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Exploring South African university academics' level of preparedness for emergency multimodal remote teaching during the COVID-19 pandemic

Abstract

The advent of coronavirus disease, COVID-19, in late December 2019 has wreaked havoc on the economic and educational sectors. As a result of the COVID-19 pandemic, educational institutions were forced to switch from face-to-face to virtual classroom contact. The result was that many academics, particularly university lecturers, turned to remote teaching as a means to continue with academic responsibilities under lockdown regulations. The researchers opted to investigate the level of preparedness of academics for remote teaching in the faculties of education because there was a paucity of literature on the subject. This study used a phenomenological case study research design with a sample of 28 academics from the faculties of education. The universities in South Africa were located in the provinces of Gauteng, the Free State, and the Eastern Cape. The researchers used a validated interview schedule to collect qualitative data. The trustworthiness of the interview guide was ensured by giving it to experts to provide constructive criticism. The data were examined using thematic analysis. The findings demonstrated that the majority of the academics in the education faculties lacked the necessary preparation for distant teaching and learning, because neither academics nor students received any support as they transitioned from routine to unusual working conditions. It was also discovered that the necessary infrastructure was initially not prepared to facilitate remote teaching and learning. Since they expected the lockdown to only last a few months, some academics indicated they were unprepared and found the situation to be extremely stressful. This suggests that during the COVID-19 pandemic, the majority of university academics were ineffective at implementing emergency multimodal remote instruction. For the efficient implementation of remote teaching, university academics must receive suitable and thorough in-service training.

Keywords: COVID-19 pandemic, emergency multimodal remote teaching, level of preparedness, South African university academics

1. Introduction

COVID-19, a global pandemic, disrupted the world population, significantly affecting the academic year of 2020. The pandemic, according to Azionya and Nhedizi (2021), altered how higher education institutions give instruction. Institutions had to change their methods of teaching and learning because they could no longer use traditional methods (Hu, 2022). Due to the pandemic's effective implementation of a global shutdown of many activities, including educational activities, universities have been compelled to move to an online learning platform due to a severe academic crisis (Adedoyin & Soykan, 2020). The COVID-19 epidemic has exacerbated educational disparities, further marginalizing people with limited access to education, especially in environments of conflict, weakness, and insecurity (Sayed *et al.*, 2021). Universities were unprepared for the abrupt shift from in-person instruction to online learning that the COVID-19 pandemic caused (Maphalala, Khumalo & Khumalo, 2021). People's views towards labour and employment were anticipated to change as a result of COVID-19 and the shocks it brought about in the economic and educational sectors (Kramer & Kramer, 2020). The quality of teaching and learning in educational institutions will be impacted by this new working condition, according to Realyvásquez-Vargas *et al.* (2020). The epidemic has destroyed the educational system and brought up a number of new problems for higher education around the world (Gonzalez *et al.*, 2020). In the same vein, universities have also been impacted, and are currently engaged in protracted disputes over how to respond to the pandemic while sustaining teaching and learning, research, and community involvement (Hlatshwayo, Khumalo & Nzimande, 2021).

Putri *et al.* (2020) found that many lecturers are not adept in instructing through technologies nor utilising internet technologies for teaching and learning (Putri *et al.*, 2020). As the COVID-19 pandemic disrupted the 2019–2020 school year, there was little or no research on how school disruptions might affect learning (Kuhfeld *et al.*, 2020). According to Matarirano, Gqokonqana and Yeboah (2021), the COVID-19 pandemic led some universities to use synchronous and asynchronous instruction to conduct emergency remote teaching. While some academics worked from home during the pandemic, primarily for research objectives, most instruction was done in loco (Walker *et al.*, 2020). Furthermore, COVID-19 preventive control procedures resulted in a situation in which multimodal remote teaching became necessary with immediate effect. As a result, there was little or no planning to meet the demands of remote teaching and learning in many institutions (Walker *et al.*, 2020). Mittal *et al.* (2022) opine that the only option to deal with the situation orchestrated by COVID-19 is to convert physical classrooms to virtual ones and promote online teaching and learning through emergency remote teaching (ERT). According to Mohammed *et al.* (2020), emergency remote teaching implies utilizing all of the remote teaching methods available in an emergency situation, entailing sending educational materials that would often be taught physically or through hybrid courses.

Emergency remote teaching (ERT) allows lecturers to be more creative and imaginative while providing temporary access to instruction (Songca, Ndebele & Mbodila, 2021). However, ERT implementation in several countries, including South Africa, poses difficulties for both students and academics (Songca, Ndebele & Mbodila, 2021). The ability to operate a learning management system (LMS) and the stability of those systems are also important factors in the success of remote teaching and learning.

