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Perceptions of teachers on teaching and learning with mobile devices in higher education classrooms in Oman: A pilot study

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Abstract

Mobile learning is a new educational paradigm. The use of mobile technology is popular on a global scale among students of higher learning. Mobile handheld devices have emerged as a learning tool for teachers and students in higher education classrooms. Nevertheless, the impact of mobile technology on learners has been an area of concern to teachers and administrators. The purpose of this pilot study was to explore the perceptions of teachers on the use of mobile devices such as smart phones, iPads, notes and tablets in higher education classrooms. In this pilot study, in-depth one-to-one face-to-face interviews were conducted using semi-structured questionnaires. Limitations included the relatively small number of participants and restriction to only one of the many higher education institutions in Oman. The findings of this pilot study indicated that these technological tools can be potentially beneficial to the educational sector in the future and that more research should be conducted in the future in which a greater number of interviewees are sampled from more education institutions in Oman.

1. Introduction

Mobile devices are handheld modern electronic gadgets such as smart telephones, iPads, notebooks and tablets. In the modern world, mobile devices are an integral part of the lives of a majority of university students of the millennium generation. Mobile technology has become pervasive and powerful, offering teachers a valuable tool to assist in teaching (MacCallum, 2010). The rapid progress of mobile technology has resulted in learning becoming more and more accessible, and has provided teachers with new avenues to augment learning both inside and outside the classroom. Mobile technology is an amalgamation of a vast number of applications and tools that can enhance learning to be both dynamic and effective, so that students are no longer tied to their desks to communicate and can also experiment with objects of learning. The integration of mobile technology into learning and teaching is expected to have huge impact on the performance and experience of learners (Hammond et al., 2011). However, questions surrounding if the teachers accept this technology in the classroom setting have had a significant impact on the successful implementation of mobile learning. Students are capable of using mobile technology to assist informal learning, but without the acceptance and support of teachers it is unlikely to be integrated completely into much formal learning (Sang et al., 2010).

Research studies indicate that the use of mobile technologies in education has contributed towards greater efficacy in learning, developed assistance for personal growth, and larger exposure to technology and better communication (Sharples, 2013). While designing m-learning environments, it is essential to emphasize the role of the teacher who is an essential part of the process of learning, who creates the learning surroundings and controls it to some degree, thereby enhancing guided reflection. Teachers who became popular utilizing their mobile devices developed a better understanding of how activities of m-learning could be incorporated and implemented into schools and universities (Aubusson, Schuck & Burden, 2009). Realization of the importance of mobile phones for education might develop the quality of learning and teaching. Teachers must be encouraged and adequately trained to deliver m-learning courses in blended learning environments (Chen et al., 2010).

The adoption of m-learning is still in its developmental stage within learning and teaching processes in Oman, and teachers must be given an opportunity to voice their perspectives towards the adoption of mobile technology in classroom teaching. Therefore, the research question

asks, “What are the perceptions of teachers of teaching and learning with mobile devices in higher education classrooms in Oman?”

2. Background

While it is generally accepted that technology should be an integral part of the learning process in Oman higher education sectors today, there is evidence that technologies still remain peripheral to the main work conducted in many Oman institutions. The Oman Higher Education Curriculum in its current form emphasizes inherent capabilities required for learning in the 21st century. This has meant a number of higher education sectors in Oman have adopted the technological route, primarily in terms of improving networking and mobile devices. Earlier research into this area has indicated that there is an underutilization of technology in the field of higher education in Oman. This research analyses the perceptions of teachers in Oman’s higher education sector in the light of the increasing ubiquity of technologies. The main aim of the study is to identify the perceptions and perspectives of teachers when utilizing mobile devices within higher education classrooms in Oman.

3. Literature review

3.1 Teachers’ views

Mobile telephone use during class time has received more criticism than support from teachers (Wei & Leung, 1999). Proponents of mobile technology argue that it places exponentially high valuable data in the hands of the students in real time and that it can improve the efficient transfer of lecture materials to students. The utilization of mobile devices is validated as they enable easier communication, better organisation and access to the internet thereby better connecting students to their families, friends and teachers (Katz, 2005; Mifsud, 2003). While these devices are computers with ease of access and higher portability properties in terms of reduced weight and size (Prensky, 2004), critics argue that mobile gadgets are largely distractive and can be used as tools to cheat during examinations (Katz, 2005).

3.1.1 Studies on teacher perceptions

Given the prevalence of mobile devices in our daily lives and their appeal as educational instruments, it is essential to understand the perspectives of teachers with regards to mobile technology and its feasible integration into teaching, (McCallum & Jeffrey, 2009). This pilot study is aimed at

exploring the benefits and obstacles that mobile technology provides to education from a teacher's perspective.

