

An Analysis of Students' Perceptions of Online Learning Practices in Higher Education in Zimbabwe

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ABSTRACT

This study explored pre-service student teachers' perceptions of online learning practices in higher education in Zimbabwe. The study adopted a qualitative case design within the interpretive paradigm. A convenient sample of 15 participants from a class of 83 pre-service student teachers enrolled for Mathematics and Science education courses in a university was selected. Open-ended online questionnaires, face-to-face interviews and document analysis were used to gather data. Findings revealed that online programmes made it possible for lecturers to deliver online tuition, upload content and other courseware materials and interact with students. However, sentiments from the pre-service student teachers showed that the online delivery modes were less engaging with limited applicability in contexts-bound and authentic situations. Additional findings showed limited access to internet facilities and reduced support for pre-service student teachers' orientation for online learning. The pre-service student teachers also reported experiencing some challenges in the use of formal online platforms such as Moodle, Zoom, Google Meet and Google Classroom. Among other solutions proffered, the pre-service student teachers suggested that local internet service providers needed to offer subsidised tariffs to all higher education institutions. It was conjectured that such solutions and others highlighted in this study would assist institutions of higher education in Zimbabwe a great deal to create online environments that were instructive, situating, constructive, evaluative, communicative and supportive.

Keywords: Courseware materials, Virtual environments, Online learning, Student support, Online best practices, Synchronous learning.

Introduction

The advent of Covid-19 pandemic has impacted negatively on the operations of most schools, colleges and universities worldwide (Gautam & Gautam, 2021; Madinah, 2020; Adnan & Anwar, 2020). During the pandemic, countries have imposed restrictions on travel and movement. As a result of these Covid-19 induced restrictions, business came to a near halt, schools, colleges and universities closed. According to Gautam and Gautam (2021), 1.5 billion children and youths in 188 countries were out of school and confined in their homes, representing 72%

of the world's student population by May 11, 2020. In Nepal for example, more than 1.3 million students of different levels lost their regular college activities, and universities were forced to withhold their examination and intake schedules (Gautam & Gautam, 2021). In similar moves in Uganda, the government closed schools leaving about 15,000,000 students at all levels and an estimated 600,000 refugee learners out of school (Madinah, 2020). With the increasing lockdown tenure and realising the pandemic situation most universities made a forced shift from in-person to online delivery modes. Success of the shift depended on a number of factors inclusive

of availability of resources, technical preparedness, type of university and other dimensions. Adnan and Anwar (2020) aver that the unexpected changes became a measure of institutions' agility with the majority focusing on transfer of educational content to digital platforms rather than establishment of functional virtual systems. Making similar observations, Madinah (2020 p. 185) argued that considering educators needed elaborate course designs and teaching materials it was a "...huge, unsettling shift to transfer all the existing courses online in a matter of days". In other words institutions and staff were caught unawares without plans for staff and student orientation for online provisions. Staff needed re-skilling. This is because unlike traditional in-person delivery modes the changes to online provisions place new demands (technical proficiencies, pedagogical competencies, administrative skills) and expectations on the universities, their staff and students alike (Gautam & Gautam, 2021).

Given that a large number of universities literary ventured into uncharted territory without prior planning, an analysis of environmental dimensions for online teaching and learning becomes critical. Without suggesting that online teaching and learning was non-existent before the advent of Covid-19, the argument is the unexpected shift created a need to closely examine the diverse virtual environments within which universities are operating. Of necessity to online teaching and learning environments are issues inclusive of instructive, constructive and access dimensions. The instructive environment relates to all the essential components such as specific learning needs, instructional objectives, learning experiences and activities put in place for the basic element of learning content while the constructive environment denotes active construction of knowledge characterised through inquiry- and problem-based approaches (Chin & Williams, 2006). While these environments readily exist with much easier application in the traditional face-to-face delivery modes there is inconclusive research evidence suggesting seamless application of the same when it comes to online delivery.