Based on the aforementioned, the researchers intended to explore academics' level of preparedness of academics multimodal remote teaching in the South African university context using Law *et al.* (1996) Person-Environment-Occupation Theory (PEOT).

2. Theoretical background

The three components that make up PEOT are person (P), environment (E), and occupation (O). Occupational performance is the result of the interaction between these three components. This method stresses how a person's environment, job, and other factors interact to affect how well they perform in their jobs. Role, self-concept, cultural background, personality, health, cognition, physical performance, and sensory capacities are all part of the person's domain. In this sense, the individual is a unique being with numerous obligations that are inextricably linked to contextual forces. A set of traits, abilities, knowledge, and experiences are brought to the workplace by the individual. The person brings a variety of characteristics, skills, know-how, and experiences to the teaching and learning environment. The environmental domain comprises physical, cultural, institutional, social, and socio-economic environments, while the occupation aspect refers to the array of activities that a person performs in order to maintain, express, and complete himself or herself. The three domains are interdependent and have an impact on one another. The three domains overlap in this model, which dynamically shapes occupational performance and illustrates the degree of connection between the individual, environment, and occupation. This theory is relevant to this study since it allowed the researchers to comprehend lecturers' academic commitments during the emergency multimodal remote teaching during the COVID-19 pandemic. Within the context of this research, the academics are the "persons"; the environment is the "work from home"; while the occupation is the "remote teaching". Thus, the person aspect (academic) is dependent on the environment while the environment (work from home) determines the effectiveness of the occupation (remote teaching). These findings have corroborated the tenets of POET in the sense that the COVID-19 pandemic impacted negatively on the academic effectiveness in teaching and learning engagement.

3. Available empirical studies

Dhawan's study is supported by Adnan (2020) surveyed 126 Pakistani participants' perceptions on multimodal remote teaching, which reveals that the great majority of students lack the basic facilities to access internet technology. The absence of direct communication between the academics and their professors and peers raised additional worries among them (Adnan, 2020). Additionally, Watermeyer *et al.* (2021) found that disturbance of confidence and trust, increased workload, and decreased working conditions are parts of the various difficulties academics faced during the urgent online migration of their practice. According to Watermeyer *et al.*, academics' reactions to the pandemic represent a story of trauma, and they contend that academics were wounded by their experiences with the emergency online transition.

Seetal, Gunness and Teeroovengadum (2021) indicate that many university academics had received no proper training in using technology in the classroom, limiting their readiness to adopt emergency remote teaching. Adedoyin and Soykan (2020) reveal that contrary to a war or a natural disaster, the COVID-19 pandemic problem has not harmed the physical infrastructure of educational institutions, but resulted in an unforeseen international disruption of traditional teaching and a migration of learning methodologies. Due to inadequate planning and design of remote teaching programs, the migration process of higher education institutions

to such program is now in doubt (Adedoyin & Soykan, 2020). It is crucial to distinguish between successful online training that is used regularly and that which is carried out quickly with few resources and little time otherwise, known as emergency remote teaching.

According to Lassoued, Alhendawi and Bashitialshaaer (2020), under the COVID-19 pandemic, the major barriers to achieving quality in emergency remote teaching could be divided into four categories: (a) personal, which relates to self-imposed barriers that signify students' rejection and resistance; (b) pedagogical, which concerns barriers to administering tests, evaluating electronic exams, or obtaining feedback from students; and (c) technical barrier, which concerns slow internet speeds, inadequate data security and confidentiality among others. Additionally, impediments to efficient remote teaching included instructors' negative attitudes and experiences with switching from face-to-face to emergency remote teaching during the pandemic, such as preparedness, confidence, institutional support, access, workload impact, ailments, and affordances (Watermeyer *et al.*, 2021).

According to Bao (2020), academics' high-quality instructional design, proper instructional delivery, prompt feedback and direction and high-quality student participation in instructional activities are the five criteria that determine effective online learning experiences. Bao further states that in order to support all of the aforementioned criteria, a backup plan for any unforeseen technological challenges must be created. For successful online teaching, Rapanta *et al.* (2020) explored the opinions of online education experts on the global online transition during the pandemic and emphasize the significance of the effective design of online learning activities, which increases teacher presence, and an assessment and feedback mechanism. In the situation when universities were forced to go online, it was noted that the weaknesses of online teaching include the problems of technology, time management and lack of online learning acceptance (Dhawan, 2020). These issues, according to Dhawan, may come with a variety of difficulties, including the digital divide, inequality among different groups, and a lack of personal support.

