




## The Role of Technology in Enhancing Business Studies Pre-service Teachers' Self-Directed Learning

Nduduzo Brian Gcabashe<sup>1\*</sup> 

<sup>1</sup> Department of Curriculum and Instructional Studies, University of South Africa, Pretoria, South Africa  
Correspondence: Nduduzo Brian Gcabashe, Department of Curriculum and Instructional Studies,  
University of South Africa, Pretoria, South Africa  
Email: [gcababn@unisa.ac.za](mailto:gcababn@unisa.ac.za)

Doi: <https://doi.org/10.23918/ijsses.v13i2p4>

**Abstract:** Technology in open distance education plays an important role in driving pre-service teachers (PSTs) to engage in self-directed learning. This qualitative study explores the use of technology by Business Studies pre-service teachers to engage in self-directed learning. This study is located within interpretive paradigm. An exploratory case study was employed as its research design. The Community of Inquiry was adopted as the theoretical lens of this study. A total of 14 third-year PSTs studying at a South African open distance education institution were selected purposefully. Data was collected by means of open-ended electronic questionnaires and analysed thematically. The study reported that PSTs believe that technology is an enabler of self-directed learning. The study also revealed that technology promotes interaction among PSTs. The study concluded that PSTs believe that technology enhances their self-directed learning. Lecturers should therefore capitalise on the capability of technology and provide learning activities that will require PSTs to use technology to study.

**Keywords:** Business Studies, Distance Education, Pre-service Teachers, Self-directed Learning, Technology

### 1. Introduction

Over the years, open distance education has transformed the education sector and the conceptualisation of teaching and learning. The history of open distance education can be traced back to the 18th century (Pregowska et al., 2021). The first correspondence course was offered in Boston in the USA. For the first time, teaching and learning was facilitated through the post (Pregowska et al., 2021). Africa was introduced to open distance education in the 19th century when the first public distance university in South Africa, today the University of South Africa (UNISA), was established (Pregowska et al., 2021). For decades it was a paper-based open distance education institution (Van den Berg, 2020) and learning materials were delivered to students through the post. Students were also required to submit their assignments through the post.

However, with the introduction of technology, open distance education institutions started to adopt technological platforms to facilitate teaching and learning. Currently, open distance education institutions such as UNISA, are becoming fully online universities (Chauke & Dlamini, 2024) and teaching and learning is facilitated on technology-based platforms.

Received: 06.03.2025

Accepted: 15.06.2026

Published: 22.06.2026

Gcabashe, N. B. (2026). The Role of Technology in Enhancing Business Studies Pre-service Teachers' Self-Directed Learning. *International Journal of Social Sciences & Educational Studies*, 13(2), 71-85.

However, with the introduction of technology, open distance education institutions started to adopt technological platforms to facilitate teaching and learning. Currently, open distance education institutions such as UNISA, are becoming fully online universities (Chauke & Dlamini, 2024) and teaching and learning is facilitated on technology-based platforms. Several factors are responsible for the decision to adopt technology in open distance education. The outbreak of COVID-19 forced institutions of higher learning to strengthen their technology-based platforms to continue with teaching and learning (Adedoyin & Soykan, 2020). COVID-19 forced UNISA to broaden its use of technology-based platforms and conduct examinations online. Furthermore, technology-based platforms such as Microsoft Teams, were adopted to supervise the teaching practice of Pre-Service Teachers (PSTs). The shift to fully online and technology-based teaching and learning ushered in a new era for open distance education students, including Business Studies PSTs. Some face-to-face learning activities that used to take place on campus have been discontinued as a result, lecturers and students communicate on technology-based platforms (Chauke & Dlamini, 2024).

Since the COVID-19 outbreak, open distance education students in South Africa had to maximize on the use of technology if they want to succeed in their studies. The use of technology is no longer confined to delivering learning material and receiving assessments. Lecturers explore different ways to capitalize on the capabilities of technology to ensure that students engage in learning meaningfully. This include assessments that require students to use technology to engage in self-directed learning. For example, lecturers design assessments such as e-portfolios, to prompt students to engage in self-directed learning. Despite the increased use of technology in open distance education to support teaching and learning, studies on the role of technology in enhancing self-directed learning in open distance education learning remains sparse in South Africa. The existing studies have mainly focused on examining PSTs' self-directed learning in higher education (Mahlab, 2020; Maphalala, Mkhlasibe & Mncube, 2021; Olivier & Wentworth, 2021). Having few recent studies that examine the role of technology on enhancing PST's self-directed learning may underrate the value and influence of technology in teacher education in open distance education context. Hence this study explores the role of technology in enhancing Business Studies PSTs' self-directed learning at an open distance education institution in South Africa. To achieve the aim of this study, two research objectives were formulated:

- To explore how Business Studies PSTs use technology to promote their self-directed learning.
- To investigate the benefits of using technology to complete learning activities that promote self-directed learning in open distance education.