According to the Canadian Council on Learning (2009), online learning brings with it access to education, equity in resources distribution, an instructive environment replete with shared learning content and deeper constructive-based learning, and a social component to learning. While the argument that online learning increases access to education as posited by Canadian Council on Learning (2009) holds water in environments that are well planned, in some cases particularly in developing countries, the same argument falters. For instance, while it is widely believed that adopting online education is panacea to diverse educational problems of inequality in crisis situations some

students are left out due to technical challenges such power cuts, unaffordable ICT gadgets, and remote geographical locations with poor internet connectivity (Gautam & Gautam, 2021; Agormedah et al., 2020; Lee, 2017). Lee (2017 p. 21) says; "Given that there is currently a large group of people in both developed and developing worlds who do not have full access to the Internet, it is plausible that adopting web technologies might actually reduce the accessibility of distance [online] education in those contexts". In other words, universities strive to uphold expectations about online teaching and learning within such complex and ill-defined structures and environments.

Statement of the problem

The Covid-19 pandemic induced restrictions abruptly compelled many universities to shift from in-person to blended and/or total online modes of delivery. Both lecturers and students alike were least prepared for such shifts in teaching and learning. In the majority of cases it meant they had to adapt in the shortest possible time even without orientation. The quality of online learning that manifests under these circumstances needs illumination. This study therefore seeks to explore pre-service student teachers' (PSSTs) perceptions of online learning practices in higher education in Zimbabwe.

Main research question

The study is guided by the following overarching question: What were PSSTs' perceptions of the quality of online practices in higher education in Zimbabwe?

Sub-research questions

To provide answers to the main research question of the study, three sub-research questions are asked.

- What were the PSSTs perceptions of their training and orientation for online learning?
- What perceptions did PSSTs hold about the quality and organisation of online delivery modes by lecturers?
- How can the quality of online learning practices in higher education in Zimbabwe be improved?

Related literature

Orientation for both faculty staff and students is a crucial aspect of successful online programmes. Online learning

is defined by Huang et al. (2020) as learning experiences offered in synchronous or asynchronous environments using different devices with internet access. Effective online learning demands that students and staff alike be trained on requisite skills for ease of application. Technical aspects of the online system such as institutional Learning Management Systems (LMS), computer and internet often require that users are oriented on its use (Huang et al., 2020). Research has shown that engaging students in orientation prepares them effectively for the pending academic journey, boosts their confidence, fosters a sense of belonging, and builds requisite skills for future online engagement (Hoffman et al., 2020; Khorwal et al., 2021). Vaill and Testori (2012) suggest a three-tier approach - orientation, mentoring and on-going support. In relation to orientation, faculty staff need to be trained to use the LMS, apply pedagogy of online education, learn the unique profiles of online students, adapt courses for online delivery and construct assignment and assessments for the students. Training can be provided through mentoring. In mentoring, the novice faculty member works with an experienced mentor teaching the same course who continues to offer support. Ongoing support comes in the wake of short demonstration sessions from technical staff, familiarising members with new technologies and ongoing technical assistance availed to needy staff in the course of the semester. Literature (Huang et al., 2020; Kebritich, et al., 2017) is in agreement that the three stage approach works equally well with student orientation and supports. Effective support services for lecturers' online teaching and for students can of necessity follow similar models to ensure quality online education for both students and faculty staff (Huang et al., 2020).

As online learning grows literature on best practices grows with it. Frameworks for the development of quality online programmes abounds. Kaye (2011) located thirteen such frameworks within literature. A synthesis of the thirteen frameworks reveal issues of access, institutional support, course development and structure, student support, faculty support, management, technology, pedagogy, and evaluation as critical attributes for the development of quality online programmes. The technology infrastructure together with the plan for use, management and security is a prerequisite for effective online programmes. This calls for an interface of lecturers, PSSTs and technology in the design process of the online programmes as resources are channelled to enhance both student and staff readiness.

Oliver (2001) avers that sustainable online learning requires that five strategies of teacher expertise, student readiness, technology infrastructure, reusable learning

objects, and reusable learning design be put in place to create conducive environments for online practices. First, online learning practices require a vastly changed skillset for the lecturers for them to be abreast with ever-changing technology skills demand (Oliver, 2001). Second, students' readiness is central to online learning practices. Thus, institutions should ensure inclusive access, orientation of students on basic computer skills, technology literacy and self-regulated learning. Third, courseware delivery must become part of technology infrastructure. Fourth, reusable learning objects are required entities. Examples of such entities are Web pages, PDF documents, database applications, PowerPoint presentations, library resources, consortia among institutions and specialist organisations that broker instructional materials and learner support services for institutions (Oliver, 2001). Fifth, reusable learning design that brings about planned learning outcomes are required as opposed to just providing pages of content material.

