Support Given to Lecturers when Providing Mobile Centric Services in Teaching and Learning: A Policy Analysis Perspective

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Abstract: The objective of this study is to examine the status of Higher Education Institutions (HEIs) policies in supporting lecturers when providing mobile centric services to students. The research was undertaken as a single case study within the Open and Distance Learning (ODL) context in South Africa. Qualitative data was captured through policy document analysis using the Framework for Qualitative Data Analysis. The findings of the study revealed that UNISA has many policies that guide lecturers when providing mobile centric services to students. The policies cross-reference but some gaps were observed on how the institution provides lecturers with mobile technology infrastructure, technical support, emotional support and pedagogic support. Hence, this study proposes some recommendations on how the policy could support lecturers in providing mobile centric services in teaching and learning.

Keywords: Mobile Technology, Mobile Centric Services, Policy

1. Introduction

As debates on providing mobile centric services at Higher Education Institutions (HEIs) acknowledge the role of mobile phones as information access and interaction tools, the focus is shifting towards the role of institutional policies in this respect. The evidence of this shift is seen in the objectives of the UNESCO Mobile Learning Week (MLW) symposiums held in 2011[1], 2013 [2], and 2014[3], which had at least one objective on the role of policy in supporting mobile learning. The symposiums provided a platform for discussing strategies for employing mobile phones as tools for teaching and learning. The MLW 2011 symposiums focused on the role of policy in supporting educators when providing learning through mobile technology [1]. The deliberations of the MLW 2011 symposium resulted in the publication of a policy guideline that could help educational institutions and governments to develop mobile learning policies [4]. The MLW 2013 symposiums focused on how mobile technologies could support teachers in their professional development. Recently, the MLW 2014 symposium focused on bringing educational policy makers together to share experiences on how educators could leverage mobile technologies to improve educational outcomes [3]. Hence, the lesson learnt from the MLW symposiums is that successful provision of mobile centric services in teaching and learning depends on institutional support provided to the educators through the policies.

UNESCO's point of departure was to respond to high mobile technology adoption rate and the opportunities it presents in facilitating learning [1]. Traxler [5] argued that

opportunities for supporting teaching and learning through mobile technology would be useless if they are not supported by policy. There is now enough evidence to confirm that mobile technology brings opportunities in teaching and learning, for example, pilot projects confirming mobile phones as suitable learning tools [6-9]. The evidence supports UNESCO's vision of pushing mobile technology as a resource that could help in achieving its objective of Education for All [10]. UNESCO is of the opinion that successful integration of mobile technology in teaching and learning would depend on the educators' skills and the policies that supports them [11]. The educators would require skills that enable them to design mobile centric services with respect to designing learning resources, communication, and interaction.

Among many factors that could be delaying full utilization of mobile technology in teaching and learning, policy has been identified as a critical enabler [5, 11-13]. The ICT policies in teaching and learning are considered outdated and fail to provide necessary guidance on the use of mobile technology in teaching and learning [11]. As a result, the policies prohibit full utilization of mobile devices as learning tools. Czerniewicz and Ngugi [14] analysed South African ICT educational policies and they found that the national policies were broad and had no strategies for supporting the use of ICTs in teaching and learning. At institutional level, the study found that the development of e-learning policies were at different levels. The study concluded that the differences in the development of policies at HEIs is rooted in the the national e-learning policies, which were described as fragmented [14]. These findings are important in this study because existing ICT educational policies would inform mobile technology polices. In line with this argument, another study [11] concluded that most ICT policies in education only focused on the provision of hardware, software and networking, whose link to pedagogy, curriculum, or assessment was not clear. Hence, UNESCO sees this as a vacuum in the educational ICT policies [1].

In response to the vacuum in the ICT educational policies, UNESCO published guidelines that provide recommendations for designing polices that regulate the use of mobile technology in education [4]. Table 1 presents the summary of UNESCO policy recommendations.

With reference to Table 1, the UNESCO guidelines for m-learning policy recommended that government and educational institutions should review and upgrade their ICT educational policies to benefit from the use of mobile technology in teaching and learning. The guidelines recommended that policies should encourage and support lecturers with training for providing mobile centric services. With respect to the provision of online content, the guidelines recommended that all content and websites be accessible through mobile devices. The recommendations emphasize equitable access in terms of communication, interaction, accessing mobile resources, connectivity, economic status, and gender. Lastly, the guidelines encourage the use of mobile technology among stakeholders and promote safe, responsible, and healthy use of the devices.