## **2. Literature Review**

### **2.1 The use of technology in open distance education**

Technology significantly facilitates students' learning in open distance education. It gives them access to learning resources that enhance their learning (Alghamdi, 2021). Annuar et al. (2021) assert that technology enables students to resolve their learning problems. In short, technology in open distance education enables Business Studies PSTs to access educational resources and resolve their study problems. They use their smartphones, computers and laptops. Thanks to internet access, a multitude of learning materials are at students' disposal (Usta, 2022) such as e-books, journal articles and online newspapers

(Heeks, 2020). Such sources supplement Business Studies PSTs' prescribed learning materials and they don't have to rely only on the learning materials that their lecturers prescribe.

Furthermore, technology allows students to interact with their peers and share ideas (Pinto & Leite, 2020). In other words, technology creates opportunities for collaboration among Business Studies PSTs to complete learning activities. Technological platforms such as video conferencing, discussion boards and Learning Management Systems such as Moodle and Blackboard, enable students to interact and collaborate as they engage in self-directed learning (Agormedah et al., 2020). In addition, these technological tools allow students to engage in both synchronous and asynchronous learning (Agormedah et al., 2020). This means greater flexibility for Business Studies PSTs, especially those who study while they work full-time. In other words, technology allows them to study when it suits them. This view is also emphasized by Arik (2021) who contends that such flexibility in open distance education puts the responsibility to learn squarely on the shoulders of students. They decide when, how and where they study. Furthermore, technology in open distance education allows PSTs to access Open Educational Resources (OERs), which enhance their learning and gives them access to quality education (Özüdogru, 2021).

The technology used in open distance education can also enhance PSTs' technological skills. Lai and Smith (2018) claim that technological skills can help PSTs to integrate technology in their lessons once they have become teachers. Although this may not be true for all PSTs because technology integration skills are not acquired by using any technological tool, it can be said that PSTs who use technology to study are exposed to various technological tools that can later enhance their pedagogical practices. Lai and Smith (2018) contend that PSTs who have used technology to study are likely to integrate it into their teaching practice. The above indicates that the use of technology to support PSTs' learning has a lasting effect on their instructional practices.

## **2.2 Open distance education and self-directed learning**

Open distance education and self-directed learning are closely related since both concepts seek to produce autonomous students, who can work independently and seek peer solidarity for support and motivation (Letseka & Seeletso, 2021). Thus, students from open distance education are expected to engage in self-directed learning. Knowles (1975) accentuates that self-directed learning is a process through which students take initiative to diagnose their learning needs, develop appropriate learning goals to assess their learning outcomes. Similarly, Spencer and Jordan (1999) view self-directed learning as the learning process that enables students to take responsibility for their learning while determining learning resources to use to complete the learning tasks. From the above, it can be concluded that students with self-directed learning skills take full charge of their learning. With the use of technology, Business Studies PSTs enhance their self-directed learning by accessing educational resources that would assist them to engage in learning meaningfully. Kacha, Charles, Alemnge Fedelis and Célestin, (2024) asserted that self-directed learning is a formidable form of learning in open distance education institutions striving towards academic excellence of their students. Self-directed learning makes students to be responsible for planning, undertaking and reviewing aspects of their learning process (Morris & Rohs, 2021). Usta (2022) accentuated that when engaged in self-directed learning, students are expected to be responsible for their own learning and be autonomous throughout the learning process. This view suggests that Business Studies PSTs are expected to engage in the learning process independently because they and their lecturers

are in different places and teaching and learning occurs through technology (USDLA, 2021). Lecturers design and disperse course content to students in advance through Learning Management Systems (LMS) (Usta, 2022). To access the course content, PSTs make use of technology. Even the interaction between lecturers and students and between students themselves occurs mainly through technology. Because physical contact between them and their lecturers is minimal, Business Studies PSTs must use technology to engage in self-directed learning. Students who possess self-directed learning skills are self-motivated. Such students take the initiative to diagnose their learning needs, formulate learning goals, identify learning resources, and implement appropriate learning strategies to achieve the learning outcomes (Annuar et al. 2021).

Furthermore, open distance education requires good time management (Ajani and Maphalala, 2023) because students should make time to study. Özdemir and Önal (2021) affirm that distance education students not only decide when and for how long they study, but also adopt different strategies to perform their learning tasks and monitor their understanding of the content. Time management skills are crucial because some PSTs work full-time while they study. In addition, they must do their teaching practice on a yearly basis during their studies. This requires a great deal of dedication from the PSTs. Van Tonder et al. (2021) claim that intrinsic motivation is indispensable to study independently without relying on lecturers.

