

## UNIVERSITY LECTURERS' EXPERIENCES WITH TECHNOLOGY INTEGRATION INTO TEACHER EDUCATION POST COVID-19 PANDEMIC

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### Abstract

In this study, technology integration into teacher education post COVID-19 pandemic was explored from the perspectives of lecturers from selected Southern African universities. The study used a qualitative research approach and a multiple case study design. Two Southern African universities, in South Africa and Eswatini, the researchers' places of work, were conveniently chosen to be the research sites in this study. A purposeful sample of lecturers involved in teacher education participated in this study. Data were generated through, open-ended questionnaire completed by nine lecturers, and a focus group discussion with 12 participants, which included lecturers from both institutes. Thematic analysis was used to analyse the data collected from the study's participants. The study's conclusions show that lecturers from both universities experienced a change in instruction delivery compelled by the prevailing COVID-19 pandemic which made the physical environment in universities not suitable for face-to-face but online instruction where technology had to be integrated into teacher education. The study concludes that lecturers experienced a new norm as universities formed policies to ensure that technology is included in teacher education. The study also concluded that lecturers had limited knowledge, pointing to the need for training on the needed knowledge domains to integrate technology into teacher education. The study also concludes that the universities understudy offered some digital gadgets and internet connectivity for lecturers to using, especially while on campus. However, internet access would be limited when lecturers leave the campuses, with institution A failing to provide data for off-campus use while institute B did so, but load-shedding was one of the problems in the nation where institute B is located.

**Keywords:** Lecturer, technology integration, teacher education, university, COVID-19 pandemic.

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### 1. Introduction

The COVID-19 pandemic stalled the globe, in the process forced educational systems to reevaluate the most beneficial pedagogies for instructing and learning in light of the problems with global health that were encountered (Cui, Ma, Wang, Yang, Liu, Kong & Wang, 2023). The COVID-19 pandemic prompted people to conduct more activities from home, including learning (Easterbrook, Doyle, Grozev Kosakowska-Berezecka, Harris & Phalet, 2023). As a result, education systems developed online learning guidelines that were implemented even in higher education institutions in teacher education programmes (Shahzad, Hassan, Aremu, Hussain & Lodhi, 2021). Globally, the educational system has shifted toward e-learning in an effort to mitigate the effects of the COVID-19 pandemic. Mahmood (2021), however, makes the point that universities have to put policies in place to guarantee a smooth transition from face-to-face to online teacher education.

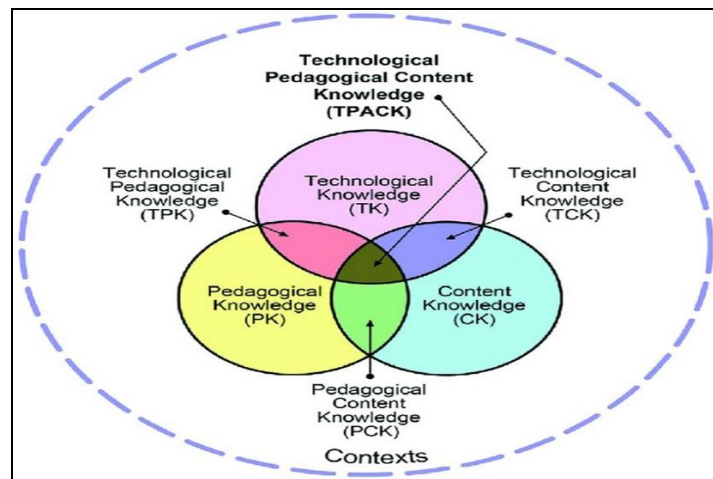
Technology knowledge and competence in its application are seen as two distinct forms of competencies (Instefjord & Munthe, 2017). lecturers in universities may be tech-literate, but, unable to effectively use technology in the classroom (Dinçer, 2018; Alanazy & Alrusaiyes, 2021). It shows that using technology in instructional practises and having technological understanding are two very distinct things. Lecturers must possess all of the knowledge domains for them to use technology in the lectureroom effectively (Ifinedo et al., 2020). Akram, Yingxiu, Al-Adwan and Alkhalifah (2021) point out that lecturers who are not proficient at using technology prefer to spend more time lecturing in lecture halls. The current environment advocates for technology integration into teacher education.

