Preparedness of the book sector in Zimbabwe for the development of e-learning materials for the new curriculum

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Abstract

Purpose: In January 2017, the Zimbabwean government implemented a new curriculum for the primary and secondary school education level emphasizing e-learning. This has implications on the publishing sector, producing the new curriculum's necessary teaching and learning resources. However, there is no e-learning policy in Zimbabwe and the availability of infrastructure for e-learning is of concern. The study sought to explore the e-readiness of the local textbook publishers for the new curriculum by establishing the availability of e-content, ascertaining schools' capacity to implement e-learning and ascertain the availability of skilled e-content producers.

Methodology: This was a qualitative case study that adopted open-ended questionnaires and interviews for data collection. The study participants were purposively drawn from educational publishers and primary schools in the Bulawayo Metropolitan Province.

Findings: The findings revealed a lack of stakeholder preparedness to implement the e-learning initiative and inadequate e-learning infrastructure.

Implications: The study will influence policy and practice in developing textbooks and other teaching and learning materials for the new curriculum, emphasising e-learning.

Originality: The unplanned implementation of the new curriculum for the primary and secondary education system in January 2017, coming on the heels of the curriculum review consultations which had just ended in the mid-year of 2016, prompted the need to establish the preparedness of developers of textbooks and other learning materials for this move.

Keywords:

E-learning; Electronic textbooks; Learning materials development; New curriculum

1. Introduction

Textbooks play a critical role in teaching, learning and provision of quality education and without them, implementation of a new curriculum becomes a challenge. A textbook is a printed standard piece of work on a specific subject "designed for classroom use with appropriate vocabulary, illustrations, student exercises and teacher aids" (Crossley and Murby 1994 citing Deighton 1971). Publishers contribute significantly to curriculum implementation by developing textbooks and supplementary materials for teaching and learning. In January 2017 the Ministry of Primary and Secondary Education in Zimbabwe introduced and implemented a new curriculum, which disrupted the status quo as it came without sufficient preparation by stakeholders, i.e., teachers,

schools, parents and publishers. At the launch of the curriculum in September 2016, the Minister, Dr Lazarus Dokora, reiterated that this move would align the education system with modern technologies and pledged that the Ministry would explore the readiness of the schools for the new system by assessing their infrastructure. Thus, disregarding the readiness of publishers who produce the teaching and learning materials. The Ministry then developed subject syllabi, including a new examination in agriculture by unpacking the Grade 7 General paper. Amongst the significant changes to the curriculum was the introduction of new technologies in teaching and learning, thus heralding e-learning in the education system.

Due to its eagerness to roll out the new curriculum, the Ministry rushed to implement it. Thus, it was met with descending voices from stakeholders who expressed lack of consultation, unpreparedness and lack of requisite infrastructure. The new syllabi had not been availed to schools and textbooks for the new curriculum had not been developed (Pindula 2017). The choice of this study was influenced by the view that the educational reform can only be successful if stakeholders are informed of the impending changes to the system in good time, for example, five years, to prepare and make adjustments to meet its requirements. For example, when Kenya reviewed its curriculum, publishers were given sufficient time to develop textbooks for the new curriculum (Larson 2010); in the United States of America, the idea of e-learning in schools began in 2012 and actual implementation was to commence in 2016 (Tomassini 2012:1), so they had four years to prepare. In Zimbabwe, however, the idea of a technology driven curriculum was introduced in September 2016, and implementation was done in January 2017. This alone threatens the success of e-learning in Zimbabwe because it pressures all the players in the book chain, from the content developers to the schools and parents. Publishers were not given ample time to develop e-content; schools needed to plan to install the requisite infrastructure and train teachers without ICT skills and qualifications to use the new technologies; parents may not be ready to purchase the required gadgets to be able to support their children's education. Publishers need to work out the modalities to produce interactive teaching and learning materials for an effective e-learning process. This study, however, explored the e-readiness of textbook publishers as producers and developers of the teaching and learning materials for the e-learning programme.

2. Literature Review

2.1 E-learning

There is no single definition for e-learning. Scholars have taken different approaches to demystify this concept. While some authors explicitly define e-learning, others imply a specific definition or view of e-learning in their articles. Electronic learning can take many forms, and consequently there has been some debate about what can legitimately be covered under such a term. E-learning is a computer-based educational tool or system that enables one to learn anywhere and at any time (TalentLims 2014:4). Today, e-learning is mostly delivered through the internet, although in the past, it was delivered using a blend of computer-based methods like CD-ROM, radio lessons, television programmes, audio and video cassette tapes. Brooking (2015:2) proffers that "as the personal computer started its domination, the concept of having training material on a computer teaching a student was termed computer-based training or CBT". Cross (2004:12) opines that it was not until the last few years with the advent of Web 2.0, which catered for the interactive web

and resulted in the blossoming of the social media, that e-learning has taken on its newest form. By the early 1990's several schools had been set up to deliver courses online only, utilising the internet and bringing education to people who would not previously have been able to attend school due to geographical or time constraints (Brooking 2015:3). Technological advancements also helped educational establishments to reduce the costs of distance learning. This saving would also be passed on to the students, helping bring education to a wider audience. Africa is recognised as an active participant in the e-learning environment with mobile operators, such as Vodacom (South Africa) launching e-learning projects (Jackson 2017).