In other literature, quality online learning is based on the interaction of three pillars - people, technology and services. The *human element* includes students, employees, lecturers, content and service providers. The content and service providers offer *services* such as pedagogical models, and instructional strategies through the medium of *technology*, that is, digital content, videos, audios, knowledge repositories, discussion forums, social networks and multi-user dialogue and sharing tools (Aparicio et al., 2016).

Organising online teaching to ensure quality learning can be a challenge to the lecturer. For it to be effective critical considerations of the learner, the hardware and software of the course materials, learning and administrative environments should be made. In a study on transition to online higher education in Nepal, Gautam and Gautam (2021) found infrastructure, student and teacher as antecedents of effective online classes. According to Butnaru et al. (2021), three elements for designing effective content for online courses are theoretical materials, pedagogy, and technology. Huang et al. (2020) argue that effective online teaching and learning can be achieved following seven factors; communication infrastructure, digital resources, friendly learning tools, interactive teaching methods, effective instructional organization, teachers and learners supports, and cooperation between institution and stakeholders. It is widely believed that underplaying the importance of these dimensions results in challenges that impact negatively on the quality of online practices.

This study draws from Universitas 21 Global's (U21G) framework for effective online learning. U21G is an

agreed framework for a consortium of 16 European universities in partnership with the world-renowned publisher, Thomson Learning (Chin & Williams, 2006). The rigorous quality assurance mechanisms as directed by an external body, U21 padagogica (U21p) and the U21G guiding principles for the design and development of online learning programmes make it a suitable framework for adoption in studies carried out in developing countries such as Zimbabwe.

A U21G learning design targets adults, thus, considers principles of andragogy and student-centred synchronous and asynchronous e-learning styles. With regards to andragogy, the common principles that relate to the creation of a conducive e-learning environment are; subject matter relevance to personal interest of the learners, structuring learning activities on the basis of learners' experiences, problem-centred rather than content-centred learning, and involvement of the learner in the planning and design of instruction (Chin & Williams, 2006). Concurrent with involvement of learners in the planning of instruction, is the use of synchronous and asynchronous e-learning styles, which are a composite of cognitive, affective, and physiological factors that serve as tools aiding e-learners to adapt learning to their individual preferences (Shahabadi & Uplane, 2015). As a corollary of affiliation to these principles, a key element of the U21G e-learning framework is the opportunity for interactions occurring in holistic virtual environments, in diverse ways and to diverse learners (Chin & Williams, 2006).

The U21G framework considers learning as occurring seven sub-environments, namely: instructive, situating, constructive, supportive, collaborative, communicative, and evaluative environments (Teo, 2003). These sub environments focus on knowledge applicability in future work environments (Chin & Williams, 2006). Accordingly, the instructive environment which is outcome based makes use of graphics, animation, simulated scenarios and other multimedia approaches to engage learners. In the situating environment learning is situated in environmental and cultural contexts rather than existing as self-contained and divorced from situations. According to Chin and Williams (2006), this environment is premised on the model of situated cognition which states that knowledge is contextually situated and is influenced by activities, contexts, and culture within which it is studied. Thus, in the U21G framework knowledge is embedded in learners' contexts and culture through authentic activities. The constructive environment frames learning as a knowledge construction process engaging the e-learners in interactive exercises, constructive enquiry,

mind mapping and other such approaches that are case-, design- and problem-based. Assumptions about learning informed by constructivism include learning that is; goal oriented, personally meaningful/relevant and active, reflective and problem-based, collaborative, inclusive with diversity of perspectives highly valued, and a partnership where teachers and learners work together productively (Segrave & Holt, 2003). The supportive environment is explained by the same authors (Chin & Williams, 2006 p. 14) as relating to the performance (e.g. software tools, courseware, tables & formulae) and cognitive (e.g. e-coaching, mentoring, feedback, e-resources) support that is made available to the learners for online learning.

