Unveiling challenges with e-learning faced by academic staff at a University of Technology after COVID-19 pandemic in South Africa

Radiakga Thabang Molokomme

(a) Faculty of Human Sciences, Department of Legal Science, Vaal University of Technology, Private Bag X021, Andries Potgieter Blvd Vanderbijlpark 1911, South Africa

ABSTRACT

The global shift from traditional face-to-face learning to e-learning, spurred by the COVID-19 pandemic, has significantly transformed higher education (HE) landscapes. Many institutions in developing countries, unprepared for this shift, now find e-learning integral to the educational process. This study explores challenges faced by academic staff at a South African University of Technology (UoT) post-COVID-19. Utilising a phenomenological qualitative research approach, insights were gathered from academic staff through semi-structured interviews. Key challenges identified include insufficient infrastructure, limited training, technological proficiency gaps, student engagement issues, and concerns about academic dishonesty. Practical recommendations encompass infrastructure enhancement, digital training, blended learning strategies, improved student engagement, and measures to ensure academic integrity. These adaptable suggestions provide insights for institutions seeking to enhance e-learning environments, contributing to improved teaching and learning (T&L) outcomes in an evolving educational landscape. It was further recommended that future studies can explore long-term intervention effects, conduct comparative institution studies, and delve into innovative pedagogical approaches.

Keywords: E-learning, Traditional Learning, Blended Learning, Covid-19, Higher Education, University of Technology, Connectivity.

JEL Classification: I23

Introduction

The coronavirus disease of 2019 (COVID-19), as a worldwide public health catastrophe, has had a devastating impact on people, economies, education and food security all around the world, regardless of country borders (Motseki, Maluleke & Barkhuizen, 2021:321). According to Agasisti and Soncin (2021:88), higher education (HE) is one of the most affected industries. Higher education institutions (HEIs) were forced to close completely after face-to-face activities were suspended to prevent the virus from spreading among their staff and students (Mpungose, 2020:2). This has resulted in the transition from traditional face-to-face learning to electronic-learning (e-learning) (Mpungose, 2020:2).

Nagy (2005:85) defines e-learning as referring to any type of delivery for teaching and learning T&L that relies on various information communication technologies (ICTs). E-learning can have a variety of advantages and disadvantages. One advantage is that academic staff members are able to work from home and conduct classes in the comfort of their homes (Bhat, 2020). Disadvantages include distractions when conducting classes online and less personal interaction between lecturers and students (Bhat, 2020).

During the COVID-19 lockdown period, HEIs continued to provide education through the use of digital media, e-learning platforms and video conferencing technology (Mathivanan, Jayagopal, Ahmed, Manivannan, Kumar, Raja, Dhairinya & Prasad 2021:3). As a result, e-learning has become an essential part of the educational process (Mpungose, 2020:2). With that said, numerous HEIs were confronted with e-learning for the first time, which resulted in a variety of challenges (Bhat 2020). Examples of such challenges include but are not limited to lack of training and knowledge of technology and the use of e-learning platforms, limited e-learning
resources (e.g., computers and internet access for academic staff members), limited finances to purchase e-learning resources and limited time to organise and adjust to the new educational landscape (Bhat 2020). These challenges were especially faced by traditional classroom HEIs in underdeveloped and developing countries, such as South Africa (SA), Botswana, Zimbabwe and Mozambique (Maatuk, Elberkawi, Aljawarneh, Rashaideh & Alharbi, 2022; Mulugeta, 2021:21; Basak, Wotto & Belanger, 2017:88).

Today, post-COVID-19, many HEIs in SA are still using e-learning platforms because of the COVID-19 pandemic and its after-effects (Donald, 2022:13). However, besides the challenges, there are many factors impacting the successful implementation of e-learning in SA (Maphalala & Adigun, 2021:2), such as an ongoing period of widespread national blackouts of electricity supply (loadshedding), limited access to the internet, living environment, poor network connectivity, lack of resources and not being adept in the use of computers (Mushtaque, Rizwan, Dasti, Ahmad & Mushtaq, 2021:21).

Previous studies have been conducted on the COVID-19 pandemic and e-learning challenges in higher education (HE) (see Table 1.1). However, these studies were conducted in other countries such as Ethiopia, Australia, Sweden, Saudi Arabia and Libya (Almaia, H-Al Khasawneh, & Althunibat, 2020:5261; Donald 2022:13; Iatridis, 2022:1-2; Lim, 2021:2; Maatuk, Elberkawi, Aljawarneh, Rashaideh & Alharbi, 2022:21; Mulugeta, 2021:2). Studies that were conducted in SA focused on traditional HEIs and not universities of technology (UoTs) (Nzala, 2021:2; Pashaliev, 2022: ii). Other studies that were conducted in SA focused on the challenges faced by students and not academic staff members. From this, it can be seen that limited research has been done on the challenges with e-learning post-COVID-19, specifically at a UoT in SA.

