expected.	It gives students enough time to reflect since the interaction is not in real-time.
<i>How?</i>	By using synchronous tools, such as Zoom, Google Classroom, and chat applications.	By using asynchronous tools, such as email, discussion boards and blogs.

Source: Adapted from Hrastinski (2008)

As is evident from Table 1, synchronous and asynchronous interactions cannot simply be seen as replacements for each other. Neither can they be considered to be interchangeable. In some cases, they may be integrated, but the aim of a lesson plays a crucial role in deciding which form/s of interaction should be adopted. For example, when introducing a lesson, synchronous interaction is considered to be most appropriate, because the aim is to acquaint students with new topics. However, before introducing a topic, teaching that involves an asynchronous interaction might be used to give students time to reflect on the broader issues embedded in the topic, to enhance their understanding and the quality of the discussion when introducing the topic. This time lag in communication helps students to internalise information by giving them extra time to explore new ideas and reflect on them (Worldwidelearn 2020).

ONLINE TEACHING AND LEARNING THEORY IN HIGHER EDUCATION

As purported by Gardener (2021) theories of learning emphasise a particular feature of the

learning experience. The online learning model by Anderson (2011) provides some platforms of how online learning can be enhanced. The model illustrates two major actors in the process of online teaching and learning, that is students and teachers and their interaction with each other and content. In the process of online learning, some students interact directly with the content which they found in multiple formats, thus require limited interaction with the instructor. However, some prefer their content to be sequenced and require assistance from the instructor (Anderson 2017). As mooted by Anderson (2017), the interaction takes place in the community of inquiry using synchronous or asynchronous interactions. Like other theories of learning adopted for the face to face modes such as constructivism and social constructivism, the online model by Anderson put the student at the centre of their learning with the instructor taking the role of the facilitator.

ENABLING FACTORS AND CHALLENGES ASSOCIATED WITH ONLINE TEACHING AND LEARNING

Online learning has been considered a useful tool for learning (Jeffcoat Bartley and Golek 2004; Gratton-Lavoie and Stanley 2009; De La Varre, Keane, and Irvin 2010). However, as pointed out by Milman (2020) it takes a lot of time and effort to design and develop effective, engaging online education and many countries including developed countries were not prepared for this dramatic change (Almahasees, Mohsen, and Omer 2021). The study conducted by Almahasees et al. (2021) with faculty members and students in Jordan about their experiences of online teaching and learning revealed that while online learning was considered useful during the time of the pandemic its effectiveness was questionable. In addition, while the advancement of self-learning and flexibility was considered to be enhanced with online learning, the systems factors hinder the quality of learning. Similarly, the study by Muthuprasad et al. (2021) also revealed that system factors such as connectivity issues proved to be a challenge for students. The plethora of literature that explores perceptions of online learning amid COVID-19 among higher education paid particular attention to challenges and enabling factors encountered by students. This study extends the debates to include teacher educators within the African continent which is considered to be digitally underdeveloped. Teacher Educators plays a crucial role in preparing future teachers thus their conception of remote teaching does not only influence their practices it has the potential to influence policy enhancement towards preparing future teachers in the new norm and the digital world.

FRAMEWORK UNDERPINNING THIS STUDY

Kurt Lewin's change model (see Figure 1) was used as the theoretical framework for this study.

We found Lewin's model to be fundamentally useful for exploring teacher educators' transition from a face-to-face learning environment to ERT. Lewin's (1947, as cited in Cummings, Bridgman, and Brown 2016) model of change involves three steps: unfreezing, changing, and refreezing. According to Lewin, before a change can be implemented it must go through the initial step of unfreezing (Hussain et al. 2018). The focus of the initial unfreezing is to create awareness of the status quo. This awareness is vital, as people tend to be motivated and accept change when the need for change is made known to them, and when they feel that it is necessary and urgent. Unfreezing creates the motivation to learn, but does not necessarily control the direction of learning (Schein 2010). Once people are unfrozen, they can begin to move (Hartzell 2012). After moving away from the status quo, leaders are required to support employees' (in this case, teacher educators) involvement to accelerate the change (Hussain et al. 2018).

