The Usage Pattern of Mobile Devices among High School Teachers in the Oshana and Oshikoto Regions towards the Adoption of Mobile Learning in Namibian High Schools

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Abstract
This study investigated the usage pattern of mobile devices among high school teachers in the Oshana and Oshikoto regions of Namibia. The sample for this study consisted of one hundred and eighty (180) high school teachers from the two regions selected from three (3) high schools from each region. A mixed method approach, comprising a baseline survey questions and interviews with randomly sampled teachers from the high schools was undertaken and the result was analysed using the statistical package for social sciences (SPSS). The findings among others indicated that since teachers are already using mobile devices for educational and non-educational purposes, mobile learning technology can be adopted in Namibian high schools.

Keywords: Mobile learning, Mobile devices, Teachers, Perceptions

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The wide spread and increase use of technology has brought about dynamism in the educational system whereby teaching and learning has been made to become not only innovative but also interactive and effective. The impact of introducing innovative technologies into education is positively enormous. Technology has become a potent force and its widespread has provided teachers with an effective tool to support learning. The significant advancement of mobile technology has facilitated teaching to the extent that teachers can now support learning ubiquitously. The dynamism of mobile learning has come to the stage where its integration has made teaching and learning experience so dynamic to the extent that learners can study ubiquitously and teachers can teach virtually. “Mobile learning technology adoption for pedagogy will have much impact on the experience and performance of learners” (Mac-Callum, & Jeffrey, 2013).

The rapid growth of this technology has brought about a valuable tool that will support learning which has become accessible due to the considerable advancement of mobile technology over the last decade. This accessibility has brought about ubiquitous learning. Today, the dynamism of teaching has made teaching experience very interesting because of the various sets of tools and applications that are incorporated in mobile technology. “The adoption of mobile technology into pedagogy is expected to have a positive impact on the experience and performance of learners” (Mac Callum, & Jeffrey, 2013). Nevertheless “what will bring about the successful adoption of mobile learning is the willingness of teachers to accept it” (Mac-Callum, 2010).

Using mobile phones as a support for teaching and learning

The affordability of mobile phone has made it very popular. As it is now, mobile devices have passed the stage of being used only for the normal traditional communication means. It can now be used to support pedagogy. “Mobile phones in education have led to the evolution of new paradigm known as mobile learning” (Muyinda, Mugisa & Lynch, 2007). The speed at which accessibility to mobile phones is moving globally, particularly in developing countries have made it a potential facilitator in the business of improving pedagogic processes and institutional competences (UNESCO, 2012a). Huang and Hwang (2010) noted that “mobile learning applications can facilitate students not only learning contents conveniently but also interacting with others collaboratively anytime and anywhere”. Hence, the development of mobile learning as an innovative approach for instruction has implications for the way students and teachers collaborate/interact in educational institutions.

Ferry (2008) posits that the features in the present mobile phones can assist students in the area of remixing, sharing, assessing web based contents, interact with others and create rich media deliverables for teachers. In the words of Cui and Wang (2008), “universities in United Kingdom (UK) have made the use of mobile phones to store and retrieve information such as ebooks, instructional materials, reviewing students’ marks thus making teaching and learning practices more effective”. Moreover, Liaw (2009) reported that mobile phones can facilitate the provision of teaching and learning resources, send due dates for assignments, and time table information. Cui and Wang (2008) further noted that in China, learners can view the web page of their teachers and the can also access other online English learning resources through their mobile phones and they can also take tests online. Utulu (2012) stated in his study that “in Nigeria, mobile phones were used for student-lecturer interaction, data collection (recordings), emails (to lecturers), access Online Public Access Catalogue and knowledge sharing”. However, mobile phone uses for teaching and learning purposes in primary, secondary and tertiary education in Tanzania is highly limited. Kafyulilo, (2012)
concluded by saying that “even though mobile phones are the most accessible technological tools in schools and colleges their use in teaching and learning is among the lowest both in Tanzania and it is still unknown why the usage mobile phones is low”.