Sayed *et al.* (2021) reveal that academics did not receive appropriate professional development (PD) and psychosocial support to help them negotiate the COVID-19 pandemic's uncertainty and pedagogical expectations. Academics were forced to shift from traditional teaching methods to remote instruction, with minimal expertise (Hlatshwayo, *et al.*, 2021). Almpanis and Joseph-Richard (2022) found that academics were not prepared to become familiar with digital technology and related pedagogies within a short period for classes to migrate online. Lee *et al.* (2021) note that since academics were forced to learn to use technologies within a short space of time, there were significant differences between more established online teaching methods.

The foregoing has shown that there is a gap in literature, as there is a dearth of literature on the readiness of the university academics in the adoption of emergency remote teaching. Based on this premise, the researchers explored the South African university academics' level of preparedness for the emergency multimodal remote teaching during COVID-19 pandemic using faculty of education academics at various South African universities.

4. Methods

4.1 Research approach and design

A qualitative research approach with a phenomenological qualitative case study research design was used by the researchers. Phenomenological research aims to comprehend and characterize a phenomenon's fundamental elements. The method examines human experiences in daily life while suspending the researchers' previous notions regarding the issue. On the other hand, a case study is a thorough examination of a person, family, group, organization, or event. Consequently, phenomenological qualitative case study examines people's perceptions and actual experiences in relation to specific phenomena. The researchers used this methodology because they wanted to get to the heart of what the faculty of education scholars had to say about emergency multimodal remote teaching during the COVID-19 outbreak. This methodology has recently been used by Ugwuanyi, Okeke and Shawe (2021), Gqoli, Okeke and Ugwuanyi (2022), Gqoli, Okeke and Ugwuanyi (2023), Baloyi-Mothibeli, Okeke and Ugwuanyi (2023).

4.2 Participants

The South African provinces of Gauteng, Free State, and the Eastern Cape provided participants for this study. The majority of the participants were from different universities in these provinces. The study's target population comprised all academic staff members in the faculties of education at all eight (8) universities in the three provinces of South Africa. The survey was completed by 28 academics from the faculties of education at eight (8) different universities located throughout the provinces. The eight institutions were selected by means of purposive sampling, which made sure that each province's universities were fairly represented. The participants were chosen using a convenience sampling technique. This gave the researchers the opportunity to choose academics who were enthusiastic about taking part in the study.

4.3 Instrument

Data were gathered utilising a semi-structured interview schedule that included questions about academics' level of preparedness for the emergency multimodal remote teaching. Experts in instrument development conducted the face validation of the semi-structured interview to guarantee that it measures what it claims to measure. The validity of the interview schedule was confirmed by exposing it to a similar sample on two separate occasions.

4.4 Data collection procedures

The semi-structured interview schedule in the form of Google forms was emailed to participants whose email addresses indicated they would reply to the interview schedule to gather the qualitative data. This situation arose because face-to-face interviews were challenging due to the COVID-19 restrictions. The interviewees had ample time to respond to the questions.

4.5 Ethical considerations

Each university gave the researchers ethical approval prior to data collection. As a result, the request for ethical clearance was granted. Additionally, the researchers followed the pertinent ethical guidelines for qualitative research. In other words, before the interview, participants had to fill out and sign written informed consent. The chosen people have the option to deny participation right away, or to withdraw at any time for any reason. However, none of the

contestants withdrew from the event. To protect the participants' privacy and confidentiality, pseudonyms were utilized. During the reporting phase of this study, the authors were mindful of protecting the participants and their institutions.

4.6 Data analysis

The researchers used thematic analysis to analyse the qualitative data. Thematic analysis examines patterns of meaning in a data set, such as a collection of transcripts from focus groups or interviews. A thematic analysis, on the other hand, classifies sets of data (which are frequently rather big) into categories based on commonalities, or themes. These themes assist us in understanding and interpreting the information. The participants' interview responses were coded, sorted, categorised, and transcribed using this method. To ensure accurate data analysis, the participants' responses were read numerous times to extract key information. Member-checking allowed for verification of the data.

5. Results

The presentation of the results was based on the analysis of the interview response of each of the participants.

5.1 Theme: Academic preparedness to work from home

5.1.1 Subtheme 1: Academics' level of preparedness for the emergency multimodal remote teaching.

This subtheme focused on the level of preparedness of academics. To elicit responses from the participants during the interview the academics were asked individually whether they were sufficiently prepared for the emergency multimodal remote teaching. Below are the findings in subtheme 1.