The problem identified was that despite receiving technology training, lecturers in the universities in South Africa and Eswatini often found it difficult to combine their expertise of pedagogy, content, and technology knowledge into teacher education (Siddiqui, Arif, & Hinduja, 2023). The only technological

experience lecturers had was preparing slides and using PowerPoint in lectures (Gunuç & Babacan, 2018). Universities in Southern Africa considered integrating technology into teacher education to be a feasible and perfect solution for continuing education physically away from the university throughout the COVID-19 pandemic (Roy, Babu, Abul Kalam, Yasmin, Zafar & Nath, 2023). Lecturers in the universities were using face-to-face instruction, meaning that for them to make a smooth shift to online instruction, they had to be trained on integrating technology to their instruction (Budianto, Arifani, Wardhono & Poedjiastutie, 2023). The move to a student-centred learning model, in which the student takes the lead in their own learning rather than the lecturer having complete control of the process, was made easier by integrating technology into the teacher education process (Keiler, 2018). In order to ensure that technology is integrated into teacher education even after the COVID-19 pandemic era, it is crucial for universities to provide university lecturers with the necessary knowledge and skills.

This study was informed by the Technological Pedagogical Content Knowledge (TPACK) theory, which describes the kinds of knowledge required for a systemic integration of technology into teacher education (Mishra, 2019). The TPACK theory emphasises the need for lecturers in universities to combine their subject-matter, pedagogical, and technological knowledge as shown in Figure 1 (Budianto, Arifani, Wardhono & Poedjiastutie, 2023).

Figure 1. The technological pedagogical content knowledge (TPACK) framework (Akram, Yingxiu, Al-Adwan & Alkhalifah, 2021).



Despite the fact that it was predicted that pedagogical content knowledge (PCK) would have the greatest impact on lecturers' activities in teacher education, effective teaching depends on well-integrated information from multiple knowledge domains (Şen, Demirdöğen & Öztekin, 2022). Another category of knowledge that has recently emerged and has to be addressed is technological knowledge (Choi, Lee & Yoon, 2023). Further, Eli-Chukwu, Igbokwe, Ifebude, Nmadu, Iguodala, Uma and Akudo (2023) alludes to the fact that it is vital that universities provide continuous training for lecturers in technology integration into teacher education.

## 2. Design

As part of an interpretive research paradigm, the study employed a qualitative research approach and a qualitative phenomenological research design (Hassan, 2023). The characteristics of the phenomenological research design make the design fit for this study. The Phenomenological research design is descriptive, hence it is fit for a study that is interpretive. The researcher aims to describe as accurately as possible the structure of a phenomenon in a phenomenological research design (Sheehan, 2014). Thus, in this study the integration of technology into teacher education in the studied universities was described as given by the research participants using direct quotations from the participants.

Qualitative phenomenological research design aims to uncover what a particular experience means to a group of people and how they experienced it (Zarestky, 2023). This study uncovered the university lecturers' experiences on technology integration into teacher education and described the experiences as given by the research participants. As the qualitative phenomenological research design focuses on the immediate experience, this study described the integration of technology into teacher education post COVID-19 pandemic era which is the current environment in Southern African universities.

The study was conducted in two Southern African universities that the researchers easily selected as their places of employment (Mudavanhu, 2017). The lecturers in the faculties of education were chosen as a purposeful sample for the reason that they are the instructors in teacher education (Tapala, Van Niekerk & Mentz, 2021). A total of 21 participants participated in the data collection process, a focus group discussion with 12 participants, an open-ended questionnaire completed by 9 lecturers who are involved in teacher education (Arving, Wadensten, & Johansson, 2014).

### 3. Objectives

- Determine the university lecturer's experiences with technology integration into teacher education post COVID-19 pandemic.
- Suggest what the universities in Southern Africa may do to sustain the integration of technology into teacher education after the COVID-19 pandemic era.

### 4. Methods

The research methods of this study were open-ended questionnaires, open-ended interviews and a focus group discussion. A well-designed questionnaire comprises questions that are pertinent to the subject matter of the study's research and may include lists, short responses, or in-depth narratives. All purposefully sampled lecturers were sent open-ended questionnaires to complete in order to provide the data necessary to address the research objectives. The individuals who responded favourably to the request to participate in the study were then encouraged to participate in a focus group discussion by the researchers. This worked really well because we were able to get the data we required from the study participants.

