EXPLORING THE BARRIERS TO ONLINE STUDENT LEARNING SUPPORT SERVICES: A REVIEW

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ABSTRACT

Online education has been proven by several scholars as a convenient, flexible, and successful means of teaching and learning. Given the rate of student dropout in online learning, and the outbreak of the Covid-19 pandemic, this study explored the barriers to online students' learning support services. A qualitative research approach was applied, and a non-empirical methodological approach was adopted. In this case, literature sources were reviewed to identify the barriers to online learning support services. One hundred articles related to e-learning were downloaded from Google Scholar, 80 of the articles were deemed irrelevant and discarded, and 20 articles were analyzed and used for this study. During the analysis, multiple barriers to online learning were identified and documented, and related barriers were later grouped into themes. Findings depict that the barriers to online learning as being personal constraints, enabling conditions, social interactions, pedagogy, technology, and motivational issues. The study, therefore, recommends that institutions providing online teaching in South Africa, and in other parts of the world, should ensure that there is adequate communication between students and academics. The study further provides appropriate recommendations to alleviate online learning barriers identified by the study. These institutions must guide and offer comprehensive motivation to ensure each student will learn with utmost enthusiasm.

Keywords: inclusive student services process model; information and communication technology

(ICT); online learning; student support; technology challenges.

INTRODUCTION

Online Student Learning Support Services (OSLSS) has recently been confronted with many challenges, which resulted in a significant increase in student dropouts in higher education institutions (HEIs) (Lemoine et al. 2019). Due to the outbreak of the Covid-19 pandemic, many institutions had to opt out of daily lectures to contain the spread of the virus, and this had a significant negative effect on academic activities and created various barriers for students and facilitators in the unfamiliar online learning environment. This study set out to investigate the barriers encountered in the OSLSS to provide recommendations to improve the retention and performance of students.

Online education has grown in popularity and was adopted as a method of teaching and learning by many international HEIs over the last few years. The introduction of information and communication technology (ICT) and the continuous changes associated with the Fourth Industrial Revolution (4IR) have resulted in the teaching and learning processes undergoing significant modifications. According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO 2019, 6), the learning context has shifted to a more personal framework where learning access has been transformed from five days a week to 24 hours a day, seven days a week; implying that anybody can study, anytime and anywhere, and Morrison (2014,2) opines that teaching approaches have been reformed from the classic "sage on the stage" to a "guide from the side" in constructivist learning. The importance of ICT in education is recognized daily (Iivari, Sharma and Ventä-Olkkonen 2020), with HEIs responding to the universal technological learning trend (Webb, McQuaid and Webster 2021). Oke and Fernandes (2020) affirm that educational conceptual models and technical transformations such as e-learning have paved the way for transformational change in teaching and learning.

OSLSS deals with online teaching and learning but often provides case management assistance to help students cope with life, learning, and other academic challenges. The OSLSS provides students with convenience and flexibility, thus encouraging them to pursue their academic endeavours with rigour (Roslan and Halim 2021). Due to the increased usage of technology in the learning environment, as well as the emergence of Covid-19, online learning has been challenged. This necessitates significant efforts on the part of HEIs to establish more interactive online learning

and support platforms (Pokhrel and Chhetri 2021). Chiu (2021) opines that HEIs should develop an effective platform, as well as play mediating roles in fostering an environment that is conducive to facilitating online learning. As the OSLSS environment is presented with added challenges relating to engagement, access, community, and support, the interaction between academics and students is crucial to assist students to succeed in an online learning environment (Chan, Kam and Wong 2022).

Students, however, face various challenges in the online learning environment because of the open, accessible, and less supported manner of teaching (Misopoulos, Argyropoulou and Tzavara. 2018). Some of these problems can be classified as learning barriers, and these often result in student dropout and failure to achieve personal predetermined goals (Hone and El Said 2016). Learning barriers can be defined as obstacles that restrict or prevent students from achieving their personal goals (Henderikx et al. 2021), and include aspects such as personal constraints, enabling conditions, social interactions, pedagogy, technology, and motivational issues. Also, there exist other barriers such as teaching and institutional barriers which hinder the success of online learning, and these are highlighted in this study. Due to the high dropout rate witnessed in online learning in South Africa, and other technical issues experienced in other parts of the world as gathered from the literature, this study set out to identify barriers encountered in OSLSS and proposed solutions to mitigate some of these barriers in an endeavour to enhance the quality of online education.

THE MEANING AND BARRIERS OF ONLINE STUDENT LEARNING SUPPORT SERVICES (OSLSS)

Student support services, according to Simpson (2016), refers to the student services that must ensure the successful delivery of a remote learning experience. Shikulo and Lekhetho (2020) view OSLSS as a set of activities that direct students on actions to take in an online learning platform. Pratt (2015) points out that student support is an important aspect of a successful learning environment that focuses on what an academic should do to assist students in ways other than formal subject delivery or skills development. Student support encompasses several functions including diagnosing students' difficulties, assisting students with new concepts or ideas, assisting students in gaining a deep understanding of a topic or subject, evaluating various ideas or practices, understanding the limits of knowledge, and above all, encouraging students to succeed (Shikulo and Lekhetho 2020). A personal intervention and regular communication between academics,

students, or a group of students, whether in a face-to-face or online setting, are typical examples of student support. These activities are not usually planned ahead of time but are frequently used to personalise the learning experience so that students' learning challenges may be addressed when they arise (Herman, Pupitasari, and Padmo 2015).

