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Exploring E-Learning as an Alternative Pedagogical Approach to Teaching and Learning during the Covid-19 Pandemic in Two Secondary Schools in Bulawayo

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Abstract

The emergence of the Covid-19 pandemic triggered a paradigm shift from the traditional face to face teaching to e-learning in educational institutions. In order to curb the spread of the pandemic, restrictions were put in place including shutting down of schools and compelling learners to learn online. However, this shift encountered some challenges as it had not been planned for nor experienced in most institutions even though learners and teachers had access to laptops, smart phones and personal computers for accessing websites and social media platforms. It is against this background that this study sought to gain insight into how two schools from different responsible authorities coped with the challenges encountered when using e-learning as an alternative pedagogical approach during the Covid-19 pandemic. The sample comprised of 20 learners and 8 teachers who were selected through simple random and purposive sampling techniques respectively. This study used a qualitative research approach. Personal interviews with teachers and semi-structured questionnaires administered to learners were used to gather qualitative data whose analysis was based on the themes: level of preparedness of the two schools for e-learning adoption during the Covid-19 pandemic, strategies used to cope with the challenges of the e-learning approach during the Covid-19 pandemic and the impact of e-learning on both teachers and learners. The findings indicated that pre-practicing of e-learning before the Covid-19 led to less challenges for the private school. Its teachers and learners were motivated and appreciated e-learning. Contrary, the less privileged public-school teachers and learners faced challenges. Hence, were demotivated and worried about the potential of e-learning. The study concluded that resource mobilisation and preparedness are a pre-requisite for successful e-learning. Inadequacies of resources demotivated both teachers and learners leading to dissatisfaction with e-learning. Conversely, the well-resourced schools' uptake of e-learning was commendable. It is therefore recommended that a universal access to internet be implemented through setting up of Wi-Fi hotspots by the government. Teachers should be provided with tablets or laptops. Most importantly, e-learning should be an integral part of daily teaching and learning.

Keywords: Covid-19, e-learning; pedagogical approach, public secondary schools, teaching and learning, private school

1. Introduction

The Covid-19 pandemic is one of the epidemics that threaten human life. Besides losses to human lives the pandemic had unprecedented challenges to a number of sectors that include industries, schools and social and cultural aspects of the populace. The pandemic spread at an alarming rate and forced world countries to put in place different safety measures guided by the WHO (2020) [22]. A declaration of emergency was made to key sectors such as the security and health institutes, calling them to enforce complete lockdowns, social distancing and quarantines of infected persons. People were asked to work from home to curtail the spread of the virus.

The Covid-19 pandemic disrupted the education systems around the world, compelling educational institutions to search for alternatives that could enable them to carry out their mandate of providing education without exposing the teachers and students to the virus. These alternatives included the adoption of e-learning, TV and radio lessons and in some instances a blend of these approaches was used.

The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2020) [20] that monitored several countries the world over, asserts that the closures of educational institutions affected over half the world's student population. This highlights the severity of the pandemic in the education sector. The impact saw most Governments enforcing an immediate transition to online learning.

The Zimbabwe government came up with various options to help learners cope during the pandemic. Among the adopted strategies were the radio lessons and ICTs. The Ministry of Primary and Secondary Education called on schools to switch from face-to-face tuition to e-learning as means to curtail the virus spread and reduce loss of lives. This sudden decision

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undoubtedly caused major challenges for teachers, learners and parents. The educational institutions had to cope with the "new normal". Zinyemba, Nhongo and Zinyemba (2021) [24] note that some challenges were encountered at the implementation of the online teaching and learning approach as it had not been planned for nor experienced in most educational institutions even though learners and teachers had access to laptops, smart phones and personal computers for accessing websites and social media platforms.

Bao (2020) [3] allude that the extended stay of learners at home and learning in a different environment, could possibly have had an impact on the students' interpersonal and intrapersonal lives both educationally and socially. The authors add that the unprecedented school closures caused mixed feelings among the learners about their future. In the same vein, Cao, Fang, Hou, Han, Xu, Dong, and Zheng (2020) [5] conducted a study in China to measure anxiety among students from Changzhi medical college during the period of the Covid-19 outbreak in China. The results of the study indicate that learners from urban areas, and those with families with stable incomes, and living with parents were less anxious during the pandemic. In addition, the economic factors, delays in academic activities, and effects of home life were possible causes of anxiety in learners.

