

Virtual Learning: The Lacuna for Improved Access, Openness and Flexibility in an Open and Distance Learning University

Mmabaledi Seeletso

Botswana Open University, Botswana

Moeketsi Letseka

University of South Africa, South Africa

ABSTRACT

This paper explores ways in which virtual learning can facilitate improved access to information, promote openness, and encourage flexibility in an open and distance learning university. It reports on experiences and perceptions of students at an open and distance learning university, who study through virtual learning. The study considered two groups studying the same programme, under different conditions. One group had facilitators during face-to-face sessions while the other used a virtual classroom, using smartboard technology. The sample consisted of thirty-two (32) students from Botswana Open University (BOU). An exploratory mixed methods approach was used. Students were purposively sampled. A questionnaire was administered to establish the extent to which virtual learning delivery mode provided improved access, openness and flexibility. For data analysis, themes of students' responses were identified and tallied according to the different issues and trends that emerged. The findings suggest that students view virtual learning not as significantly different from the face-to-face session in terms of quality of content. However, students reported low levels of satisfaction regarding interactivity and poor video quality.

Keywords: affordance theory, autonomous study, self-directed study, technology acceptance model, virtual learning

The introduction of information and communication technologies (ICTs) has been embraced by many open and distance learning (ODL) institutions of higher learning. ICTs uptake is being used to improve access, promote openness and encourage flexibility in the ODL space.

This paper reports on a study that explored perceptions and experiences of virtual learning students enrolled in the Master of Educational Leadership (MEDEL) programme with Botswana Open University (BOU). Virtual classes were started in July 2016 at BOU to address issues of access, openness and flexibility. Access would provide equal and equitable opportunities to education to all people irrespective of race, gender, religion and sexual orientation, among other factors. As such, using virtual learning was seen as a way that would possibly facilitate all these. Virtual learning is also perceived to eliminate barriers to choice of where and when to study. Jeong and Hmelo-Silver (2016, p. 247) observe that “Technology has made it possible for students to interact with other learners located in geographically distant areas across the globe.” It provides more options of knowledge sharing, which promotes openness. Students are not constrained to go through their work. As such, virtual learning has a potential to encourage flexibility. These are some of the key factors that can contribute to success in an open and distance learning space. Other key issues that are addressed by this paper include online learning by students, quality of both content and student support, satisfaction of virtual learning students in terms of available resources as well as simultaneous delivery of the programme.

This paper is guided by the following research questions:

- (i) How do MEDEL students at BOU perceive the virtual delivery of the programme?
- (ii) What are the lived experiences the MEDEL virtual learning students?

Structure of the paper

This paper is divided into five sections. The *first section* foregrounds and provides the purpose and argument of the paper. It explains the key issues discussed, as well as to introduce the research questions guiding the discussion. The *second section* discusses perspectives on the virtual learning mode of delivery at BOU. It defines the key terms that pertain to the paper, namely: *virtual learning*, *autonomous study*, *self-directed study*, *Technology Acceptance Model* and the *Affordance Theory* as used in the context of the study. This paper draws on the Technology Acceptance Model propounded by Davis (1989), as well as the Affordance Theory of Gibson (1979). These two provide the theoretical framework for the paper. The *third section* reviews the literature informing virtual delivery. The *fourth section* considers the research design and methodology. It describes the design and methodology used to obtain the necessary data for the study. The *fifth*

section is on the findings and discussion of perceptions and experiences of virtual learning. The section presents and discusses results from the data gathered. It also considers the challenges of virtual learning, from the viewpoint of the participants. The *sixth and final section* offers some concluding remarks. As a disclaimer, it should be mentioned that this paper is also informed by the lived experiences of the two authors. The first author coordinates two post graduate programmes, one of which uses virtual learning for teaching a masters' degree cohort at BOU.

Perspectives on the virtual learning mode of delivery at BOU

Virtual learning is one of the many possible modes of delivery that has the potential to contribute to increased access to high quality education, as espoused by the sustainable development goal (SDG) 4. At BOU, students reading for Masters in Educational Leadership (MEDEL) programme are exposed to different multimodal contexts during support sessions. One group has facilitators or tutors on site, taking them through the content during face-to-face sessions, while the other group use white board technology to follow the tutorial sessions. Through this technology, students follow proceedings of the face-to-face session through white board technology, where content is shared electronically.

The success of the virtual learning mode of delivery at BOU is a joint effort bringing together expertise from multiple departments such as multimedia, information technology (IT), the library, academic support services and student administration and support. All these sections of the university work collaboratively to respond to, and address the needs of both the students and the programme delivered through the virtual mode. The main aim of the virtual learning mode of delivery is to encourage independent learning, with a view of developing autonomous students. However, it is important to note that “virtual aspect of learning needs to facilitate learning, and not to dictate the instructional approach,” (Garcia, 2018, p.4).