**Teachers and Mobile Phones**

A lot of prominence has been given to mobile learning due to its popular nature and technological growth (Xie, Zhu & Xia, 2011; Gibson, Taylor, Seymour, Smith & Fries, 2012; Buck, McInnis & Randolph, 2013). The popularity of mobile devices has shown that it can contribute increased access to digital educational content. Its portability gives it an advantage of being used anywhere both within and outside the educational environment (UNESCO, 2012b). These devices showcase a more attractive instructional process (Buck et al., 2013). Therefore, the use of mobile devices facilitates effective teaching on the side of the teacher and also makes learning more accessible, collaborative and interactive (UNESCO, 2012b). In as much as mobile devices have positive influence in education schools generally do not utilize them. Instead they are prohibited in classrooms. It is worthy of note that mobile devices (particularly mobile phones) can cause distractions. However, the use of such devices in schools can be carefully guided by the teacher by introducing usage rules to students.

That notwithstanding the above fear that mobile learning can cause distraction in class, its universal acceptability and powerful functionality is unavoidably changing the behaviour of individuals. A survey conducted by CourseSmart (2011) revealed that people are now so used to these devices to the extent that they cannot do without it. People are constantly making use of their digital devices. With different features added to smart phones in the modern day, voice call (which is the oldest feature of mobile phones) is becoming relatively less important and less used. This is due to the various innovative features that have been added to these mobile devices. These feature brought about the various patterns mobile devices are being used today. The usage pattern range from using it for academic purposes (calculating, researching for meaning of words, downloading educational materials and applications, etc) to non-educational purposes (play non-educational games, listening to music, etc). In as much as mobile devices can be used for educational and non-educational purposes, both usage patterns go a long way to determine the level of literacy of the users which are the teachers in this case. The positive attitude towards the use of mobile devices by teachers will certainly have a great influence on its adoption. This is because if the teachers are already using these devices to perform one function or the other with ease, it exposes them of a lot of potential benefits of using this technology for pedagogy

Similarly, for technology to be used in the classroom, a number of external and internal factors will have to be considered. Teachers’ views and have a role to play in the process and one of the decisive factors will be their perception on how they value technology. These internal factors are alleviated by external forces, including the amount of support and training available, as well as the amount of time that faculty have to devote to technology use. It is essential to have more understanding about teachers’ need and views on the use of technology this is because they are responsible for deciding how and whether technology should be used for instruction or as an instructional material. The teachers’ pattern of usage of these devices matter because it determines their level of expertise in terms of using the various features embedded in mobile devices. This will ultimately give the confidence when the devices are adopted for learning purposes.

**Statement of the problem**
Few studies have researched on the factors that influence teachers’ adoption, integration or use of mobile learning. (Aubusson, Schuck & Burden, 2009; Seppala & Alamaki, 2003). The usage patterns of mobile devices by teachers have largely been overlooked. Being able to ascertain the usage pattern of mobile devices by teachers will go a long way to determine how these devices are being used and if the pattern of mobile device usage by teachers will facilitate its adoption. This study examined the usage pattern of mobile devices by high school teachers in Oshana and Oshikoto regions of Namibia. This is to find out the various ways in which mobile devices are used for educational and non-educational purposes in order to ascertain their readiness for the adoption of mobile technology in Namibian high schools.

Research Objectives
The specific objectives of this study are as follows;
   i. To assess the usage pattern of mobile devices by high school teachers in Oshana and Oshikoto regions of Namibia
   ii. To identify the factors that can enhance the adoption of mobile learning technology by teachers in Oshana and Oshikoto regions of Namibia

Research questions
The research questions that guided the study are as follows;
   i. What is the usage pattern of mobile devices by high school teachers in Oshana and Oshikoto regions of Namibia?
   ii. What are the factors that can enhance the adoption of mobile learning technology by teachers in Oshana and Oshikoto regions of Namibia

Methodology
The section discussed research design, instruments and methods of data collection, population and sampling design and method of data analysis.

Research Design
Descriptive survey design was adopted for this study and questionnaires were used to obtain relevant information from respondents to describe the existence conditions and other phenomena. O’Leary (2010) noted that information about peoples lifestyles, attitudes, beliefs, behaviours and feeling can be collected using questionnaire. This design was found most appropriate for this study because that the study got information from the respondents based on their attitudes and behaviour. SPSS was used to analyze the data collected.