It is against this background that this study seeks to gain insights into how two schools, from different responsible authorities, coped with the challenges encountered when using e-learning as an alternative pedagogical approach during the Covid-19 pandemic.

1.2. Research Problem

When the Covid-19 broke out, schools were in a dilemma as to how to handle their educational mandates. They needed to continue providing educational services to learners in their institutions. At the same time, they had to prevent or at least minimize the spread of the disease amongst the learners. Strict Covid-19 restrictions and guidelines such as washing hands with soapy running water or sanitizing, use of face masks and body temperature checks were enforced at the schools. The face-to-face teaching was augmented with online teaching which had its share of challenges. Research has extensively explored the challenges experienced by schools during the pandemic most of which were institutional challenges, lack of digital proficiency, and connectivity issues (Zinyemba, Nhongo & Albert; 2021; Kangai, Bukaliya, 2011 and Mandoga, Matswetu, & Mhishi, 2013) [24, 9, 12].

This study seeks to explore how two schools of different statuses, implemented e-learning in their jurisdictions. One was a public school and the other a private high school proffered different solutions for the same challenges encountered during e-leaning. Hence, the study explored the challenges faced by the schools, the strategies each school used to address the challenges and the impact e-learning had to teachers and learners of the particular schools during the Covid-19.

1.3. Research Questions

The following questions were developed to guide the study:

a) What was the level of preparedness of the two schools for e-learning adoption during the Covid-19 pandemic?
b) What strategies were used to cope with the challenges of the e-learning approach during the Covid-19 pandemic?
c) How did the online teaching and learning mode impact on teachers and learners during the Covid-19 pandemic?

1.4. Objectives

The study was aimed at achieving the following objectives:

a) To ascertain the level of preparedness of the two schools for e-learning adoption during the Covid-19 pandemic.
b) To explore the strategies that were used to cope with the challenges of the e-learning approach during the Covid-19 pandemic.
c) To explore how the online teaching and learning mode impacted on teachers and learners during the Covid-19 pandemic.

2. Literature Review

Flores and Gago (2020) [8] posit that the unexpected Covid-19 pandemic outbreak affected various socio – economic sectors across the world. According to the authors a number of measures were put in place by authorities to manage its spread. Liguori and Winkler (2020) [11] noted that the outbreak of Covid-19 posed a major challenge to the education sector which was forced to close down. The institutions were encouraged to consider alternative teaching and learning approaches. Among the available options was the e-learning approach. Andres, and Miquel (2022) [1] alludes that at the implementation, stakeholders in education were concerned of whether the shift from face-to-face learning to online learning would produce the positive results. The author notes that though the stakeholders anticipated challenges with the online learning, nothing stopped its implementation. Sharma, Leung, Russel, Davcik and Cardinali (2020) [18] assert that the implementation of online teaching and learning, had numerous challenges that included connectivity issues, lack of resources, learners' and teachers' difficulties to adjust to "the new normal".

2.1. Comparison of Face to Face and E-Learning Approaches

Several studies, among them (Flores & Gago, 2020; Rizun, Strzelecki (2020; Zhang et al., 2020) [8, 14, 23] argue that the traditional face to face learning is still preferred amid the challenges associated with e-learning. This is because face to face interaction is more real with learners being able to deliberate and discuss with peers and teachers. In support, Dawadi et al. (2020) [6] noted that e-learning was likely to increase existing inequalities because of socio-economic and education background of communities. The author posits that the digital divide and unequal access opportunities to e-learning and e-resources increases the gaps between the advantaged and disadvantaged learners. On a different note, Wahid et al. (2020) [21] argue that e-learning is not suitable for sciences such as Biology, Chemistry, Physics, and Mathematics. The reason proffered being that science experiments were nearly impossible to conduct on online.

2.2. Teaching and Learning E-Learning Challenges

2.2.1. Difficulties to Adjust by Teachers and Learners

Teachers are instrumental in their institutions of teaching. Due to a sudden outbreak of COVID-19 and the subsequent shift to e-learning, teachers and learners had no adequate time to adjust to the new teaching approach (Burgess & Sievertsen, 2020) [4]. The author alludes that there is evidence of lack of sufficient knowledge on the usage of ICTs by both teachers and learners. This includes lack of understanding and insufficient knowledge about the e-learning approach, which resulted in teachers encountering challenges in facilitating e-learning. The authors further explain that more challenges were associated with arranging online classes, executing the

lessons, choosing appropriate e-learning teaching platforms, learner assessment and monitoring the effect and quality of the approach. The author concludes that due to such challenges there was a decrease in user satisfaction. This implies that both teachers and learners did not appreciate this mode of teaching and learning.

