BARRIERS TO TRANSITIONING FROM FACE-TO-FACE SCHOOLING TO ONLINE LEARNING AT A SOUTH AFRICAN PRIVATE TERTIARY INSTITUTION

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Abstract

The paper presents the barriers to transitioning from face-to-face schooling to online learning in a private higher education institution within South Africa. First-year students have limited experience with online learning, as they are exposed primarily to face-to-face teaching during their schooling years. Therefore, this study aims to explore the barriers that exist when transitioning from a face-to-face learning environment to an online learning environment. A qualitative interpretive approach was adopted. Twenty-one first-year students were purposively and conveniently sampled to generate the data. The selection criteria included that all modules from the first semester were passed. Students were interviewed in the form of face-to-face focus groups using semi-structured questions. A thematic approach was used to analyse the data from the interviews. The key findings revealed four main themes, technological barriers, social barriers, emotional barriers and learning environment. Limited access to the Internet and digital devices such as computers, laptops or smartphones was identified as technological barriers. Socioeconomic, interpersonal factors and digital literacy emerged as social barriers. Socioeconomic factors include limited access to resources. The interpersonal factors that were experienced included a sense of isolation, communication challenges and disengagement with their peers, lecturers and online learning activities. Students experienced stress and lack of emotional support as emotional barriers. Challenges related to the learning environment are addressed, including the lack of a quiet and conducive space, as well as the absence of human contact in the online learning environment.

This study contributes to the field of technology-integrated teaching and learning. It underscores the need for educational managers and lecturers to increase their awareness of the barriers students face when teaching online. Their consideration in the space will lead to effective teaching and learning and ultimately student success if these barriers are addressed.

Keywords: transition, first-year students, online learning, online teaching, barriers, tertiary education

1. INTRODUCTION

In South Africa, many students who enter tertiary education come from disadvantaged backgrounds with low literacy levels and a lack of technological skills (Bharuthram & Kies, 2013). This affects the learning process

as it is a barrier for students who are expected to learn online at tertiary institutions. The transition from traditional face-to-face schooling to tertiary education represents a significant shift, especially in the context of the evolving educational landscape.

2. LITERATURE

This section delves into the multifaceted aspects of this transition, with a specific focus on online learning in higher education. The acceleration of digital learning, catalysed by the global Covid-19 pandemic in 2020, has not only reshaped the educational paradigm, but has also brought about challenges and opportunities. This exploration covers various dimensions, including the adoption of Learning Management Systems (LMS) and the barriers that exist.

2.1. Transition from Face-to-Face School to Online Learning in Higher Education

In recent times, the shift to online learning has been remarkable and much needed in the educational landscape. The Covid-19 pandemic in 2020 forced South African educational institutions to close their doors for a short period so that the virus could not easily be transmitted (Mhlanga & Moloi, 2020). This led to an increase in online learning so that teaching and learning could continue. Although the Covid-19 pandemic has caused great human suffering throughout the world, it accelerated digital learning as access and deployment of educational technology were improved (Mhlanga & Moloi, 2020). Online learning is beneficial as it allows students and educators to have control over what they learn, where, and when they learn as content is accessible online (Pete & Soko, 2020). Therefore, online learning allows flexibility and engagement with peers. It is therefore important to note that e-learning which takes place using the Internet in the 21st century is important for tertiary education, especially for today's students as digital natives (Prensky, 2001). Face-to-face learning limits student experiences as it excludes students who cannot attend class due to protests or pandemic outbreaks (Mpungose, 2020). Graham et al. (2013) defines blended learning as a combination of face-to-face instruction and the use of digital resources, such as online lectures. Adams et al. (2020) state that many scholars now agree that blended learning has become a normalised part of educational practice in higher education.

2.2. The Adoption of a Learning Management System at the Higher Education Level

Within the transition from face-to-face schooling to online learning in higher education, students are introduced to a Learning Management System (LMS). An LMS is a software support tool that manages academic and administrative tasks of a course, programme, or higher educational institution (Gani, 2013). These academic tasks provide access to course material, informal assessments, the use of pedagogical tools, for example, discussion forums, and online activities that promote engagement between the lecturer and students. Administrative tasks include tracking and monitoring student activities in the LMS, providing immediate feedback to students through online assessments, and communicating important information through announcements.