Therefore, the purpose of this study is to explore the challenges experienced by academic staff members with e-learning at a UoT post-COVID-19 in SA. The importance of this study is two-faced, firstly this study will help in understanding the challenges faced with e-learning by staff post-COVID-19 at a UoT in SA. Secondly, this study will help in filling the gaps in literature, specifically from the perspective of a developing country. Thus, the question that needs to be addressed is what are the challenges with e-learning faced by academic staff member’s post-COVID-19 at a UoT in SA?

Table 1: Research on the COVID-19 Pandemic and E-Learning Challenges in Higher Education

<table>
<thead>
<tr>
<th>Author/s</th>
<th>Country</th>
<th>Name of University</th>
<th>Goal of research</th>
<th>Research approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mulugeta (2021)</td>
<td>Ethiopia</td>
<td>University of South Africa (UNISA)</td>
<td>Explore students’ experiences regarding the use of e-learning and the challenges at an Ethiopian HEI.</td>
<td>Mixed-Method</td>
</tr>
<tr>
<td>Lim (2021)</td>
<td>Australia</td>
<td>Singapore University</td>
<td>Investigate the efficacy and challenges with e-learning in a Singapore University.</td>
<td>Qualitative</td>
</tr>
<tr>
<td>Pashaliev (2022)</td>
<td>SA</td>
<td>Stellenbosch University</td>
<td>To gain a better understanding of what online learning was for different HEI facilitators who went through the crucible of adopting online learning due to COVID-19.</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Ja’ashan (2020)</td>
<td>Saudi Arabia</td>
<td>University of Bisha</td>
<td>Determine the difficulties students have when utilising an online learning system to learn English at the University of Bisha.</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Nzala (2021)</td>
<td>SA</td>
<td>University of Cape Town (UCT)</td>
<td>Explore and understand the UCT student’s perception and lived experience of emergency remote T&amp;L during COVID-19.</td>
<td>Mixed-Method</td>
</tr>
<tr>
<td>Iatridis (2022)</td>
<td>Sweden</td>
<td>Linnaeus University</td>
<td>Investigate the reviews and opinions of lecturers regarding the challenges and the impact of the introduction of e-learning during COVID-19.</td>
<td>Qualitative</td>
</tr>
<tr>
<td>Mahyoob (2021)</td>
<td>Saudi Arabia</td>
<td>Taibah University, University of Hail and AlBaha University</td>
<td>To explore the students’ attitudes towards online learning effectiveness using the Blackboard (BB) platform in three Saudi public universities during the COVID-19 pandemic.</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Maatuk, Elberkawi, Adawarneh, Rashaideh and Alharbi (2022)</td>
<td>Libya</td>
<td>University of Benghazi</td>
<td>To further explore the potential challenges facing learning activities. Students and instructors’ perspectives on using and implementing e-learning systems in a public university during the COVID-19 pandemic.</td>
<td>Quantitative</td>
</tr>
</tbody>
</table>
Literature Review

Empirical Literature

E-learning has grown into an essential method of T&L in HE, with many HEIs following blended and e-learning approaches (Michael & Murphy, 2020:163). The COVID-19 pandemic has forced many HEIs to implement this form of education in their T&L model (Donald, 2022:13). However, not all HEIs are equipped to offer e-learning successfully. Mathivanan et al. (2021:3) and Bhat (2020) stress that many HEIs were forced to transition to e-learning and they were not well resourced nor ready to implement e-learning for T&L, which resulted in many HEIs facing challenges with e-learning, specifically in SA. This has resulted in many challenges that both staff and students are facing, which makes it difficult for them to succeed in e-learning. Therefore, it is necessary to explore the challenges, explain why it is important to address these challenges and identify possible strategies that can be used to address the challenges. This can assist with the successful implementation of e-learning in HEIs, resulting in higher pass rates and increased student output into the global market (Almendingen, Morseth, Gjølstad, Brevik & Torris, 2021:1; Churi et al. 2021:59).