Dube (2013) conducted a study entitled "engagement of electronic publishing by textbook publishers in Zimbabwe", the research focused on the strides taken by local publishers to incorporate electronic publishing and eventually publish supplementary e-readers. The author found that most of the local publishers were still incorporating electronic publishing, although with limited resources (Dube 2013). However, this study focuses on the newly introduced curriculum and how it impacts local textbook publishers in developing e-content for e-learning. There are misconceptions about e-learning and how it works. According to Webb and Way (2003) people only think of new and innovative equipment as drivers of e-learning while disregarding other critical requirements. Since the government of Zimbabwe has been donating computers to schools, the shared belief is that the schools automatically have e-learning. However, that is not true because computers alone are just a component or tool for e-learning. Some schools in Bulawayo claim to have incorporated e-learning simply because they have computers and the students get to use basic tools (Farawo 2016). These misconceptions are mostly because people do not understand the full potential of e-learning. The complete package is a combination of readily available e-content, software, and the computer (tool). In Zimbabwe, people have the desire and curiosity to incorporate e-learning, but they have not been able to do so; therefore, there is a need to understand why? Farawo (2016) opined that the government's upper-level decision-makers do not know much about standard e-learning.

Locally, the E-learning Solutions, Econet's Ruzivo and Africom have pioneered e-learning in Zimbabwe. The incorporation of e-learning will create opportunities for many players in the publishing industry. Once local publishers start publishing e-content, opportunities will be created for various stakeholders. For example, teachers will be given a chance to learn and eventually teach digitally while benefiting learners and moulding them into 21st century students. Therefore, the study explored the e-readiness of local publishers; established the availability of electronic content for the new curriculum; ascertained the capacity of schools to provide e-learning infrastructure; and established if there are trained personnel to produce electronic content, such as animators, cartoonists and programmers.

2.2 Implementing e-learning

Ezeugbor and Asiegbu (2010) state that several factors are considered for an e-learning programme to succeed. Infrastructure is an essential driver of e-learning and without the required infrastructure, e-learning is not possible. According to Farawo (2016:9), infrastructure with regards to e-learning refers to a functioning computer lab, tablets, personal computers, cell phones and other suitable digital gadgets. "Unfortunately, the supply of ICT equipment tends to be the

main focal point for delivery of an e-learning program often to the exclusion of other critical requirements" (Webb and Way 2003:25). Infrastructure is not the only prerequisite for successful e-learning; computers alone are just a tool/component for e-learning. Webb and Way (2003:19) state that "There are many e-learning settings and technologies available to use in schools, each with their advantages and applications." Often, the best solution is a combination of technologies depending on the particular need and learning environment.

Cross (2004:12) observes that "In a multimedia classroom, educational content is delivered to students in a one-to-many approach. This is cost-efficient per pupil and can provide a large number of educational resources to students." Classrooms would be equipped with a projector or screen, speakers and a classroom computer. Nichols (2003:34) asserts that the teacher could display various types of content housed either on the classroom computer or the teacher's laptop or other devices. The teacher would be able to adapt and project various content (for example, videos, PowerPoint slides, multimedia presentations, the teacher drawing a graph, and so forth). Personal devices are also crucial in e-learning; they include tablets, smartphones and e-readers. Small, personal devices such as tablets, smartphones and e-readers are similar in that they are all relatively new technologies (Ezeugbor and Asiegbu 2010:35). They are rapidly gaining popularity due to their declining price, many web-based software applications, powerful graphics, and enjoyment of use. Publishers are encouraged to work closely with technology companies to make access easy and convenient. A publisher can work with a mobile gadget company to make all of their e-textbooks available to the latter's gadget such that schools can purchase the gadgets knowing that they will get access to the publisher's titles. For example, in the USA, the big three publishers Pearson, McGraw-Hill Education and Houghton Mifflin Harcourt partnered with Apple Inc. to provide a line of e-textbooks exclusively for the iPad. In 2012 alone, Apple Inc. managed to sell over 1.5 million tablets to schools in one district (Tomassini 2012:18). Publishers in developing countries should be motivated to follow suit and partner with well-established companies.