A study conducted by Al-Busaidi and Al-Shini revealed that the adoption of LMSs in higher education depends on the lecturer's use, as it will have a ripple effect on how students use the system (Al-Busaidi & Al-Shihi, 2010). They claim that lecturers lack skills in teaching and technology. Furthermore, their time is restrictive and therefore they are unable to master the use of an LMS. A recent study conducted by Mpungose (2020) states that choosing what resources to use and learning to offer depends on rationale, time management and goals to be achieved during e-learning. This will help students incorporate physical and online resources to achieve effective e-learning. Mpungose (2020) however, found that the LMS is missing the personal feature for students that will motivate students to have a passion for using online resources.

2.3. Technological Barriers

van Deursen & van Dijk (2019) argue that access to the Internet and technological resources are the main limiting factor in universities from developing countries such as South Africa. The limited infrastructure to provide reliable and affordable Internet services further aggravates the digital divide. The digital divide, as outlined by van Dijk (2017), represents the disparity between students who have access to various forms of information and communication technology (ICT), including the Internet, and those who do not. Students who lack access to ICT tools face challenges with online learning.

2.3.1. Affordability and accessibility to the Internet

According to Czerniewicz (2020), the cost of data in South Africa is expensive. This is a hinderance as they are unable to realise their full potential of e-learning. In addition, students must bear the cost of internet infrastructure such as Wi-Fi routers, mobile phones, laptops and access to data bandwidth which is costly. A

study showed that students preferred to use the nearest local community libraries to access WIFI to complete academic tasks as there was no internet access at home (Hoadley & Jansen, 2014). Addressing the challenges of limited access to the Internet infrastructure requires concerted efforts from governments, private entities, and communities to invest in and develop robust digital infrastructure. This will ensure equitable access for all students to access online learning.

2.3.2. Access to digital devices

Students preferred to use their mobile phones with free network data bandwidth for communicating. As a result, digital literacy skills are minimised, which impacts student academic performance. The World Bank points out that students who can make the best use of online learning are already competent in using technology tools to support online learning (WHO, 2020). Those who have sufficient access to good bandwidth and connected devices can learn effectively.

In principle, to ensure a smooth transition to online learning, it is important to have access to a reliable Internet connection. This will allow information to be accessible and will lead to greater engagement during online lectures.

2.4. Social Barriers

Social barriers refer to the constraints or limitations within a society that prevent individuals, groups, or communities from fully participating in various aspects of social life. These barriers can manifest themselves in various forms. It can affect people according to certain characteristics such as race, gender, socio-economic status, or education. In the context of this study, the social barriers that are relevant are the socio-economic factors, interpersonal barriers and levels of digital literacy.

2.4.1. Socio-economic barriers

The socio-economic barriers discussed in this section emphasise the challenges faced by individuals, groups, or communities due to a combination of social and economic factors. Based on a study in Turkey by Tansel (2002), the impact of family socioeconomic levels on student academic achievement and participation is highlighted. Within the South African context, persistent educational disparities persist, notably marked by divergent access to well-funded educational institutions and resources between students of higher and lower socio-economic status. Higher socio-economic backgrounds afford superior educational facilities and resources, while their counterparts struggle with additional challenges in accessing essential educational resources. Selwyn (2004) identified the digital divide not only as a technological concern, but also as a social, economic, cultural, and political one. Collaboration among various stakeholders is crucial to developing practical and theoretical solutions, particularly in the context of digital learning before, during, and post-pandemic outbreaks (Mpungose, 2020).

2.4.2. Interpersonal factors

Interpersonal factors play a crucial role in shaping the willingness of students to engage in various modes of online learning. The versatility of online education, ranging from blogs to course management systems such as Blackboard, allows students to participate synchronously or asynchronously through chat rooms and online discussion forums. Notably, research by Garnham and Kaleta (2002) suggests that introverted students, who may be reserved in face-to-face settings, tend to participate more actively in the online space. Additionally, Kupczynski et al. (2012) indicate increased student participation in asynchronous environments, where flexibility of posting messages, reading, and reflecting over time contrasts with the limitations of face-to-face interactions. The desire to engage with peers is emphasised and lack thereof can lead to social isolation, highlighting the importance of fostering effective communication in online learning environments.