E-Learning in Higher Education

The traditional teaching process has undergone significant modifications as a result of the development of ICT as well as the usage of the internet as a new method of instruction (Arkorful & Abaidoo, 2015:31). Using ICTs for education leads to social transformation and improves the skills needed for a country (Bagarukayo & Kalema, 2015:169). Universities can remain competitive by using innovative technologies in T&L to improve the quality of T&L activities while also attracting new students (Salloum, Alhamd, Al-Emran, Monem & Shaalan, 2019:128446). The SA National plan for HE emphasises that university activities develop an information society, through technology use, for knowledge advancement to improve education and support the new education system (Bagarukayo & Kalema, 2015:169). Therefore, there was a need for integration of ICTs in South African universities to compete globally, be innovative and address the learning styles and preferences of digital natives longing to learn in an active, authentic learning environment (Bagarukayo & Kalema, 2015:169).

E-Learning Before, During and Post-Covid-19

Before COVID-19, e-learning was implemented in many HEIs, particularly in developed countries and normally in short courses and distance courses (Queiros & De Villiers, 2016:165). E-learning was also implemented in some HEIs such as UNISA and some private HEIs such as STADIO, which was known as the Southern Business School, which targeted to increase its online implementation (Queiros & De Villiers, 2016:165; BusinessTech 2020). It is believed that UNISA is in a prime position to take the lead in expanding underprivileged groups’ access to HE and to assist the development of high-level capacities outside of SA, particularly on the continent (Department of Higher Education and Training [DHET] 2017:2). Although these HEIs were known for offering T&L through the e-learning model, lecturers were encountering challenges with e-learning before COVID-19 as there were challenges of loadshedding and internet access in SA and they were inept in the use of technology (Majola & Mudau, 2022:275-276; Queiros & De Villiers, 2016:166).

According to Mathivanan et al (2021:3), e-learning was forcefuly implemented in all South African HEIs due to the restrictions that came with the COVID-19 pandemic. Many HEIs implemented e-learning and had to face challenges as they were never ready to implement e-learning, specifically in HEIs with class-based T&L (Donald, 2022:13). The shift to a new digital pedagogy required all staff and students to adapt to a new norm quickly, as lockdown restrictions prohibited face-to-face interactions between lecturers and students (Pashaliev, 2022:ii). UNISA, as the largest HEI in Africa, dedicated to distance learning, had the necessary resources to set up structured and long-lasting e-learning (such as computer-based learning, Web-based learning, virtual classrooms and digital collaboration (Leteeka, Leteeka & Pitsoe, 2018:129). Traditional face-to-face HEIs should learn from the COVID-19 pandemic and other HEIs such as UNISA to ensure that similar resources are in place to deal with emergency disruptions and emergency remote learning (Ontong & Mbonambi, 2021:257).

Post-COVID-19, e-learning is becoming increasingly significant in HEIs (Gupta & Gupta, 2020:1320). HEIs have seen a number of changes as a result of the introduction and growth of a variety of e-learning tools, particularly in the areas of educational assistance and delivery (Arkorful & Abaidoo, 2015:31). E-learning has been acknowledged as having the potential to improve people, knowledge, skills and performance in HEIs (Hoq, 2020:458). Additionally, colleges, universities and other HEIs compete to progress their online course capabilities in a rapidly expanding cyber education market (Arkorful & Abaidoo, 2015:31). Traditional face-to-face HEIs should develop and review strategies and policies to ensure long-lasting e-learning takes place (Ontong & Mbonambi, 2021:262). This will also eradicate issues of participation during online classes as students easily become demotivated and give up, due to poor guidance and lack of direct interaction (Lillejord, Borte, Nesje & Ruud, 2018:45). Kalpana (2014:28) added that this implies the importance of designing interactive and hands-on activities that promote self-directed learning and critical thinking in an e-learning environment as in accordance with the Piaget’s theory of constructivism.

Challenges with E-Learning in Higher Education

As mentioned by Maphalala et al. (2021:2), e-learning is becoming increasingly important in today's world. There are a variety of challenges faced and addressing the challenges can help prepare students, lecturers and HEIs for the future of education and for future
pandemics. According to Iftakhar (2016:12), addressing this issue of features on the learning platforms can make e-learning a powerful tool for expanding access to education and promoting lifelong learning for the future. These challenges are discussed next.

