

**Blended Learning In Higher Education In The Era Of Covid-19 And Implications For 4ir: The Case Of A Selected State University In Zimbabwe**  
Salachi Naidoo, Vice Chancellor's Office, Great Zimbabwe University

---

**ABSTRACT**

This chapter was based on a case study of a selected University in Zimbabwe. It was particularly concerned with modes of blended learning during the COVID-19 era and assessing if these modes were effective. The World health Organisation (WHO) declared a global health emergency based on the virus. The COVID-19 pandemic brought with it a national lockdown which compelled universities to blend their teaching instruction. Universities were no longer able to congregate students all at once; hence learning had to be sustained through online means when students were not physically on campus. Although universities invested in ICTs, and insisted on blended learning to ensure that teaching and learning took place amidst COVID-19, they were beset with many challenges. This chapter covers the study period from March 2020 to April 2021. The study assumed a qualitative approach and case study design. Data was collected through interviews and questionnaires. The same was presented and analysed in a thematic approach. The findings of the study revealed that although learning did take place through blended learning, the effectiveness of learning through this mode was questionable as the quality of learning was compromised. The most widely used online learning modes which were blended with face-to-face interaction were Google Classroom, Zoom and WhatsApp.

*Key words: COVID-19, blended learning, online learning, higher education, quality*

**INTRODUCTION AND BACKGROUND OF THE STUDY**

This Chapter was based on a case study of a University in Zimbabwe. It was concerned with blended learning used during the COVID-19 era and assessing if this mode was effective. The effectiveness of teaching and learning was measured in terms of the quality of the contributions of both lecturers and students in the learning process. COVID-19 refers to the novel coronavirus SARS-CoV-2 which was discovered in the Hubei Province of the Peoples Republic of China and spread rapidly across the world (Velavan & Meyer, 2020). On 30 January 2020, the World health Organisation (WHO) declared a global health emergency based on the virus (Ibid). This world devastation induced a national lockdown in Zimbabwe, which took effect from the 30<sup>th</sup> of March 2020 (*The Herald*, 18 March 2020). The lockdown meant that only people in essential services such as health, food and retail shops we allowed to move around. Due to their involvement in the production of personal protective equipment, universities were also classified as essential services but ordered to turn to online operations, so as to adhere World Health Organisation (WHO) COVID-19 Prevention Protocols.

Universities in Zimbabwe had to immediately transition to blended learning with the little physical learning that had taken place. Some programmes at the selected university of this study, were set to begin in April 2020 hence no teaching had taken place. Lecturers and students were forced to embrace online platforms (like Google Classroom and Zoom meetings) in their teaching and learning. Resultantly, both students and lecturers

were ill prepared to use these platforms due to shortages of wifi access and the requisite gadgetry (laptops, tablets, smart phones etc) for such learning (Maphosa, Dube & Jita, 2020). Due to these constraints, lecturers ended up using other unauthorized online platforms like WhatsApp. Despite the need to adhere to COVID-19 prevention protocols and embrace blended learning, students were recalled for physical examinations. There was an unavoidable interface between COVID-19 and quality teaching and learning as the pandemic disrupted the physical mode of teaching and learning in higher education institutions. The quality mechanisms for physical or face to face modes of learning were not wholly effective for ensuring the quality of blended learning. Considerations of these mechanisms were significant in ascertaining if the modes used for blended teaching and learning were effective for the successful delivery of higher education.

The main objectives of the study were to; identify learning platforms and modes that were used for teaching and learning during COVID-19 during the period March 2020 to April 2021, analyse the challenges that affected quality teaching and learning through the methods identified as well as identify solutions for the challenges raised, if any. The study was intended to unearth perspectives of the users and consumers of the blended learning modes in the new normal era imposed by COVID-19. This study was critical for policy makers and managers of higher education institutions to ensure the quality of blended teaching and learning. The study made recommendations that could potentially influence policy changes based on lived experience. Out of the 21 public and private universities in Zimbabwe, the study was confined to studying one state university with a particular focus on the period beginning March 2020 to March 2021. This was due to the need to deeply understand the quality concerns of the specific institution. The blended mode of teaching and learning that was covered in this study was used in the university under study. COVID-19 induced restrictions made it difficult for people to congregate physically in large numbers. This meant that students were only allowed on campus in limited numbers (i.e by study level) in a compressed timetable. Such an arrangement put both lecturers and students under pressure to complete tasks within a constrained space of time. This left them with very little time to partake in this study thereby making it difficult to have physical observations of participants to benefit from non-verbal and paralinguistic features of physical human interactions. Most participants complained about the cost of data bundles and could only participate fully while accessing free university internet. However, to mitigate these challenges, the study was carried out wholly virtually at times when participant were able to access the university Wi-Fi service. There was no physical contact between the researcher and the participants. All questionnaires were issued and administered online.

### **CONTEXTUALISING BLENDED LEARNING IN HIGHER EDUCATION IN ZIMBABWE**

Blended learning is understood to mean a combination of several methods such as collaboration software, web based courses, and knowledge management practices (Valiathan, 2002). Online or virtual learning, on the other hand, refers to web based learning with no physical contact between the learner and the lecturer. Simply put, online learning is

instruction through a computer (Carliner, 2004). Important discourses arise out of blended learning such as; what can be blended and the goals of blended learning (Osguthorpe & Graham, 2003). Blended learning is thus the intentional deployment of a learning model that combines student-centred traditional in-class learning with alternative flexible learning to achieve strategic educational benefits (Downes, 2008; Stacey & Mackey, 2009).