2.4.3. Digital literacy

Digital literacy emerges as a critical factor. Cilliers (2012) highlights the academic challenges faced by rural high school students, especially when transitioning to universities where computer use is integral. The struggle to adapt to academic tasks that involve computers highlights the limitations in computer skills and knowledge among these students. Mpungose (2020) emphasises the imperative to prepare students for e-learning within South African universities. Therefore, pointing out that educators face challenges in teaching online due to a lack of skills, they are often forced into this mode without adequate preparation or in-service training. The lack of technological proficiency among staff, as identified by Schoepp (2005) and Mulenga and Marbán (2020), constitutes a significant barrier to effective integration of technology into online learning experiences.

2.5. Emotional Barriers

Emotional barriers refer to challenges that arise from an individual's emotions or feelings, which hinders effective communication or interaction with other individuals. These barriers can have an impact on personal relationships, professional interactions, and various aspects of an individual's social life. Addressing emotional barriers can include implementing strategies to create a sense of community, offer support services, and promote digital literacy skills. Additionally, lecturers and the educational institution could create a positive online learning environment by incorporating interactive elements, encouraging collaboration, and providing regular feedback to students. The lack of emotional support and fear faced by first-year students follows.

2.5.1. Lack of emotional support

The lack of emotional support emerges as a significant challenge, particularly for first-year students. According to McGhie (2017), students face various challenges during this transition, including financial assistance, the absence of on-campus accommodation, and the lack of emotional support from their families. Research indicates that home environments were not conducive to learning for several students. Moreover, Sevinc and Gizir (2014) highlight the negative impact of factors like the quality of teaching, relationships with lecturers, loneliness, shyness, homesickness, and a lack of social relationships on campus in the adjustment to university life. Peel (2000)highlights isolation or the perception of isolation as a major problem in this transition. To address these potential barriers, both lecturers and administrators must establish supporting systems that include financial, academic, and emotional needs, even before the start of teaching and learning. The emphasis on lecturer empathy, guidance, and regular feedback becomes crucial in ensuring that students' goals are achieved within the designated time limit. Overall, creating a supportive environment within educational institutions is vital and an integrated approach is recommended that addresses both academic and emotional aspects, particularly for the well-being and success of first-year students.

2.5.2. Fear of online learning

In the face of the transition from face-to-face schooling to an online tertiary learning environment, the fear of online learning is evident, exacerbated by the COVID-19 pandemic. This global crisis induced widespread fear due to the closure of educational institutions, causing increased stress and anxiety among students. The pandemic forced educational institutions to employ various strategies, including the adoption of online teaching and learning. However, this change presented many challenges, including resource availability, changes in teaching and learning strategies, and a shortage of experienced teachers for online education. Despite the pandemic that required the immediate shift to online learning, its relevance persists as students continue to grapple with adapting to this sudden change from face-to-face to online education. Educational institutions are forced to embrace technology and engage students in a different mode of learning. According to Stacey (2001), this poses a substantial challenge in constructing effective sources for engaging students in online learning. The evident stress and lack of motivation among students are attributed to their inability to handle the unexpected change in the mode of teaching and learning, coupled with the lack of psychological support of their peers, which specifically affects less motivated and less engaged learners.

2.6. Learning Environment

In the context of transitioning from face-to-face schooling to an online tertiary learning environment, the learning environment becomes a critical consideration. The higher educational demands of students encompass both the social and academic aspects of university life. Adjusting to higher education involves elements such as social networking, building relationships with new friends, and coping with academic changes and demands, contributing to students' psychosocial development (Salami, 2011). The paragraph underscores that social isolation can result from a lack of direct contact, where face-to-face interactions allow the expression of emotions (Priego & Peralta, 2013). In current times, young adults rely much more on technology to maintain their social bonds and foster a sense of connection with their peers. College students utilise online platforms not only for information exchange and entertainment, but also as a means to engage in social interactions (Sun et al., 2006).

In conclusion, the transition from traditional face-to-face schooling to tertiary education, particularly in the context of online learning, reflects a significant transformation with challenges and opportunities. The rapid acceleration of digital learning, driven by the global COVID-19 pandemic, has reshaped the educational landscape, prompting a closer examination of various dimensions, including the adoption of Learning Management Systems (LMS) and the barriers that exist. The shift to online learning, as required by the pandemic, highlighted the importance and benefits of digital education, providing flexibility and accessibility to students. However, this transition has brought to light barriers such as technological limitations, social

challenges, emotional factors, and considerations related to the learning environment, especially for first-year students. Addressing these barriers requires collaborative efforts, policy changes, and community-based initiatives to ensure equitable access to online learning. As educational institutions continue to navigate this evolving landscape, it becomes crucial to foster a supportive online learning environment, incorporating interactive elements, collaboration, and regular feedback to enhance students' digital literacy skills and overall success.