It further emerged from the literature that technology facilitates the interaction between PSTs and lecturers (Ebru, 2020). In other words, technology allows PSTs to easily contact their lecturers for guidance. This dispels the notion that open distance education isolates students and deprive them of lecturer guidance. Furthermore, technology has transformed the interaction between lecturers and PSTs (Galway et al., 2020). Previously, interaction between them was through paper-based materials such as tutorial letters and study guides. Nowadays, PSTs communicate with their lecturers by email, phone calls, Microsoft Teams, Zoom, and WhatsApp. Özdemir (2021) contends that contact with lecturers is paramount in open distance education because it motivates PSTs to study.

It can be concluded from the literature review that technology have revolutionized open distance teacher education. Access to various learning materials by means of technology certainly enhances their self-directed learning. According to Lai and Smith (2018), technology use may influence PSTs' learning and eventually their teaching practice. It has further emerged that the use of technology facilitates self-directed learning. It is also important to note that several studies about the use of technology to enhance self-directed learning have been conducted in South Africa. For example, Van den Berg and Du Toit-Brits (2023) studied the development of OERs to promote self-directed learning among PSTs. Furthermore, Ajani and Maphalala (2023) investigated the relationship between online learning and self-directed learning. Nonetheless, South African studies about Business Studies PSTs' use of technology to boost their self-directed learning are scarce. This study, therefore, offers empirical evidence of how Business Studies PSTs use technology to enhance their self-directed learning. This study contributes to the field of teacher education in Business Studies in particular. Its findings will also help lecturers to understand the technological devices and platforms the students use to engage in learning so that they align learning activities accordingly.

### 3. Theoretical Framework

The study adopted the Community of Inquiry (CoI) as its theoretical lens. Community of Inquiry theory advocates for a collaborative and positive approach to technology-based and distance learning (Garrison, 2016). In other words, CoI helps us to understand collaboration among students in a technology-based and open distance education context. Wang et al. (2001) argue that the CoI theory advocates for the creation of an online community. An online community is critical in open distance education because it creates a conducive environment in which students share knowledge to make meaning of the content (Wang et al., 2001). This suggests that Business Studies PSTs use technology to engage in a critical discourse and reflect to develop a mutual understanding of the content (Garrison and Akyol, 2013). Furthermore, an online community enables students to explore various learning activities through brainstorming, discover new knowledge and discuss problems (Fiock, 2020). This means Business Studies PSTs use technology to study with their peers and discover new knowledge that enhances their understanding of the content.

CoI theory encompasses three dimensions, namely teaching presence, cognitive presence and social presence. The first dimension is social presence, which involves the creation of a conducive learning climate (Garrison, 2007). The proponents of CoI theory argue that any learning climate should provide support and encourage probing questions, scepticism and the contribution of explanatory ideas. In short, social presence means that the learning environment must enable students to learn effectively. Kim and Gurvitch (2020) assert that social presence ensures a productive learning climate through student interaction. Social presence also fosters a sense of belonging because students can freely communicate with each other and negotiate different perspectives. This suggests that social presence helps Business Studies PSTs to establish associations with their peers. Establishing associations and support groups in open distance education is vital because business studies PSTs who do not associate with their peers may find open distance education isolating and difficult to cope with. In addition, social presence can assist Business Studies PSTs to have a support system in a form of their peers as they engage in self-directed learning. This will help them not to feel isolated and lonely in their studies, since they have their peers who they interact with during the course of learning.

Cognitive presence is the second dimension of CoI theory. According to Garrison (2007), it includes the exploration, construction, resolution, and confirmation of understanding through collaboration and reflection in a Community of Inquiry. Cognitive presence occurs when students make sense through sustained interaction and collaboration. Business Studies PSTs can make meaning collaboratively through technology-based platforms such as discussion forums, video conferencing or social media platforms. Chen et al. (2019) believe that cognitive presence promotes higher-order thinking among students because it creates a space to engage, share their ideas, challenge one another's thinking and learn. The PSTs' interaction with the peers does not only enhance their understanding of the courses, but it also helps them to cope with their studies as they engage in self-directed learning.

The final dimension of CoI theory is the teaching presence. This dimension entails the presence of an instructor who creates and sustain the social and the cognitive presence (Heilporn & Lakhali, 2020). In other words, lecturers should be present on technology-based platforms such as Learning Management Systems, to interact with students and provide direction during the learning process (Anderson et al., 2001; Zhang, 2020). Especially in open distance education, a teaching presence not only improves students'

perception of learning, but also develops the online community (Brook & Oliver, 2000) so that students don't feel isolated.