The term ‘quality’ relates to high standards of service delivery (Conti, 2007). The term has since found its place in higher education. This is a higher level of learning which is “...a complex system facilitating teaching, research, extension and international cooperation and understanding” (Mishra 2007, p.10). There is a diversity of perceptions among different stakeholders of what quality higher education is or should lead to for different stakeholders (Watty, 2003 cited in Matei & Lewinska, 2016). Students may expect quality higher education to lead to immediate employment with good salaries, while academics may expect it to lead to self-growth and promotion. The employer, on the other hand, may expect higher education to produce or instil in graduates, certain key skills for improved business (ibid).

Prior to the coming of COVID-19, most universities in Zimbabwe used face-to-face modes of teaching and learning. Only Zimbabwe Open University (ZOU) was known to have blended learning (of both virtual and face-to-face modes). According to Kurasha & Gwarinda (2011) the main modes of delivery at ZOU were; self-contained print modules distributed to students and were intended to replace the lecturer; face-to-face contact with tutors for ironing out matters not understood from the module, adding other content, sharing experiences and building spirit-de-corps; tutorial letters; radio lessons; newsletters, CDs and DVDs; and an E-learning platform, branded as ZOU-on-line. The print modules were physical copies that were distributed physically, hence the continued need for physical contact between the student and university.

Moyo & Sibanda (2020) examined the challenges faced by Theatre Arts staff and students at Lupane State University during COVID-19 and its associated lockdown. Their study established that, students struggled to adjust to the new normal and social distancing during performances. Maphosa et al. (2020), making use of the Unified theory of Acceptance and Use of Technology, posited that WhatsApp was the best mode of instruction for virtual learning at Lupane State University given a it was less costly than other platforms. By focusing on student perspectives alone, the study was unable to capture a more nuanced stakeholder perception of the use of WhatsApp as sole platform for teaching and learning. The subjectivity of the term ‘success’ in higher education discourses rendered the study to further interrogation. This justified the need and agency of this current study as it went beyond Maphosa et al.’s (2020) study to analyse the effectiveness of other modes of blended learning broadly.

In yet another study, Vusumuzi, Sisasenkosi & Nodumo (2020) evaluated the acceptance of Moodle as a mode of blended learning by faculty at a rural university in Zimbabwe. The study made use of the adapted Unified Theory of Acceptance and Use of Technology (UTAUT) model as a theoretical framework. The study revealed that faculty staff had challenges with digital skills, connectivity, prohibitive data costs, and requisite gadgets that were crucial in the use of blended learning. In the wake of these challenges, the study

concluded that Moodle was an online mode that could effectively be blended with face-to-face interaction at that rural university. Marevesa & Mavengano (2021) utilised the Knowles' Adult Learning Theory to investigate how prepared and ready staff and students at Great Zimbabwe University (GZU) were to adopt blended learning in the context of COVID-19. The study argued that instructors at GZU were firmly rooted in physical face-to-face method of teaching, and as such, blended learning remained a difficult transition. This conclusion was similar to that by Maphosa et al. (2020) who proposed that successful adoption of any blended learning model required prior training of staff and students.

### ***Conceptual framework***

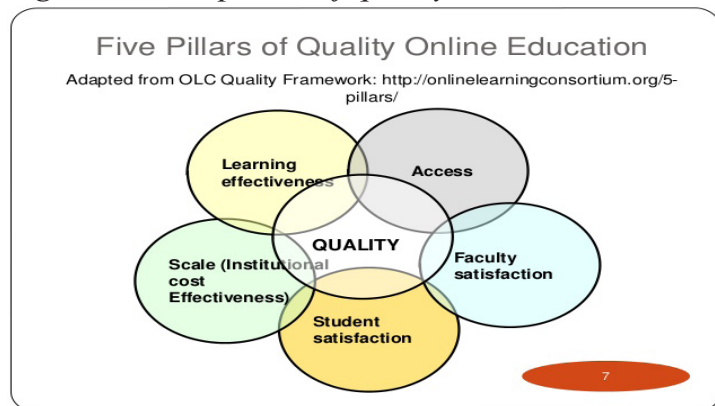
Given the novelty of the COVID-19 pandemic and currency of the problem at hand, this study took guidance of a conceptual framework rather than a theoretical framework. As such, it was informed by the Online Learning Consortium (OLC) quality framework

In view of the OLC quality framework, a university demonstrates the quality of its on-line learning programs, and its blended learning, through its responses to the concerns raised in figure 1 above. The above concerns were crafted into questions and administered in the context of the blended learning modes.

### ***Research methodology, design and sampling***

This study was grounded on a qualitative research methodology as it sought to provide answers to why and how something is happening; open-ended survey questions and highly descriptive answers that are difficult to measure and describe through numbers are frequent in qualitative research (Matters and Hunn, 2007). A Case Study was used in the study.