**Virtual Classroom Inadequacies**

According to Zhang (2020:36), e-learning technologies and platforms are typically utilised in virtual classrooms to closely resemble traditional face-to-face classrooms. However, there are still several shortcomings in the virtual classroom that prevent it from becoming a substitute for the conventional face-to-face classroom (Zhang, 2020:36). In light of this, Katz and Kedem-Yemini (2021:173) claim that in the virtual classroom, the lecturer cannot fully capture the numerous real-time facial expressions and body language that would have been noticed directly in the face-to-face classroom in terms of absorption of what is being taught. Ofusori (2021) adds that it is impossible to assess each student’s level of engagement, focus and coordination in a virtual classroom, because any student may choose to leave a teaching session in progress. Students can become distracted when working on digital devices (Khanna & Kareem, 2021:1). This can occur when the students are busy with other tasks on their digital device (e.g. working on assignments, playing games or searching the internet for irrelevant information) (Ofusori, 2021) or when the students have to attend to a matter at home (e.g. looking after a sibling and cooking and cleaning) (Khanna & Kareem, 2021:3). Such a distraction can eventually have an impact on students’ academic performance (Ofusori, 2021). Furthermore, Katz and Kedem-Yemini (2021:173) indicate that neither direct social interactions between students nor the promotion of collaborative learning among them are possible in a virtual classroom. There is no assurance that every student who agreed to participate in the virtual classroom and began the lesson with his or her peers would be there until the finish (Ofusori, 2021).

**Academic Honesty and Assessment Authenticity**

Scholars have indicated that e-learning had an impact on the quality of the assessments that were written by students in HEIs (Salloum et al. 2019:128446). As educational programmes nationwide shifted from contact learning to e-learning during the COVID-19 era, international studies have noted an increase in dishonest behaviour in online assessments (Janke, Rudert, Petersen, Fritz & Daumiller 2021:4; Balderas & Caballero-Hernández, 2020:752). According to Du Plessis and Van der Westhuizen (2022:53), e-learning and online assessments can be challenging particularly in ensuring that the work submitted by the students is authentic and their own and also to track weather students are indeed attending class. However, Valizadeh (2022:199) states that students do not cheat in online assessment in most cases and that they cheat when writing face-to-face assessments. Additionally, some of the reasons that caused students in HE to cheating during online assessments was the lack of responsibility, laziness, lack of respect for academic rules and showing no interest or being unwilling to study as well as low self-esteem are the most important internal reasons (Valizadeh, 2022:196). Furthermore, mitigating issues of attendance during online classes and ensuring academic honesty during online assessments should be a priority for HEIs (Rettinger & Gallant, 2022:10). This will assist in eradicating the level of cheating during online assessments and track whether students are indeed attending the online classes (Du Plessis & Van der Westhuizen, 2022:54).

**Digital Devices and Technological Constraints**

According to Ofusori (2021), one of the main issues that could have an impact on both students and lecturers is the requirement for digital devices. Lecturers require digital devices to provide students with successful and efficient learning resources (Sobaieh, Hasanein & Elshaer, 2022:1). In most cases, the HEIs provide these devices to lecturers (Favale, Soro, Trevisan, Drago & Mellia, 2020:108). However, most of the time the HEIs do not provide digital devices to students, resulting in the students having to obtain the digital devices themselves (Favale et al. 2020:108). Unfortunately, most students do not have the funds to purchase these devices, resulting in parents or guardians having to purchase the devices for them (Favale et al. 2020:108). On the other hand, students do not have the knowledge and skills to work with digital devices (Michael & Murphy, 2020:165), while some students have the ability to work with digital devices but are not able to study in an e-learning environment (Bawa, 2016:5). This results in students struggling to attend, follow and complete the necessary assignments to pass (Phan, Van Ho & Nguyen, 2022:253), which leads to a low pass rate of students, as well as students feeling demoralised and unmotivated to finish their studies (Gumant et al. 2021:52).

According to Ahmed and Opoku (2022:389), internet connectivity is one of the main obstacles for both students and lecturers and the success of remote learning is heavily reliant on the accessibility of internet service. In addition, Zhang (2020:36) allude to the fact that this is less of an issue for students who live close to the HEIs, as those HEIs typically make these provisions available. In some cases, the HEI provides a limited amount of data to lecturers and students (Allo, 2020:1). However, this amount is not enough to fulfil the duties of e-learning, resulting in lecturers and students having to purchase their own data for e-learning (Dube, 2020:146). In most cases, the students do not have the funds to purchase data (Dube, 2020:146). With that said, lecturers and students who live in rural areas might not have connectivity, resulting in them having to travel to a different location to have access to the internet for e-learning (Zhong, 2022:2).