To summarize, because CoI theory affords a theoretical understanding of how teaching and learning occurs in open distance learning by means of technology, and it was deemed suitable for this study. Furthermore, CoI theory puts technology at the centre of teaching and learning activities in open distance education. As a theoretical lens, it also helped the researcher to interpret the findings of this study. Owing to the three dimensions of CoI theory, the researcher could fully understand the phenomenon under investigation.

#### **4. Methods**

This study is located within the interpretive paradigm. The interpretive paradigm helps to understand the subjective world of human experiences (Buriro, Ednut & Khatoon, 2021). In accordance with the beliefs of interpretivists, the subjective experiences of the participants and their use of technology to engage in self-directed learning in an open distance education setting were studied. A qualitative research approach was adopted. Mohajan (2018) maintains that qualitative research helps to accumulate and interpret non-numerical data in social sciences research. Therefore, a qualitative research approach was adopted to interpret the personal experiences of the participants regarding the phenomenon under investigation. An e-mail was sent to a 2024 cohort of 259 third-year Business Studies PSTs registered for a third-year teaching practice module in Further Education and Training phase, requesting them to participate in the study. A total of 14 PSTs indicated their willingness to participate. The participants of this study are registered for a third-year teaching practice module, one of their major subject is business studies and they use technology to engage in learning since they are studying through open distance. An online survey comprising open-ended questions was e-mailed to them. All of them completed and returned the survey.

Before dispersing the online survey to the participants, the researcher worked with two senior researchers who are experts in distance education to check the quality of the online survey. The experts provided feedback on the quality of the questions that were contained in the survey and the researcher revised the questions based on the feedback from the senior researchers. This ensured the validity of the survey as a data collection instrument. After, receiving the responses from the participants, the researcher engaged in reading all the responses and transcribed them to develop the raw data. The transcriptions were sent to the participants for them to verify the accuracy of the raw data. This ensured the reliability of the data that was collected for this study. After receiving all the feedback from the participants as part of member-checking, the researcher engaged on data analysis and Braun & Clarke's (2006) thematic analysis was used to analyse data. The researcher commenced data analysis by reading the raw data, allocated codes to the raw data, developed initial themes by merging identical codes, eliminated immaterial codes, and developed the final themes to report the findings of the study.

Table 1: Biographical data of the participants

Participants	Gender	Age group	Qualification Enrolled for	Major Subjects
BS-PST1	Male	20-25	B Ed	BSTD & ACC
BS-PST2	Female	20-25	B Ed	BSTD & ACC
BS-PST3	Male	25-30	B Ed	BSTD & ECON
BS-PST4	Female	20-25	B Ed	BSTD & ACC
BS-PST5	Female	20-25	B Ed	BSTD & ECON
BS-PST6	Female	20-25	B Ed	BSTD & ACC
BS-PST7	Female	20-25	B Ed	BSTD & ACC
BS-PST8	Male	30- 35	B Ed	BSTD & ECON
BS-PST9	Male	30-35	B Ed	BSTD & ECON
BS-PST10	Female	30-35	B Ed	BSTD & ACC
BS-PST11	Male	20-25	B Ed	BSTD & ACC
BS-PST12	Male	20-25	B Ed	BSTD & ACC
BS-PST13	Male	30-35	B Ed	BSTD & ACC
BS-PST14	Male	20-25	B Ed	BSTD & ACC

Table 1 above shows the biographical data of the participants. It is evident from the table above that both male and female students were represented in this study. This means the voices of both genders were represented in this study. Furthermore, the table shows that the participants were predominantly young people between the ages of 20-35. This confirms that open distance education nowadays does not only cater for old and matured as it was previously believed, but young people as well embrace distance education. Thus, the need to conduct studies that explore the role of technology in enhancing self-directed learning among students on open distance education because there is a common belief that young people are amenable to technology, but they lack self-directed learning skills. All participants were enrolled for the undergraduate degree at the selected open distance education which is the Bachelor of Education (Bed). Finally, one of the subject specialisation of the participants was Business Studies.

### 3.1 Ethical considerations

Research ethics implies the ability to distinguish between right or wrong and acceptable or unacceptable behaviour in research (Carr, 2024). This study adhered to all ethical standards of empirical research involving human beings. Permission to conduct research was sought from the academic institution where the study was conducted. Ethical certificate number 2023/10/11/90707746/43/AM was issued by its ethics review committee. The participants were provided with detailed information about the study. Their rights were explained to them, including their right to anonymity. To protect their identities, the participants are referred to as BS-PST1 to BS-PST14. It is important to note that the abbreviations BS-PST1-BS-PST14 used as pseudonyms in this study were derived from the concept Business Studies Pre-Service Teachers.