3. METHODS

This research aimed to evaluate the transition of students from face-to-face learning to online teaching in a private higher education institution. The authors adopted a qualitative interpretivist paradigm. This paradigm allowed the authors to understand the world as it is from the experiences of students who transitioned from face-to–face learning to online teaching.

This study comprises a sample size of twenty-one first-year full-time students. A purposive sampling strategy was adopted as the students were easily accessible to the authors. The sample selection of twenty-one students was from the School of Humanities and Social Sciences. They were selected on the following criteria, which were: (i) must be a first-year School of Humanities and Social Sciences student and (ii) passed all first semester modules. The research site was in a private higher education institution. There are 2400 students enrolled at this institution, and about 800 first-year students registered in 2022. The average first-year class size is between 50 and 80 students.

Students were interviewed using semi-structured questions in a focus group to determine attitudes, behaviours, preferences, and dislikes of students when it comes to online learning (du Plooy-Cilliers et al., 2021). Interviews were conducted with three focus groups. The interviews were recorded in audio through the MS Teams platform and later transcribed. All focus group interviews took place from 27 October to 1 November 2022. A thematic approach was used to analyse the data from the focus groups. The identified themes are discussed in the findings.

Creswell (2012, p. 230) provides guidelines for practising ethics in research that include: 'informing participants of the purpose of the study, refraining from deceptive practices, sharing information with participants, being respectful of the research site, reciprocity, using ethical interview practices, maintaining confidentiality and collaborating with participants.' All Creswell's guidelines were adhered to.

Confidentiality and privacy were maintained as pseudonyms were used to indicate the responses of the respective students. Additionally, participation in this study was voluntary. The authors requested the consent of the students and informed them that they could withdraw from the study at any time if they felt uncomfortable.

4. RESULTS AND DISCUSSIONS

The results revealed four main themes in this study. These are technological, social and emotional barriers when transitioning from face-to-face to online learning. Furthermore, considerations of the learning environment are discussed.

4.1. Technological barriers

During the transition to online learning, access to reliable Wi-Fi and the Internet and hardware limitations were categories that were identified among students. The students expressed several concerns and challenges regarding technology when transitioning to online higher education learning.

4.1.1. Access to reliable Wi-Fi or data

Some students reported difficulties in accessing reliable Wi-Fi or data, which affected their ability to participate in online classes and complete assignments.

> *Participant 5: For me it is the physical barrier, because of the WIFI. It's like my room is far from the router and when I talk to my landlord about it, he says he doesn't have another option, so now I have to come to school to be online at school. (Focus G3: Line 174)*

> *Participant 8: The physical barrier, so I live at the Location, so I have to buy myself data, and sometimes you will find that there is no network. Also, the shop owners struggle to access the network. (Focus G3: Line 186).*

4.1.2. Hardware limitations

Some students reported difficulties in accessing the necessary hardware, such as a computer or a

smartphone, which hindered their ability to participate in online learning. In addition, the students mentioned technology issues, such as not having a microphone on their laptops, which led to difficulty engaging in verbal participation.

> *Participant 5: …I also didn't have a laptop to access. (Focus G3: Line 21).*

> *Participant 2: Oh well, so when I was, I got a new laptop last year, so I didn't know how anything worked. But then my laptop does not have a microphone, so I couldn't participate in classes verbally, and so I had to type everything out and it was a lot of work. (Focus G1: Line 40)*

These technological barriers reflect a major hindrance to transitioning to online higher education learning from face-to-face schooling.

4.2. Social Barriers

During the transition to online learning, the students in the focus group discussed two social barriers. These social barriers are 'communication and engagement' and 'social interaction and loneliness' experienced among students:

4.2.1. Communication and engagement

Students found it challenging to communicate effectively and engage in deep conversations during online lectures. They felt that the absence of body language cues and the reliance on slides made it easy to get distracted and drained their energy. Additionally, one student had challenges related to gender identity, which caused discomfort in engaging in online communication and sharing personal information.