In the communicative environment learners are connected to each other through online activities that engage them in cooperative and collaborative activities. Chin and Williams (2006) further contend that in the U21G communicative environment courseware is designed in conversational style with e-mail, discussion forums, instant messaging, voice notes, and audio conferencing forming the basis of communication with the learners. The communicative environment is further strengthened in the collaborative environment in which team work is a critical resource for peer learning, threaded discussions and social learning. Lastly, U21G values the evaluative environment. Accordingly, evaluation of learner progress takes place at every stage inclusive of needs analysis, formative and summative. Further, diverse online assessment approaches such as self and peer assessment, quizzes, and tests are used after every topic to check learners progress (Chin & Williams, 2006). Based on the framework our study sought PSSTs' perceptions of relevance of content, quality of online learning experiences, rational, their involvement, usefulness of courseware materials and whether activities were problem- or content-based.

Method

A qualitative case study within the interpretive paradigm was used to guide the research. In the interpretive paradigm research knowledge is relative to contexts and exists in multiple forms as interpretations by individuals (Levers, 2013). Rashid et al. (2019), proposes a four stage case study process, namely: (1) considerations on inquiry techniques and research logic (2) description of the entire set of procedures involved in the collection of empirical evidence (3) planned interaction with the participants, and (4) analysis of findings for report writing. These stages influenced the design of the current study.

The study's participants were a class of 83 undergraduate sciences and mathematics students doing a course in Curriculum Studies. Due to the fact that teaching and learning was blended with online and in-person sessions alternating and coinciding Covid-19 lockdown restrictions and subsequent easing up, data collection was done online and also through in-person face-to-face interviews. Open-ended questionnaires were sent to all students through the institution's Learning Management System (LMS) and participants were asked to return the completed questionnaire. Interviews were purposively done with two participants- a male and a female. Both participants were class representatives of respective sub-groups of the class and were therefore considered as information rich. Fifteen (15) questionnaire responses were returned achieving a return rate of 18%, which was considered low. According to Saleh (2017), open ended online questionnaires encounter lower return rates than short close ended ones. However, for a qualitative study the responses from the 15 participants triangulated with other data sources was largely adequate to achieve credible findings. Content analysis was used to analyse the data. Three a priori themes were drawn from the research questions. Thereafter the researchers picked cues and clues, categorised and reflected on and synthesised the data to yield codes, emerging patterns and extra themes that were used in reporting the results. Results were presented under the following sub-headings: participants' background information, access to internet by geographical location, orientation and students support for online learning, the quality and organisation of online delivery modes, and improving online practices.

Results

Participants' background information

Fifteen (15) PSSTs specialising in either Mathematics, Sciences (Physics, Biology, Chemistry) or Computer Science participated in the study. All the PSSTs completed an online open-ended questionnaire. Participants were allocated pseudonyms. Seven (47%) of the 15 participants were residing in a city, five (33%) at a Growth Point and three (20%) in a village (rural area). Nine (60%) of the participants were females while the remainder (40%) were males. All the males (100%) thought that they were very good in most computer skills such as discussing online, uploading and downloading assignments, and opening e-mail accounts that are pre-requisite for online learning. Fewer females, thirty three percent ($N_{females}=9$) expressed confidence in the aforementioned skills, while the majority (67%) thought they were not confident

enough on the online learning pre-requisite skills. The findings therefore suggested that male PSSTs were relatively more ready for online learning than their female counterparts.

Access to internet by geographical location

Depending on their locations the participants had different opportunities of accessing internet. Those participants residing in urban centres and some at Growth Points (67%) reported that they usually accessed internet by purchasing data bundles and visiting internet cafes. However, some of the participants hailing from remote rural areas (33%) experienced access challenges. Two said they would only access internet when they went back to college, another two reported that they asked relatives/friends for internet facilities while one from a remote rural area at the border with Mozambique talked about walking some kilometres to access network. The excerpts below picture the variations in the levels of access to internet services.