Population/ Sample
A population is an entire group of objects from which a sample is selected and about which the researcher wishes to draw conclusions. In this study, the population was made up of students from high schools in Oshana and Oshikoto regions. Since it was not practicable to study the whole population, research have shown that part of the population, called sample, must be selected for the study (Babbie & Mouton, 2010; Brynard & Hanekom, 2006; Maree & Pietersen, 2007; Strydom, 2011). Bergman (2008) supported by Mitchell and Jolley, (2007) noted that it is beneficial to use a sample because it will save time and cost. Therefore, the sample of this study is participants from six (6) high schools in the Oshana and Oshikoto regions. Three schools each were randomly selected from the two regions. A sample of one hundred and eighty (180) high school teachers was drawn from the six (6) schools (thirty (30) teachers per school).
In other to get the target population, purposive sampling was also used. “Purposive sampling is a technique widely used in qualitative research to identify and select information-rich cases for the most effective use of limited resources” (Patton, 2002). In this case individuals or group of individuals that have experience and knowledge about an area of interest are identified and selected (Cresswell, Plano & Clark 2007). In addition, Bernard (2002) noted the significance of readiness to partake, and the ability to share experiences and views in a clear, expressive, and reflective manner. With the use of random sampling procedure, three schools were selected from each of the regions.

**Instrument of Data Collection**

The questionnaire was used as the instrument of data collection in this study. The questionnaire items were structured and unstructured. The structured questions were used to measure subjective responses so as to bring clarity to the objective responses and consequently, assist to formulate the recommendations of the study. The researcher used trained and experienced research assistants for data collection. This minimizes errors because the research assistants help the respondents with clarifications in case there are mix-ups.

**Method of Data Analysis**

Data analysis is when data that is collected in a non-standardized and complex form is condensed, summarized, grouped and restructured to become more meaningful information. Data was analysed using percentages and graph. The statistical package for social sciences (SPSS) was used as the tool for data analysis.

**Results and Discussion**

In this section, the results of the study is presented and discussed. Specifically, the findings on the usage pattern of mobile devices among high school teachers in the Oshana and Oshikoto regions is presented below;

**Figure 1: Usage Pattern of Mobile Devices in Oshana and Oshikoto Regions**
Discussion of Findings

From table 1 above, it can be said that the use usage pattern of mobile technology in the two region are not far from each other not minding the fact that the percentage of teachers that make use of the device is higher in the Oshana region. For instance the percentage of teachers affirmed that they can use mobile devices for academic purposes in Oshana region is 83.3% while that of Oshikoto region is 80%. Also, all the teachers in Oshana region agreed that they use mobile devices as teachers while 75% of them in Oshikoto region agreed that they use mobile devices as teachers.

One striking thing that is common among the two regions is that the teachers affirmed that they have computer labs in their respective schools. They also affirmed that they can access the internet through mobile devices. In as much as they have labs and can access the internet not all of them can download materials and mobile applications from mobile devices. For example in the Oshana region 80% of the teachers can download educational material using mobile devices while 89% of the teachers can download educational applications using mobile devices. On the other hand, 75% of teachers in Oshikoto region can download educational materials using mobile devices while 83.3% of them can download educational applications using mobile devices. Be that as it may the percentage of teachers that an download educational materials and applications using mobile devices is on the high side as can be seen from the table.

Another area where mobile devices are beneficial to the teachers is when they use it to find meaning of words, look up things they do not understand and use mobile devices as calculators. In the two regions, one can conclude that majority of the teachers can find meaning of words, look up things they do not understand and use mobile devices as calculators. Though the percentage of teachers that can do these is a little higher in the Oshana region where 92% of the teachers can use mobile devices to find definition of words, and all the teachers affirmed that they can use mobile devices to look up things they do not understand and also use it as calculators. Conversely, 80% of the teachers in Oshikoto region can use mobile devices to find definition of words, 83% can use it to look up things they do not understand and all the teachers where positive that they can use mobile devices as calculators.