*Figure 1. Five pillars of quality online education*



*Adapted from OLC Quality Framework: <http://onlinelearningconsortium.org/5-pillars/>*

formerly known as the Sloan Consortium (or Sloan-C) (Moore, 2005). Given the heavy presence of online learning within blended learning (Whitlock & Jelfs, 2003; Downes, 2008; Stacey & Mackey, 2009), the researcher deemed the conceptual framework of the OLC useful in assessing of blended learning. Although OLC was designed long before COVID-19, it was useful in its scope, to the current study. The OLC framework listed 75 specific indicators which were refined to fit into five main pillars of quality online education which are; learning effectiveness, access, faculty satisfaction, student satisfaction and cost effectiveness as indicated on figure 1.



Critical case sampling was employed by selecting a small number of important cases (respondents) to yield the most information with the greatest impact on the development of knowledge on the effectiveness of the blended learning mode that was used at the selected university.

The target population of this study were students, lecturers, quality assurance staff, and deans of faculties at a selected state university in Zimbabwe. Limiting the scope of the study allowed for a deeper understanding of the target population. The target population had directly and personally experienced COVID-19 enforced blended learning at the selected university. The qualitative sampling of the study, was an iterative set of decisions made during the research process, rather than a simple planning decision (Emmel, 2013). Judgment and expertise in evaluating the quality of information versus the uses to which it were to be put were used to determine sample size (Sandelowski, 1995). The sample size of the study was influenced by the usefulness of the participants to the study, their knowledgeability of the study issue, their accessibility for the study, relationship (staff or students) to the study university as well as the suppressed time within which the study was to be carried out.

### *Demographical data of the study*

The demographic information of the participants is presented in Table 1 below:

*Table.1: Respondents' Demographic Information*

<b>Demographic Information</b>	<b>Number</b>	<b>Percentage (%)</b>
<b>Age</b>		
18-34	13	32.5
35-44	17	42.5
45-65	10	25
<b>Total</b>	<b>40</b>	<b>100</b>
<b>Occupation</b>		
Students	20	50
Faculty Deans	5	12.5
Lecturers	10	25
Senior Administrative Staff	5	12.5
<b>Total</b>	<b>40</b>	<b>100</b>

Notes to Table1: The information above is was sourced from field work done in May and June 2021.

In order to collect data for the study, 45 participants were identified and requested through emails to participate in the study. However, only 40 participated as the remaining 5 were continuously unavailable. Semi-structured questionnaires and open ended interviews were emailed to the respondents. Whereas 32 participants responded via email, 8 preferred to be interviewed over the telephone. All the eight who were interviewed via telephone were students. Of the 40 participants, 20 were students, 10 were lecturers, 5 were faculty deans, and 5 were senior administrative staff.

In keeping with Cousin, (2009) and Mason, (2010) this study relied on saturation as a methodological guideline in arriving at sample size determination. The study made use of the purposive sampling technique. This generated non-probability samples that were chosen based on the features existing in a particular population group and the overall

study. Advantages of the purposive sampling technique are well established in qualitative research (Sharma, 2017; Acharya, 2013; & Rai & Thapa, 2015). Purposive sampling's key benefit for this study was that it allowed the researcher to swiftly reach a specific sample. The participants of this study were chosen from amongst staff and students of the selected university. This was done purposively to benefit from the knowledge and experience of the participants based on the selected university. For the staff, the selection cut across both academic and administrative staff hence the participation of Faculty Deans, Lecturers and Senior Administrative Staff.

A semi-structured interview and open-ended questionnaire was used to collect data. The questionnaire was termed open-ended because, though the questions were planned, the interviewer was guided by the responses of the participants and made follow-up questions. This enabled the researcher to elicit respondents' impressions and opinions on the novel and sensitive matter of COVID-19. The focus of open-ended questions was frequently on the participant's thoughts, feelings, experiences, knowledge, abilities, ideas, and preferences (McIntosh & Morse, 2015; Riiskjaer, Ammentorp, & Kofoed, (2012). The sample group's diverse professional, educational, and personal history precluded the use of a typical interview schedule. This was useful for the study in order to capture the perceptions of the participants in their diversity. In line with COVID-19 friendly practices, the open-ended questionnaires and semi-structured interviews were administered via zoom, email or telephonically. Participants were asked questions about their understanding of the term blended learning, the modes of Blended Learning they knew or used, modes of online learning used for lectures during the COVID-19 era, the most effective mode of blended learning, how COVID-19 changed perceptions of the use of online learning, challenges encountered in the use of blended learning during COVID-19, quality assurance measures put in place to ensure effective blended learning as well as any advice, comments, suggestions, and views to the institution and policy makers in the use of blended learning going beyond the COVID-19 era.

### ***Presentation, analysis and discussion of results***

The study employed the thematic approach to data analysis, guided by the view that thematic analysis is used to infer respondents' perspectives, opinions, knowledge, experiences, or beliefs (Braun & Clarke's, 2006). As a result, a thematic analysis meant an identification of major themes from the data that would aid the creation of a rich, thorough, and complicated narrative of the data set. The thematic approach was free from constraint of any theoretical framework. The researcher used Braun & Clarke's (2006) six-step procedure of; getting familiarised with data, generating initial codes, searching for themes, reviewing themes, defining, refining, and naming themes, and producing final report to analyse data. Conversations of the telephonic interviews were recorded manually and on audio. The audios were re-played and transcribed to capture full details. Concerns of ethics, credibility and trustworthiness were adhered to by fully informing the participants of what the study sought to achieve and their rights and freedoms pertaining to participation in the study. In keeping with the principal of maintaining the anonymity of the respondents, codes were used in place of names. The participants were coded according to occupation i.e for