Virtual learning allows for online interaction between both students and their facilitators, and helps produce 21st century educators. It also creates a self-directed learning environment which allows students to take full charge of their learning. This involves students who, on their volition, create learning communities and syndicates to support each other with their studies. Self-directed students are usually more independent and take much more control of their studies (Knowles, 1975). These are unlike the normal distance learning students who depend entirely on institutions and their facilitators for support. Self-directed students take initiative for their own success. This, they do by creating more conducive learning environments such as WhatsApp groups and other learning platforms. Virtual learning further facilitates multimodal learning, which involves a combination of different modes of delivery in an educational environment. Students interact

and engage through discussion forums and chats, which are platforms in their learning space. Joo and Lim (2018) contend that virtual learning can be used to teach more challenging tasks. Zheng, Xie and Liu (2018) made an observation that virtual learning has the potential to create collaborative learning experiences, which can help enhance students' critical thinking.

A major drawback to embracing virtual learning is the resistance to technology especially by adult learners, and rural students with less experience with technology, (Domingo & Bradley, 2018). In most African countries, leaders have typing and other computer-based tasks done by their secretaries and personal assistants. For this reason, they are not able to learn basic computing skills required for the MEdEL programme. Once they are admitted in the programme they struggle with technology.

Technology integration in teaching and learning at BOU saw the introduction of the MOODLE platform, which the students use as their learning space. This learning space facilitates creation of online learning communities that can be used to support “different teaching modes such as blended learning, ubiquitous learning, and flipped classroom,” (Teo, Zhou, Fan, & Huang, 2019, p. 750). The platform is able to provide varied student-centred services in form of chats, forums, quizzes etc. It further facilitates interaction, both synchronous and asynchronous. Teo et. al., (2019) further point out that virtual learning facilitates innovative teaching practices.

Virtual learning creates better opportunities for accessibility and improved learning experiences. For the purpose of this study, virtual learning students accessed the same content by attending support sessions through smartboard technology. The virtual class students followed live presentations of the face-to-face class. The face-to-face sessions took place at the Gaborone Campus, with facilitators on site and physically interacting with the students. Domingo and Bradley (2018, p. 330) observe that “instructors can assimilate virtual classrooms to have content-specific information and resources continuously available in the virtual environment”. However, effective virtual learning environments need sufficient hardware and reliable internet connections. This remains the main barrier to offering virtual learning at BOU.

Defining key words as used in the paper

Autonomous study

Thanasoulas (2000) defines autonomous study as a system that allows students to take charge of their own learning. As such, autonomous learners are able to identify their needs and look for possible solutions. Autonomous learners are empowered about what to learn, even how to learn. They remain more focused, more motivated and always eager to learn than face-to-face learners. In autonomous learning environments the role of the teacher is more of an advisor and facilitator – a complete deviation from the traditional setting where the teacher is the “knower” and “source and

foundation” of knowledge. One common, yet unique feature of autonomous learners is to learn as a team, by so doing learning from each other.

Self-directed study

Self-directed study is a learning approach which involves students taking responsibility of their learning (Knowles, 1975). In this kind of initiative, learners identify their needs and aim towards addressing these needs. Learners can, either as individuals or as a collective, identify the resources they may need to address their identified needs. They will then choose relevant strategies to address their needs. Self-directed study, which is very similar to autonomous study, can also be viewed as a learner-centred approach of learning.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) explains how users of technology ultimately get to accept and use technology. It suggests that first, people need to consider the usefulness of technology as well as its user friendliness. Normally people will embrace technology that is easy for them to use. Davis (1989) argues that for a person to accept certain technology they should see and appreciate its usefulness and how it will help improve her/his job performance. Davis (1989) argues that for people to finally embrace specific form of technology, they need to display a positive attitude towards it. The attitude they portray will be a reflection of the general impression they have regarding the technology. This model further suggests that when users are first presented with a new form of technology, they consider a lot of factors around it, before ultimately accepting it. These factors, according to Davis (1989), are perceived usefulness and perceived ease-of-use.

Perceived usefulness is explained as “the degree to which a person believes that using a particular system would enhance his or her job performance ... and perceived ease-of-use is the degree to which a person believes that using a particular system would be free from effort,” (Davis, 1989, p. 320). Davis (1989) further explains that if technology is easy to use, then a lot of challenges will be overcome, and people will have a positive attitude towards it. In the same vein Joo and Lim (2018) observe that the model’s underpinning explanation is that it perceives ease of use as the degree to which users believe they will use new technology without particular difficulty. This view is further corroborated by Masrom (2007).