Table 1: Summary of UNESCO 2013 mobile learning policy guidelines [4]

Policy Recommendation	Contents
Create or update polices related to mobile learning	Update existing ICT policies to incorporate the use mobile technology in teaching and learning.
Train teachers to advance learning through mobile technologies	It is recommended that educators receive training on how to incorporate learning into their curriculums.
Provide support and training to teachers through mobile technologies	In educator development courses, educators should be provided with curriculums, course plans, and activities through mobile technologies.
Optimize educational content for use on mobile devices	Ensure that online content repositories are accessible through mobile devices. Provide educators with tools that facilitate creation of mobile content.

Policy Recommendation	Contents
Ensure gender equity for mobile students	Promote mobile technology as a tool that is not gender based.
Expand and improve connectivity options while ensuring equity	Ensure that the community has equal access to mobile networks. Subsidies mobile data or broadband.
Develop strategies to provide devices for students/lecturers who cannot afford them	Provide a strategy that ensures that all the staff or students have access to mobile devices.
Use mobile technology to improve communication and education	Encourage communication through mobile technologies in teaching and learning.
Promote the safe, responsible and healthy use of mobile technologies	Promote ethical use of mobile devices in communication and interaction. Safe guard against the flow of inappropriate content. Warn of potential health risks.
Raise awareness of mobile learning	Highlight the benefits of using mobile technology in teaching and learning. Encourage dialog among key stakeholders.

The argument presented here highlights the importance of policy as a factor that could support successful provision of mobile centric services in teaching and learning. Hence, the objective of this study is to investigate the status of a HEI's policies in supporting lecturers in providing mobile centric services to students.

2. Objectives

The objective of this study is to examine the status of a South African HEI's policies in supporting lecturers when providing mobile centric services to students. The results of this study could be relevant to other HEIs situated in the developing world. This objective translated into the following research question, "*What is the status of HEI's policies in supporting lecturers when providing mobile centric services to students?*"

3. Methodology

In order to answer the research question of this study, the investigation was undertaken as a single case study [15] at the University of South Africa (UNISA) as an instance of a HEI. This section presents the research context, data collection, and analysis strategy used in the case study. The study began in 2012 but the document analysis was undertaken on documents accessed between 1 September 2014 and 30 October 2014.

3.1   Research context

UNISA has a student population of over 250,000. The bulk of the students originate from the African continent and the remainder from various parts of the developing and developed world. The diverse backgrounds of the student population introduce disparities in levels of exposure to accessible technological infrastructure [16]. In response to this, the institution provides students with technological infrastructure at its regional centres in South Africa. The technological support initiatives lessened students' problems but not for every student. Even though students could access the facilities, students could only do so during working hours but when they are at home, they would not have access. This could be due to the physical realities of a resource constrained environment that includes lack of ICT infrastructure and device scarcity.

Mobile phones can provide prospects for overcoming some of the information access limitations of students. Prior research found that mobile phones brought information access and interaction to geographical areas where it never existed before [18, 19]. Research also established that mobile phones provide access to a number of internet-based services that include audio and video files, email, SMS, and banking just to mention a few [20].

Given that at the end of 2014, the estimated global mobile phone subscription would have reached 7 billion and that Africa mobile broadband growth would have reached 20%

[21], there is a high probability that most students would have access to mobile phones with internet access. The growth in mobile technology sector has given majority of the students access to a variety of information services and content, which has opened challenges and opportunities for HEI's and raised questions on how HEI's should respond.

3.2 Research method

This study employed document analysis as a research method. A document is an artefact that has as its central feature an inscribed text, specific origin, purpose and targeted audience [22]. The goal of the document analysis was to investigate the status of the institutional policies in supporting the provision of mobile technology services by the lecturers at an ODL institution in South Africa. Policies are a rich source of information because they are stable, legally valid, contextually relevant, and grounded in the institutional environment [23]. The target documents in this research were policy documents that guide the provision of mobile technology services by the lecturers.