Students- S. 1 up to S. 20, Faculty Deans- F. D. 1 up to F. D 5, Lecturers- L. 1 up to L. 10 and Senior Administrative Staff- S.A.S 1 up to S.A.S. 5 as reflected in Table 2 below:

*Table 2 Coding of Participants*

Participant category	Codes
<b>Students</b>	<b>S. 1 - S. 20</b>
<b>Faculty Deans</b>	<b>F. D 1 - F. D. 5</b>
<b>Lecturers</b>	<b>L. 1 - L. 10</b>
<b>Senior Administrative Staff</b>	<b>S.A.S 1 - S.A.S 5</b>

The findings are presented according to the major themes around which the information was categorised.

### ***Understanding of the term “blended learning”***

The participants showed a varied understanding of blended learning. While students had a general understanding, most of the lecturers and faculty deans gave detailed explanations of the term blended learning. A notable example is F.D 1, who said:

*“Blended learning is an educational approach that mixes traditional place-based classroom methods with online instructional materials and chances for online participation.”*

Some of the lecturers also showed an appreciation of the term blended learning as they outlined the relevance of blended learning in the current digital age. To this end, L. 2, said:

*“In this digital age, it is a pity that we still have some of our folks who put our profession in disrepute.”*

Lecturer L. 4. linked blended learning to the advent of the digital technology as follows:

*“Blended learning, in general, refers to a combination of online and face-to-face learning, implying that your students are probably already performing some sort of blended learning and have been for years. It was only a matter of time until learning became ‘blended’ by necessity as digital and social media became more ubiquitous in the lives of students.”*

The response reflected Downes (2008) and Stacey & Mackey’s (2009) views of blended learning consisting of a combination of traditional face to face modes of learning with virtual or online platforms. There was a discernible pattern in the responses of the non-academic staff who, like students, accepted that it was a combination of learning approaches. This question was important as a grounding of participants’ comprehension of the learning modes that were combined to create blended learning.

### ***Modes of Blended Learning that participants were aware of and used***

Most of the students were not sure of themselves. One example of a quick and to the point response was the response by student S. 5 who just said: *“Face-to-Face and virtual learning.”* This trend was common among students.

***The modes of online learning participants were using for lectures during the COVID-19 era***

Participants were asked to outline the modes of online learning they were using either as a lecturer or as students. The most common modes of online learning that were used were Google Classroom, Google Meet, WhatsApp, Zoom and Email. Most participants (30 out of 40) were using Google Classroom as a mode of online learning. The discernible trend was that most lecturers in the age group 18 to 34 used Google Classroom as an online learning tool. For some lecturers, like L.3, Google Classroom had been their mode of instruction well before the advent of COVID-19. L.3 went on to comment that:

*“Technology has come to make life easy for us and how on earth can I be found still sweating it out in this digital age. I find Google Classroom a very convenient method of instruction. I can upload material at a time convenient to me while students can also access the same material at a time they find convenient.”*

As for most of the elderly lecturers (7 out of 10) in the 45 to 65 age group, the most prevalent online method of instruction was WhatsApp. For them, WhatsApp was quick, easy and friendly although they were limited on the material they shared with students. As reflected in their responses, Google Classroom was too technical, and they needed prior training.

Senior Administrative Staff as well as 4 out of 5 Faculty Deans said they had fully harnessed Zoom for their meetings and lectures. To them, Zoom made their lives much easier. However, F. D. 2 found Zoom very challenging. He shared an experience of a zoom meeting and said:

*“Never take some of this technology lightly. Those of us from the old school struggled to come to terms with the Zoom operations. At some point it took me forever to mute my mic. It was so embarrassing as everybody was at the mercy of the noise coming from my background as I was stuck”*

Students, who participated in the survey, concurred with the difficulty of being exposed to different kinds of online learning as each lecturer imposed on them the method of online learning he/she was comfortable with. Most students found it very confusing.

Most students concurred that the most widely used online mode of learning was WhatsApp, which for them was more accessible. They added that they submitted assignments through emails, with only 8 of the students saying that they submitted assignments through Google Classroom. 12 of the students concurred that their lecturers were not keen on using Google Classroom and Zoom; the study university’s official online learning platform as they complained about data costs. On the whole, all the participants revealed that they used some form of online learning during the study period.

***The most effective mode of blended learning***

The responses to this area were varied but most participants pointed out that Google Classroom would have been the most effective mode of blended learning if connectivity challenges had been addressed. In concurrence with Kaup et al. (2020), respondents L. 8 and FD1 commented that Google Classroom was the best tool that made life very easy for both lecturers and students as it was user-friendly and effective. Others, like L. 3, stated that online learning systems were just dumped on them without any training. L.3 explained



that lecturers needed serious training for them to accept online learning platforms like Google Classroom to be effective.

In concurrence with Moyo & Sibanda's (2020) and Maphosa et al. (2021), 4 lecturers said that WhatsApp was the most effective due to costs. One Dean F. Da. 4 found Google Meet to be the most effective and gave the following reasons:

*"Its free, no limits on time so you can do your 1 to 5 hours uninterrupted using university wifi"*

All Senior Administrative Staff supported Google Classroom and Zoom as being the most effective as there was a record and proof that teaching and learning had taken place. Asked if there was need for training, the fairly younger lecturers argued that an academic could always learn things on his or her own.