Although MEdEL students showed technophobic tendencies at the start of the programme, in the end they embraced technology. This was further confirmed by participants of this study who shared the view that they started using technology for their record keeping. Participants explained that before then they did manual filing for their records, which more often than not, went missing. Teo et. al., (2019, p.752) postulates that the Technology

Acceptance Model (TAM) has been “validated in diverse contexts to predict and explain users’ behavioural intentions in using technologies”. Research has also shown that a mismatch exists between benefits that technologies bring to education, and the limited usage.

Affordance Theory

The Affordance Theory was made prominent by Gibson in 1979. The central argument of the theory is that there is a direct correlation between people and their environment, and the extent to which human beings can use what they have at their disposal to improve their lives. It is crucial for technology users to ascertain how best they can utilise the available technology to their own benefit. Gibson (1979) argues that the world we live in is not only perceived in terms of objects and spatial relations, but also by objective possibilities for action. In other words, it is Gibson’s (1979) view that whatever the environment provides or affords can be used to achieve different things. It therefore, follows that in terms of technology, users need to appreciate the available technology, identify their need(s) for that particular technology, and use the technology to improve their material conditions of existence. In the sphere of education, learners and teachers can interact with technology for the sole purpose of improving teaching and learning. In essence, they can determine what they can do best with the technology or technologies at their disposal.

Blin (2016) concurs with Gibson. He argues that the term ‘affordance’ is often used to denote “possibilities offered by the technologies,” (p. 41). For instance, MEdEL students at BOU had to embrace the available technology in order to ascertain how it can help them achieve their teaching and learning goals. They also needed to decide how they might use the technology to leverage their own personal and professional development. It is therefore necessary for ODL practitioners and institutions to explore the available technologies, and see those that can best be used to facilitate teaching, learning and general improvement of ODL institutions.

Research Design and Methodology

The study on which this paper reports lends itself to the exploratory mixed methods design. Thirty-two participants were purposively sampled and an online survey questionnaire administered to establish the extent to which virtual learning delivery provided improved access, promoted openness and encouraged flexibility in an ODL university. There were twelve questions for participants, excluding those requesting their demographic data. Data were analysed by studying the computer generated report from the online survey responses. The emerging themes were then identified from this report. First, statements pertaining students’ experiences and perceptions on virtual learning, and how virtual learning could lead to improved access, openness and flexibility were highlighted. The statements

were then classified into common themes. Other than information from students, the search scope extended to books, conference papers and journal articles.

Participants

The questionnaire was sent out to participants with a self-explanatory consent letter explaining the purpose of the study. Thirty-two (32) students, 19 females and 13 males, were invited using the second year, second semester tutorial register. This was the last of the scheduled tutorials for the group which was due for completion that same year (2018). The last tutorials are scheduled for February of every year. Of the 32, a total of 27 students (16 females and 11 males) responded to the questionnaire. This represented an 84.3% response rate. The participants' age ranged between 34 and 55+ years. Participants were given a consent letter seeking their permission to participate in the study. They were also informed about their right to participate; that they could withdraw their participation anytime they wished to.

Findings and Discussions

The findings of the study were mainly informed by the perceptions that students held, as well as their experiences of the virtual learning delivery mode. This study yielded useful findings as discussed in the section that follows.

Good effects of virtual learning

Participants in this study stated that the virtual class was not significantly different in terms of quality of content offered to the two groups of students. They indicated that everything remained the same in terms of content, including assessment. Students provided responses on what they perceived as good effects of virtual learning that might contribute to improved access, promote openness and encourage flexibility in an ODL institution that uses technology to facilitate teaching and learning. The strength that the students displayed as a result of interacting through virtual learning cannot be overemphasised. They mentioned that virtual learning generally helped improve their progression rate and performance. Virtual learning also facilitated knowledge construction and sharing of ideas by students, thus constructing and sharing knowledge during the process. They praised virtual learning for allowing them to work anywhere, anytime. Above all, students explained that they experienced effective communication through virtual learning.

Creation of autonomous learners

The virtual students used virtual learning as an opportunity to work closer together and support each other in their studies. The students

explained that they devised support mechanisms by creating learning platforms to engage even outside the scheduled face-to-face support sessions. This encouraged more flexible learning as students could access their circle of support anytime they wished. This has also resulted in improved access and retention, leading to increased progression and completion rates.