Olson et al. (2011:20) state that, to meet the promises and potential of e-learning in developing countries, many challenges must be addressed in its implementation. These include economic, governance and infrastructure problems as well as the difficulties faced by the educational publishers themselves. E-readiness of publishers to develop teaching and learning materials for the e-learning environment is an essential element. When publishers are dubbed e-ready, it means they possess the required resources to participate in or provide electronic materials.

Moyo (2016:28) observes that there is no e-learning policy in Zimbabwe, and that might be one of the reasons for failure by the e-learning industry and publishers to develop e-content as they should. Brooking (2015:9) alludes to the need for proactive leadership to develop a shared vision for the use of ICTs in education and e-learning. Absence of a shared vision results in uncoordinated, piecemeal implementations which, oftentimes are donor-driven instead of being vision-driven. Essentially, the vision needs to lead to policies and initiatives at the national, regional, and local levels to support schools, teacher training programmes and digital learning materials development.

Zimbabwe is an emerging market for e-learning; however, the country continues to fall short of effectively implementing e-learning (Farawo, 2016:30). A very few private schools in Zimbabwe

have successfully implemented e-learning, but the majority of the schools lag behind. There are a lot of sceptics when it comes to e-learning. They cannot be blamed because exploring a new model is challenging. Regardless of all the benefits of e-learning, one cannot deny that there are some drawbacks. One of the major concerns in Zimbabwe is the lack of appropriate infrastructure. On average, a primary school in Bulawayo has 1000 pupils and 50 computers; these numbers alone show an imbalance in the student to computer ratio that may limit the students to a very few computer lessons per term. These numbers apply to schools located in the Metropolitan Province and one can imagine that it is worse in the rural areas that may have no computers at all. In a drive to bridge the digital divide, the Tekeshe Foundation (2017) sourced for donations of computers which it distributed to schools in the Manicaland Province of Zimbabwe. A study by Konyana and Konyana (2013) on computerisation of rural schools in Zimbabwe found that there had not been any capacitation of schools that had received donated computers to enable them to usitlise the technologies fully for the benefit of pupils and teachers Preparedness is also a drawback in Zimbabwe; most schools and content creators were not ready to cater to the demands of the curriculum, probably because they were not given sufficient time to do so.

3. Methodology

The study employed a qualitative approach to understand publishers' experiences, perceptions, pre-judgments, assumptions and pre-supposition (Neumann 2000) towards development and production of electronic learning materials for schools in Zimbabwe. It was a case study involving textbook publishers in Zimbabwe and primary schools in the Bulawayo Metropolitan Province because of limited time and resources. Four textbook publishers (content producers), that is, College Press, Consultus Publishing Services (CPS), Zimbabwe Publishing House (ZPH) and Priority Projects Publishing, and eight primary schools selected from Bulawayo central and Imbizo districts (four from each district broken down to six public and two private) in the Bulawayo Metropolitan Province were included in the study. The public schools included; Manondwane, Mgiqika, Nketa, Senzangakhona, Milton junior, and Coghlan while the private schools included Greenfield and Marantha junior. Primary schools were chosen because the curriculum is universal, unlike the secondary school sector with varied curricula and examination boards. Questionnaires with open ended questions were distributed to staff in the publishing houses (project managers, editors and sales representatives) and teachers, while headmasters were interviewed using a structured interview guide. Participants were purposively selected.

4. Findings

4.1 Response rate

Twelve questionnaires were distributed to the staff of the textbook publishers (project managers, editors and the sales representatives) and eight were returned, giving a 66.7% response rate. Twenty questionnaires were distributed to teachers in eight primary schools and 15 were returned, giving a 75% response rate. Eight interviews with headmasters had been scheduled, but only four were successful (50% response rate). Of the four interviews, three (75%) were with public schools and one (25%) with a private school.

4.2 The e-readiness of local publishers

Publishers were asked if they were ready to publish electronic content for teaching and learning; six respondents said they were not ready, while two said they were ready. This shows that the country's textbook publishers are not ready to produce e-content. One interviewee said that:

> *There are some outstanding issues to be addressed… the fact that we have no qualified personnel to develop electronic content and we are waiting for the Ministry of Education (MOE) to finalise a deal which is underway between them and the technological companies.*

To amplify their unpreparedness some participants criticised the demands of the new curriculum which they said were "*unrealistic*", "*far-fetched*" and "*rushed*".