Most students were unsure of the most effective online method that was blended with physical learning. They indicated that they enjoyed using Google Classroom as it was fun and interesting and also found that it blended well with face-to-face learning as the feeling of human presence and interaction was upheld. Students like S. 7 were yet to embrace blended learning. She said:

*"Face-to-face was better on its own because there were no interruptions like power outages, no network connectivity challenges to talk of, no data to buy, no smartphone to talk of."*

Having discussed respondents' views on the mode of online learning they found most effective, the next section presents the respondents' views on how COVID-19 had, if at all, changed the university wide perceptions on the use of online learning.

### ***How COVID-19 has changed perceptions of the use of online learning***

There was a striking consensus among respondents (30 out of 40) that it was during the COVID-19 era that online learning received significant attention as a learning tool. Others like L. 3, attributed the advent of online learning to the coming of COVID-19. The lecturer, who recounted that he started lecturing more than thirty-five years ago and had, taught at most of the public universities in Zimbabwe blamed COVID-19 for the "troubles" he was facing with having to learn most of these – according to him- "not so easy to learn" and "not so friendly" online learning platforms like Google Classroom. For 4 of the Faculty deans, COVID-19 gave the final push for staff who had tried to resist online learning. F.D. 3 recounted how much effort he put trying to convince staff in his faculty to adopt online learning tools. The coming of COVID-19, compelled lecturers to accept what he said was "the new normal" mode of teaching and learning. All the student participants concurred that they saw a new sense of agency for the use of online learning under COVID-19. Student, S. 2 said that it was only under COVID-19 that he realised that lectures could be conducted online. Reflective of the studies by Murphy (2020) and Mahaye (2020), he went on to point out that, for the majority of lecturers, it was purely face-to-face until the arrival of COVID-19.

### ***Challenges, if any, encountered in the use of blended learning during COVID-19***

A number of challenges were encountered in the use of online learning. The challenges that

were encountered in the use of online learning included; power outage challenges, network connectivity challenges, prohibitive data charges, lack of gadgets like laptops, smartphones and lack of technical skills for both students and staff. As has been discussed in previous sections, participants' cited challenges of skills for using online platforms, hence the need for training in the use of Google Classroom and Zoom.

3 Senior Administrative Staff cited challenges of regulations that locked unregistered students out of the official Google Classroom platform. Similarly, some students, like S.5, who struggled to raise tuition fees on time and had neither a smartphone nor the data to participate in alternative platforms like WhatsApp lectures and Emails, were left out altogether. Another student, S.9 commented that,

*"I encountered problems in sending assignments via Google Classroom because the platform was only introduced to students without being given a chance to do a pilot test, even some lectures did not have enough knowledge about it."*

The same concerns were also raised by lecturers that Google Classroom, although well intended, was dumped on them without any training. S. 9 also concurred that no pilot study was undertaken before the adoption of Google Classroom as the primary online learning tool. S. 9, also noted that some of the lecturers were struggling to use Google Classroom. In a nutshell, the most notable challenges were the high costs of internet data and the lack of skills, flexibility and requisite gadgetry support.

### ***Quality assurance measures, if any, that the university put in place to ensure effective blended learning***

Participants were asked if any measures were put in place by the university to make sure that quality teaching and learning took place through blended learning. Various responses were given by respondents. Responses from Senior Administrative Staff generally suggested that some form of measures were put in place by the university under study. Most of them pointed out that some meetings were held by various schools in the university to check on the effectiveness of blended learning. Responses from faculty deans revealed that some quality assurance measures were put in place for blended learning. F. D. 4 said:

*"Deans and chairperson were allowed to enter in google class rooms of all the lecturers to see what was taking place. Weekly meeting to check the progress of the teaching was done thru the deans committee meeting"*

A number of the students (12) however, pointed out that they were not aware of any measures put in place to ensure the effectiveness of blended learning to uphold the university's quality assurance standards. Most students pointed out that the quality of blended learning was severely compromised. Some students pointed out that blended learning only favoured students from well to do families while those from underprivileged families were being marginalised. A faculty dean, F.D. 3 pointed out that the quality assurance of the institution was severely compromised, and he called it an issue that required urgent attention. The last discussion from the questionnaires was open for the participants to give their views, comments, suggestions and advice geared towards ensuring effective use of blended learning at the university under study.

***Participants' advice, comments, suggestions, and views to the institution and policy makers in the use of blended learning going beyond the COVID-19 era***

In view of the challenge that online learning was not well communicated and was just a university management idea, L. 3 advised that:

*The intuition should use an all-stakeholders approach whereby lecturers, students and ICT staff share information together on how things should be done, not simply imposing it on unknowing students and lecturers. A pilot test should first be done before it is fully rolled out.*

On the way forward and view on blended learning, L. 3 also proposed the following suggestions and overall comments:

*"We have done well in face-to-face learning and much has to be done to improve online learning. For example, provide lecturers with enough resources, improve out Wi-Fi broadband, ensure all students have the capacity to be involved in lectures."*

This respondent echoed the sentiments raised by Graham et al. (2013) that governments and institutions need to capacitate staff and students alike to effectively use online learning resources for successful blended learning. Most lecturers cited the need for the university to provide them with the necessary gadgets as well as ensuring that Wi-Fi was always available and more powerful to sustain the needs of both staff and lecturers.