The virtual learning created a much more autonomous group of students. From the study, it became apparent that virtual learning created more autonomous, self-directed learners who devised means to support each other (Knowles, 1975). In their responses, students further mentioned that virtual learning helped them create social platforms, which in turn helped reduce their feeling of isolation. From the study it became evident that virtual learning encouraged high retention rate due to high interaction that characterised it. The students' experiences of interaction demonstrate the strength of virtual learning in helping facilitate interaction. In the separate studies they conducted, Jeong & Hmelo-Silver (2016), and Shin (2017) reached a similar conclusion that virtual learning encouraged collaborative learning as students studied together, leading to improved progression and performance.

The MEDEL results for the past 3 cohorts that graduated in 2017, 2018 and 2019 also showed that the virtual class out-performed the face-to-face class. During the study it became apparent that virtual class students developed to be better managers. They could manage both their time and study much better, compared to the face-to-face group. Virtual students motivated each other, which in turn helped break the isolation, which is very common in the normal ODL delivery where technology is not used to support teaching and learning. Virtual students also proved to be more disciplined than the face-to-face cohort, who tend to procrastinate. The students indicated that they monitored each other's progress to ensure they all completed, and submitted their assignments on time. However, it is important to note that younger students enrolled in the MEDEL programme, aged forty years and below, found it easier to use technology and "perceived using technology as a helpful learning tool" (Joo & Lim, 2018, p. 56). They also showed more interest in using technology than the older students.

The majority of students confirmed Garcia's (2018, p. 6) view that "In a traditional classroom, teachers can gauge students' level of engagement and understanding through simple observation of their body language and interaction with peers and contributions to group discussion". They asserted that they struggled on their own with little support from facilitators during tutorials while the face-to-face group benefitted since the facilitators could adjust or change the teaching strategy as necessary, when they realise that the students were not following.

The technology here was initially introduced to improve "dialogue" through improved interaction. In the end this did not succeed through

smartboard but students used other available platforms such as chats and discussion forums to interact with each other. Evidence from the students learning space (Moodle) further indicated strong positive student attitudes towards the virtual space, largely to do with improved delivery, i.e., improved interaction. As such, virtual learners turned what could have been their main source of frustration into their greatest opportunity.

Improved practice

Virtual learning has led to increased opportunities and there was evidence that it helped promote innovative teaching methods amongst the learners. Other participants indicated that it promoted successful outcomes and created unique learning experiences. They indicated that they adopted some of the technology that they were using in the programme for their own use at their own work places. Technology has, as such, positively influenced the learners (Shin, 2013). Furthermore, virtual delivery helped reduce transactional distance. Research by among others, Chen (2010) has shown that virtual learning allows individuals to interact and collaborate with each other in virtual classes, which are otherwise not available due to distance.

Research further shows that students feel free as virtual class provides a greater sense of empowerment (Wang, Minku, & Yao, 2018). Wang et. al., (2018) further contend that virtual class motivates learners since it provides “flexibility for repetition and self-pacing,” (p. 75). They further argue that “a learner who navigates through a virtual environment can gain valuable virtual experience, thus enabling discovery or experiential learning,” (p. 75). On the other hand, Dieker, Hynes, Stapleton, and Hughes (2007, p.4) point out that virtual learning “... provide physical, environmental and social interaction....” All these came out vividly from learners’ responses.

For a developing context such as Botswana power cuts are a routine occurrence which interrupt delivery of content. From the study it was evident that constant power-cuts led to poor internet connectivity in other places. This challenge instilled efficiency and developed leadership skills in virtual learners who took the initiative to act as leaders in their different learning communities, encouraging others to participate in activities at hand. This was evident in students’ discussion forum trails on which they were also assessed.

Factors that hindered access, openness and flexibility of virtual learning

The students also shared their experiences of factors that hindered access, openness and flexibility. The findings from the study are that the virtual class was not significantly different from the face-to-face mode, in terms of quality of content. The students appreciated that the quality of content was not in any way compromised for the virtual learning class. However, they decried the low-levels of interaction and poor quality of

videos, the very aspect that has been brought in to facilitate and reduce human absence in the teaching and learning process. The students stated that only the audio component was clear during the presentations while they rated the video very poorly.

Technological challenges of a virtual Class room

Though technology was introduced to make teaching and learning more conducive for the virtual learning students, the smartboard used required internet to function, and most of the time the internet was down especially during working hours. Poor internet connection and persistent power cuts that interrupt teaching and learning are a common occurrence affecting virtual learning at BOU. They are a phenomenon that frustrates the students and affect the students' abilities to appreciate IT mediated learning.