## 4. Findings

The findings are presented based on three themes that emerged from the data analysis. They are: the role of technology in self-directed learning, technology promotes community of practice, and lecturers' support during self-directed learning.

### 4.1 The role of technology in self-directed learning

This theme reports on how technology facilitates self-directed learning among Business Studies PSTs in open distance education. For example, BS-PST3 mentioned that she used technological tools such as her laptop and cell phone, to engage in self-directed learning. *I use my laptop and cell phone for my studies. I watch videos on YouTube and browse the internet for more information.*

BS-PST10 relied on her smartphone to engage in self-directed learning. *I only have a cell phone that I use for my studies. I use it to type my assignments, access more resources from Moodle and join Telegram groups where I interact with other students.*

From these comments, it is clear that Business Studies PSTs rely on technological tools such as their cell phones and laptops, instead of on paper-based learning material. This indicates that they find it easy to use technology to study. This might be attributed to the fact that technology is convenient. BS-PST 12 found it easy to use technology to engage in self-directed learning. He remarked the following: *I use my laptop to engage in self-directed learning since it is easy for me to do research about certain topics I do not understand as I study.*

BS-PST12 found it convenient to study on his laptop. He could read the study content and quickly conduct a search for more information to get greater clarity.

Technology undoubtedly facilitates the self-directed learning of Business Studies PSTs. They find it convenient to use technology. Hence, the conclusion can be drawn that technology has brought about a paradigm shift in self-directed learning.

#### 4.2 Technology promotes Community of Practice

It emerged from the data that technology promotes a Community of Practice among Business Studies PSTs. BS-PST1 observed: *We use Telegram to help each other to cope with workload and encourage each other to do our assignments on time.*

Similarly, BS-PST 13 commented that she joined Telegram groups to get peer support. She stated: *I joined groups where students help one another to provide on the work we do not understand.*

The assertions of BS-PST 1 and BS-PST 13 show that self-directed learning in open distance education is no longer an isolated exercise. The ubiquity of technology helps Business Studies PSTs to build a Community of Practice with their peers in different locations as they engage in self-directed learning.

It also emerged from this study that the participants build a Community of Practice not only on social media platforms such as Telegram, but also on their institution's Learning Management System. Its features promote the establishment of a CoP among them. For example, BS-PST 7 observed that: *As students we engage in discussion forums on Moodle, and this makes it easier for us to share ideas and learn from one another.*

#### 4.3 BS-PST 2 added:

*I learn a lot from other students through discussions on Moodle since we come from different backgrounds, and we have different experiences. Students share what they know about a particular topic, and I get to learn from them and apply that information when I solve problems in my studies.*

Similarly, BS-PST 9 mentioned that using technology to interact with his peers makes him feel less isolated. *I join groups where there are other students doing the same degree and majoring in Business Studies. This makes me not to feel alone in this journey.*

From the commentaries above, it is clear that Business Studies PSTs use different technological platforms to establish a Community of Practice with their peers to enhance their self-directed learning. It is evident that technology helps them to engage with and learn from their peers. PSTs are eager to learn from their peers since they are from different backgrounds and have different life experiences. Furthermore, the majority of students studying through open distance education are already employed. As a result, those that are employed have valuable experience from their occupations to share with their peers and these experiences may assist to shape their learning experiences.

#### 4.4 Technology enables lecturer support

Previously, open distance education relied on paper-based learning materials. Nowadays, technology allows PSTs to consult with their lecturers during online classes and discussion forums or contact them by email, WhatsApp and Telegram. The participants in this study reported that technology allows them to get assistance from their lecturers as they engage in their self-directed learning.

For example, BS-PST1 remarked: *Yes, lecturers are very supportive, they ensure that they send announcements and additional study material to use when we want to attempt assignments. They update*

*everything on Moodle and via emails to keep us updated. This information is very helpful, especially when you want to complete assignments.*

BS-PST6 replied: *Yes, they put up discussion forums for every unit of the module and we can post our questions and our struggles for them to assist.*

From the commentaries above, it is evident that technology allows Business Studies PSTs to receive support from their lecturers. Lecturer support and guidance is vital in open distance education because distance separates students and lecturers. Since some students live in remote areas where contact with other students is limited, they rely on guidance from their lecturers through emails and during discussion forums and online classes.

The participants further noted that technology helps them to get clarity from their lecturers as they engage on self-directed learning. BS-PST 2 and BS-PST10 had the following to report:

*When I am stuck, I just send an email to my lecturer, and he responds in no time.*

*Normally, my lecturer would assist when I have enquiries or when I need clarity on some of the things as I study or as I complete my assignments.*

From the responses of BS-PST2 and BS-PST10, it can be inferred that technology allows for immediate feedback from lecturers. Previously, students studying at open distance education institutions got feedback only weeks after they had submitted their assessments. Today, students get immediate feedback from their lecturers thanks to technology. Immediate feedback helps to fine-tune their understanding of the content as they study.