Student support is required in most educational programmes, but especially in distant learning programmes. This assertion was confirmed by Fluke et al. (2014), who stated that providing students with educational opportunities alone will not enhance academic excellence unless student assistance is also provided. It is not enough to get students enrolled in a programme and then fail to provide them with the support they need to turn their participation into an achievement. Sánchez-Elvira Paniagua and Simpson (2018) are concerned that students who are admitted to distance learning programmes but do not receive adequate support from their institutions are likely to fail. Simpson (2016) further asserts that an open admission policy without student support is insufficient to meet the needs of disadvantaged students.

Online student support strategies have been proven to be a useful technique for aiding teaching and learning from a distance. Students who live in rural areas, however, are confronted with barriers in the open and distance learning (ODL) setting (Musingafi et al. 2015). HEIs are tasked with meeting the diverse needs of students by implementing learning technologies that enable achieving common goals such as access, retention, and other academic goals (Zuhairi, Karthikeyan and Priyadarshana, 2020). HEIs in South Africa are expanding to accommodate more undergraduate and postgraduate students, and are increasingly focusing on continual quality improvements (UNESCO 2014). The ability to provide adequate support services will assist in achieving success in online teaching and learning in the South African context.

Gillett-Swan (2017) states that online education faces multiple dimensional issues such as different views of academics and students. Snoussi (2019) investigated the problems experienced when implementing OSLSS and discovered the primary obstacles to include the lack of student self-discipline, inconsistency of the learning management systems, and technical literacy. Alqahtani and Rajkhan (2020) studied these barriers from diverse perspectives and discovered that lack of lecturers' knowledge, lack of confidence, bad experience with e-learning, and lack of confidence were the most significant personal challenges. A lack of e-learning policy, inadequate infrastructure, and educator abilities in the application of e-learning were also discovered as major challenges to successful e-learning (Achmad et al. 2021). Concerning the challenges in

instructional design, Zuhairi et al. (2020) discovered that instructional design and development of online courses, support effective learning engagement and motivation, quality assurance in the design and delivery patterns, and strategies to improve the quality of teaching, learning, and assistance are limitations to student online support services. Other barriers to OSLSS, according to Noesgaard and Ørngreen (2015), include inadequate administrative skills, delays in responses, ineffective communication skills, technological incompetence, and the inability to provide informative feedback.

Open distance and e-learning (ODeL) institutions often accept students from all walks of life, which include young school leavers, business people, employed and unemployed adults, people from rich and poor backgrounds, candidates acquainted with the latest technology and those who are not, individuals from developed areas, and those from rural areas. Included in the barriers faced by the students in an ODeL setting, are infrastructural issues due to diverse geographic locations, and difficulty adapting to emerging technologies (Sari, and Nayır 2020). These difficulties invariably impact students' perceptions of e-learning and increase the number of students' dropouts as e-learning is perceived as challenging by students who are familiar with the traditional method of learning. Negative impressions of e-learning can contribute to poor learning outcomes (Esra and Sevilen 2021), also student frustration can arise especially if courses are poorly designed or if students lack the necessary skills to learn online (Kauffman 2015). Other issues may be practical support given to students in the process of teaching and learning and other technical issues such as facilities used in learning assistance. Student performance and contentment can be aided by appropriate instructional methods, adequate support, course structure, and design (Jaggars and Xu 2016). However, not all online learning is successful, as there are several barriers to overcome. When implementing online learning, HEIs are expected to analyse and control the hurdles that exist.

GENERAL PERSPECTIVES ON ONLINE STUDENT LEARNING SUPPORT SERVICES (OSLSS)

Technology advancements, such as the Internet, have gained a remarkable stake in determining how education is delivered around the world today (Cook and Sonnenberg 2014). While the online mode of teaching and learning delivery has grown in popularity, it is still relatively new to most people. In the 21st century, rapid advancements in ICT have proliferated, thus demanding

educational reforms (Peña-López 2016). Online learning approaches have replaced traditional methods of teaching that are deemed interactive, with various functionalities supporting a virtual classroom to improve teaching and learning. An outstanding advantage of online learning is that it allows people who are unable to access lecture rooms to engage with each other asynchronously (Gautam 2020). It also allows students from many cultures to collaborate and gain from one another's experiences.