> *Participant 1: So, I often struggled with communication because a lot, because like communication is through body language, and those cues were omitted during online lectures (Focus G1: Line 47)*

> *Participant 3: I did not enjoy talking to people on online lectures. I am transgender and I have a legal name that does not reflect my gender identity, so I try to speak as little as possible online because I didn't want people to know who I was. (Focus G1: Line 149)*

On the other hand, students enjoyed the ease of communication and interaction with peers during online lectures, which facilitated personal connections and even allowed sharing jokes and creating a sense of community.

> *Participant 4: Um, going off what participant 5 said, chatting with others in the lecture was very easy and it help like make personal bonds, so that was quite fun. Also, like sending jokes, and then like the teacher would see, so it was a nice interaction with everyone (Focus G1: Line 144).*

4.2.2. Social interaction and loneliness

Some students felt lonely and discouraged due to the lack of personal connections and the difficulty of making new friends in the online learning environment.

> *Participant 5: In the beginning, I didn't know anyone, and I was really lonely and that was, coz I've always had people around that I knew, it was really discouraging coming to school every day knowing no one. And obviously I would make the effort to talk to people, but it was still difficult (Focus G1: Line 132).*

The above social barriers must be addressed and considered by the lecturer so that effective learning can take place in an online learning environment.

4.3. Emotional Barriers

During the transition to online learning, the students in the focus group discussion mentioned several emotional barriers that they experienced. These emotional barriers were 'flexibility to change', 'stress management', 'expectations vs. reality' and emotional support.

4.3.1. Flexibility to change

Some students reported difficulties adapting to the sudden shift to online learning, which required them to be flexible and adapt to a new mode of education. Students highlighted the adjustment required by both students and teachers to adapt to online learning, especially when high school teachers were not accustomed to using technology.

Participant 1: The emotional barrier is I would get frustrated to the point where I feel like I am not even going to join this online class anymore because I can't find the link and its frustrating, or say for example I am in the session, it would just somehow happen that they place me in a group where people are not active, so I would just go out and I would not participate because, I was just like, why would you not answer when you know this is group work? (Focus G3: Line 154).

Participant 6: I feel like high school teachers especially are of older generations, so they are not accustomed to using technology much (Focus G2: Line 132).

4.3.2. Stress management

Many students mentioned experiencing stress related to various aspects of online learning, such as technical difficulties, feeling overwhelmed by the online environment, and the pressure to perform in a new learning format.

Participant 4: …it's only the emotional barrier, and it's the stress, because I would actually be stressed because what if I don't get something right? (Focus G3: Line 171).

Participant 6: Emotional barrier, stress due to not finding the link, and knowing that the lecturer is sharing important work and of course reconnecting. (Focus G3: Line 177).

4.3.3. Expectations vs. reality

There was a disconnect between the students' initial expectations of online learning and the actual workload and submission timelines they encountered in higher education. This misalignment led to feelings of overwhelmed and unpreparedness.

Participant 1: So, my expectations were that I wouldn't get so much work, like work would be easier, um, I would actually be able to do work on my own, or I wouldn't need assistance from the lecturer, coz in high school you kind of, sort of, do your own thing you know. But when I was already enrolled, I found out there is so much work, and it needs time and the work is like closer, so you have closer submission dates, whereas I thought that maybe I would only submit one thing in one month, then another thing the other month, but the submission dates are so close up, so, ja, that was my only problem. (Focus G3: Line 211).

4.3.4. Emotional support

Some students did not receive support from their families, as they were not familiar with online learning and did not understand the challenges faced by students.

Participant 1: For me, I did receive the support, but it was not familiar for them so when we were in an online lesson, they would send messages on WhatsApp asking questions, or maybe call or whatever, and I remember there was this one time where my mom came to visit and she is not familiar with online classes, so she would ask questions and I would say, 'I am on an online session, so please stop asking questions' and she would be like, 'Oh, I thought it was something that was recorded and you get to listen to it'. So, ja, I did receive support, but they were not used to it, so they didn't know how to support me. (Focus G3: Line 60).

On the other hand, some students received support from their peers through WhatsApp groups, where they could ask questions and share study tips. Others received support from academic staff who would check their well-being and offer emotional support. Some students also received support from their community, such as older students who offered to help with assignments and questions.