**Service Interruptions**

Lecturers and students also face the challenge of service interruption, which includes internet outage and power outage (Oyedotun, 2020:2). A service interruption means that the learning and teaching technology is unable to perform its normal functions for required course activities. Service interruptions can disrupt the learning process and hinder students’ ability to access educational materials and participate in online classes (Bozkurt, Jung, Xiao, Vladimirschi, Schuwer, Egorov, Lambert, Al-Freih, Pete, Olcott & Rodes, 2020:1). This can lead to a loss of valuable instructional time and have a negative impact on academic performance (Kuhfeld, Soland, 2022:196). Furthermore, mitigating issues of attendance during online classes and ensuring academic honesty during online assessments should be a priority for HEIs (Rettinger & Gallant, 2022:10). This will assist in eradicating the level of cheating during online assessments and track whether students are indeed attending the online classes (Du Plessis & Van der Westhuizen, 2022:54).
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Tarasawa, Johnson, Ruzek & Liu, (2020:549). When service interruptions occur, students may experience technical difficulties such as slow internet speeds, lost connectivity, or issues with software or hardware (Falter et al. 2022:9). These difficulties can frustrate students and cause them to lose motivation to engage in the e-learning process (Falter et al. 2022:9). According to Falter et al. (2022:10), service interruptions can also affect communication between lecturers and students. For example, students may miss important announcements or updates related to course materials, assignments, or exams, which can lead to confusion and frustration. Additionally, it is mentioned by Adnan and Anwar (2020:49) that when service interruptions occur, students may not be able to access support services such as tutoring or academic advising. This can hinder their ability to succeed academically and make it more challenging for them to stay on track with their coursework (Adnan & Anwar, 2020:49). Service interruptions can also exacerbate existing inequities in HE, where students who lack access to reliable internet or appropriate technology may be more severely impacted by service interruptions and may struggle to keep up with their coursework (Angelico, Trapani, Manzia, Lombardini, Tisone & Cardillo, 2020:49). Furthermore, in SA, signal gets lost often during loadshedding, which worsens the challenges of e-learning and makes it difficult for an online session to continue without interruptions (Majola & Mdua, 2022:275).

Methodology

The research was exploratory in nature and followed a phenomenological qualitative research approach. Due to the fact that limited research has been done on the challenges with e-learning at a UoT in SA, the research design and approach were deemed optimal (Kumar, 2014:370). It allowed the researcher to explore, understand and describe these challenges in-depth (Konur & Akyol, 2017:2111). It allows the researcher to contribute to the existing body of knowledge that may inform future research (Creswell, 2013:300).

Target Population

According to Guest (2014:216), a population is the entire set of individuals or things of interest that the researcher wants to assess. While seeking specific participants, namely academic staff members who transitioned from traditional method of T&L to e-learning, the potential for subjective bias to emerge was acknowledged (Cassim, 2021:136). To mitigate this risk, the participants possessed similar characteristics (worked at a UoT before the implementation of e-learning) and were subjected to the same replicable data collection procedures to ensure that no prejudice would occur (Bryman, 2012:188). Therefore, the population for this research included academic staff members form a UoT in Gauteng, SA. The UoT employed an average of 540 academic staff between the years 2013 and 2018. The UoT enrolled an average of 19 524 students between the years 2013 and 2018 across four faculties: Human Sciences, Applied and Computer Sciences, Management Sciences, and Engineering and Technology (Vaal University of Technology [VUT], 2020:4-5).

Sampling

According to Kumar (2015:164), sampling is the process of selecting a few individuals from a larger group to serve as the foundation for estimating or predicting the prevalence of an unknown piece of information. The research followed a non-probability sampling method, including purposive sampling. Purposive or judgment sampling is where it is deemed appropriate to select a population based on the knowledge and the purpose of the study (Etikan, Musa & Alkassim, 2016:2-3). The planned sample size for this research was 12 academic staff members (three from each faculty). This is supported by Creswell and Poth (2016:216), who state that the sample sizes for phenomenological investigations should range from 10 to 20 participants in order to achieve data saturation. Therefore, the researcher deemed it optimal to interview 12 participants in order to reach data saturation. Data saturation was achieved at participant 10. The researcher, however, continued data collection to reach the planned sample size. This was done in order to strengthen the data and to ensure that there were an even number of staff from all four faculties.

Data Collection

According to Kabir (2016:201), data collection in research is the process of applying the measuring instrument to the sample or cases chosen for the research. Permission to conduct the study at the UoT was obtained. Afterwards, the researcher applied for a gatekeeper’s letter, which provided permission to conduct the study at the chosen UoT in SA. Data was collected from 08 May 2023 until 30 June 2023 and was done face-to-face at the UoT during operating hours. The interviews with participants were conducted in a private setting (e.g., a staff office or a room in the library). The interviews commenced after the participants had read and signed the information leaflet and informed consent form. The researcher took notes and recorded all the interviews on one audio device (Huawei Nova 9 SE Cell phone) for transcription purposes with the permission of the participants. The interviews took approximately 20 minutes to complete and were conducted in English.