Within the context of this study, leadership support including technical support, pedagogical support is considered critical for teacher educators to manage the change process. According to Schein (2010), Lewin recognised that change is a process, by means of which an institution goes through a transition or new state of being. The second step of his model is the change stage. At this stage, people begin to learn new behaviours, processes and ways of thinking (Hartzell 2012). Hartzell posits that the change stage is marked by the implementation of the change. The final stage of Lewin's model is refreezing, which involves reinforcing the new state after the change (Schein 2010).

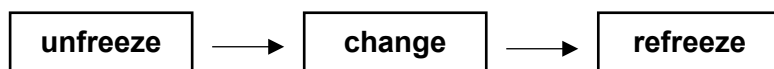


Figure 1: Change has three steps (Source: Lewin 1947, as cited in Cummings et al. 2016)

The COVID-19 outbreak has caused all sectors, including education, to unfreeze. In the educational sector, stakeholders have realised the need to change from face-to-face to online teaching and learning. However, since online education is a mode of instruction that requires more time to be carefully thought out and planned, remote teaching has been identified as the possible change that could be implemented in response to the crisis.

METHODOLOGY

A qualitative case study approach was selected to concentrate on the specific instance or situation (Cohen, Manion, and Morrison 2011), namely, the enabling factors and challenges experienced by teacher educators in implementing remote teaching. This study was conducted

at one teacher college in the Central Region of Ghana. In this region, there are three teacher colleges. The college used for data generation was selected due to the researcher's familiarity with the college and its proximity to it. One of the researchers in the study is an educator at the college and was therefore deeply familiar with the context, and was able to establish a rapport with the participants to obtain a deeper understanding of their views. Due to travel limitations and the closure of the college due to COVID-19, a letter was sent by email to the heads of department explaining the nature of the study and asking them to recommend members of staff from their departments to participate. The letter explained the purpose of the study and the rights of the participants. Of the six possible departments, only three responded with the name of a teacher educator who showed an interest in participating in the study.

The three participants were Akyire (a female educator from the Education department), Osei (a male educator from the Languages department) and Enoch (a male educator from the Mathematics department). Pseudonyms have been used to protect the identity of these teacher educators. Due to the closure of the college as a result of the COVID-19 crisis, which required the teacher educators to work from home, data was generated through telephonic interviews. Before conducting these interviews, the interview questions were emailed to each participant. This was done to give the participants time to acquaint themselves with the questions. To capture the participants' responses, the researchers recorded the interviews, after obtaining the participants' permission.

DATA ANALYSIS

The audio recordings of the interviews were transcribed, and after the transcription, the researchers employed narrative inquiry to analyse and present the findings. The narrative method was used to develop a description of the experiences of the three teacher educators while preserving their voices (Cortazzi 1994, 10). Narratives were constructed for each participant from the individual transcripts of the telephone interviews, and each participant's narrative described his or her experiences in implementing remote teaching. These narratives allowed the researchers to convey the enabling factors and challenges experienced by the participating teacher educators in implementing remote teaching during the COVID-19 pandemic. The researchers purposively selected extracts from the narratives that directly addressed the phenomenon of the study. To ensure coherence and clarity, the verbatim responses of the participants were restructured slightly by removing repetitive words, but the gist of their responses was not altered. Lewin's change model was then used to analyse the participants' narratives, to understand their conceptions as they transitioned from face-to-face teaching to remote teaching.

FINDINGS

Extracts from the individual participants' narratives are presented and discussed below to answer our research questions.

Teacher educators' conceptions of emergency remote teaching

The narratives below reflect teacher educators' conceptions of remote teaching.