Participant 3: I receive a lot of support from peers (Focus G1: Line 100).

Participant 3: I have to admit that I would sit in the cafeteria to do some of my assignments and things and older students that are maybe doing their honours in psychology that I didn't even know will come up to me and ask me if I need help? So, especially in the first semester that was a big resource for me (Focus G1: Line 108).

Participant 3: Well, we have a WhatsApp group – so when one of us has a struggle with a question we can ask each other, and overall, we just give each other study tips as well (Focus G1: Line 116).

The literature on emotional support indicates that public universities provide limited emotional support, while

in our study, which was conducted at a private institution, students felt well supported by lecturers and their peers. Addressing these emotional barriers is essential to support students' mental health and overall success in the online learning environment.

4.4. Learning Environment

Challenges related to the learning environment, including the lack of a quiet and conducive space for learning, as well as the absence of human contact in the online learning environment, were also prominent themes. These findings stress the importance of creating supportive and inclusive virtual learning environments.

4.4.1. Conducive Learning Environment

Some students reported difficulties in finding a quiet and conducive learning environment, especially when living in student accommodation or with noisy housemates. Students experienced distractions at home by their parents.

> *Participant 1:…because the physical barriers, like you would find that, so I live in student accommodation and would find that I have connection problems because everyone is connected to the WIFI, or you would find that while I am on the online lesson my other housemate is busy in the kitchen, or playing music loudly, or they are busy talking and it is not something that is in my control. (Focus G3: Line 149).*

> *Participant 6: My mother knows about me and online classes, but sometimes she needs me to go to the shop immediately, so then I have to go, and I get most of the work from friends on WhatsApp, like what happened and what did we do in the online (Focus G3: Line 79).*

4.4.2. Human contact

Some students reported difficulties with lack of human contact in the online learning environment, which affected their motivation and engagement.

> *Participant 7: So, when it comes to the online classes I would say that the worst thing is actually engaging with people – you could engage, but not a lot of people would engage – and the fact that you can't see the people also makes it less interesting. So, it's not like you want to be there, you want to do something else rather. And when it comes to the face-to-face it's better because you get to see the people and you get to interact, and talk, and laugh, and whatever else people do. And you are able to ask questions with the lecturer and he will be able to answer you back and all that. So, ja, that's that. (Focus G3: Line 126)*

5. CONCLUSION

The findings revealed that the barriers that exist are interrelated. We have seen this in the literature and in the findings. All relevant stakeholders in the private and public sectors must collaborate to support the educational landscape to bridge the digital divide gap in South Africa by increasing accessibility and ensuring the affordability of technology. Addressing these barriers is crucial to ensure that all students have equal opportunities to participate in online learning and succeed in their academic pursuits.

REFERENCE LIST

Adams, D., Joo, M. T. H., Sumintono, B., & Pei, O. S. (2020). Blended learning engagement in higher education institutions: A differential item functioning analysis of students' backgrounds. Malaysian Journal of Learning and Instruction, 17(1), 133–158. https://doi.org/10.32890/mjli2020.17.1.6

Al-Busaidi, K. A., & Al-Shihi, H. (2010). Instructors' acceptance of learning management systems : A theoretical framework. Communications of the IBIMA, 2010, 1–10. https://doi.org/10.5171/2010.862128

Bharuthram, S., & Kies, C. (2013). Introducing e-learning in a South African higher education institution: Challenges arising from an intervention and possible responses. British Journal of Educational Technology, 44(3), 410–420. https://doi.org/10.1111/j.1467-8535.2012.01307.x

Cilliers, C. B. (2012). Student perception of academic writing skills activities in a traditional programming course. Computers & Education, 58(4), 1028–1041. https://doi.org/10.1016/J.COMPEDU.2011.12.001

Creswell, J. W. (2012). Educational research: Planning, conducting and evaluating quantitative and

qualitative research (4th ed.). Pearson.

Czerniewicz, L. (2020). What we learnt from going online during university shutdowns in South Africa. PhilOnEdTech. https://philonedtech.com/what-we-learnt-from-going-online-during-university-shutdowns-in-south-africa/

du Plooy-Cilliers, F., Davis, C., & Bezuidenhout, R. (2021). Research Matters (2nd ed.). Juta.