2.2.2. Challenges with Internet Connectivity

E-learning relies on reliable, fast and internet connections. Therefore, the move from the face-to-face learning to e-learning meant that teachers and learners had to stay connected to the internet. Dawadi (2020) [6] points out that this was not guaranteed and it affected the implementation of the e-learning. The author suggests that impediment to e-learning was mainly because of internet connectivity. Ronnie et al. (2020) [15] adds that most learners were using devices which were not theirs, say parents' mobile phones. This meant that such learners had limited access time to the devices limiting their study hours. This also implies that the learners had limited technical aptitude to learn online.

2.2.3. Inadequacy of Teaching and Learning Resources

Learning is facilitated by the availability of resources, limited resources meant that students and teachers had challenges in conducting e-learning (Kerres, 2020) [10]. The author notes that educational institutions had no adequate and running e-learning tools such as e-libraries. As an example, the author cites limited student access licenses to online library resources, which definitely affected the delivery and access to e-learning. The challenge was not limited to learners only, but to teachers who had limited infrastructure to facilitate learning from home and parents were equally affected as they had to source computers and other gargets for their children to study from home (Sahu, 2020) [6].

2.2.4. Consequences of Affective Aspects on Learning

Martin and Reigeluth (1999) [13] identifies several dimensions of affective learning which include but are not limited to emotional, anxiety and motivational. The authors claim that these dimensions impact teaching and learning. Melanie, Stephan, Markus and läser-Zikuda (2019) [19] allude that the acceptance of e-learning depends on the beliefs and the perceived ease of use of the associated devices and applications. The authors add that learners' emotional experiences do have an impact on their use of e-learning technologies. The authors note that there have not been enough studies on the effects of emotions on e-learning and how they are intervened with technology acceptance. In the same study it was found that learners with a stronger self-esteem, are more confident, less anxious and are motivated, such learners are active and confident in their learning. Learners who lack self-confidence become anxious in specific situations or tasks. The authors expose that low self-esteem forms a formidable barrier for leaners to participate in learning activities and at the same time learners who experience low self-esteem tend to lose interest in learning. The implications of such thoughts are that if e-learning causes strong self-esteem or low self-esteem they may have interest or lack of interest in e-learning respectively. Self-esteem is "a psychological and social phenomenon in which an individual evaluates his/her competence and own self according to a set of values" (Rubio, 2007: p. 5) [5]. The author asserts that self-esteem is so important that no cognitive or affective activities can be implemented without a certain degree of self-confidence, or belief that to some extent one is able to perform an activity successfully.

Douglas (2014) [2] describes motivation as an external driving force or an internal process in which people are stimulated to take certain actions to meet specific goals. This implies that for a successful uptake of e-learning, leaners have to be motivated, for example that through e-learning one will achieve higher grades. Douglas (2014) [2] explains that from a behavioral perspective, motivation means that people anticipate a reward. The author notes that emotions are closely related to cognitive, behavioral and motivational processes. Hence, they are important for learning and achievement.

Arnold and Douglas (2000) [2] categories motivation into extrinsic motivation and intrinsic motivation. Extrinsic motivation comes from the desire to win awards or avoid punishment. It is from the outside, thus, may be related to money, awards, prizes and grades. For example, a promise to buy a laptop for a child may motivate the child to work hard.

Stephan et al. (2019) [19] allude that anxiety is an affective obstacle as it is related to negative affective experiences such as tension, sadness or uneasiness. Anxiety refers to the learners' fearfulness and uneasiness when they are to use new technologies in e-learning. Such anxiety is inversely proportional to the acquisition of skills needed in e-learning. This means that the less anxious the learner is, the more he/she is disposed to acquire new skills or to learn, or the more anxious they are, the less disposed they are. The authors further note that anxiety is inversely proportional to academic results, self-esteem, as well as self-confidence.