I ask relatives and friends to google for me because I don't have a smartphone and have no money for buying internet data [Rose]

I use mobile network connection from the local provider. But I have to walk almost a kilometre and a half to access internet. There is no network booster nearby.[Fred]

Emerging from the students' sentiments was that poor connectivity, high cost of data bundles, and power cuts reduced their opportunities of accessing quality online education. The students concurred that their diverse backgrounds had a bearing on the issue of access. Due to difference in geographical locations, financial backgrounds, technical IT skills students' access to online services was varied. Some enjoyed enhanced access while the majority experienced reduced access.

Orientation and students support for online learning

PSSTs' responses to questionnaires and interviews revealed that orientation came as a once-off activity at the beginning of first semester of Part One. In other words, orientation for online learning was part of the general orientation provided to incoming PSSTs entering into university for the first time. Asked if they received orientation for online learning a few [e.g Del, Chen, Beki, Fred] answered in affirmation while the majority did not

believe the college trained them for online learning. Their perceptions are illustrated in the excerpts below.

The college doesn't really train us to use online facilities unless if online facilities is part of the course you will be doing in that semester. Majority of the students are not confident or rather are not fully knowledgeable about using online facilities [Dora]

No. The college doesn't offer us any form of training. They expect us to navigate through and find our way on the online platform [Sasha]

There was a general agreement among PSSTs that the institution offered little assistance to navigate online facilities. A few PSSTs reported receiving assistance from individual lecturers. The excerpts below illustrate this.

Yes. Some do, especially lecturers teaching faculty wide courses. For example, our pre-practicum lecturer sent a video on how to compress documents and how to upload large files using google drive and our Research Methods lecturer sent us guidelines on the use of Zoom.[Sasha]

Some lecturers do assist us with guidelines some don't. Some only do when approached. [Del]

The excerpts show that some assistance was given in the form of coaching on how to upload and download materials. Although such limited support came in before the start of a course module it was not sustained during the semester. In other words, ongoing support that would be needed whenever necessary was largely missing. The PSSTs actually opined that lack of such ongoing support caused them stress and anxiety.

The quality and organisation of online delivery modes

Data gathered in this study indicated the following salient features of the quality and organisation of online delivery modes; nature of online learning engagement and environments, delivery modes and approaches, interactions, timing, materials and tools, content nature and structure, tasks and activities, instructional goals, communication, and feedback. The PSSTs revealed that organisation of online delivery modes occurred through lecture sessions around organised topics, assigned reading materials, group discussions, coursework assessment, and feedback on tasks and assignments. The PSSTs also indicated that all these highlighted activities needed technical assistance.

PSSTs reported that they held one or two online lectures (of two hours duration) per week in the different subject areas. Lecturers were aware of their obligation to conduct online lectures. The timing of the lectures was a flexible arrangement between the lecturer and PSSTs. While some PSSTs [e.g Beki, Zed, Sasha, & Rose] said they attended all lectures, attendance was never 100%. Attendance was affected by PSSTs' motivation, affordability (data bundles), internet connectivity, and ability to balance study and family/social obligations. However, the PSSTs revealed that those who missed online lectures would be followed up later, asynchronously. As opposed to synchronous learning which engages students in real-time structured interactions, asynchronous learning allows students to follow recorded or posted proceedings on platforms at their own time and pace (Huang et al., 2020).

Another finding concerning organisation of the online learning was that delivery of lessons was achieved through what the researchers coined "primary" and "secondary" modes. From the students reports WhatsApp emerged to be a primary mode of delivery while the less often used e-mail, Moodle, Zoom, Google Classroom became secondary modes. PSSTs reported using only the secondary modes to access bulky courseware materials such as large audio/video or zipped files that could not be send on WhatsApp. Most of the online lectures were conducted through WhatsApp. Lecture notes, voice notes, instant messaging are the features that enhanced learning through WhatsApp. The PSSTs further reported that in some cases synchronous meetings were attempted with Zoom and Google Classroom despite low numbers in attendance. The excerpts below illustrate the existence of the two modes of delivery.

While Zoom is preferable because it helps teachers to demonstrate and coach learners we mainly use WhatsApp because many students can access WhatsApp bundles. There is high participation in WhatsApp classes [Ken]

Registration is one of the major challenges of Moodle. You cannot access Moodle without registration. If we emphasise Moodle most of the students who register late are left out due to registration issues. That's why most of the lecturers use alternatives to Moodle like e-mail and WhatsApp [Kumbi]

In the institution under study the LMS linked up PSSTs' registration with access to the e-learning portal, examinations and results. Some PSSTs were struggling to raise money and only managed to register toward the end of the semester in time for examinations. It therefore meant an unregistered PSST could not access courseware materials uploaded on the platform.