South Africa, like many developing countries, is confronted with several challenges when integrating ICT into teaching and learning, particularly in an online student support service dimension (Dzansi and Amedzo 2014). In South Africa, online education is regulated by the ICT policy called "The White Paper on e-Education of 2004," which recognises the importance of integrating ICT into classrooms (Department of Education [DoE], 2004). The policy mandates that all South African educational institutions (from schools to higher learning institutions) integrate ICT into education which should have been completed in 2013. Due to problems such as connectivity, lack of suitable professional progress, and a scarcity of technical resources, this demand could not be met (Ramorola 2018). To assure the attainment of these objectives as stated in the White Paper on e-Education, the government has suggested three phases of ICT implementation in the education system which have not been fully realised.

Despite the reforms in e-education, it is difficult to compare South Africa to other countries, particularly in terms of education (Vandeyar 2015). While the rest of the world was preparing for a 4IR classroom in 2030, South Africa was still attempting to equalise systems in the aftermath of Apartheid (Lambrechts, Sinha and Marwala 2020). The fight for educational equity continues, although the number of under-resourced rural schools is still high, three decades after securing a democratic government. Because online education leads to social transformation, the South African government has ensured that students from various racial, social, and educational backgrounds have fair access to higher education. Since the stages of the White Paper on e-Education were promulgated, there has been a surge in interest in e-learning services and platforms. Correspondingly, pedagogy, curriculum, assessment, and administration have made tremendous improvements in the educational process (Ramorola 2018). As a result, academics could expressly give opportunities for students to learn effectively, which can be accomplished using ICTs. Although e-learning entails the use of technology for teaching, learning, and evaluation, there is no uniform approach toward e-learning in African HEIs and as a result, there is a concern that the

full potential of the e-learning technique is not being fully realised (Mashau and Nyawo 2021).

Maina (2021) affirms that the success of online learning in South Africa unquestionably needs support from higher education administration concerning teaching, assessment, and regulation. Gregorian (2021) affirms that South African universities absorb 18 per cent of the matriculants, of which (47 per cent) (almost half of the 18 per cent) will drop out at the end of their first year; if distance learning institutions are included, the percentage rises to 68 per cent. Gregorian (2021) further states that the main reasons for poor performance and dropping out are the unpreparedness of the students and inadequate support offered by academics. Furthermore, Mpungose (2020) highlights that ODeL students faced several barriers during the Covid-19 pandemic and these include transitioning from face-to-face to e-learning, particularly the prominence of the digital divide was the main impediment to students achieving effective e-learning targets. Customizing the Moodle learning management system to meet the local needs of disadvantaged students is beneficial to achieving e-learning in general. Furthermore, while there may be numerous obstacles that prevent students from realizing the full potential of e-learning such as the inability to provide free data bandwidth and free physical and online resources, Landa, Zhou, and Marongwe (2021) highlight those other barriers as lack of information technology literacy, lack of training and readiness for online learning, inability to access the internet due to lack of network signal and complexity of technical communications. Nonetheless, to fully accomplish the potential of online learning, HEIs should take steps to examine the essential success criteria associated with the e-learning paradigm.

THE PROVISION OF OSLSS IN ODeL HEIs

The provision of OSLSS remains a crucial component of online student success (Al-Adwan 2020), which has been recognised in the past and is still relevant in reducing the rate of dropout (Rotar 2022). The essence of facilitating the student support services is to assist students in performing well in their studies. Rotar (2022) further opines that different support models have emerged, which assisted in providing useful approaches to facilitate online student support services. In the view of Baranczyk and Best (2020), contacting and instructing online students is vital for retention and academic performance. The initial framework to enhance OSLSS centres on the understanding of the distance student's lifestyle, and the interest in distance education as a feasible avenue for study to graduation (Kaplan and Haenlein 2016). In the view of Tait (2000), online student support

services comprise three essential aspects, namely cognitive, affective, and administrative services**.** Cognitive services refer to services that cater to learning (academic) needs, and include tutoring and assessment; affective services include services that assist in resolving social and emotional needs. Furthermore, administrative services include all the services that comprise the administration of the academic learning system.

The Inclusive Student Services Process Model (ISSPM) subsequently emerged to enhance OSLSS. The ISSPM enumerated four stages of effective support services in the online learning cycle. These phases, as identified by Floyd and Casey-Powell (2004), include the student intake phase, student intervention phase, student support phase, student transition phase, and the measurement phase. Table 1 presents the ISSPM model and its focus on the OSLSS.

Table 1: Inclusive Student Services Process Model (ISSPM)

The phase of the learning cycle	**Focus on online student support services**
Intake	Measuring the students' eagerness to learn and attain their goals
Intervention	Supporting and assisting independent and self-directed students
Support	Assisting in obtaining personal developing skills
Transition	Career development and counselling services toward personal and professional shifts
Measurement	Evaluating the effectiveness of the entirety of the programme through feedback

Adapted from Floyd and Cassey-Powell (2004)

The ISSPM model as presented in Table 1 indicates that the online learning cycle should comprise intake, intervention, support, transition, and measurement to ensure the success of students. In the view of Nacu, Martin and Pinkard (2018), the OSLSS environment needs consistent support to ensure students' success. To this effect, academics should be able to provide mentoring and peer support. Other duties as highlighted by Nacu et al. (2018) include the provision of structure, fostering a sense of community, interactions with students, development of meaningful relationships, developing of student skills, feedback, personal advising, and counselling. Furthermore, Nacu et al. (2018) introduced some pedagogical roles that educators could consider in online environments, which are presented in Table 2. These pedagogical roles include audience, encourager, friend, instructor, broker, model, monitor, promoter, and provider of resources.