- Osei: "Ideally, I am not an online educator. I am a face-to-face regular classroom educator, but with this Covid I have been forced to change, converting from face-to-face to the online way of teaching students. Remote teaching came as a result of necessity due to the closure of colleges so I will say it's just one way those in power consider it to be used to continue teaching. When probe further he said my understanding is that it's a temporary measure used to continue with teaching until things go back to normal. During face to face we interact with students live now we use online platforms to teaching with limited interaction."
- Akyire: "It is a teaching approach that is contrary to face-to-face or traditional methods of teaching. It is a temporary measure usually adopted where direct contact with students is not possible and manage change during the time of crisis."
- Enoch: "Remote teaching is an instruction used in a situation where you are not able to get the normal face-to-face contact with your students; therefore, you need to use other means. It's not an alternative to face to face but just one strategy considered possible in a time of crisis."

These excerpts indicated that the participating teacher educators considered remote teaching to be a stopgap or interim method of instructional delivery and learning, and that consider it different from the normal face-to-face mode of teaching since it limits interaction. As pointed by Enoch it's a measure used to respond to a crisis thus not considered to be for a long term period. When asked if they consider remote teaching to be different to online teaching all three teacher educators said no because it's just different terminology. For example, Osei stated that he had converted to online teaching, but then explained that remote was a response to the closure of colleges. It appeared that he conceived online teaching and remote teaching as interchangeable, which contradicts UoPeople's (2020) description of online learning as intentionally designed to function remotely. The teacher educators' conceptions suggested that they conceive remote teaching as an alternative mode of teaching to be used in particular instances, concurring with Hodges et al.'s (2020) who describes it as a temporary shift of instructional delivery to an alternate delivery mode due to a crisis.

From the narratives, teacher educators' echoed that although they are used to face to face mode of teaching they had to change and teach in the new way that has been imposed upon

them due to the outbreak of Covid and those in power. They all echoed that remote teaching is implemented in response to change. In light of Lewin's change model, this suggests that, whether willingly or not, they have to transition from the initial step of unfreezing the status quo of teaching to conceptualising the change. Teacher educators seem to be aware of the status quo and the need for change.

Enabling factors concerning implementing emergency remote teaching

Amid COVID-19 change has been inevitable. The teacher educators shared their experiences of the change of environment associated with instructional delivery. They acknowledged that they had found the virtual learning platform to be useful, especially for large classes, and stated that scheduled Zoom classes helped to save time and to recover lost contact time. The transcript excerpts that follow delineate the teacher educators' narratives of their experiences when employing remote teaching strategies to deliver learning materials and instructional activities to their students.

Akyire: "I can reach quite a large number of students [at a time] as compared to face to face. In contact mode, I probably have to divide the class into groups due to the lecture hall capacity. I will also say it is convenient in doing my teaching and not as rigid as face to face ... because it allows me to work on my own time."

To clarify what Akyire meant by working "at her own time", she explained that

"... in face to face, I have to be in a lecture room at a specific time. If I am unable to do that, it means the students have lost that particular [instructional] time and it is difficult to reschedule due to the nature of the timetable and other co-curricular activities of the college. With emergency remote teaching, I can schedule it [a lesson] at a time suitable for me and the students."

Akyire's response showed that while contact teaching is restricted by space, remote teaching is not, because regardless of how big the class is, it can be conducted at one time, without having to divide the class into smaller groups. While smaller groups are deemed effective because they allow for greater teacher-learner interaction (Ndlovu 2017), it seemed that Akyire had found them to be a practical challenge and that the transition to remote teaching has helped her to overcome classroom constraints conditions. Nilson (2020) has stated that bridging the education connectivity gap caused by the COVID-19 pandemic is an important step in providing remote teaching, and it seemed that Akyire had found that remote teaching provided her with the opportunity to bridge the education gap.

Osei: “I am using Zoom, and to be honest with you, this is the first time I have heard of Zoom. I had to take my time and go through tuition on how best to use it, and so after the training, I started using it, and I am now conversant with it. Initially, I had a problem with how to manipulate the online tools. Because we are not online educators we seem not to have the upper hand on things like Zoom, Google classroom and learning management systems. So basically, I was faced with teething problems – sometimes with the Internet, sometimes with not even knowing how to share a screen. Everything was just too much. I could not record my teaching so that I could share it with the students who were unable to come online. But the college, in partnership with the Amsterdam University of Applied Science, organised a workshop for the staff. The college also put in place an ICT support team, who helped whenever we encountered a problem. That was helpful.”