## **5. Discussion of the findings**

This study investigated technology's role to Business Studies PSTs' self-directed learning in open distance education in South Africa. The study reveals that technology fosters self-directed learning among them. It enables them to access various learning materials that enhance their self-directed learning skills. Alghamdi (2021) concurs that technology grants students access to learning resources that contributes to their learning. Technology allows them to consult additional learning materials in addition to those prescribed by their lecturers. Different learning materials help Business Studies PSTs to develop insights into the content which could come handy when they teach Business Studies during teaching practice and also as qualified teachers. This finding implies that students are not confined to the prescribed materials. The use of technology to facilitate learning presents a paradigm shift in higher education since students have access to vast amounts of information. This can present both challenges and opportunities for students in open distance education. Students who have capabilities to deal with vast amounts of information benefits from this while those who lack skills to consume vast amounts of information might be overwhelmed by this. Furthermore, the study found that Business Studies PSTs believe that technology is convenient since they can effortlessly search for information on the internet. This finding corresponds with that of a study conducted by Annuar et al. (2021), which indicates that technology enables students to resolve their problems as they engage in the learning process. This finding implies that having access to internet helps students to access information they couldn't access without it. Internet access can allow students to access

information in different formats such as video, audio and text which is beneficial to students who prefer to learn in these formats.

It further emerged from this study that Business Studies PSTs use technology to establish a Community of Practice where their peers encourage them to persevere with their self-directed learning. Pinto and Leite (2020) recommend the formation of Communities of Practice in open distance education because it allows students to share ideas with their peers. The findings indicate that Business Studies PSTs use social media platforms and certain features of learning management systems such as discussion forums, to connect with their peers as they engage in self-directed learning. This finding resonates with the tenets of Community of Inquiry theory, which recommends the creation of online communities of inquiry, which is critical in open distance education (Wang et al., 2001). The proponents of CoI believe that online communities enable students to explore different learning activities through brainstorming, discovering new knowledge and discussing problems (Fiock, 2020). This was evident in the comments of some participants who indicated that they share valuable advice on ways to tackle the challenges of open distance education with their online community. Furthermore, the participants believed that technology facilitated lecturer support because it allowed them to regularly interact with their lecturers through emails, online classes and discussion forums. This finding resonates with one of the CoI's tenets, which proposes an instructor's presence in technology-based learning to create and sustain social and cognitive presence (Heilporn & Lakhal, 2020). Özdemir (2021) contends that it ensures interaction between lecturers and students and facilitates self-directed learning in open distance education. Having regular interaction with the lecturers assists the students to continuously receive guidance as they engage in self-directed learning. This makes learning for students to be easy since they can seek clarity from their lecturers with ease, unlike previously where students in the open distance education had to try to figure out challenges on their own.

## **6. Limitations of the study**

Few limitations for this study are acknowledged. Firstly, this study was conducted in one open distance education institution in South Africa, as a result its findings cannot be generalised to other public and private open distance education institutions. Furthermore, self-reported questionnaires was used to collect data. The researcher acknowledges the shortcomings of the self-reported questionnaires including the fact that follow-up and probing questions cannot be asked to the participants to deeply understand their sentiments. Finally, only Business Studies PSTs were sampled for this study and the findings of this study are applicable to the PSTs that were sampled for this study. Despite these limitations, it is still believed that this study makes a unique contribution to the field of business education and teacher education in general. The findings of the study will help teacher educators to recognize the role of technology in fostering self-directed learning among business studies PSTs in an open distance education context.

## **7. Conclusion and Recommendations**

This study concludes that Business Studies PSTs believe that technology enhances their self-directed learning skills. It not only gives access to a variety of learning materials, but also allows them to establish Communities of Practice and receive support from their fellow students. Finally, the study revealed that Business Studies PSTs rely on technology for support from their lecturers. Based on these findings, it is recommended that lecturers capitalise on technology and devise learning activities that require students to

learn by making use of technology. This will enhance not only their self-directed learning skills, but also their technological skills for teaching in the 21st century. Regarding future research, the study recommends a comparative study of Business Studies PSTs at contact universities and PSTs at an open distance education institution. This will give a more comprehensive understanding of the ways in which technology boosts Business Studies PSTs' self-directed learning skills. Additionally, a quantitative study must be conducted in future; this will enable the researcher to sample a large number of the participants, and this will allow the researchers to generalize the findings of the study.