The issue of blended learning being the only way to go kept coming up though many participants hastened to point out that a lot of work still had to be done if online learning had to be effective. Senior Administrative Staff also had a lot of comments, views, and suggestions to offer. S.A.S. 2, commented as follows:

*"My advice would be that blended learning should be the way to go whether COVID-19 persists or not. However, there is need for quality checks in the submitted work. The work should be exposed to turn -it in for originality. In the case of videos sent they have a chance to pause, rewind and re-watch the material and understand better than writing notes when the teacher speaks once in class. The slow learners have a chance to catch up."*

While still supporting the idea of continuing to use blended learning some lecturers suggested that the university should have its own online learning management system. F. D. 1 said,

*"So far a home-grown mode should be used because it would be cheaper for our students. A smart phone or a laptop should be a compulsory requirement for enrolment into the University so that all students start on the same page and manage to receive instructions on-line."*

Student S. 12 offered the following comments;

*"The university authority should be aware that students do not come from the same backgrounds. Students are in full support of online learning platforms and there is no plan or motive to resist or sabotage the adoption of online platforms like Google Classroom, but the issues students raise are real and pertinent. The university may have to partner with the business community to provide funding, loans and financial support to students from not well to do families. The adoption of online learning should not exclude some students from the learning process "*

***Integrating the OLC Quality Framework with the findings of this study***

Using the guidelines of the Online Learning Consortium (OLC) quality framework, the findings of the study raise concerns for the quality of blended learning at the university under study. At a surface level, deans, lecturers and senior administrative staff submit that some efforts were made towards ensuring that quality measures were put in place.

The OLC framework indicators were placed in five main pillars of quality online education which are; learning effectiveness, access, faculty satisfaction, student satisfaction and cost effectiveness. These indicators were covered within the themes of the study analysis. Quality is demonstrated through; learning effectiveness through this framework is determined through responses to learning effectiveness, cost effectiveness, access, faculty satisfaction and student satisfaction (Mayadas, 1977 in Moore, 2002, p. 2). These clusters were grouped according to connectedness as shown in Table 3 below.

This section details the attainment or otherwise of quality in the blended learning platforms of the study, from the points of view of the different participants (students, faculty deans, lecturers and administrative staff). The findings of this study are illustrated below; on a scale of 1 – 5, where 1 = indeterminate, 2 = poor, 3 = neutral, 4=good and 5 = very good. Table 3 below indicates the quality scores of blended learning at the selected university, guided by the Online Learning Consortium quality framework

*Table 3 Quality Scores of blended learning at the selected university of the study from March 2020 to April 2021.*

<b>Theme</b>	<b>Students</b>	<b>F/ Deans</b>	<b>Lecturers</b>	<b>Senior Admin Staff</b>	<b>Ave</b>
Institutional support and technical support, (including faculty support, student support)	2	4	3	4	3.5
Course development and instruction design, course structure,	3	4	3	4	4.6
Teaching and learning,	3	4	3	4	4.6
Social and student engagement,	2	3	2	3	2.5
evaluation and assessment	4	4	4	4	4

The table above indicates scores based on averages derived from participant responses on each of the five score areas as indicated. The scores above indicate that reasonable strides were made to ensure the quality of blended learning modes in the university under study, where 3 (neutral) is an average score which can be taken to indicate minimal effort. It is admissible that the university made efforts, however modest; towards ensuring that quality blended learning took place.

The results and policy suggestions are similar to recent work (Aboagye et al., 2021; Ali, 2019; Marongwe et al., 2019) which found that most students did not have access to technical devices such as computers and laptops, making the transition to online study difficult. The studies (Aboagye et al., 2021; Ali, 2019; Marongwe et al., 2019) proposed active policy interventions if online learning was to bring intended benefits. Lastly, several



comments, views and suggestions were proposed by the respondents. Technology was viewed as being the cornerstone for innovation in teaching methods during COVID-19 and probably beyond. Thus, with blended learning being increasingly explored as an effective method of learning, several preconditions were to be met if blended learning is to be successful at the selected state university in Zimbabwe.

### ***Blended learning and implications for 4IR, Lessons learnt from covid 19, What does 4IR mean, What role should government play***

The impact of the Covid-19 pandemic on society can never be underplayed, particularly on the education system. According to a 2020 report by UNESCO, the pandemic resulted in the total closure of schools in about 192 countries worldwide, with 91.4% of the total number of enrolled learners in these countries temporarily forced out of school (UNESCO, 2020). To avoid total curriculum disruption during the Covid-19 pandemic, some institutions introduced technology-based pedagogy to ensure that learners continue to have access to learning materials while staying home. The term Blended Learning (BL) which refers to ‘the integrated combination of traditional learning with web-based online approaches’ (Oliver and Trigwell 2005: 17), became more popular during this period. However, BL has been in use for almost 20 years and its meaning ‘has been constantly changing during this period’ (Sharpe, Benfield, Roberts, and Francis 2006: 18). BL combines several different delivery methods, such as face-to-face classrooms, live e-learning, and self-paced learning using collaboration software, web-based courses, EPSS, and knowledge management practices.