A sample of nine policy documents from the institution where the case study happened were analysed, of which four were Teaching and Learning policies, and five were ICT policies. The Teaching and Learning policies were:

- the Tuition policy,
- the Curriculum policy,
- the Open distance learning (ODL) policy, and
- the Prescribed books and journal articles policy.

The ICT policies were:

- the ICT mobile device policy,
- the Telephone and cell phone policy,
- the Policy on sending SMSs and Emails to students, the Internet, electronic communication and web management policy, and
- the ICT policy on broadband agreements.

The policies are available on the university website and are accessible to all members of the university [24]. The policy document analysis was done between 1 September 2014 and 30 October 2014. The following section describes the document analysis protocol used for analysing the policies.

3.3 Document analysis protocol

The document analysis protocol used in this study was informed by the UNESCO 2013 mobile learning policy guidelines [4]. The UNESCO m-learning policy guidelines are important because they provide a balanced strategic direction for using mobile technology in teaching and learning. Table 2 presents the document analysis protocol. The policy documents were analysed using the Framework Analysis method [25]. The Framework Analysis method is inductive and has systematic stages of analysing the data. The stages are familiarization, identifying a thematic framework, indexing, charting, mapping, and interpretation. The following sections present the document analysis results.

Table 2: Document analysis protocol

Name of policy /date of publication	What is the name of the policy?
Purpose	What is the purpose of the policy?
Implications on lecturer training	What does the policy say on the role of lecturers?
Implications on provision of Infrastructure	How is the infrastructure provided and supported by the university to lecturers and students?
Implications on communication	How are mobile phones supposed to be used when communicating?
Implications on provision of learning resources	What are the guidelines for providing students with access to learning resources?

| Implications on interacting with students | What are the guidelines for lecturer to student interactions? |

4. Results

This section presents the findings of the policy document analysis. The objective of the study was to answer the research question, "What is the status of HEIs policies in supporting lecturers when providing mobile centric services to students?" The findings are structured as follows: Review of polices to incorporate the provision of mobile technology, lecturer training, provision of infrastructure, mobile communication and interaction, and provision of mobile content.

4.1 Review of policies to incorporate mobile technology

One of the fundamental recommendations of the UNESCO 2013 mobile learning policy guidelines is that HEIs' should either introduce new policies that guide the use of mobile technology in teaching and learning or review existing e-learning policies to reflect the use of mobile technology. Policy document analysis established that UNISA introduced two new policies in response to the use of mobile technologies in teaching and learning. The first policy is *the Policy on sending SMS and Emails to students*, whose objective is to give guidance on the appropriate uses of SMS and email in communication. The second policy is *the ICT Mobile device policy*, whose objective is to regulate the use of mobile devices and to make the users aware of their responsibilities when using mobile devices on the university network. In addition, the university revised two ICT policies to take care of the use of mobile technology at the university. The first revised ICT policy is *the Telephone and cell phone policy*, whose objective is to give guidance on the use of the university telephone systems and private cell phones with respective to university business. The second revised ICT policy is *the ICT policy on broadband agreements*, whose purpose is to regulate access and usage of broadband facilities.

The institution also revised three Teaching and Learning policies to reflect the dynamics and the evolution of technology in learning. The revised policies do not specifically focus on the use of mobile technology but on the general use of technology in teaching and learning. The first revised policy is *the Tuition policy*, whose objective is to provide guiding principles on teaching and learning. The second revised policy is *the Prescribed books, readers, and journal articles policy*, whose objective is to guide the prescription of reading material to students. The third revised policy is *the Curriculum policy*, whose objective is to provide principles that guide the design of curriculums for teaching and learning in ODL.

Consequently, this provides evidence that the institution responded to the use of mobile technologies in teaching and learning. Inductively, this study established that the Teaching and Learning policies support the lecturers in providing mobile centric services in general. The reason being that the policies were written for different purposes rather than supporting lecturers in providing mobile technology services in teaching and learning. The purpose of the Teaching and Learning policies include providing principles that guide teaching and learning, guidelines for prescribing study material, and curriculum design. Hence, the policies seem to address the issue of providing mobile technology services under the banner of integrating innovative technology. Furthermore, the ICT policies do not directly support lecturers in providing pedagogic services through mobile technology services. The policies provide general guidance on the provision of infrastructure, security, ethical behaviour, communication, and interaction on the university network. Engraved in these guidelines are pointers on how lecturers could provide mobile centric services to students. Therefore, the policies implicitly support lecturers in providing mobile centric services in teaching and learning.