Being exposed to online teaching tools for the first time seemed to be a difficult experience for Osei. However, after receiving training, he became conversant with them. Although it was not explicitly articulated in his response, it seemed that he had found himself with the double responsibility of learning how to use the tools while also learning how to teach using the tools. Enoch, on the other hand, was unable to articulate any enabling factors regarding the implementation of remote teaching. His responses focused on the challenges he had experienced in delivering instruction and learning remotely and suggested that nothing was working for him in the process of teaching using remote teaching tools such as zoom. These findings, to some extent, concur with UoPeople’s (2020) argument that in remote teaching there is limited faculty support as evident among the three participants that while some have received support in their respective disciplines some has not.

Challenges concerning implementing emergency remote teaching

The threat of COVID-19 has come with a set of unprecedented challenges for higher education institutions, faculty, students, and staff (Veronica 2020). Educators have to adapt to all sorts of changes in terms of the possible strategies for delivering instruction and facilitating teaching and learning. In this study, the participating teacher educators articulated their experiences of the challenges encountered with implementing remote teaching. The challenges encountered are narrated below.

Enoch: “The challenges are enormous. One, unstable Internet connectivity and working with the whole family at home. In addition, using Zoom to teach mathematics is difficult. I cannot theorise mathematics I need to interact with students to demonstrate the correct ways to teach. Mathematics students need to be engaged, and I do not know how to engage them using Zoom. Although we were trained to teach using Zoom, I was not trained in how to teach mathematics using Zoom, for example when I need to illustrate to students how to solve problems in real-time. We were just trained on the technical aspect of it.”

Enoch’s response revealed that system issues, social issues, and a lack of proper resources were stumbling blocks in his implementation of remote teaching. Unstable Internet connectivity was

one system issue that was highlighted as a challenge. Although not explicitly articulated, Enoch's response revealed that the change of teaching environment and the lack of necessary resources for delivering mathematics instruction in the way he was used to, had challenged his ability to teach effectively. As pointed out by Milman (2020), the medium is not as important as the design of the learning experiences, the quality of the content and the engagement of learners, which are critical with remote teaching. The inability to engage with students seemed to be what Enoch found to be most challenging. What has been raised by Enoch suggest that the implementation of remote teaching have not allowed the teacher educators to fully implement the practices of the online learning model as purported by Anderson (2017) model. As pointed by Enoch the transition to remote teaching has limited the interaction between students and between student and instructor. Osei raised similar system issues and resource issues:

Osei: "The main challenge has to do with the data bundles – data on my part as the lecturer and data on the part of the students. The high cost of data bundles is the main challenge. Another challenge is the instability of the Internet. The Internet is normally not stable, so it affects course delivery."

The system issues seem to be an additional burden for Osei as he is worried not only about his pedagogical approach but also about data usage and connectivity issues. While he was becoming conversant with using the teaching tools, system issues and resource issues were a hindrance for offer quality teaching to students.

Echoing Enoch and Osei, Akyire noted that her major challenge was that she lacked the technical skills to deliver instruction via the remote teaching platform. A lack of knowledge and skill about using technological tools has been shown to affect teachers' educational practices (Holmström and Pitkänen 2012). While Akyire had raised the point that the teaching platform had helped her to manage large classes, it seems that for her the usefulness of the platform extended only to addressing the practical space limitations imposed by large classes, and not to the effective delivery of the lessons. This problem of inadequate knowledge and skills about online pedagogy is shown in the excerpt from Akyire's interview below:

Akyire: "... we were given training, but with this online teaching, there is the need for hands-on experience, but the training they gave was not enough for me to acquire the skill. It needs practical orientation, and I did not get that."