A study was conducted about teachers' perceptions and potential use of mobile learning in a business school (Boughzala, 2012). While mobile technology develops the possibilities for m-learning, the perceived lack of value pertaining to mobile technology within the learning environment has hindered the possibilities for mobile learning trials. The purpose of their study was to evaluate the adoption and use of mobile technology by teachers in a business school (Boughzala, 2012). The teacher respondents offered insights about mobile learning opportunities such as interactive surroundings, availability, and daily activities' inclusion and enhanced communication. The respondents further identified that teaching practices must be adapted to create interactive activities and to motivate reflection with a timely feedback; such driven by the threat posed by institutional, technological, individual and pedagogical barriers that threaten mobile learning practices. Their study noted that integrating mobile devices, new technology and new resource platforms at institutions are expected to develop learning outcomes resulting in better collaboration, availability and ubiquitous features.

Another study looked at whether teachers' acceptance of technology could impact their readiness for the pedagogical use of mobile phone technology in schools, yet it is questionable if teachers are ready to use mobile phones in learning and teaching (Ismail et al., 2013). However, the study recognized an essential correlation between respondents' motivation and awareness of technology with their readiness for pedagogical use of mobile phones. It can be inferred from their study that mobile technology is considered essential for future education, albeit the slow uptake in teacher adaptation to this mobile technology in schools.

While there is an increased awareness that these technologies may be beneficial to learning and teaching, factors that determine the acceptance of mobile technology by teachers have been restricted (MacCallum, 2014). There is a new model that expands the Technology Acceptance Model (TAM) with three new variables namely 'Information and Communication Technology' teaching self-efficacy, digital literacy and anxiety (MacCallum, Jeffrey & Kinshuk, 2014). Yet, their study revealed that a large number of teachers still resisted the integration of technology into the classroom. Two perspectives have been predicted consistently to influence teacher adoption of technology, namely pertaining to trust and the necessary skills to use digital technology. Their study predicted that perceived usefulness, anxiety, digital literacy and self-efficacy of teachers were essential

factors in guiding the behavioral intentions of teachers to use mobile learning. One serious issue which concerns teachers is classroom distractions due to the misuse of students' mobile phones, this in different higher education institutions in Oman (Shrivastava, Shrivastava & Muscat, 2014).

3.2 Mobile devices as aids

Mobile technology has evolved and so have teachers' attitudes as this technology can deliver learning content in a variety of ways (Hartnell, Young & Vetere, 2008). This evolution is instrumental in ensuring that lessons are learner-centered, authentic and different from the more traditional approaches to instruction; such technological evolution can be leveraged to assess and reflect students' performance levels (Markett, Sanchez, Weber, & Tangney, 2006).

Portability of mobile gadgets allows access to the course material anywhere and at any time for both the learner and the instructor thereby enabling socialization between them; such an interactive relationship is an excellent source of motivation (Markett et al., 2006). From the learners' perspective, use of mobile devices allows them to enact a variety of tasks simultaneously including easy access to course content and internet research while still in communication with peers and seniors (Lu, 2008). In addition, most mobile devices incorporate certain features that support instruction. For example, texting can support numerous applications that can be used for classroom instruction and interaction between staff and students, including student performance assessment (Whattananarong, 2006). Comparisons were conducted between two groups of students, the control group who sat for their examinations in the conventional way and the other group who used mobile devices, yet the examination results for the two groups were the same. Moreover, text messaging can be utilized as a tool for inquiry and a teacher's mode of delivering instructions.

Mobile technology can be leveraged to quantify information and use teacher podcasts incorporating learning materials to allow students to study them pre and post the lesson or can permit flipped teaching (reverse instruction) that is a revolutionary form of blended teaching. Essentially, flipped classroom redirects instruction to a learner-centered model thereby allowing more time to be allocated to explore new topics more comprehensively and create meaningful learning opportunities; this while initially students are introduced to such topics outside of the classroom setting. This enables teachers to spend considerably more time in a two-way interaction with students as opposed to just lecturing (Pierce, 2013). Both podcasts and flipped approaches are known to increase motivation, writing and listening

skills, while retaining ownership and meaningfulness of the learned content (Dlott, 2007). Mostly, the materials created for podcasts and flipped platforms are aimed at augmenting classroom instruction. Finally, podcasts play a fundamental role in differentiating instructions in an appealing way, enhanced through audio and visual aids that re-emphasize classroom learning. This is important in instructing those students burdened by language difficulties or those with special cognitive needs (Molina, 2006).

Studies reveal that educators are concerned that the short format used in text messaging is impacting negatively on writing skills in the form of abbreviated language and slang thereby inhibiting the students' ability to speak and write using appropriate grammar. On the contrary, results of a study examining the writing skills of teenagers showed that those who texted more often were able to write more and had better writing and spelling skills than their peers who texted half as much (Plester, Wood, & Bell, 2008).

3.3 Mobile devices as obstacles

3.3.1 Mobile devices as distractors

Students who spent a lot of class time texting were often distracted because they were likely to pay little or no attention in class (Tindell & Bohlander, 2012). More than 90% of teacher participants expressed concerns that such students were likely to score poorly in impromptu tests after class. It was found that both teachers and learners got irritated and distracted by the ringing of mobile devices during lessons (Campbell, 2006). Moreover, most teachers and students in Oman supported restrictive policies to keep the use of mobile devices under control, especially during lectures. In a study of the use of mobile devices belonging to 1,300 college students, it was found that nearly every text message was responded to, indicating that it is difficult for students to ignore text messages (Burns & Lohenry, 2010).