Table 2: Pedagogical role educators could consider in online environments

Roles of OSLSS	Dimensions
Audience	Ensuring that the online activities of the students are checked
Encourager	Inspiring the students by assigning grades, ratings, and other assessments
Friend	Displaying personal concerns on mentorship, which include social posts and off-topic discussions
Instructor	Teaching the students new skills or concepts, allocating assignments, and providing feedback
Broker	Providing opportunities to connect with learning opportunities
Model	Sharing own creative work
Monitor	Setting standards or suggesting online rules of behaviour such as grammar/plagiarism
Promoter	Showcasing youth participants' work
Provider of resources	Providing resources for learning

Adapted from Nacu *et al.* (2018)

The illustrations in Table 2 indicate that academics' online academic support is deemed critical in helping students resolve problems that may impede the expected learning outcomes. This was confirmed by Noor, Isa and Mazhar (2020), who stated that OSLSS supports the relationship between satisfaction and academic learning motivation. This implies that students who have more options to communicate with their academics and peers are more satisfied with their online learning activities. According to Espasa et al. (2019), online feedback from faculty members to students is more beneficial than text-based feedback. As a result, instructors' involvement and academic support are critical in enhancing students' academic satisfaction and performance. It should be noted that students who are more satisfied with their learning experiences score higher grades. Distance learning support systems have become more proactive, deliberate, and effective in assisting students in succeeding in their studies, especially during the Covid-19 pandemic. Baranczyk and Best (2020) confirm that a support plan would be effective if it were to consider the stage at which assistance is provided. However, there has been little research done to systematically examine specifically the main online learning barriers encountered by students during the duration of their studies. This study assists in categorising the barriers to online learning and identifies the main problems that may retard success in online learning platforms in ODeL Institutions and the recommendations that would be made to enhance OSLSS in the South African context.

TRANSACTIONAL DISTANCE THEORY

The transactional distance theory as espoused by Moore and Kearsly (1996) claim that in distance learning scenarios, the difference between the academic and students might lead to communication gaps and psychological space of potential misunderstandings between their behaviours. In another review by Giossos, Mavroidis and Koutsouba (2016), it was stated that distance learning space creates unique behavioural models between the academic and the student, also known as psychological and communication distance. According to Moore (1997), three variables must be considered in the transaction created between academics and students in distance learning: conversation, structure, and student autonomy. Dialogue encompasses more than two-way communication; it encompasses all forms of contact within the context of clearly stated educational aims, academic cooperation and understanding, and, ultimately, it culminates in solving the learner problems (Giossos et al., 2016).

The transactional distance theory indicates that distance is not just a geographical phenomenon but also a pedagogical one. What matters are the impacts of such geographic isolation on teaching and learning, particularly on student-academic contact, course design, and the organisation of human and technology resources (Moore and Kearsley 2012). Distance separates students and academics if they are not together at the same time and as a result, an artificial communication medium must be introduced to deliver information, while also providing a route for the interaction between them (Moore and Kearsley 1996). Moore's theory emphasises interaction, particularly between the student and the content, the student and academic, the student and other students, and the student-interface interactions (Falloon 2011).

This theory is deemed appropriate to be applied to the entire learning program, not simply the learning materials (Aluko, Hendrikz and Fraser 2011). This theory indicates that it is critical to think about the content as a whole, including the learning outcomes, topic content, assessment criteria and methods, and technological medium, to improve effective learning. To improve learning, the educator should provide feedback after each examination. Researchers had a commonly held idea that the employment of interactive technology with the capability of two-way communication and different representations may result in more interactions for online students, resulting in improved learning results (Karnouskos 2017; Nicolaou, Matsiola and Kalliris 2019; Tham et al. 2018). To an extent, this idea has been objectively supported. Other studies have found a positive link between the level of interaction and satisfaction, depicting that student support is a

great enabler of online distance teaching (Gray and DiLoreto 2016; Henderikx et al. 2021), and this can enhance academic success in South African ODeL institutions if it is equitably applied.