A common finding that also emerged across the three sources of data (interview, questionnaire survey and documents study) is the intensity of content. The analysis of documents showed that content uploads such as texts, literature, lecture notes, internet links, and course modules were made. The uploaded documents were largely content intensive. Content intensive implied materials with subject matter knowledge that PSSTs needed to read and memorise. Just waiting to receive such materials probably meant the PSSTs were not actively engaged in the knowledge construction process and that the applicability of the materials in context-bound situations became questionable. Data from both interviews and open-ended questionnaires revealed that the PSSTs seemed happy with the content intensity phenomena since in their opinion it prepared them for examinations. For the majority of courses, the content was contained in course modules. Course modules in this context were lecturer designed study guides/booklets containing course content in line with individual course outlines. A majority of the PSSTs [e.g Kayler, Kumbi, Fred, Kuzi] made reference to the course modules which they regarded as the most important document they should receive from a lecturer. The PSSTs thought that since the module was written basing on the course outline having one guaranteed a pass in the examination. From their' perspectives the learning outcomes seemed to be examination centred.

That observation that learning outcomes seemed to be examination oriented was perhaps further confirmed in the online delivery approaches. Findings suggested that delivery approaches were deductive in nature. Unlike inductive approaches that engage the learner actively deductive teaching approaches are teacher centred. The main focus of such deductive approaches is to transmit content. Although some PSSTs [e.g Sasha and Rose] talked about the use of videos, audios and PowerPoint presentations some [Roy, Dora, Kumbi, Ruva] opined that content uploads did not have a variety of activities to engage in. What emerged was evidence of limited collaboration, particularly that which involved working in teams on real-world problems. The teaching and learning materials the PSSTs received were mainly structured in the form of notes with tasks for comprehension. Rarely did the materials delve to ask PSSTs questions requiring online collaboration. While the PSSTs reported doing collaboration on group assignments their collaboration was limited to physical groupings of PSSTs coming from the same locality. Further observations were that collaboration was only sometimes done through WhatsApp discussion chats but not through the institution's designated Moodle discussion forums. The limited collaboration and

use of deductive teaching approaches meant restricted participation and loss of belonging in which PSSTs were largely left isolated to themselves in much of the online activities

In relation to organisation of the online learning, it was found that feedback on tasks was given. The PSSTs were in agreement that most of the lecturers provided feedback on work marked. Feedback was provided mostly through e-mails exchanges and WhatsApp. However, feedback that related to technical expectations was largely missing. Technical expectations imply communication to the PSSTs on skills that are required in online environments. Such skills are inclusive of technical IT skills, sending and downloading folders or bulk files, logging in and posting materials on discussion forums. Commenting on the need for such support skills Dora said:

Some lecturers do teach one or two things associated with their course on how to access online facilities. While others do not tell you how to access them, they mostly correct you after you have done the wrong thing. My thought is students should be told about their expected way to tackle assignments even before they do to avoid confusion

This might possibly mean that lecturers should take a leading role right from the beginning. They should communicate expectations to their PSSTs informing them what platforms they would be using and providing essential help services. In other words, lecturers can provide tutorials through videos, audio or texts of expectations, and steps to follow when tackling assigned work or using an online learning platform.

Improving online learning practices

The PSSTs were also asked how they thought quality online learning could be enhanced. Most of them thought that if the university could assist them and their lecturers with data bundles it would go a long way to improve online engagements. Specifically, PSSTs suggested that the university could either canvas for subsidised data bundles from internet service providers such as Econet Zimbabwe and TelOne or allocate them (PSSTs) data bundles per course per week following a quarter system. Others [e.g Dora and Roy] suggested the scrapping of student registration as a condition to get onto Moodle since it was impossible to access the institution's Learning Management System (Moodle) without registration. Freeing up the LMS space would ensure inclusive access to the facility, as late registrants are accommodated as soon as a new semester commenced. The other issues

that emerged on approaches to improve online best practices were suggested as follows:

- Both PSSTs and lecturers to embrace online learning and accept it as a new normal
- Invest in online learning infrastructure
- Train/Coach both PSSTs and lecturers on online learning systems
- Establish systems for supporting online learning
- Lecturers must use multiple approaches to engage students

From the PSSTs' sentiments training must happen at two levels- lecturer and student. On one hand lecturers must be trained on how they can design courseware that is engaging. On the other hand PSSTs' training could involve orienting them on skills to engage in discussion forums, operate computers, visit websites, create e-mails, upload and download materials, and engagement in online collaboration. The PSSTs iterated the need for lecturers to commence a new course with orienting sessions on the technical and academic requirements. Wherein technical requirements meant skills for operating hardware and software computer components and applications, academic requirements involved types of engagement (teacher-student, student-student, and student-materials), and the nature of coursework assessment. Further, the PSSTs opined that the use of follow up prompts to PowerPoint presentations, voice notes, and tutorials through a video, audio or text constituted multiple approaches to engage the students. Acknowledging the utility of such approaches Ken said;

One lecturer uploaded an assignment for us and for the solutions he sent a video which explained the content. It was effective. We watched, listened, and played the video over and over again until we understood. The video clarified difficult concepts.

However, the sentiment echoed by Ken was not a common phenomenon. The PSSTs thought that the approach expressed in the excerpt was an ideal that could be adopted by every lecturer to improve the quality of online learning. Despite that connectivity still remained an issue the PSSTs called for more virtual meetings as opposed to just WhatsApp conversations. It meant lecturers had to do more to actively engage the PSSTs in synchronous learning through platforms such as Zoom, Google Classroom or Microsoft Teams. No wonder, the institution was also called upon to invest time and money into the development of online infrastructure and training of staff to improve the quality of online programmes.

Discussion

Overall, the finding that emerged in this study is the lack of preparedness for online learning that comes as a result of lack of orientation and limited ongoing support. The finding showed that training for the PSSTs' online skills was a once-off phenomena that was insufficient to sustain online learning for the course duration. Similar findings are reported in Agomerdah's et al. (2020) who aver that despite students' knowledge of online learning and existence of platforms like Moodle and Google Classroom they were not ready for online learning because they lacked formal orientation and training. Contrary to our findings, Salceanu (2020) revealed that a majority (76.97%) of the students studied experienced no difficulty adapting to online activity. Salceanu (2020) studied 152 students with an opinion poll regarding their perception about the problems that the transition of the entire teaching and learning activity in the online environment raised for them at Ovidius University of Constanta. The differences in findings, perhaps manifest to the existence of the digital divide between countries in developed and developing worlds (Agomerdah et al., 2020; Salceanu, 2020). In that regard, Puzziferro and Shelton (2009) rightly observe that online teaching and learning can be highly effective in digitally advanced countries. However, despite the differences highlighted in studies (Agomerdah et al., 2020; Salceanu, 2020) above, the need for PSST's prior training on technical skills in computer operations and Internet cannot be overemphasised. Hoffman et al. (2009) note that while some students come with prior experience others require familiarisation with processes, expectations and the new operating environments. Such familiarisation if provided on an ongoing basis will result in the following immense benefits revealed in literature; a boost in PSST's confidence for success online, an increased sense of community among PSSTs, faculty, and lecturers, facilitation of academic preparedness and skills-building, and provision of support and engagement resources (Hoffman et al., 2009; Huang et al., 2020; Butnaru et al., 2021).

Two findings from the current study relate directly to quality and organisation of online activities. First, it was reported that students placed value on the organised online programmes and willingly attended a majority of the lectures. Similar findings are presented in a study by Salceanu (2020) where it was found that 64.47% of participants thought that carrying out educational activity in online environments was most suitable during the pandemic period. Further, in the same group of participants, 75.57% were happy with the possibility of attending the organised online lectures. Second, the current study's

findings also reported on primary and secondary delivery modes in which the use of WhatsApp emerged as the major delivery mode. While public opinion may cast doubt on the effectiveness of social media platforms such as Facebook, Twitter and WhatsApp in online educational settings some studies (Maphosa et al., 2020; Alubthane et al., 2021) attest to their proven benefits. Facilitation of online discussions, opportunities for articles publication, and editing in knowledge co-creation exercises, using mobile instant messaging (MIM) to communicate and share information and courseware materials, and assist to integrate videos, podcasts, messages, texts, images, voice notes and audio files are some of the benefits (Alubthane et al., 2021). Despite the limitation that our study did not probe the perceived reluctance by both lecturers and students to use formal online platforms the findings concurred with the two studies above that WhatsApp was rated highly because of its convenience, practicality and ease of use.