In this study, the lecturers who were unable to complete the questionnaire were invited to take part in a focus group discussion with lecturers from the two higher education institutions that were the subject of the study. Six participants from institute A fully participated in the focus group discussion. Focus groups helped us triangulate the data gathering techniques utilised in the study, including virtual interviews, questionnaires, and document analysis. Focus group interviews are conducted to gather data for a study in order for the researcher to more fully comprehend the issue, (Nyumba, Wilson, Derrick & Mukherjee, 2018). In order to get information from the study participants about how they integrate technology pedagogies in teacher education, document analysis was used in this study along with open-ended interviews and open-ended questionnaires.

### 5. Discussion

The results of the study reveal that with the integration of technology into teacher education in both the studied universities, lecturers experienced a shift from the traditional face-to-face teaching as COVID-19 heightened to the use of technology in teacher education. This finding is in line with the views from Shahzad, Hassan, Aremu, Hussain and Lodhi (2021) who reveal that the entire higher education system shifted to e-learning to mitigate the effects of the COVID-19 pandemic. Furthermore, Mahmood (2021) points out that policies were instituted in universities to ensure that technology is integrated into teacher education.

The findings of this study also reveal that the lecturers in the studied institutions through integrating technology in teacher education experienced a shift from an instructor centred to a student-centred type of learning style. This finding is consistent with views from Keiler (2018) who states that student-centred classes in universities have multi-benefits as they make the students active researchers and technology also assists them to connect with other students globally.

The results of this study also revealed that lecturers from both of the institutes under study were receiving training in integrating technology into teacher education. This finding is in line with the views from Budianto, Arifani, Wardhono and Poedjiastutie (2023) who point out that to integrate technology pedagogies in teaching and learning, lecturers have to be trained to develop innovative and imaginative solutions that highlight the three categories of knowledge, technology, content, and pedagogy in teaching as represented in TPACK.

The study also reveals that some lecturers still struggle with integrating technology into their lectures despite their training, to the point where they turn to their peers for help integrating technology into teacher education. This view is reflected by Eli-Chukwu, Igbokwe, Ifebude, Nmadu, Iguodala, Uma and Akudo (2023) who reveal that in training lecturers for effective technology integration, higher education institutions concentrate on professionally developing lecturers to independently apply TPK to their subject areas. Therefore, providing technical knowledge to lecturers in higher education institutes is

not enough as the issue is in having the four domains of knowledge in the TPACK complementing each other in successful integration of technology into teacher education in the studied higher education institutes in Southern Africa.

## 6. Conclusions

The problem is that, despite obtaining technological training, lecturers in South Africa and Eswatini still struggle to integrate their knowledge of pedagogy, content, and technology. Based on the findings of the study, this study concludes that lecturers from both universities experienced a change in instruction delivery compelled by the prevailing COVID-19 pandemic which made the physical environment in universities not suitable for face-to-face but, online instruction where technology had to be integrated into teacher education. The study concludes that lecturers experienced a new norm as universities formed policies to ensure that technology is included into teacher education. The study also concluded that lecturers had limited knowledge, pointing to the need for training on the needed TPACK knowledge domains to integrate technology into teacher education. The study also concludes that the universities understudy offered some digital gadgets and internet connectivity for lecturers to use, especially while on campus. However, internet access would be limited when lecturers leave the campuses, with institution A failing to provide data for off-campus use while institution B did so, but load-shedding was one of the problems in the nation where institution B is located.

## 7. Recommendations

Based on the findings of the study, it is recommended that universities studied in Southern Africa should give their lecturers continual training on how to integrate technology into teacher education. In addition, this study recommends that higher education institutions install enough internet across their buildings and install electrical generators to supply electricity during blackouts. Additionally, the study recommends that the training provided to the lecturers needs to take into account the application of all knowledge domains that would help with the integration of technology pedagogies in teacher education. Similar to this, the universities need to decentralize training to subject areas so that lecturers are knowledgeable about how to include technology pedagogies in their respective subjects.

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