Data Analysis

Thematic analysis was utilised in this study to analyse the data. According to Braun and Clarke (2006:77), thematic analysis is a technique that organises and characterises the data set in detail, clarifies many aspects of the study issue and entails locating, analysing and reporting themes within the data. There are four phases of thematic analysis, which include organising the data, coding the data, establishing themes and interpreting the data (Creswell, 2013:300; Castleberry & Nolen, 2018:810). The interview recordings from the participants were transcribed verbatim separately into a Word document. The interview notes were labelled according to the different participants (example staff member 1). The data from the Word documents were carefully read through and divided into
meaningful analytical codes (inductive open coding and NVivo coding). This required labelling the data segments with distinctive names, symbols, or descriptive words (keywords). This made it easier for the researcher to locate and gather the information related to the subject notion so that the codes could be compared and studied as a whole. Once all of the data had been split and the first coding was finished, the inductive open coding procedure came to an end. A master list was retained for each code created and utilised in the research - NVivo coding - during the inductive open coding procedure. Similar data segments were subjected to a second application of these codes (Creswell & Creswell, 2018:192; Nieuwenhuis, 2019:136). After the data from the different Word documents were coded and saturation is achieved, the different codes were categorised into themes, which the question posed to the respondent reflected. From the data, significant quotations for each sub-theme were extracted. As a result, the researcher was better able to explain the results and stay focused on the significance of each topic and code (Creswell & Creswell, 2018:192; Nieuwenhuis 2019:138). Finally, the data were interpreted into a logical and well-ordered structure that revealed the challenges faced and potential solutions of e-learning at a UoT (Creswell, 2013:300; Castleberry & Nolen, 2018:810).

Findings and Discussion

The findings of this were collected from 12 academic staff members from a UoT in SA. After transcription and coding, four major themes emerged. Below are the demographic profiles and results of academic staff members from UoT in SA.

Academic Staff Members

Table 2 provides a summary of the demographic profile of the academic staff members. As per the target population of the study, the academic staff members are spread across the four faculties of the UoT (Human Sciences, Applied and Computer Science, Management Sciences, and Engineering and Technology). From Table 4.1, it can be seen that there is a noticeable gender imbalance, with more male staff members than female staff members. The ages of the staff were diverse, ranging from their late thirties to their early sixties. The average age of the staff members was 52 years. This reflects a common trend in academia (Alonderiene & Majauskaite, 2016:151). Additionally, they mostly reside in various towns close to the UoT. Furthermore, the academic staff members have been working at the UoT between four and 29 years. The average length of employment at the UoT is 14 years. The academic staff members graduated with their PhDs between three and 20 years ago and the average length of having a PhD is eight years.

Table 2: Demographic Profile of Academic Staff Members

<table>
<thead>
<tr>
<th>ID</th>
<th>Gender</th>
<th>Year of birth</th>
<th>Town of residence</th>
<th>Faculty</th>
<th>Role</th>
<th>Year started working at UoT</th>
<th>PhD graduation year</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS1</td>
<td>Male</td>
<td>1985</td>
<td>Vanderbijlpark</td>
<td>Human Sciences</td>
<td>Senior Lecturer</td>
<td>2019</td>
<td>2020</td>
</tr>
<tr>
<td>AS2</td>
<td>Male</td>
<td>1966</td>
<td>Meyerton</td>
<td>Human Sciences</td>
<td>Head of Department</td>
<td>2015</td>
<td>2017</td>
</tr>
<tr>
<td>AS3</td>
<td>Female</td>
<td>1959</td>
<td>Vanderbijlpark</td>
<td>Human Sciences</td>
<td>Senior Lecturer</td>
<td>2012</td>
<td>2014</td>
</tr>
<tr>
<td>AS5</td>
<td>Female</td>
<td>1985</td>
<td>Parys</td>
<td>Applied and Computer Sciences</td>
<td>Senior Lecturer</td>
<td>2012</td>
<td>2014</td>
</tr>
<tr>
<td>AS7</td>
<td>Female</td>
<td>1960</td>
<td>Vanderbijlpark</td>
<td>Management Sciences</td>
<td>Head of Department</td>
<td>1994</td>
<td>2017</td>
</tr>
<tr>
<td>AS8</td>
<td>Male</td>
<td>1983</td>
<td>Vanderbijlpark</td>
<td>Management Sciences</td>
<td>Lecturer</td>
<td>2017</td>
<td>2019</td>
</tr>
<tr>
<td>AS9</td>
<td>Male</td>
<td>1972</td>
<td>Vanderbijlpark</td>
<td>Management Sciences</td>
<td>Senior Lecturer</td>
<td>2005</td>
<td>2020</td>
</tr>
<tr>
<td>AS10</td>
<td>Male</td>
<td>1968</td>
<td>Vanderbijlpark</td>
<td>Engineering and Technology</td>
<td>Senior Lecturer</td>
<td>2014</td>
<td>2018</td>
</tr>
<tr>
<td>AS11</td>
<td>Male</td>
<td>1969</td>
<td>Vanderbijlpark</td>
<td>Engineering and Technology</td>
<td>Senior Lecturer</td>
<td>2012</td>
<td>2016</td>
</tr>
<tr>
<td>AS12</td>
<td>Female</td>
<td>1973</td>
<td>Vanderbijlpark</td>
<td>Engineering and Technology</td>
<td>Senior Lecturer</td>
<td>2004</td>
<td>2017</td>
</tr>
</tbody>
</table>