An additional finding under the organisation of quality online learning related to content intensity. Participants perceived the online materials as content intense and examination oriented. The finding where PSSTs waited to receive sets of reading materials from the lecturer created scenarios that alienated them (PSSTs) from the core elements of the U21G framework. The core elements of the U21G framework require that students actively co-construct knowledge that is applied in situated and authentic contexts (Chin & Williams, 2006). This observation was made elsewhere in other studies (e.g. Conman et al., 2020; Madinah, 2020; Dhawan, 2020) on online learning in the pandemic era. For instance, in the same regard Dhawan (2020) says the rush from face-to-face delivery modes to online result in lecturers using content that was mediocre and theoretical and that did not allow students adequate practice and collaboration. As a result and as suggested in research evidence a primary focus on content and examinations leads to a narrowed down curriculum and the neglect of learner-centred approaches framed in both constructivism and social constructivism (Kebritchi et al., 2017; Dhawan, 2020).

The current study revealed several challenges experienced by PSSTs that can be traced back to the lack of orientation and support. Some of these challenges are categorised in literature (e.g., Adnan & Anwar, 2020; Guatam & Guatam, 2021) as broad yet others are regarded as personalised (Lee, 2020; Kebritchi et al., 2017; Dhawan, 2020). The current study revealed that PSSTs experienced the following broad challenges; poor connectivity, frequent power cuts, lack of access to internet facilities, high costs of online services, ineffective technology,

disadvantaged financial backgrounds, and remote locations as aspects that negatively impacted effective provision of online teaching and learning. Further, the study also reported on personalised challenges for online learning provisions that were similar to what has been reported in literature e.g., restricted participation which manifested through uncommunicated learner expectation, loss of belonging, reduced learner engagement, and limited support. The descriptions of learner expectation, belonging and participation challenges made in the current study closely match those provided in Kebritchi et al. (2017). In Kebritchi et al. (2017) for instance, belonging (group identity) issues are defined from a social constructivist point of view where co-creation of identities occur as a result of online social interaction. Furthermore, the finding that PSSTs were largely not supported to develop competences to operate in online environments were commensurate with Salceanu's (2020). A majority (74%) of students faced challenges related to competencies needed to operate online, different malfunctions of the platforms, and uncommunicated expectations for online practices (Salceanu, 2020).

Conclusion

This study sought to explore PSSTs' perceptions of their experienced online learning practices. Overall, the PSSTs were happy with their lecturers' commitment. Lecturers delivered online tuition, uploaded content and other courseware materials and interacted with PSSTs successfully. Despite the PSSTs' perceived challenges such as poor connectivity, lack of access to internet facilities, high costs of online services, uncommunicated learner expectations, poorly conceived sense of belonging, reduced learner participation, and limited support the PSSTs were happy with the institution's successful organisation of online learning activities. Although the use of official online platforms such as the institution's LMS was limited, PSSTs reported widespread use of WhatsApp as a tool for online teaching and learning. From the PSSTs' perspective the institution and its staff made concerted effort to pay attention to the core elements for the support and creation of conducive online learning environments. In line with literature (Chin & Williams, 2006; Puzifferro & Shelton, 2009; Huang et al., 2020) such online environments are instructive (created content is applicable and outcome-based), situating (consideration for cultural and contexts-bound knowledge), constructive (active construction of knowledge), supportive (scaffolded online learning with ongoing support provisions), communicative (learners are connected through team work and use of multimedia tools and applications), and

evaluative (assessment and evaluations occur regularly through authentic scenarios).

Competing Interests Statement

All authors have read and approved the manuscript and take full responsibility for its contents. No potential conflict of interest was reported by the author(s).

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