4.2   Lecturer training

The UNESCO 2013 mobile learning policy guidelines recommend that educators should receive training on how to provide learning resources, communicate, and interact through mobile technology. Document analysis found that only three of the Teaching and learning related policies addressed the issue of educator training and none of ICT related policies. The policies that addressed the issue of educator training are *the Tuition policy, the Open distance learning policy and the Curriculum policy*. Two of the policies, *the Tuition policy* and *the Open and distance learning policy* address the issue of educator training in general and do not specify the type of training that an educator could receive from the university. The two policies state that the university provide its educators with opportunities for professional development, and provide courses for on-going employee development. In this respect, *the Curriculum policy* explicitly stated that employees would receive adequate training that would enable them to develop, implement, and experience e-learning or m-learning. Therefore, the policy explicitly supports training for providing mobile technology services. That is, lecturers could receive training on mobile technology communication, learning activities design and interaction.

4.3   Provision of infrastructure

The UNESCO 2013 mobile learning policy guidelines recommend that an institution should have a strategy that enables the users to have equitable access to mobile devices and networking services. Document analysis found three polices that inform the provision of infrastructure and access to network services by the lecturers. The three policies were the ICT policies and they are *the ICT mobile device policy*, t*he Telephone, and cell phone policy*, and *the ICT policy on broadband agreements*. The policies address the provision of infrastructure in terms of mobile device ownership, access to network services and the cost of broadband.

The *ICT mobile device policy* defined three ways in which lecturers could own and use mobile devices at the institution as Bring Your Own Devices (BYOD), purchase a mobile device through a research funding, or own a university funded mobile device. The policies stipulate that the university would fund the purchase of mobile devices based on the job responsibilities, the incumbent's entailment to offsite work, and the rate at which that person works offsite. The university requires that employees purchase, register, insure, and sign contracts of the devices in their own names even if they are institutionally funded. The university only funds the purchase of mobile devices through allowances. The allowances are readily available to senior managers and any other employee could obtain such a privilege through application and approval by the senior managers. In terms of device maintenance and security, the policies stipulate that the owners of the devices are responsible for their devices. The university would only provide maintenance and insurance for university-funded devices.

This study found two policies that address the issue of accessing university network services through mobile devices, and they are *the ICT mobile device policy* and *the ICT policy on broadband agreements*. The policies stipulate that all employees could access the university network with mobile devices if they agree to the university terms and conditions. The terms and conditions cover aspects of security and ethics.

Therefore, the university policies seem to support the provision of mobile devices through BYOD, research and university funding. The implication of the BYOD to lectures could be that they would be reluctant to use their mobile phones for communicating and interacting with students. This could jeopardize the opportunities of anytime and anywhere communication and interaction between students and lecturers.

4.4 Mobile communication and interaction

The UNESCO 2013 mobile learning policy guidelines recommend that lecturers use mobile technology for promoting communication and interaction in teaching and learning. Document analysis established that six of the policies addressed the issue of mobile technology communication and interaction. The Teaching and Learning policies addressed the issue of mobile communication and interaction in a broad way, only mentioning the use of ICT in general. The issue of mobile communication and interaction is addressed more specifically by the ICT policies. The policies provide guidelines on how lecturers could use university resources for communicating with students. The university expects lecturers to use the landline telephone systems during the working hours and only provides professors who work from home with a telephone allowance. The Policy on sending SMSs and emails to students provides a code of conduct of how lecturers could communicate and interact with students. The lecturers are obliged to oversee and quality control all subject specific messages sent to their students. On the student side, the policy stipulates that it is compulsory that all students receive subject specific SMS or emails. The policy also stipulates that students could use SMS to interact with some university systems that provide students with services such as exam results, retrieving contact information, or general enquiries.

Document analysis in this study also found that the policy on Sending SMS and email requires that line managers should approve all SMS messages before they are sent to students. This bureaucratic condition could block some of the lecturers from communicating with students through SMS. In this regard, the UNESCO policy guideline on mobile learning advised that policies should strive to provide access for all [4].