Since blended learning is a technology-based teaching system, it can only be effectively implemented in a digitally developed society. The digital divide gap was exposed and further widened during the Covid-19 pandemic with unstable and inadequate access to learning infrastructural facilities such as computing devices, electricity and internet connection affecting remote learning. This calls for governments to quickly address the existing socioeconomic and digital inequalities in order to avoid leaving any student behind in higher education training. The absolute adoption of disruptive technologies and trends for teaching and learning is key to addressing the highlighted inadequacies of the education system. Industrial Revolution affects every sphere of human living including, manufacturing, production, distribution, the economy and socialization (Aggarwal, 2009). The industrial revolutions transformed the world with the first being the age of mechanical production and water power, the second being the age of science and mass production, and the third being the rise of digital technology. The 4th industrial revolution, usually called Industry 4.0 or 4IR can simply be referred to as the current developmental transformation in the way human functions, as a result of disruptive technologies and trends such as robotics, **Internet of Things (IoT), virtual reality and Artificial Intelligence(AI) (Rouse, 2017).**

### **CONCLUSION AND RECOMMENDATIONS**

The study assessed the use of blended learning at a selected state university in Zimbabwe during the COVID-19 pandemic, from March 2020 to April 2021, with a view to establishing the effectiveness of the modes of blended learning that were used. This study cemented the view that COVID-19 aided the agency for institutions to embrace blended learning

in their modes of instruction. In addition, it was noted that successful implementation of blended learning was dependent on a well-developed information and communication technology (ICT) system and gadgetry. Participants displayed a comprehension of the modes of blended learning. Participants showed a positive attitude toward blended learning as an instruction mode and believed that online learning was the future of teaching and learning. Due to their disadvantaged backgrounds, the majority of students did not benefit much from technology-based learning. The findings demonstrated that there had been a major loss of learning owing to a variety of factors; including high cost of data bundles, lack of gadgets and competence of using online resources for teaching and learning. The mode of online learning that appeared to be popular in usage was WhatsApp, while Google Classroom was agreed to be the most Efficiency for quality learning, at the selected state university under COVID-19.

During the COVID-19 pandemic, both students and academic staff experienced numerous problems in the fast-paced implementation of online learning. Power outages, network connectivity issues, expensive data rates, and a shortage of gadgets such as computers and even smartphones for both students and staff are all obstacles faced when using online learning. Most students did not have access to computers and laptops, which made the transition to online learning difficult. They mostly used smartphones and shared gadgets with those who had them. The study recommended that beyond the pandemic: universities should give support that strengthens lecturer proficiency in using online learning platforms, engaging students, and assuring usage. There is need for a robust, inclusive, and digital education system that addresses some of the students' challenges, a multi-stakeholder approach comprising institutions, government, development partners, and telecommunications firms is required. Finally, the study recommends further research on the effectiveness of blended learning platforms as follows through comparisons between state and private universities. It would be fascinating to conduct a study of the success of blended learning during COVID-19; encompassing all of the country's universities, as this would reveal online learning issues unique to specific institutions.

### REFERENCES

- Aboagye, E., Yawson, J.A. and Appiah, K.N., 2021. COVID-19 and E-learning: The challenges of students in tertiary institutions. *Social Education Research*, 1(1), pp. 109-115
- Acharya, A. S., Prakash, A., Saxena, P., & Nigam, A. (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialties*, 4(2), pp. 330-333.
- Ali, W., 2019. The Efficacy of Evolving Technology in Conceptualizing Pedagogy and Practice in Higher Education. *Higher Education Studies*, 9(2), pp.81-95.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101.
- Carliner, S. (2004). *An overview of online learning 2<sup>nd</sup> Ed.* Massachusetts: Amherst.
- Conti, T. A. (2007) A History and Review of the European Quality Award Model. *The TQM Magazine*, 19 (2) pp 112-128.
- Cousin, G. (2009). *Researching learning in higher education: An introduction to*