DEMOCRATIC THEORY OF EDUCATION

According to the democratic theory of education, students learn more effectively when they are given an equal opportunity to participate in school governance (Sant 2019). In democratic education, decisions about studying, living and working are made with input from both students and educators (Collins, Hess and Lowery 2019). Considering the above assertion, the practical components of democratic education imply that students are both subjects and subjected, and they make collective decisions about their own public spaces, like schools or classrooms and these can be places where students can practice the deliberative and critical thinking skills necessary for collective decision-making rather than places where political battles are waged (Sant,2019). The democratic classroom, according to Nichols and Coleman (2021) has a shared power and high levels of trust between educators and students, high levels of student agency and voice, and respect for the opinions and contributions of the students. In democratic theory of education, students learn more effectively when they are given equal opportunity to participate and take decisions that relates to achieving their academic pursuits (Wood, Taylor, Atkins and Johnston 2018). The democratic classroom incorporates shared power and high levels of trust between educators and students, high levels of student agency and voice, respect for the opinions and contributions of the students (Collins et al. 2019). In this paper the democratic theory of education amplifies the need for students' voices to be heard in an educational setting. This will facilitate effective learning options since students can then equally take part in decision-making processes, thereby prompting student-centered policies. In this case, the efficiency of the OSLSS is guaranteed since students can confidently report their academic challenges to their educators and find alternative solutions to resolve such issues.

RESEARCH METHODOLOGY

The study adopted a qualitative research approach. A non-empirical methodological approach was applied by reviewing literature sources in an attempt to identify barriers and find possible solutions to the phenomenon under investigation. To resolve the barriers to OSLSS, the study was guided by the following research objectives: To investigate the specific barriers related to OSLSS reported in

previous research, and to make recommendations to improve online learning based on the findings in the previous research.

To provide answers to the research objectives, the researcher downloaded 100 articles from Google Scholar. The keywords used were ‘barriers to online education’, ‘barriers to online teaching and learning’, ‘barriers to online learning support', and 'HEIs'. The articles had to be written in English, fully accessible, and published from 2018 to 2022. The exclusion criteria were articles that were not published within 2018-2022, and articles that do not focus on the barriers to online learning support services. The 100 articles were reviewed and sorted manually, and 20 articles were deemed relevant for this study after due consideration of the inclusion and exclusion criteria.

In this study, descriptive qualitative research methods were applied, and the researcher traced the general online learning perspectives in South Africa and other international countries. The meaning of OSLSS and its barriers were also explored through a non-empirical approach. Several factors were presented as barriers based on the findings from past literature, and these were further grouped into constructs that represented the main barriers to online learning. These constructs were discussed briefly to highlight how these affect OSLSS. To unravel the militating barriers to OSLSS, a meta-analysis was created which highlighted different writers' perspectives on the barriers of online learning. Finally, recommendations were drawn based on the meta-analysis of the study. These were presented as the mitigation factors that can be implemented by the HEIs in South Africa and other countries facing the same challenges to achieve success in their bid to facilitate effective OSLSS.

FINDINGS AND DISCUSSION

This section presents the findings obtained in the study. The descriptive statistics of the articles included in the study were presented, followed by the category of the barriers to OSLSS, and the meta-analysis showing studies identifying barriers to OSLSS. Figure 1 presents the publication dates of the articles included in the study.

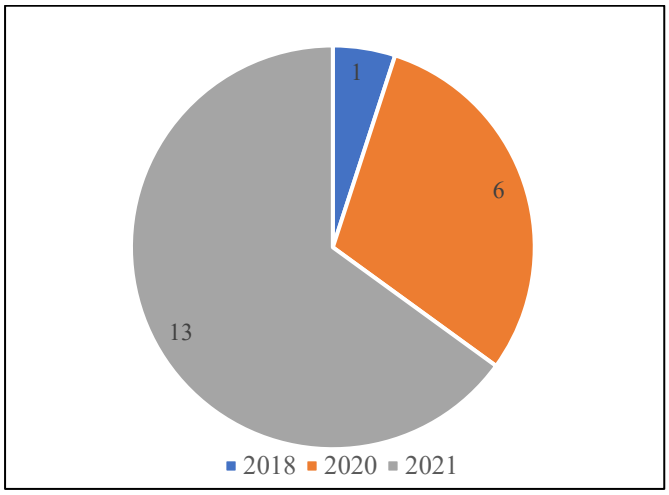

Figure 1: Publication dates of the articles included in the study

According to Figure 1, 13 articles were published in 2021, six were published in 2020, and one was published in 2018. The next Figure presents the number of articles published on each continent.