**Conflict of interest:** There is no conflict of interest for this paper.

## References

- Adedoyin, O. B., & Soykan, E. (2023). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive learning environments*, 31(2), 863-875.  
<https://doi.org/10.1080/10494820.2020.1813180>
- Agormedah, E. K., Henaku, E. A., Ayite, D. M. K., & Ansah, E. A. (2020). Online learning in higher education during COVID-19 pandemic: A case of Ghana. *Journal of Educational Technology and Online Learning*, 3(3), 183-210. <https://doi.org/10.31681/jetol.726441>
- Ajani, O. A., & Maphalala, M. C. (2023). Online Learning Environments in Higher Education: Nexus Between Self-Directed Learning and Learning Attainment in Students' Online Learning Engagement. *International Journal of Social Science Research and Review*, 6(11), 349-367.  
<http://dx.doi.org/10.47814/ijssrr.v6i11.1767>
- Alghamdi, A. (2021). COVID-19 mandated self-directed distance learning: Experiences of Saudi female postgraduate students. *Journal of University Teaching & Learning Practice*, 18(3), 014.  
<https://doi.org/10.53761/1.18.3.14>
- Anderson, T., Liam, R., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context.
- Annuar, N., Sabri, M. D., Mutalib, H. A., Rahman, N. L. A., Mutalib, S. K. M. S. A., Daud, D., & Johan, M. R. M. (2021). Empowering self-directed learning through technology, organization and personal support in open and distance learning: A conceptual review. *Turkish Journal of Physiotherapy and Rehabilitation*, 32, 23303-23313.
- Arık, S. (2021). Distance education learning environments during COVID-19 pandemic from student perspectives: A study in Turkish higher education. *Journal of Pedagogical Research*, 5(2), 103-118. <http://dx.doi.org/10.33902/JPR.2021269494>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.

- Brook, C., & Oliver, R. (2007). Exploring the influence of instructor actions on community development in online settings. In *User-centered design of online learning communities* (pp. 341-364). IGI Global Scientific Publishing.
- Buriro, A., Ednut, N., & Khatoon, Z. (2021). Philosophical underpinning and phenomenology approach in social science research. *Asia-Pacific-Annual Research Journal of Far East & Southeast Asia*, 38, 237-254.
- Carr, R. N. (2024). Ethical considerations in special education research. In *Research methods in special education* (pp. 55-70). Routledge.
- Chauke, T. A., & Dlamini, N. (2024). Academics' perceptions and responses to students' academic underperformance in Open Distance e-Learning environment: students' academic underperformance in Open Distance e-Learning environment. *International Journal of Curriculum and Instruction*, 16(2), 441-463.
- Chen, Y., Lei, J., & Cheng, J. (2019). What if Online Students Take on the Responsibility: Students' Cognitive Presence and Peer Facilitation Techniques. *Online Learning*, 23(1), 37-61. <https://doi.org/10.24059/olj.v23i1.1348>
- Fiock, H. (2020). Designing a community of inquiry in online courses. *The International Review of Research in Open and Distributed Learning*, 21(1), 135-153. <https://doi.org/10.19173/irrodl.v20i5.3985>
- Galway, G. J., Maddigan, B., & Stordy, M. (2020). Teacher educator experiences of iPad integration in pre-service teacher education: successes and challenges. *Technology, Pedagogy and Education*, 29(5), 557-575. <https://doi.org/10.1080/1475939X.2020.1819397>
- Garrison, D. R. (2007). Online community of inquiry review: Social, cognitive, and teaching presence issues. *Journal of Asynchronous Learning Networks*, 11(1), 61-72.
- Garrison, D. R. (2016). *E-learning in the 21st century: A community of inquiry framework for research and practice*. Routledge Taylor & Francis, Group. <https://doi.org/10.1017/CBO9781107415324.004>
- Garrison, D. R., & Akyol, Z. (2013). The Community of Inquiry Theoretical Framework. In *Handbook of distance education* (pp. 104-120). Routledge.
- Heeks, R. (2020). ICT4D 3.0? Part 1—The components of an emerging “digital-for-development” paradigm. *The Electronic Journal of Information Systems in Developing Countries*, 86(3), e12124. <https://doi.org/10.1002/isd2.12124>
- Heilporn, G., & Lakhal, S. (2020). Investigating the reliability and validity of the community of inquiry framework: An analysis of categories within each presence. *Computers & education*, 145, 103712. <https://doi.org/10.1016/j.compedu.2019.103712>