- contemporary methods and approaches*. New York: Routledge.
- Downes, S. (2008). The future of online learning: Ten years on. *Half an Hour*. [https://halfanhour.blogspot.com/2008/11/future-of-online-learning-ten-years-on\\_16.html](https://halfanhour.blogspot.com/2008/11/future-of-online-learning-ten-years-on_16.html) (accessed 25.05.21).
- Emmel, N. (2015). Themes, variables, and the limits to calculating sample size in qualitative research: A response to Fugard and Potts. *International Journal of Social Research Methodology*, 18(6), pp. 685-686.
- Graham, C. R., Woodfield, W., & Harrison, J. B. (2013). A framework for institutional adoption and implementation of blended learning in higher education. *The internet and higher education*, 18, pp. 4-14.
- Kaup, S., Jain, R., Shivalli, S., Pandey, S., & Kaup, S. (2020). Sustaining academics during COVID-19 pandemic: the role of online teaching-learning. *Indian Journal of Ophthalmology*, 68(6), pp. 1220-1221.
- Kurasha, P. and Gwarinda, T. C. (2011) Strategy and Quality Assurance at the Zimbabwe Open University. *Zimbabwe International Journal of Open and Distance Learning*, 1(2), pp 1-5.
- Mahaye, N. E. (2020). The impact of COVID-19 pandemic on education: navigating forward the pedagogy of blended learning. *Research online*. Pp. 1 -23 [https://www.researchgate.net/profile/Mahaye-NgogiEmmanuel/publication/340899662\\_The\\_Impact\\_of\\_COVID-19\\_Pandemic\\_on\\_South\\_African\\_Education\\_Navigating\\_Forward\\_the\\_Pedagogy\\_of\\_Blended\\_Learning/links/5ea315ae45851553faaa31ae/The-Impact-of-COVID-19-Pandemic-on-South-African-Education-Navigating-Forward-the-Pedagogy-of-Blended-Learning.pdf](https://www.researchgate.net/profile/Mahaye-NgogiEmmanuel/publication/340899662_The_Impact_of_COVID-19_Pandemic_on_South_African_Education_Navigating_Forward_the_Pedagogy_of_Blended_Learning/links/5ea315ae45851553faaa31ae/The-Impact-of-COVID-19-Pandemic-on-South-African-Education-Navigating-Forward-the-Pedagogy-of-Blended-Learning.pdf)
- Maphosa, V., Dube, B. and Jita, T. (2020) A UTAUT Evaluation of WhatsApp as a Tool for Lecture Delivery During the COVID-19 Lockdown at a Zimbabwean University. *International Journal of Higher Education*, 9(5) pp. 84-93.
- Marevesa, T., & Mavengano, E. (2021). Investigating the Readiness of a Developing Country to Adopt Blended Learning as a Pedagogical Approach During the COVID-19 Pandemic: A Case for the Great Zimbabwe University. In *Re-Envisioning and Restructuring Blended Learning for Underprivileged Communities* (pp. 240-253). IGI Global.
- Marongwe, N., Munienge, M. and Chisango, G., 2019. Can a solution be found using information and communication technology gadgets in higher education? A case of a rural university. In *EDULEARN19 Proceedings-Theme on-11th International Conference on Education and New Learning Technologies. Spain–Mallorca–1st-3rd July* (pp. 1079-1088).
- Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. In *Forum qualitative Sozialforschung/Forum: qualitative social research* 11(3), pp. 1-19
- Matei, L. and Iwinska, J. (2016) *Quality Assurance in Higher Education: A Practical Handbook*, Budapest: Central European University.
- Matters N, Fox N. and Hunn A. (2007) Surveys and Questionnaires. The NIHR RDS for the East Midlands / Yorkshire & the Humber.
- McIntosh, M. J., & Morse, J. M. (2015). Situating and constructing diversity in semi-structured interviews. *Global qualitative nursing research*, 2, pp. 1-12

- Mishra, S. (2007) *Quality Assurance in Higher Education : An Introduction*, Karnataka: National Assessment and Accreditation Council.
- Moore, J. C. (2002) *Elements of Quality: The Sloan-C Tm Framework*. Needham: SCOLE.
- Moore, J. C. (2005). The Sloan Consortium quality framework and the five pillars. *The Sloan Consortium*. <http://www.mit.jyu.fi/OPE/kurssit/TIES462/Materiaalit/Sloan.pdf>
- Moyo, C., & Sibanda, N. (2020). Challenges in Teaching and Learning in Practical Theatre Courses during the COVID-19 Lockdown at Lupane State University. *ArtsPraxis*, 7(2), pp. 43- 55.
- Murphy, M. P. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy*, 41(3), pp. 492-505.
- Nyanya, T. and Gabi, B. (2016) The Impact of the Quality Assurance Unit on Quality Improvement in Zimbabwe Open University. *International Journal of Humanities Social sciences and Education*, 3(2), Pp. 88-96.
- Osguthorpe, R. T., & Graham, C. R. (2003). Blended learning environments: Definitions and directions. *Quarterly review of distance education*, 4(3), pp. 227-33.
- Rai, N., & Thapa, B. (2015). A study on purposive sampling method in research. *Kathmandu: Kathmandu School of Law*.
- Riiskjær, E., Ammentorp, J., & Kofoed, P. E. (2012). The value of open-ended questions in surveys on patient experience: number of comments and perceived usefulness from a hospital perspective. *International Journal for Quality in Health Care*, 24(5), pp.509-516.
- Sandelowski, M. (1995). Sample size in qualitative research. *Research in nursing & health*, 18(2), pp.179-183.
- Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, 3(7), pp.749-752.
- Stacey, E., & Mackey, J. U. L. I. E. (2009). Researching blended learning practices for teachers' professional learning. Taipei, Taiwan: Quality Education Symposium 2009: Education and Research, 12-13 Jun
- The Herald, (2020) Coronavirus State of National Disaster, *The Herald*, 18 March, (Available Online) <https://www.herald.co.zw/coronavirus-state-of-national-disaster/>
- Valiathan, P. (2002). Blended learning models. *Learning circuits*, 3(8), 50-59.
- Velavan, T. P. & Meyer, C.G. (2020) The COVID-19 Epidemic. *Tropical Medicine and International Health*, 25 (3) pp. 278-280
- Vusumuzi, M., Sisassenkosi, H., & Nodumo, D. (2020). An Evaluation of the Acceptance of Moodle by the Faculty at a Rural University in Zimbabwe During the COVID-19 Lockdown. *digTal 2020 Conference Proceedings*, 39- 47.
- Whitelock, D., & Jelfs, A. (2003). Editorial: Journal of Educational Media special issue on blended learning. *Journal of Educational Media*, 28(2-3), pp. 99-100.