3. Research Methodology

3.1. Research Approach

The study adopted a mixed qualitative methodology in which information from teachers was sought through semi-structured interview guide and a students' questionnaire as tools for data collection, and a descriptive analysis was used as a method for interpreting the data.

3.2. Research Design

The design used was a case study of two schools, one was a private school and the other a public school. This design was used because of its flexibility in collecting data through various methods and its ability to capture the context and lived experiences of the participants.

3.3. Participants

Learners and teachers from two differently owned high schools in Bulawayo were involved in the study. Four teachers who taught writing classes during the Covid-19 period were purposively selected from each school for their experience with the e-learning mode of teaching. A simple random sampling method was used to select 10 learners from each school to participate in the study.

3.4. The Research Procedure and Instruments

In order to solicit information from the teachers, interviews were conducted via the Zoom application due to the social distancing requirements for the Covid-19 prevention. The interviews took between 30 and 40 minutes. The interview guide was used to guide the interviews and the questions were open-ended and sought the teachers' perspectives about the level of preparedness of their schools for e-learning, the strategies their used in addressing challenges faced and how e-learning affected the teachers and learners.

The study also sought information from the learners through a Google form questionnaire. In order to access the form, learners had to open a link that was shared to them through a WhatsApp group comprised of the 20 learners. The questions were open ended allowing learners to divulge more information about their experiences with e-learning. Learners were asked about their level of preparedness for the e-learning approach, the strategies they used to deal with the challenges encountered while learning online and how this approach affected them.

The two instruments collected qualitative data which was descriptively analysed through thematic analysis. The data was organized into three themes

i). Level of preparedness of the schools,
ii). Effect of the e-learning approach and
iii). Strategies used to address the challenges. After the data analysis meaning was then attached to the findings.

4. Results and Discussions

This section presents and discusses the findings of the study. Table 1 presents the findings on the level of preparedness of the schools during Covid-19, table 2 gives the challenges and the strategies used to address the challenges faced by the schools.

Table 1: Level of preparedness of the schools for e-learning during the pandemic

Private School	Public Secondary School
• Teachers and learners were already practicing e-learning • Teachers and learners were knowledgeable of some applications to use during e learning • School provided tablets to teachers • School provided data to teachers • Learners used laptops and tablets phones for e-learning • Parents were more supportive of the learners	• Teachers had laptops provided by the school • Laptops were used for accessing websites and typing of documents • Teachers and learners were experiencing e-learning for the first time • Teachers did not know which applications were suitable for eLearning • Learners had no gargets to facilitate e-learning, though some had smart phones

Table 1 shows that the private school was already using e-learning at the onset of the Covid-19 pandemic coupled with the face to face-to-face teaching. On the other hand, the public school was using the face-to-face teaching. The results indicate that the private school was well resourced with teachers being given tablets and data to facilitate e-learning. This was however not the case with the public school in which teachers had laptops that they were given so that they could type documents and connect to the internet so that they could research teaching materials during their lessons. At the onset of Covid-19 the public-school teachers and learners were not prepared for e-learning. The teachers said they did not have the knowledge of how to conduct e-learning except sharing notes, books and questions through WhatsApp. On further enquiries from learners from the public school, their parents were supportive in acquiring devices and buying data for them to learn online. Compared to their counter parts, learners from the public school said they had difficulties learning online as they had no devices to connect to the internet, those who had the means to connect to the internet for online learning said the data charges were exorbitant. In terms of the applications for online learning both teachers and learners from the public school said they had no idea of the applications to use so they used WhatsApp to share content. In the private school the applications mostly used were Zoom and Google class together with WhatsApp which was used mostly for communication purposes between teachers and learners.

4.1. Challenges and Strategies Employed To Address the Challenges

Table 2: Strategies employed in addressing the challenges

Challenge	Private school	Public secondary school
• Connectivity • Lack of data • Lack of devices (laptops/tablets) • Supervision of teachers and learners. • Applications used	• Dependent on service provider • Provision of data to teachers • School bought tablets for teachers • Principal and HOD joined learners' classes • Use of google class for lessons • Difficulty to conduct experiments and demonstrations	• Dependent on service provider • teachers had to provide data for themselves • used personal smart phones • No supervision of e-learning. • WhatsApp platform • Difficult to conduct experiments and demonstrations • Could not assess learner online