4.3 The availability of e-Content

None of the publishers have started any viable e-content ventures. However, two publishers were still evaluating viable electronic content developers for projects in the near future. The publishers had other reasons to defend themselves on the unavailability of e-content. One interviewee said: *even if such content is published, how would it cater for the schools in remote areas that do not have computers and internet access? How will it cater for the disabled? How will the teachers instruct if they are not trained?* The publishers raised these issues as a drag or demotivation to their production of e-content. The publishers' apprehensions are shared by the Tekeshe Foundation (2017) which donated computers to schools in the rural areas in an effort to capacitate them. The Foundation expressed that rural schools are unable to include ICT training in their curriculum since they do not have computers. Publishers acknowledged the importance of e-content and its advantages and endless possibilities. Still, they expressed that the need to address the challenges mentioned above before they start producing e-content. The APNET report (2020) confirms the Zimbabwe's slow pace in producing and distributing e-content.

4.4 Availability of skilled personnel to produce e-Content

All the textbook publishers said they do not have an in-house department for e-publishing; that is, they do not have trained personnel to produce e-content. However, they have connections with some technology organisations such as the E-learning Solutions which has offices in Zimbabwe and South Africa. E-learning Solutions has been a pioneer for e-learning in Zimbabwe, running workshops and events to create awareness of e-learning. They are known to have trained personnel who produce high-quality digital content. However, the publishers have not started to make use of such organisations as they awaited feedback from negotiations between the Ministry of Primary and Secondary Education and e-learning solutions companies they had approached." This implies that the Ministry is in dialogue with electronic content developers, and soon, publishers will start working with them to produce e-textbooks. TalentLims (2014:12) advocates for development of electronic content in varied formats which are easily accessible different electronic gadgets. The production of such content requires expertise from animators, cartoonists and programmers

4.5 ICT competence of teachers

The results showed that of all the 15 teachers, eight had received ICT training while seven did not have formal training. Of the eight formally trained, seven were from private schools and one was from a public school. Of the 15 teachers, ten who were below 40 years owned at least one electronic device ranging from a smartphone to a tablet, while five did not have and were over 50 years old. The finding shows that the young generation is more techno-savvy than the older generation and that utilisation of electronic gadgets can be influenced by the age factor (Conseco 2015). The result shows that although the majority of the respondents are trained in ICTs, the reality is that the majority of them are from private schools. This affirms Chiromo's (2004) view that there has been an oversight in Zimbabwe in ensuring that foundational ICT skills are taught and not assumed resulting in failed implementation of several ICT programs. According to Farawo (2016) educators, support staff and other leaders need to be skilled in selection and effective use of appropriate ICT resources. This should not be once-off, but should include ongoing professional learning. For e-learning to be a success, instructional designers should be endowed with appropriate ICT skills.

4.6 The availability of computer technology for e-learning

The findings revealed a severe shortage of computers in both private and public schools. One Headmaster said:

> *The shortage of computers leads to students having less than enough computer lessons per term and such an instance means that each class can be limited to one computer lesson per two weeks*.

At the launch of the national e-learning programme at Chogugudza Primary School in Goromonzi, the late former President, Cde Robert Mugabe, said that "every Zimbabwean child should be computer literate" (Farawo, 2016:2), thus, underscoring the importance of computer literacy for the 21st century learner. According to Brooking (2014:9), there is always a requirement for access to current, robust, but sustainable technologies and digital resources. There needs to be easy access for all students, teachers, staff, and school leaders to intuitive and relevant technology. This requires not once-off but ongoing funding to support technology infrastructure, personnel, digital resources, and staff development. It was observed that although computers are not enough, private schools have more computers than public schools. This could be credited to the fact that they have access to better funds and donations than the latter. Private schools charge considerably higher tuition than public schools, and some of them dedicate special funds solely for computers. Most of the schools do not have other forms of electronic gadgets to facilitate e-learning, such as tablets, televisions, Digital Versatile Disc (DVD) players and so forth. All the Headmasters said they have received 20 tablets from an Econet company called Ruzivo Digital Learning to facilitate and aid e-learning. This Ruzivo initiative supports schools all over Zimbabwe for e-learning; however, these tablets are not enough for 1000 learners. More companies and organisations like Econet are needed to support the e-learning initiative.

5. Conclusion

From the findings, it can be concluded that the majority of the local publishers are not ready to venture into e-learning. While other publishers may argue that they are ready, other stakeholders are not prepared for the change; appropriate e-learning infrastructure is absent; teachers have not received ICT training and the needs of pupils with disabilities have been overlooked. The success of e-learning in Zimbabwe hinges upon the redress of these issues.

6. Recommendations

The following recommendations were made:

1. The Ministry of Primary and Secondary Education should address the challenges of e-learning to successfully implement the new curriculum. This includes the provision of computers, tablets, televisions, DVD players and so forth to schools.
2. The private sector should be encouraged to give back to society by donating electronic gadgets to schools. Econet Wireless Company has paved the way through its Ruzivo initiative, where tablets have been provided to schools.
3. With the current demand for e-textbooks, local publishers should consider creating electronic content development departments and hire qualified personnel, such as animators, illustrators and cartoonists.

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