Even though Osei, stated that after receiving training he was conversant with remote teaching his explanation focused more on the technical aspects of using the tools not pedagogies to teach

remotely. Like Enoch, Akyire felt that not being provided with practical training in online pedagogy had made it difficult for her to effectively implement remote teaching. The lack of online pedagogies illustrated by the three teacher educators suggests that while teaching and learning are considered to be taking place but is illustrated by Anderson (2017) online model teacher educators are not yet equipped to sequence the material for students nor to advance students the knowledge to engage with online material independently.

DISCUSSION

The teacher educators' narratives revealed the fundamentals needed to implement instructional strategies. While they have adapted to change their conception of remote teaching as a temporary measure means that they have not figured ways or been offered relevant support to sustain the teaching and learning process. Considering remote teaching as a temporary measure suggest that they do not have long terms plans to means to design and planning is not structured for effective engagement. Therefore with COVID-19 still upon us, it is critical that institutions of higher learning enter another phase of transition, that is to design well planned engaging online teaching as purported by Milman (2020).

The teacher educators have identified enabling factors and challenges associated with implementing remote teaching. For example, while managing large classes proved to be a challenge with face to face teaching the implementation of remote teaching proved to address that. With contact teaching, space becomes an issue, but this is not the case with remote teaching, since any number of students can access classes from wherever they are. Flexibility was also identified as an enabling factor because online teaching is not constrained by venue timetables, and asynchronous methods of delivery are not dependent on schedule timetables in different time slots. While teacher educators acknowledge and appreciate the technical training and consider it helpful to build their confidence in using the tools, the lack of expertise in the appropriate pedagogies for teaching remotely was identified as one of the major challenges. Development of one pedagogies is critical towards offering quality teaching thus it is critical that teacher educators are supported to develop the expertise of online teaching as this form of teaching has been considered as the alternative form of teaching amid the crisis where face to face or blended teaching is not possible.

IMPLICATION FOR POLICY AND PRACTICE

The findings of this study imply teacher training institutions especially for the African continent where the 4th industrial revolution has been theorized not implemented. The system challenges revealed by the teacher educators means that new practices need to be implemented to ensure

well planned online experiences for both teacher educators and students. The transition to remote teaching means that certain instructional practices that effectively work with face to face teaching could not be effectively implemented with remote teaching thus teacher educators need to be equipped with new innovative online pedagogies to ensure quality education is taking place. The result prompt immediate innovation in the way teaching and learning occurs at institutions of higher learning, as well as new forms of assessment, because traditional forms of assessment, such as face to face on-campus examinations, are no longer possible due to the mandatory social distancing requirement. Employing a critical system lens, the institution of higher education in Africa should prioritize technology-enhanced learning and assessment integrity in online environments.

CONCLUSION AND RECOMMENDATIONS

This study aimed to explore the enabling factors and challenges experienced by the Ghanaian teacher educators in implementing remote teaching during the COVID-19 crisis period. The study revealed that there are enabling factors associated with implementing remote teaching such as the ability to manage large classes. Using the synchronous and asynchronous mode of teaching allows for flexibility not to be limited by timetabling factors. However, system factors (including the high cost of data and unstable Internet connectivity) and pedagogical factors (a lack of knowledge on the appropriate pedagogies for remote online delivery) proved to be barriers to the effective implementation of remote teaching. These findings prompted the questions: *What do we do as higher education institutions post COVID-19? Which way do we go –face-to-face or online?* The researchers believe that blended teaching is the way to go. The Covid crisis is a significant opportunity for higher education institutions to design and develop policies that support digital applications and tools that deliver instruction through blended teaching and learning. The researchers recommend that large-scale studies be conducted on the enabling factors and challenges associated with the implementation of remote teaching especially in countries that are not technology advance like Ghana because understand such factors within the African context has the potential to provide ways to assist in planning and designing sustainable interventions to enhance the implementation of remote teaching. This study focus on teacher educators there is a need to also understand these factors from the perspectives of students in a different context.

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