Students who participated in the study indicated that there were generally low levels of satisfaction regarding the delivery of the programme. They further expressed the view that it was not easy to follow instruction during the support sessions, for instance, they could not fully participate when given group work due to poor internet connection. As such, they missed a lot from discussions that were led by the facilitator. Participants further intimated that communication was generally poor between facilitators at the face-to-face region and the virtual class. They further highlighted the fact that there was limited interaction with facilitators compared to the face-to-face group. The poor picture quality of the facilitators on the smartboard did not help bridge the missing human element. Facilitators were also reportedly not visible, but students only heard their voices. They shared that it was necessary to also see the facilitator on the screen as well since it would help bridge the human absence that characterises the ODL mode of delivery. Technological glitches that affected delivery most of the time were also cited as serious challenges by the participants. They cited the high prices for data and bandwidth as other challenges facing the virtual delivery of the programme. Over and above the technical challenges, participants reached a consensus on lack of technical skills for both students and facilitators that hindered smooth virtual delivery of the programme.

Conclusion

Virtual learning can be effective in this advent of the fourth industrial revolution. However, institutions need to be ready before they can embark on virtual learning. At BOU, for instance, at the time of this study, the institution was still grappling with issues of low bandwidth which negatively impacted on virtual learning. It therefore, remains a challenge for BOU to invest on infrastructure to ensure smooth implementation of the virtual learning programmes. There is a need for adequate resources to facilitate effective implementation of the virtual delivery mode by

institutions. If well prepared for, the virtual learning mode can potentially contribute to improved access, promote openness and encourage flexibility of education in ODL institutions. Institutions need to consider the usefulness of technology, as well as ease of use of the technology before introducing technology mediated programmes. Usefulness in this context speaks to the value the technology will add to the teaching and learning processes, while ease of use refers to how well users adapt to the technology used.

From this study, it is evident that there is a need to introduce multiple modes of presenting content to facilitate learning in the ODL space. This will be even helpful during times of crises such as COVID-19 which is being experienced in the 2020s. Presentation of content needs to be varied to engage virtual students. In the last instance, participants agreed in principle that virtual learning can be the lacuna for improved access, promotion of openness, and that it can encourage flexibility in an open and distance learning institution. One shortcoming of this study, however, is the small number of participants. Thus, the findings cannot therefore, be generalised. However, they can assist researchers interested in virtual learning to appreciate what other people have experienced, and thus help improve their practice. There is, therefore, a need for a longitudinal study to be carried out with the more cohorts to facilitate generalisation of findings.

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Appendix



The purpose of this survey questionnaire is to establish the extent to which virtual learning delivery mode has provided access, openness and flexibility during your study. Please note that your participation in this survey is entirely voluntary and you can withdraw at any point you so wish. Further note that your decision, whether to participate or not will disadvantage you in any way. Your responses will remain completely anonymous and no names or personal identifiers will be recorded or reported. We, therefore, request you to honestly and freely answer these questions. We encourage you to tick the option and write statements, where applicable, that best describe you, your experiences and perceptions of virtual learning.

We thank you for the anticipated cooperation and the time you will devote to this important exercise.

SECTION A: Participant Information

(1) Year of study

- (a) Year 1
- (b) Year 2
- (c) Completing student

(2) Gender

- (a) Male
- (b) Female
- (c) Other

(3) Age:

- (a) Less than 30 years
- (b) 30 – 35 years
- (c) 36 – 40 years
- (d) 41 – 45 years
- (e) 46 – 50 years
- (f) Over 50 years

(4) Marital status

- (a) Married
- (b) Single
- (c) Divorced
- (d) Separated
- (e) Cohabiting
- (f) Other

(5) Occupation

- (a) Teacher
- (b) Senior Teacher
- (c) Head of Department
- (d) Deputy School Head
- (e) School Head
- (f) Lecturer (Tertiary)
- (h) Other

SECTION B: Open Questions on Virtual Learning

- (6) How is virtual learning different from face-to-face mode of delivery?
- (7) Provide two (2) ways through which virtual learning may contribute to improved access?
- (8) Provide two (2) ways through which virtual learning that may promote openness?
- (9) Provide two (2) ways through which virtual learning that may possibly encourage flexibility in learning?
- (10) Provide two (2) factors that may hinder access, openness and flexibility of virtual learning.
- (11) What did you like the most about virtual learning?
- (12) What did you like the least most about virtual learning?
- (13) What challenges did you experience as a virtual learner?
- (14) How did you, as a virtual learning student, overcome the challenges you experienced?
- (15) How did you benefit from the virtual learning mode of delivery?
- (16) How has virtual learning influenced your practice/improved how you do your work?
- (17) Write down 2 things you would wish to share regarding how virtual learning has impacted on access, openness and flexibility of your learning as a virtual student?

Thank you for your time and participation