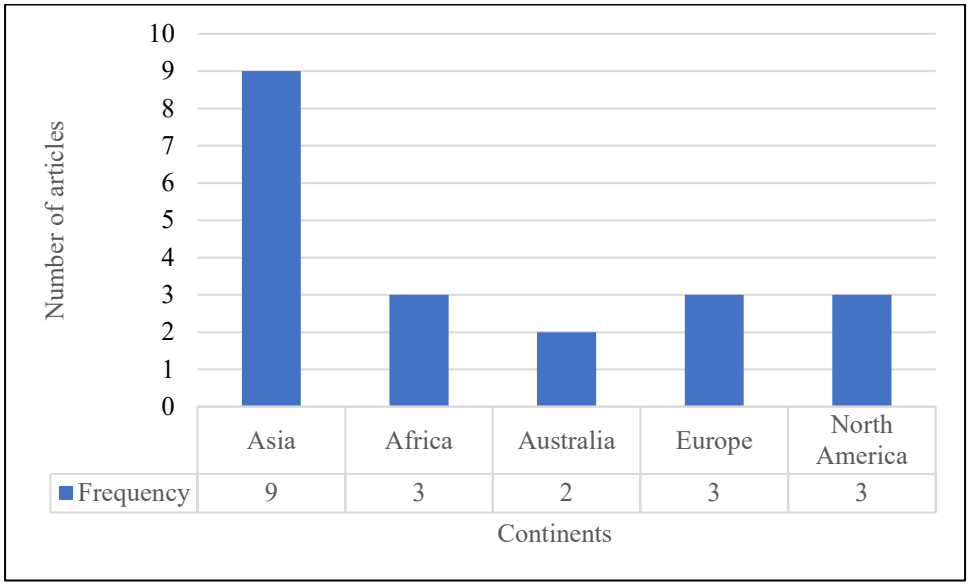

Figure 2: Number of articles published in each continent

It could be observed that more articles included in the study were published in Asia (9), followed by Africa (3), Europe (3), North America (3), and Australia (1).

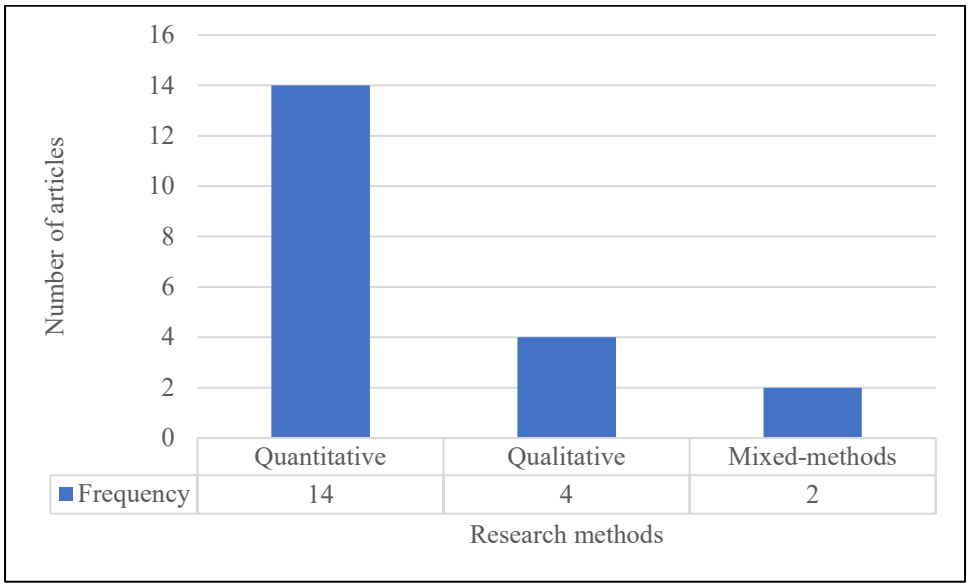

Figure 3: Research methods used in the articles included in the study

According to Figure 3, more articles included in the study adopted a quantitative study (14), qualitative study (4), and mixed methods (2).

Category of barriers to OSLSS

As noted in the research methodology, a literature review was conducted to identify various barriers to OSLSS. These findings were grouped into themes, which represent the barriers encountered in OSLSS. Table 3 presents the research results.

Table 3: Barriers to OSLSS

Barriers	Description of barriers
Personal constraints	Lack of time, lack of academic presence, lack of good academic background before online learning enrolment, lack of technical skills, work, and family-related barriers, lack of technology skills, personal engagements, lack of confidence, financial limitations, distractions at home, visual fatigue, lack of communication skills.
Constraints related to enabling conditions	The learning environment, the e-learning environment, high costs of online learning, inconsistency of learning management systems with some academic programs, availability of knowledgeable academics, and availability of a good mentor.
Social interactions	Lack of interaction with peers, lack of interaction with academics
Pedagogy	Issues with course content, lack of clarity on the best way of sharing knowledge, collaboration with academics as a problem-solving strategy, communication methods
Technology	Technical skills, cost, and access to the internet, technical problems, infrastructural issues, insufficient and unstable internet, lack of computers/laptops, poor internet connection, lack of access to computers, software and tools, communication issues due to Internet.
Motivational issues	Supports for studies, lack of institutional support, lack of motivation toward online learning, lack of learning opportunities, lack of appropriate resources for online or distance education
Feedback, guidance, other	Administrative/instructor issues, procedural factors, lack of training and assistance to use the platforms, the immediacy of feedback, classroom management; lack of support on socio-emotional well-being, and distant education management.