Key: AS = Academic staff
Challenges of E-Learning Faced by Academic Staff Members

The following are challenges faced by the academic staff members at the UoT.

![Challenges with e-learning](image)

**Inadequate Equipment and Infrastructure:** The academic staff members at the UoT believe that the devices provided by the UoT are not suitable for e-learning. An academic staff member indicated that “The devices which we use in some cases are old…” (AS9), while another stated that “Academic staff are not supported with functional laptops” (AS5). The issue of lack of data was raised and an academic staff member noted that “We don’t receive data from the institutions” (AS6). The academic staff members also believe that the infrastructure at the UoT and at home create major challenges to deliver e-learning effectively. An academic staff member stated that “We have a problem with the infrastructure here” (AS1), while another stated that “It depends on whether the lecturer is working on campus; electricity is there most of the time except for a few days, network is also there, the biggest challenge comes when a lecturer is working from home” (AS9). Another academic staff member explained that “In my office there is no connection, network coverage is bad, I cannot even answer a cell phone. I rely on the land line and sometimes the land line is not stable in the morning. Sometimes due to connectivity issues … [I] have to postpone classes” (AS4). Additionally, the loadshedding crises in SA are also creating a major challenge for the staff to deliver e-learning effectively. One academic staff member at the UoT indicated that “we have issues of network connection due to loadshedding” (AS2) and another stated that “Eskom and loadshedding has become a reality, when the lights go off then you [cannot teach with] e-learning” (AS4).

**Adaption and Training:** Academic staff have highlighted issues around the difficulty in adapting to digital platforms in which they lack training for online tools. Also, issues of technological barriers arose, where it was mentioned by AS4 that “It is difficult to adapt to these digital platforms.” Some academic staff members highlighted that “Not all lecturers may have the necessary technical skills” (AS10). One academic staff member noted the “Lack of advancement in technology” (AS8), while another academic staff member indicated that some of the lecturers do not want to learn about technology, they prefer the traditional ways of doing things. “The issue of technophobia…. technophobia is something which I see amongst lecturers, some are afraid of technology” (AS2) was also mentioned.

**Students’ Engagement:** Academic staff members highlighted issues regarding student not being engaging in an e-learning environment and it was indicated by AS3 that there is “Poor attendance and poor participation” during e-learning. Additionally, one academic staff member stated that “The classroom dynamics are less interactive” (AS5), while another indicated that “The level of student attendance is low… and you are unable to interact with the students” (AS11). Furthermore, when comparing the face-to-face sessions with the online sessions an academic staff has noted that “Our students did not attend during online classes…. When it was contact [classes] you would monitor attendance but because of the e-learning you just see names on the screen and you do not know whether they are your actual students or they are really in the session or they logged in and left, just for them to be on the register” (AS4).

**Academic Dishonesty:** Academic staff members has expressed thoughts and concerns on various aspects related to academic integrity. They stated challenges in maintaining academic integrity, the prevalence of cheating and the difficulties in verifying the authenticity of assessments in an e-learning environment. An academic staff member stated that “It is easier for students to cheat” (AS5), while AS7 expressed that “Test malpractices due to students that copy and share test questions is one of the issues that we observed in our institution”. Another academic staff member indicated that “Students tend to write in groups or pairs, and this compromise the integrity and quality of the assessment and education” (AS8) and AS2 feels that “there is nothing to prove that the person writing the test is the correct students registered for a particular module…. and students become lazy. Lazy in terms of knowing that their assessment is going to be online” (AS2). Additionally, AS1 indicated that “when it started [e-learning] they didn’t have the tools to detect cheating, so most of the students got very high marks, but they were actually cheating” and it was also noted that “assessments are challenging since the lecturer is limited to the types of questions that could be asked because if you were to ask some questions on an online assessments student will just copy from the textbook or your slides” (AS3). AS4: “There’s also a
bad behaviour when it comes to assessments which we picked up, anyone can connect and write test for the students, so we don’t have that tool that we can use to verify, so your uncle or friend could be writing for you and so forth.” AS6: “When it comes to assessments, we can’t be able to check for genuineness of the tasks.” Furthermore, it was stated that: “Preventing academic misconduct can be more challenging in an e-learning environment” (AS10), as “Those who have resources, they are able to write the assessments with families and tutors/mentors” (AS12). Therefore, academic staff members have indicated the importance of addressing the aforementioned challenges as two academic staff members have stated that “those challenges need to be addressed because we are not going back on the use of technology in HE” (AS2) and also, “to ensure quality education and maximise learning outcomes” (AS10).