Garnham, C., & Kaleta, R. (2002). Introduction to hybrid courses. Teaching with Technology Today, 8(6). Retrieved from http://www.uwsa.edu/ttt/articles/ gamham.htm

Gani, F. (2013). Lecturers' utilisation of institutional learning management systems in an OLD higher education institution in South Africa (Issue April) [Dissertation]. University of South Africa.

Graham, C. R., Woodfield, W., & Harrison, J. B. (2013). A framework for institutional adoption and implementation of blended learning in higher education. Internet and Higher Education, 18, 4–14. https://doi.org/10.1016/j.iheduc.2012.09.003

Hoadley, U., & Jansen, J. (2014). Curriculum: Organizing knowledge for the classroom. Oxford University Press Southern Africa.

Kupczynski, L., Mundy, M. A., Goswami, J., & Meling, V. (2012). Cooperative learning in distance learning: A mixed methods study. International Journal of Instruction, 5(2). www.e-iji.net

McGhie, V. (2017). Entering university studies: identifying enabling factors for a successful transition from school to university. Higher Education, 73(3), 407–422. https://doi.org/10.1007/s10734-016-0100-2

Mhlanga, D., & Moloi, T. (2020). COVID-19 and the digital transformation of education: What are we learning on 4IR in South Africa? Education Sciences, 10(7), 1–11. https://doi.org/10.3390/educsci10070180

Mpungose, C. B. (2020). Emergent transition from face-to-face to online learning in a South African University in the context of the Coronavirus pandemic. Humanities and Social Sciences Communications, 7(1). https://doi.org/10.1057/s41599-020-00603-x

Mulenga, E. M., & Marbán, J. M. (2020). Is Covid-19 the gateway for digital learning in mathematics education? Contemporary Educational Technology, 12(2), 1–11. https://doi.org/10.30935/cedtech/7949

Peel, M. (2000). "Nobody cares": the challenge of isolation in school to university transition. 1–10.

Pete, J., & Soko, J. J. (2020). Preparedness for online learning in the context of Covid-19 in selected Sub-Saharan African countries. Asian Journal of Distance Education, 15(2), 37–47. http://www.asianjde.org

Prensky, M. (2001). Digital natives, digital immigrants. On the Horizon, 9(5), 1–6. https://doi.org/10.1108/10748120110424816

Priego, R. G., & Peralta, A. G. (2013). Engagement factors and Motivation in E-Learning and Blended-Learning Projects. ACM International Conference Proceeding Series, 453–460. https://doi.org/10.1145/2536536.2536606

Salami, S. O. (2011). Psychosocial Predictors of Adjustment Among First-Year College of Education Students. US-China Review, 8(2), 239–248.

Schoepp, K. (2005). Barriers to technology Integration in a technology-rich Environment. Learning and Teaching in Higher Education: Gulf Perspectives, 2(1), 1–24. www.zu.ac.ae/lthe

Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. New Media and Society, 6(3), 341–362. https://doi.org/10.1177/1461444804042519

Sevinc, S., & Gizir, C. A. (2014). Factors Negatively Affecting University Adjustment from the Views of First-Year University Students: The Case of Mersin University. Educational Sciences: Theory & Practice. https://doi.org/10.12738/estp.2014.4.2081

Stacey, E. (2001). Social presence online: Networking learners at a distance. Paper presented at the IFIP World Conference on Computers in Education.

Sun, T., Youn, S., Wu, G., & Kuntaraporn, M. (2006). Online word-of-mouth (or mouse): An exploration of its antecedents and consequences. Journal of Computer-Mediated Communication, 11(4), 1104–1127. https://doi.org/10.1111/j.1083-6101.2006.00310.x

Tansel, A. (2002). Determinants of school attainment of boys and girls in Turkey: individual, household and community factors. Economics of Education Review, 21(5), 455–470. https://doi.org/10.1016/S0272-

7757(01)00028-0

van Deursen, A. J. A. M., & van Dijk, J. A. G. M. (2019). The first-level digital divide shifts from inequalities in physical access to inequalities in material access. New Media and Society, 21(2), 354–375. https://doi.org/10.1177/1461444818797082

van Dijk, J. A. G. M. (2017). Digital Divide: Impact of Access. In The International Encyclopedia of Media Effects (pp. 1–11). Wiley. https://doi.org/10.1002/9781118783764.wbieme0043

WHO. (2020). WHO Director-General's opening remarks at the media briefing on COVID-19-11. https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020