The *Internet, electronic communication, and web management policy* encourages lecturers to use communication technologies innovatively to enhance teaching and learning in ODL. The policy provides guidelines on the internet resources that could be used on the university network for communicating and interacting with students. For example, the policy discourages the use of video-based telephone applications such as SKYPE due to the limited bandwidth. On the other hand, the policy recommends the use of Instant messaging applications for communicating with students.

4.5 Provision of mobile content

The UNESCO 2013 mobile learning policy guideline recommends that educational institutions should optimize learning content for access and interaction on mobile devices. Document analysis established that four of the policies addressed the issue. Three of the policies were Teaching and Learning policies and one was an ICT policy.

The Teaching and Learning policies address this issue in a general way, encompassing all types of technologies, and do not specifically refer to mobile technology. The *Open and distance learning policy* recommends that lecturers design learning content that is accessible on the web, and take advantage of interactive technologies.

The ICT policy that addresses the issue of designing content for online access is *the Internet, electronic communication and web management policy*. The policy is broad and stipulates that lecturers should design quality online course material for students' access. The policy states that lecturers should not distribute learning content intended for registered students on social media platforms.

Therefore, policy document analysis found that the institution supports the design of content that is accessible through mobile devices in a broad way, but it does not provide guidelines on how it should be accomplished.

5. Discussion

As witnessed in this single case study of a HEI, the institution is in the process of developing and incorporating policies that provide guidelines for the provision of teaching and learning services through mobile technology. Hence, policy document analysis could not find concrete frameworks or models for providing lecturers with best practises or guidelines that support lecturers in providing mobile technology services. If this is the case with other HEIs in developing countries, HEIs need to come up with operational plans that give balanced technical and pedagogical support to lecturers. It would be ideal that HEIs formulate clearer and one-dimensional policy that guide the provision of mobile centric services in teaching and learning. The core of the policy would be to support lecturers pedagogically, technically, emotionally and with infrastructure.

Pedagogically, the policy should take cognisance of the fact that curriculum design for mobile learning activities could not be the same as that of learning on a computer [12]. This requires HEIs to align the curriculum design techniques with the provision of mobile technology services. This study recommends HEIs to come up with models or guidelines that support the design of mobile centric services for teaching and learning. This would help lecturers in designing appropriate instructional activities for teaching through mobile technology.

Technically, this study recommends HEIs to come up with a strategy that guides how an institution would provide technical support to lecturers. As acknowledged by UNSECO 2013 m-learning policy guidelines, lecturers need technical support when providing teaching and learning services through mobile technology. The support could focus on training workshops, learning activities design, content design, communicating and interacting with students.

Emotionally, this study recommends HEIs to come up with a strategy that guides how lecturers would be emotionally supported. The strategy should address issues of motivating lecturers in providing teaching and learning services through mobile technology. Lecturers would be motivated in providing mobile technology services if they are aware of the technology, if they find it enjoyable to do, if is valuable and can associate the activities to their teaching goals.

Learning from the results of this case study, an institution is expected to have a strategy for providing lecturers with access to hardware and software infrastructure that facilitates the provision of mobile technology services. Models for providing lecturers with infrastructure include institutional funded mobile technology hardware and software, adopt BYOD or open source software. When providing infrastructure, the institution is expected to weigh the pros and cons of models that they implement.

The contribution made in this discussion is that HEIs policy that guides the provision of mobile technology services should be supported by best practice models or frameworks.

6. Conclusions

This study examined how HEIs policy supports lecturers when providing mobile centric services in teaching and learning. Despite references pertaining to the use of mobile centric services, the findings indicate that the institution does not have one comprehensive policy that guides the lecturers in providing mobile centric services at the institution. Furthermore, concrete frameworks or models of best practices or guidelines that support lecturers in providing mobile centric services were limited. Given that UNISA is offering teaching and learning opportunities for many students in South Africa and other developing countries we believe that the findings could be relevant to other HEIs in developing countries. Based on the findings, we recommend that HEIs provide comprehensive policies supported by best practice frameworks that guide the provision of mobile centric services. This study

acknowledges the limitations of generalizing single case study results and suggests the extension of the study to other higher education institutions.

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