Source: Author's compilation

As can be seen in Table 3, the study sub-divided the online learning barriers into seven categories. These barriers include personal constraints, enabling conditions, social interactions, pedagogy, technology, and motivational issues. Added to this study are feedback, guidance, and others, and this served as a specific contribution to the study. While many authors have paid attention to other barriers to online education, very few have considered feedback, guidance, and others as serious barriers to online education. The following section presents a meta-analysis showing how different authors classified barriers to online student support services. Data in this context were drawn from a broader perspective (South Africa and other countries) to highlight the generic barriers to OSLSS.

Meta-analysis showing studies identifying barriers to OSLSS

Table 4 presents the meta-analysis of the study, where a brief synopsis was conducted to portray the barriers to online education as indicated by each author/s.

Table 4: Meta-analysis showing studies identifying barriers to OSLSS

Source		Title of the study	Findings of the study
1	binti Abd Aziz et al. (2020)	A Study on Barriers Contributing to an Effective Online Learning Among Undergraduates' Students	Attitude and technology skills were seen to be significant barriers of effective online learning among students
2	Bahian et al. (2020)	Barriers to Online Learning amidst Covid-19 Pandemic	The most commonly experienced difficulties were how to perform responsibilities at home, the adaptation of learning styles, and limited space conducive for studying
3	Diab and Elgahsh (2020)	E-learning During COVID-19 Pandemic: Obstacles Faced Nursing Students and Its Effect on Their Attitudes While Applying It	The barriers to e-learning were infrastructure and technology, technical and management support, and instructors' characteristics
4	Fabito, Trillanes and Sarmiento (2020)	Barriers and Challenges of Computing Students in an Online Learning Environment: Insights from One Private University in the Philippines	The difficulty to clarify topics or discussions with the lecturers, the lack of study or working area, and the lack of a good Internet connection.
5	Octaberlina and Muslimin (2020)	EFL Students Perspective towards Online Learning Barriers and Alternatives Using Moodle/Google Classroom during COVID-19	Slow internet connection, and physical condition of the learner.
6	Simamora *et al*. (2020)	The Challenges of Online Learning during the COVID-19 Pandemic: An Essay Analysis of Performing Arts Education Students	Five barriers were discovered such as learning styles and culture, pedagogical to e-learning, technology, technical training, and time management challenges
7	Zalat, Hamed and Bolbol (2021)	The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff	The barriers to e-learning were insufficient/ unstable internet connectivity, inadequate computer labs, lack of computers/ laptops, and technical problems.
8	Henderikx et al. (2021)	Making Barriers to Learning in MOOCs Visible. A Factor Analytical Approach	Barriers discovered were social interactions, academic skills, content-related issues, technical skills and problems, situational issues, and individual motivation**.**
9	Aboagye, Yawson, Appiah et al. (2021)	COVID-19 and E-Learning: The Challenges of Students in Tertiary Institutions	Social issues and lecturer issues were significant factors that pose barriers to online learning
10	Achmad et al.(2021)	Perceived Barriers in Online Learning among Nursing Students during the COVID-19 Pandemic in Indonesia	High costs for online learning, poor internet connection, lack of motivation toward online learning, lack of skill in using the online learning platforms, and lack of training and assistance to use the platforms
11	Alshwiah (2021)	Barriers to online learning: Adjusting to the 'new normal in the time of covid-19	Curriculum barriers, teaching process, the learning environment, and social barriers.
12	Baticulon et al. (2021)	Barriers to Online Learning in the Time of COVID-19: A National Survey of Medical Students in the Philippines	Barriers were classified under five categories: technological, individual, domestic, institutional, and community barriers.
13	Van and Thi (2021)	Student barriers to prospects of online learning In Vietnam in the context of covid-19 pandemic	Learner motivation, cost and access to the Internet, and social interaction are the barriers to e-learning.

Source		Title of the study	Findings of the study
14	Doyumgaç, Tanhan and Kiymaz (2021)	Understanding the Most Important Facilitators and Barriers for Online Education during COVID-19 through Online Photovoice Methodology	The five most reported barriers were lack of technological resources, internet, appropriate learning environments, learning opportunities, appropriate resources for online or distance education, and interaction
15	King, Pegrum and Forsey (2018).	MOOCs and OER in the Global South: Problems and Potential	Barriers to e-learning are access to the Internet, participant literacies, online pedagogies the context of the content, and the flow of knowledge between North and South.
16	Kaur et al. (2021)	Assessment of barriers and motivators to online learning among medical undergraduates of Punjab	Major among them was lack of personal interaction with academics, distractions at home, technology failure, limited access to the Internet, visual fatigue, and increased workload.
17	Tawfik et al. (2021)	First and Second Order Barriers to Teaching in K-12 Online Learning	Economic conditions, anxiety during online learning, thinking and planning, risk of user data security, lack of interactions, and learner ability.
18	Anastasakis, Triantafyllou and Petridis (2021)	Undergraduates' Barriers to Online Learning During the Pandemic in Greece	The barriers are caused by their lecturers, internet connection issues during an online lecture and the perceived limited social interactions that synchronous environments can afford.
19	Haynes (2018)	Identifying and Removing Barriers How Campus Partners Cultivate Diverse Online Learning Environments	Three barriers during online learning include unfamiliarity with e-learning, slow internet connection, and physical condition.
20	Turnbull, Chugh and Luck (2021)	Transitioning to E-Learning during the COVID-19 pandemic: How have Higher	Barriers are synchronous/asynchronous learning tool integration, access to technology, faculty, and student online competence, academic dishonesty, and privacy and confidentiality.