The social media is another area that has made an impact in the area of teaching and learning. This can be seen from the responses of the teachers in the two regions. All the teachers in the two regions affirmed that they can access social networking sites with their mobile devices. They were also positive that they know how to send emails with their mobile devices. Though 80% and 73% of the teachers from Oshana and Oshikoto regions respectively agreed that they know how to comment on blogs and respond to post from their mobile devices. The blog is a now social medium. This could be the reason why some of the teachers may not know how to use it. That notwithstanding, all the teachers in the two regions agree that they know how to use mobile devices for educational and non-educational purposes. This could be through using their devices to make call, send SMSs and play games. It is worthy of note the most of these games could also be educational.

Business benefits of using mobile learning in the classroom

There are benefits to be derived in the usage of mobile learning technologies for teaching and learning. Teachers can take advantage of mobile textbook readers connected to their school library database to prepare for lessons instead of moving about with books. There are also
cases where most of the books may not have the required or complete material need to prepare for lessons. In this situation, the teacher may decide to access the internet for the materials. Teachers can access and download educational material anytime and from anywhere, particularly when they may not have enough time to complete their work during school hours. This is in agreement with Ferry, (2009) who noted that “modern mobile phones can be used to access web based contents, remix it, share it, collaborate with others and create media rich deliverable for the classroom teachers as well as global audience”. Also, Cui and Wang (2008) noted that “in China learners can view their teachers’ web page or access some other online English learning resources via mobile phones and they can also take online tests”. Internet services can be accessed through mobile devices and teachers can search for educational materials they require. Therefore it facilitates the expansion of their knowledge. Mobile technologies support research as teachers can source for information from the numerous international databases. The paperless classroom can be supported through mobile technologies. Past examination papers, assignments, projects, syllabus, summaries, school work can all be uploaded onto a mobile device. Mobile technology provides a platform for better learning and accessing information easily. Learners can also make a follow-up on work covered in class.

Conclusion

The usage patterns of mobile devices by high school teachers have shown that there is an overwhelming positive drive towards mobile learning in Namibian high schools. A situation where the teachers know how to access the internet from a mobile device demonstrates their ability to connect themselves with the educational innovations that mobile technology has to offer. This is because Internet technologies through mobile devices can deliver a broad array of solutions that enhance knowledge and performance (Rosenberg, 2001). Moreover, a majority of the teachers can use mobile devices for social networking which also connects them to the area of collaborative learning. Furthermore, not only that the teachers can use mobile devices, they also own handheld mobile devices. Guy (2009) stated that “among the ICT tools mostly owned and used among people are the mobile phones”. Guy (2009) went further to state that “they are tools that can provide suitable learning platforms as they have a lot of applications teachers and learners may use in their academic activities”. The majority of teachers can access the internet, download education materials and applications from the internet using mobile devices, use mobile devices as calculators, access social networking sites, search for definitions of words on mobile, send emails, conduct searches for material, send emails and post comments on blogs.

The potential power of social media to facilitate academic achievement through collaborative and interactive and ubiquitous learning is obvious and it is supported by studies in literature (Brown, 2012; Junco, Heiberger & Loken, 2011; Novak, Razzouk, & Johnson, 2012). Furthermore for teachers to know how to use a mobile device to find meaning of words and look up things they do not understand means that they are open to using mobile devices for research purposes. Crawford and Vahey (2003) claimed that PDAs help teachers with organizing courses, searching for and managing research materials and information through the internet.

Internet access is expensive, and unless the schools negotiate deals that are affordable with internet service providers (ISP), then introducing mobile learning won’t be of any benefit. Providing mobile technologies to learners across schools could be costly and can be accompanied by a range of infrastructural and maintenance challenges but the advantages of having these facilities should also be considered (Russell and Jing, 2013). This could be
done at national level by the parent ministry to ensure there is no digital divide between the well-resourced schools and the under-resourced schools. Total dependence on technology has its disadvantages in addition to its advantages. If the technology is down, or electricity is not available, or there is a shortage of skilled technicians to manage the system, then teaching and learning grinds to a halt. Not everyone is ICT literate to use mobile phones. Not everyone has access to a smart phone. Therefore if mobile learning is introduced in schools then the relevant ministry or school administration should be in a position to provide all learners with mobile devices. Mobile devices can get lost easily. Therefore that would create a cycle of theft from one another. It is noteworthy that the consistent usage of mobile devices by high school teachers depend their availability and the teachers and students knowledge on how to use these devices. This means that training is still required by the teachers so as to make them more mobile technology compliant.

References


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