Academics lacked proper planning and preparedness to accommodate emergencies such as COVID-19 in terms of teaching and learning as no adequate assistance was provided to assist academics as well as students to transit from normal to abnormal working situations. Moreover, infrastructure was initially not ready to support them, despite that they were willing to engage in multimodal remote teaching. Since the COVID situation happened without prior preparedness, many colleagues were not sufficiently trained to learning platforms like ethuto and personally could not complete many tasks such as moderation of exam documents via ethuto from other universities. Thus, the academics found themselves in the unexpected circumstance of having to make sure they comprehend the teaching and learning approach through remote mode. Understanding internet platforms and other instructional strategies that can benefit students were necessary for the remote mode of teaching. That meant that the academics had to receive training on how to use the different online tools at their disposal.

5.1.2 Subtheme 2: Technological skills to work in the multimodal remote space.

Based on this subtheme, academics were asked about their level of technological skills to work in this multimodal remote space. The findings are shown below.

Some of the academics did not have enough technological skills to work in the multimodal sphere, but could only use Blackboard uploading activities, presenting on BBC which they only learned during COVID19. For academics, those were not enough as there are other technological skills such as Microsoft Teams to interact with students However, due to lack of

skills, the academics were dependent on the few available skills they had then. Only few of the academics knew how to set tests and assignments online and mark online and present lessons on Blackboard. Some of the academics responded that they needed advanced computer skills to be effective in the use of remote mode of teaching. It was also found that despite the challenges experienced by the academics during the work from home, some of the academics had to learn fast to cope with remote teaching and learning due to the fact that some institutions organised training to develop technology skills and capacities of the academics to work online teaching remotely.

6. Discussion

Using the qualitative research methodology with a phenomenological case-study research design, this study was required to determine the level of preparedness of academics for emergency multimodal remote teaching. According to Mohammed *et al.* (2020), emergency remote teaching implies utilizing all of the remote teaching methods available in an emergency situation entails sending curriculum or educational materials that would often be taught physically or through hybrid or blended courses. The majority of academics in the faculties of education in the eight different universities in the Gauteng, Free State, and Eastern Cape provinces were not ready for emergency multimodal remote teaching. It was also found that a significant number of the academics who participated in the research lacked adequate technological skills for emergency multimodal remote teaching. During the interview with the participants, several issues that affected their level of preparedness for emergency multimodal remote teaching were raised. Such issues included the lack of available internet facilities, insufficient data, lack of appropriate computer literacy skills, and lack of a conducive environment for emergency multimodal remote teaching among others. Those challenges affected the level of teaching and learning at various learning institutions in South Africa. Buttressing these findings, Almpanis and Joseph-Richard (2022) found that academics were not prepared to become familiar with digital technology and related pedagogies in a short period for classes to migrate online from the traditional face-to-face. Lee *et al.* (2021) noted that, since academics were forced to learn to use online technologies within a short space of time, they showed signs of discomfort and anxiety. As a result, their enthusiasm to implement remote emergency education was compromised. When Lee *et al.* (2021) compared these findings with those academics who engaged with technologies in a more relaxed condition, the results differed significantly from those who had to learn in an emergency. Motseki, Maluleke and Barkhuizen (2021) found that technophobia, travel restrictions inside and outside of provincial and national borders, accessibility of devices for teaching and learning, online assessment, connectivity to the internet, the cost of data, and the continuation of contact classes were some of the difficulties faced by academics and students. Seetal *et al.* (2021) agree that most educators (university academics and school-based educators) had not received proper training in using technology in the classroom, limiting their readiness to adopt emergency remote teaching. As a result of this, there were high levels of apathy toward using technology for teaching and learning during the lockdown. Besides, it was noted that the weaknesses of online teaching include technological challenges, time management issues, and a lack of readiness for online learning (Dhawan, 2020). These issues, according to Dhawan, may come with a variety of difficulties, including the digital divide, inequality among different groups, and a lack of personal support.