Discussion

The findings of this study delve into several critical issues surrounding the implementation of remote learning, shedding light on the multifaceted challenges faced by academic staff. The first concern revolves around the necessity for robust and up-to-date technological infrastructure, including high-speed internet and devices. While Mpungose (2020:6) underscores their importance, Favale et al. (2020:108) present a contrasting view, contending that HEIs in Italy adequately provide internet devices to lecturers. Discrepancies in the literature also emerge regarding the significance of internet connectivity, with Ahmed and Opoku (2022:389) emphasizing its pivotal role, while Zhang (2020:36) suggests that proximity to HEIs diminishes its impact. The additional challenges stemming from institutional support, such as the provision of functional laptops and addressing connectivity issues during load shedding, are highlighted by Majola and Mudau (2022:275), further complicating the landscape of e-learning.

Digital literacy emerges as a significant hurdle, with academic staff grappling with the adaptation to digital platforms and a dearth of training on online tools. Majola and Mudau (2022:276) advocate for continuous training, echoing Dube's (2020:146) call for ongoing efforts to enhance e-learning proficiency. Katz and Kedem-Yemini (2021:173) emphasise the need for comprehensive training covering the use of e-learning platforms, content creation, and remote student support. The presence of technophobia among some lecturers compounds these challenges, emphasising the urgency of addressing the digital skills gap (Pashaliev, 2022:ii). Participation and attendance issues in e-learning sessions are highlighted, with staff citing challenges in interacting with students online. This aligns with existing literature documenting a lack of student participation during online classes, often attributed to demotivation and insufficient guidance (Liljefjord et al. 2018:45). Du Plessis and Van der Westhuizen (2022:53) underscore the difficulty of tracking attendance, echoing the principles of Piaget's constructivism and emphasising the need for interactive activities in e-learning.

Academic dishonesty poses a prevalent concern, with staff expressing difficulties in ensuring assessment integrity in the online environment. The literature reflects varying perspectives, with studies by Janke et al. (2021:4) and Balderas and Caballero-Hernández (2020:752) noting an increase in dishonest behaviour in online assessments. However, Valizadeh (2022:199) suggests that online assessments may not necessarily lead to more cheating than face-to-face assessments. This underscores the intricate challenge of maintaining authenticity in student work and tracking attendance in the online learning landscape (Du Plessis & Van der Westhuizen, 2022:53). In conclusion, the discussion underscores the complexity of remote learning implementation, calling for a nuanced and adaptive approach to address the diverse challenges faced by academic staff.

Conclusions

In conclusion, the examination of e-learning challenges at the University of Technology in South Africa highlights a myriad of obstacles, ranging from equipment deficiencies to academic integrity concerns. These challenges necessitate urgent attention and strategic interventions to enhance the effectiveness and quality of e-learning. The study underscores the importance of substantial improvements in technology infrastructure, targeted training initiatives, academic support mechanisms, and measures to uphold integrity in the academic realm. While the findings are context-specific to this institution, the insights garnered from this research provide a valuable foundation for understanding challenges in the broader context of e-learning, specifically from a UoT point of view.

Responding to these findings, practical recommendations are important for enhancing e-learning practices within HEIs. Therefore, the researcher advocates prioritising infrastructure improvement, ensuring stable electricity supply and robust internet access, alongside providing suitable devices to lecturers. Sustainable energy solutions, such as solar panels and backup generators, should be explored to mitigate power outages. The researcher also recommends that HEIs should establish ongoing training programs on digital literacy and effective online teaching strategies, as it can be crucial for academic staff members. Nurturing a culture of lifelong learning ensures academic staff's adaptability to evolving technologies. Furthermore, the integration of blended learning, combining e-learning and traditional teaching methods, is recommended to address concerns related to student engagement and academic integrity. Embracing these recommendations positions the UoT and potentially other HEIs to navigate a transformative path toward an enhanced e-learning environment, fortifying the foundation for resilient and effective education in our rapidly changing world of technology. It is further recommended that future studies explore long-term intervention effects, conduct comparative institution studies, and delve into innovative pedagogical approaches.
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