Source: Author's compilation

Table 4 presents several findings on the barriers to online learning support services. These barriers were grouped into seven themes, which include personal constraints, enabling conditions, social interactions, pedagogy, technology, motivational issues, feedback, guidance, and others. Table 4 reveals that technology is one of the most contributing barriers to online learning. These findings were also highlighted by almost all the authors cited in the meta-analysis in Table 4. Furthermore, Achmad et al. (2021) highlights those technological issues are the most reported barriers to online education. This is followed by personal constraints. While this reflects the daily issues that distract the student from learning, Snoussi (2019) affirms that HEIs should ensure that students are always encouraged by the support units to improve learning. Enabling conditions, motivational issues, pedagogy, and social interactions are also very paramount to improving the online learning platform. Enabling conditions are paramount in all types of online learning, but it is deemed more important that Institutional management must work hard to establish and maintain student

engagement to enhance learning opportunities (Roddy et al. 2017). Although pedagogical approaches improve student competencies and learning modalities, Aboagye, Yawson and Appiah. (2021) confirm that pedagogies also pose barriers to online learning.

RECOMMENDATIONS TO MITIGATE THE BARRIERS TO OSLSS

The following recommendations are proposed to the ODeL institutions in South African Higher Education:

Personal constraints: Due to the distractions from family or other constraints, the institutional management should ensure that students are in a good psychological space to study. This should be done by encouraging the students through a mix of communication options to ensure that they stay on track to study.

Enabling conditions: This refers to the level of conduciveness of the students' conditions and their environments. The study recommends that the institutional management should ensure the capacity of the student, and also the circumstances surrounding the student before offering admission. Also, the institutions concerned should always provide financial aid and other assistance to avoid student dropout.

Social interactions: Social interactions on an online learning platform should be adequately facilitated through a mix of communication options to enhance teaching and learning. The institutional management should impose social interactions between academics and students or student-to-student interactions through various communication channels.

Pedagogy: Real-world scenarios and problem-solving activities should be applied in effective teaching and learning. The use of appropriate pedagogies can provide students with fresh ways to apply skills and a deeper understanding of how knowledge applies to their lives outside the classroom. Hence, the study recommends that academics should employ satisfactory pedagogies when teaching to ensure that students understand the study contents adequately.

Technology: As noted in the study, technological issues are considered a serious barrier to online learning platforms. Institutions must train students in computer soft skills to be acquainted with the learning modalities. Also, learning aids such as laptops and modems with high functionality should be given at subsidised rates to the students to ensure that they remain connected to enhance

learning.

Motivational issues: Institutional management should always ensure that students are motivated to learn. This could be done through the provision of financial bursaries, appropriate learning resources, moral support, and other support for studies.

Feedback, guidance and others: This serves as the specific contribution of the study. The study recommends that institutional management should provide comprehensive orientation services to ensure that students are properly informed and connected to ongoing support services. Through guidance and communication, the motivation to study online would be strengthened. Technical support and online guidance should be provided to deal with urgent matters that may arise. To enable online learning in the future, efforts must be made to create, train, and expand infrastructure facilities to accommodate students. Finally, there should be the immediacy of feedback, classroom management, support for socio-emotional well-being, and general management of the program content.

CONCLUSION

The Covid-19 pandemic has increased the use of the online learning environment to support students to achieve their academic goals. The purpose of this study was to identify the barriers to OSLSS and to recommend measures to improve student support for teaching and learning in an online environment. It could be deduced from the study that the online learning setting has contributed to facilitating learning. The findings from the study revealed that challenges are generally known as barriers and these impede the success of online education and other support services. The literature review conducted in the study revealed that the barriers to online learning include personal constraints, enabling conditions, social interactions, pedagogy, technology, motivational issues, feedback, guidance, and others. Furthermore, the barriers to online learning could be narrowed to three-dimensional phases which include student, lecturer, and institutional barriers. The study concludes that focusing on social relationships and community building, and enhancing technological complexities in the online space would ensure the best online learning outcomes. As a result, some of the student concerns and challenges related to external delivery modes may be alleviated, and students may benefit from the online environment's teaching and learning methodologies. Institutions should always share reflective assessment and delivery experiences with others, as it is the key aspect to improving student learning experiences and

building strong communities of practice. To ensure community of practice, adequate communication must be clear (understandable), concise (to the point without being ambiguous), concrete (incorporating examples), correct (informative and grammatically correct), coherent (presented in a sequence), complete (adequate information) and courteous (using a professional tone). The study opines that there should be consistent communication between students and the institution to ensure that they are always ready and motivated to work according to the required pace.

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