Watermeyer *et al.* (2021) found that the various difficulties that academics faced during the urgent online migration of their practice include increased workload, decreased working conditions, and disturbance of confidence and trust. According to Watermeyer *et al.* (2021), academics' reactions to the pandemic represent a story of trauma, and they contend that academics were wounded by their experiences with the emergency online transition. Lassoued *et al.* (2020) found that under the COVID-19 pandemic, the major barriers and obstacles to achieving quality in emergency remote teaching could be divided into four categories: (a) personal, which relates to self-imposed barriers that signify students' rejection and resistance; (b) pedagogical, which concerns barriers to administering tests, evaluating electronic exams, or obtaining feedback from students; (c) technical barrier, which concerns slow internet speeds, inadequate data security and confidentiality; and (d) organisational and financing problems such as lack of capabilities to communicate remotely and the difficulty of obtaining computers by some students. Additionally, impediments to efficient remote teaching include instructors' negative attitudes and experiences with switching from face-to-face to emergency remote teaching during the pandemic, such as preparedness, confidence, institutional support, access, workload impact, ailments, and affordances (Watermeyer *et al.*, 2021). Due to inadequate planning, design, and development of online instructional programs as a result of the pandemic, the migration process of higher education institutions to online learning is now in doubt (Adedoyin & Soykan, 2020).

Digital technology has undergone a significant change as a result of the COVID-19 pandemic, moving from "an ongoing digitalisation process" to "digitalise now or stop operating", thereby impacting the whole system of higher education significantly (Rof, Bikfalvi & Marques, 2022). Academics were forced to shift from traditional teaching methods to remote instruction, with minimal expertise, as a result of the pandemic (Hlatshwayo *et al.*, 2021). The emergency remote education context had conflicting effects on the educational process, with the majority of the consequences being detrimental to personal adaptability (Oliveira *et al.*, 2021). Sayed *et al.* (2021) reveal that academics did not receive appropriate professional development and psychosocial support to help them negotiate the COVID-19 pandemic's uncertainty and pedagogical expectations.

7. Strength of the research

This research provides a significant contribution to the development of higher education in South Africa, since it has empirically studied the academics' level of preparedness for emergency multimodal remote teaching. Theoretically, the findings of this research have strengthened the tenets of Person-Environment-Occupation Theory which indicate how a person's environment, job, and other factors interact to affect his or her performance. The person domain also encompasses roles, self-concepts, cultural backgrounds, personalities, health, cognition, physical performance, and sensory abilities. In this perspective, the person is a special entity, with a variety of responsibilities that are intimately connected to external influences. The person brings a variety of characteristics, skills, know-how, and experiences to the teaching and learning environment. The environmental domain comprises physical, cultural, institutional, social, and socio-economic environments, while the occupation aspect refers to the array of activities that a person performs in order to maintain, express, and complete himself or herself. The three domains are interdependent and have an impact on one another. The three domains overlap in this model, which dynamically shapes occupational performance and illustrates the degree of connection between the individual, environment,

and occupation. Within the context of this research, the academics are the “persons”; the environment is the “work from home”; while the occupation is the “remote teaching”. Thus, the person aspect (academic) is dependent on the environment, while the environment (work from home) determines the effectiveness of the occupation (remote teaching). These findings have corroborated the tenets of POET in the sense that the WFH that was caused by the COVID-19 pandemic impacted negatively on the academic effectiveness in the teaching and learning engagement.

The practical implication of these findings is that academics will need to be better equipped in the use of multimodal remote teaching in case of a similar pandemic in the future. On the other hand, the policy implication of these findings is that the relevant policymakers will discern from the findings of this research that academics need special training on the use of multimodal remote teaching. This will provide them with an opportunity to map out achievable policies on in-service training of academics for effective use of multimodal remote teaching.

8. Limitations of the findings

The findings of this research may have some limitations in that the Google form mode of the interview was adopted during data collection as a result of COVID-19 restriction on face-to-face contact. The emailed Google form mode of interview adopted in this study may limit the generalisability of the findings of the research to the entire population of faculties of education academics at the sampled universities. Thus, the researchers suggest that further research can be undertaken to replicate this research through the adoption of the face-to-face mode of interview.

9. Conclusion and recommendation

This study explored the level of preparedness of academics for remote teaching in the faculties of education at some sampled South African universities and found that most of the academics at various universities located in the Gauteng, Free State and Eastern Cape provinces who participated in the study were not adequately prepared for the emergency multimodal remote teaching during the COVID-19 pandemic. Thus, the researchers concluded that academics' lack of adequate preparation for the remote teaching during the COVID-19 pandemic had a negative impact on their effective teaching and learning. This implies that the teaching responsibility of the academics was not effectively carried out during the COVID-19 pandemic, especially at the start of the pandemic. This research has revealed the need to conduct proper training for university academics in the use of emergency multimodal remote teaching to face similar pandemics in the future. Thus, it is recommended that the Department of Higher Education and Training (DHET) should design in-service training on the use of emergency multimodal remote teaching for academics specifically those in the Faculty of Education.

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