- Kacha, K. T., Charles, T., Alemnge Fedelis, L., & Célestin, N. (2024). Learning Management Systems and Self-Directed Learning in Higher Education Institutions in Cameroon. *Learning*, 8(4).
- Kim, G. C., & Gurvitch, R. (2020). Online education research adopting the community of inquiry framework: A systematic review. *Quest*, 72(4), 395-409.  
<https://doi.org/10.1080/00336297.2020.1761843>
- Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. New York, NY: Association Press.
- Lai, K. W., & Smith, L. (2018). Socio-demographic factors relating to perception and use of mobile technologies in tertiary teaching. *British Journal of Educational Technology*, 49(3), 492-504.  
<https://doi.org/10.1111/bjet.12544>
- Letseka, M., & Seeletso, M. K. (2021). Open learning in the African context: Challenges and possibilities for self-directed learning. *Radical solutions for education in Africa: Open education and self-directed learning in the continent*, 175-186. [https://doi.org/10.1007/978-981-16-4099-5\\_9](https://doi.org/10.1007/978-981-16-4099-5_9)
- Mahlaba, S. C. (2020). Reasons why self-directed learning is important in South Africa during the COVID-19 pandemic. *South African Journal of Higher Education*, 34(6), 120-136.  
<https://dx.doi.org/10.20853/34-6-4192>
- Maphalala, M. C., Mkhasibe, R. G., & Mncube, D. W. (2021). Online Learning as a Catalyst for Self-directed Learning in Universities during the COVID-19 Pandemic. *Research in Social Sciences and Technology*, 6(2), 233-248. <https://doi.org/10.46303/ressat.2021.25>
- Mohajan, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of economic development, environment and people*, 7(1), 23-48.
- Morris, T.H., & Rohs, M. (2021). The potential for digital technology to support self-directed learning in the formal education of children: A scoping review. *Interactive Learning Environments*.  
<https://doi.org/10.1080/10494820.2020.1870501>
- Olivier, J., & Wentworth, A. (2021). Self-directed learning at school and in higher education in Africa. *Radical Solutions for Education in Africa: Open Education and Self-directed Learning in the Continent*, 17-39. [https://doi.org/10.1007/978-981-16-4099-5\\_2](https://doi.org/10.1007/978-981-16-4099-5_2)
- Özdemir, A., & Önal, A. (2021). An Investigation into Pre-Service Teachers' Self-Regulated Online Learning Perceptions. *International Journal of Contemporary Educational Research*, 8(2), 143-159. <https://doi.org/10.33200/ijcer.865189>
- Özüdogru, M. (2021). Pre-Service Teachers' Perceptions Related to the Distance Teacher Education Learning Environment and Community of Inquiry. *Journal of Pedagogical Research*, 5(4), 43-61. <https://doi.org/10.33902/JPR.2021472945>

Pinto, M., & Leite, C. (2020). Digital technologies in support of students learning in Higher Education: literature review. *Digital education review*, (37), 343-360.

Pregowska, A., Masztalerz, K., Garlińska, M., & Osial, M. (2021). A worldwide journey through distance education—from the post office to virtual, augmented and mixed realities, and education during the COVID-19 pandemic. *Education Sciences*, 11(3), 118.  
<https://doi.org/10.3390/educsci11030118>

Spencer, J. A., & Jordan, R. K. (1999). Learner centred approaches in medical education. *British Medical Journal*, 318(7193), 1280-1283.

United States Distance Learning Association (USDLA). (2021). <http://www.usdla.org>

Usta, N. (2022). Comparison of Pre-Service Mathematics Teachers' Views on Blended Learning and Distance Learning Applications. *International Journal of Curriculum and Instruction*, 14(3), 2157-2187.

van den Berg, G. (2020). Context matters: Student experiences of interaction in open distance learning. *Turkish Online Journal of Distance Education*, 21(4), 223-236.  
<https://doi.org/10.17718/tojde.803411>

van den Berg, G., & du Toit-Brits, C. (2023). Adoption and development of OERs and practices for self-directed learning: A South African perspective. *Teacher Education through Flexible Learning in Africa (TETFLE)*, 4. <https://doi.org/10.35293/tetfle.v4i1.4247>

Van Tonder, G. P., Bunt, B. J., Petzer, A., Bosch, H. D., Van Deventer, N., Gerber, A., & Van Schadewijk, L. (2021). The efficacy of habits of mind in the inculcation of self-directed learning skills in pre-service teachers. *International Journal of Learning, Teaching and Educational Research*, 20(2), 36-60. <https://doi.org/10.26803/ijlter.20.2.3>

Wang, M. (2001). The construction of shared knowledge in an Internet-based shared environment for expeditions (iExpeditions): A study of external factors implying knowledge construction. University of Missouri-Columbia.

Zhang, R. (2020). Exploring blended learning experiences through the community of inquiry framework. <https://doi.org/10125/44707>