As stated in table 2, the study established that teachers and learners at the public school lacked knowledge on how to practice e-learning. Both the private and public-school teachers and learners faced problems with internet connection. The respondents mentioned that the internet service providers' charges were too high for them to sustain connectivity for the duration of the lessons. Also, the teachers and learners experienced intermittent connections. The public-school teachers and learners expressed concerns over the implementation of e-learning when they had no resources to assist them conduct such teaching and learning. Asked whether they completely failed to conduct e-learning, the public-school teachers said they tried by all means to use their personal resources such as data and mobile phones to assist the learners. However, their efforts were not enough as the cost of such a program was too high for them. Such contributions indicate that the public school was mostly affected by inadequacies of resources. The public-school teachers indicated that the use of WhatsApp made it difficult to assess the learners' performance during the Covid-19 pandemic. It was difficult to provide immediate feedback to the learners. Feedback is essential in all learning processes so that learners are informed of their progress. The private school teachers said they used Google class and Zoom to

conduct their e-learning lessons. Each learner was enrolled into a class and teachers could send work and mark the submitted work. Teachers could give feedback through the Google class platform. In order to monitor both the teacher and learners, administrators were enrolled into those classes. This kind of monitoring ensured that both the teacher and learners were working.

When WhatsApp was used, sending work was easy but assessment and monitoring was difficult. Teachers from both schools concurred that teaching science and mathematics online was a challenge; as it was difficulty to conduct experiments sciences online. Private school teachers said they addressed such a challenge through using videos showing learners how the experiment is carried out. Teachers from the public school said they couldn't manage to send video because of the cost involved. The teachers said they only managed to do experiments when the restrictions were relaxed for examination classes and learners reverted to face to face tuition.

Table 3: Effects of e-learning on teachers and learners

Private School	Public School
• Teachers were motivated to teach • Learners were kept engaged and monitored • Lack of socialization with peers • Believed effective learning was achievable in when directly taught by the teacher.	• Teachers were demotivated • Learners were frustrated and worried because they had no experience with e-learning • Fear of failing examinations • Learners without connectivity devices were demotivated and left behind in their learning • Bored by staying at home • Technological division • Belief that effective learning is achieved only in the presence of teacher

Table 3 shows that the public-school teachers felt motivated because they were provided with the necessary resources for online teaching. On the other hand, public school teachers and leaners were demotivated as they had no resources. The teachers explained that the shortage of resources created disparities between the learners with and those without adequate resources. A teacher from the public school said, "*We had learners who never attended the online lessons because of the resources*". Hence, there were inequalities in terms of access to e-learning in public schools. The teacher explained that this created anxiety in learners. Unlike in public schools, private school learners felt more comfortable with e-learning as they were already using the approach before the pandemic. Participants from both schools showed lack of confidence with the learning approach. They expressed preference for the face-to-face teaching approach. The learners believed that they understood better when the teacher explained that when then they interacted with the teacher online. Such feelings point to a lack of user satisfaction on the part of the learners in the public school.

5. Conclusion

The results from the study indicate that each school, teachers and learners had different solutions to the same problems. The study shows that the solutions were contextual, thus, relied on the status of the school and the parents' support to the learners. The school that was adequately funded had enough resources to implement e-learning. The level of preparedness of the schools was different, with the private school having been implementing online teaching well before the advent of Covid-19. Thus, the private school was more prepared than the public school that started implementation of e-learning during the pandemic. The learners and the teachers of the schools had different appreciation levels of the e-learning approach, the private school teachers felt more satisfied and motivated in using e-learning than their counterparts. Learners also appreciated the approach differently, those in the private school felt more comfortable and confident with the approach while those in the public school were not, and had fears that they would fail their examinations if they continued with e-learning. However, learners from both schools believed that being taught through face to face was better than through e-learning. The study also concludes that when learners learn from home they are deprived of their social interactions as they expressed boredom when learning in a home environment.

6. Recommendation

The study therefore recommends that internet be universally accessible. To achieve that end the government should engage the different internet service players so that learners can access reliable and affordable internet connections by the majority of the students. Furthermore, online teaching should be made part of the teaching and learning approach in public schools. However, to achieve such an approach either the school or the government should provide resources to the teachers and if possible, to the learners. Parents with learners in these schools should be encouraged to buy the required gadgets for their children and provide data to enable internet connection. Teachers and learners should be trained on e-learning and the associated online applications so that teachers are not caught unawares in future pandemics.

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