In an Oman study, most students in Muscat and Sohar enacted less than 10 phone calls a day but wrote or received more than twice the number of text messages Belwal & Belwal (2009). Moreover, more than half of the study population did not feel comfortable when they did not carry their mobile devices around or when they were switched off for a period of more than one day. This was because mobile gadgets are equipped with features and applications that are highly compatible with students' daily activities. Similar studies from Norway, China, and Korea, have shown similar dependence on mobile devices among learners globally (Katz, 2005).

Mobile technology was highly attributable to time wastage and drain on monetary resources for most students in The Islamic University of Bahawalpur, Bahawalnagar Campus, Pakistan (Javid, Malik & Gujjar, 2011). There is a positive correlation between text-messaging during class time and reduced academic grades as well as difficulties in remembering disrupted lecture presentations Aamri & Suleiman (2011). Poor academic performance was associated with the considerable amount of time sending and replying to messages instead of focusing on lectures

3.3.2 Mobile devices as aids for cheating

Learners sometimes cheat during examinations as most students are extremely proficient in texting without necessarily looking at the screen which enables them to quickly share content on questions (Gerard, 2006). Mobile devices can be used to violate the privacy of both other learners and teachers. For example, video-recording other students or teachers with malicious intentions of posting demeaning video clips in public forums such as YouTube. Another study revealed that one-third of high school students use their digital devices in cheating during tests and examinations (Common Sense Media, 2010).

3.4 Purpose of the study

The purpose of this study is to understand how Oman teachers in a specific higher education setting are adopting mobile learning in classrooms; such understanding can pave the way for implementing mobile learning in higher education classrooms in Oman successfully in the near future. Currently, most of academic management and teachers do not allow mobile devices in classrooms due in part to earlier stated issues. Yet there are various types of mobile devices that have the ability to support classroom activities more effectively despite these issues (Bär et al., 2005; Geist, 2011; Milrad & Spikol, 2007). Through this analysis of existing studies, this study plans via qualitatively testing a random sample group of teachers from one of the higher education institutions to ascertain how Oman teachers can embrace and utilize mobile device technology.

4. Methodology and methods

4.1 Methodology

A phenomenographic approach was used to explore the perceptions of teachers about the use of mobile devices in higher education classrooms. Phenomenography is a subjective examination approach entailing qualitative research

which involves an interpretivist model for analysis (Akerlind, 2005). In particular, it investigates the differences of people's experiences and relates their thinking and perspective to a subject to identify the clear notion/concept pertaining to the subject. Phenomenographic research is based on information and thus its ontological assumptions are epistemological in context (Bowden, 2005). Phenomenography understands the response of the participants from different perspectives, taking into consideration the social phenomenon of nature (Hitchcock, 2006). According to the social phenomenon of nature, the responses of the individuals are influenced by different behaviors, feelings and experiences from past (Babbie, 2015). This pilot study explores the experiences and thoughts of teachers when using mobile technology for the purposes of teaching in higher education classrooms.

Seven English and Mathematics teachers from a higher education institution in Oman known as the Foundation Program of the Health Institutions were randomly sampled for the pilot study, with varying teaching experiences, age groups, genders, and different backgrounds. Interviews, each lasting about 45 minutes, were conducted using semi-structured open-ended questions such as, "What are the perceptions of teachers on teaching and learning with mobile devices in higher education classrooms in Oman?"

The question is centered on the teachers' perception of utilizing the mobile devices in Oman classrooms in Oman as a tool of modification of the education system. Thus, a qualitative approach was adopted to clearly understand the opinions, feelings and experiences of the seven teachers in a manner that depicts the social phenomena naturally. Qualitative research allows understanding of the holistic approach by looking into different variables to derive at a conclusive point through critical inductive analysis (Babbie, 2001). Also, qualitative research data help us to understand the concepts and develop theories through an inductive approach. However, special care was taken into consideration for clearly presenting the teachers' points of view without any manipulation of data or researcher bias.

The research was designed, carried out and analyzed as a part of the doctoral program in Oman where the researcher utilized Merriam (1998) as a major reference of the descriptive study. The study was conducted carefully, so iterations, revisions and consensus were critically understood during the process of determining the findings and analysis.

4.2 Data collection

Since the study is expected to understand the teachers' concepts and perceptions of utilizing the mobile devices in

the classroom, the appropriate method of data collection was to provide the opportunity to gain insights directly from the participants. Thus, a primary interview research methodology was adopted for collecting the data and a semi-structured open-ended questionnaire was prepared for the interview (Babbie, 2001). This approach was flexible in design, to allow for questions to be added or even asking countering questions as a means for the researcher to clarify and understand the teachers' conceptual understanding and perceptions. In order to ascertain if the interviews would proceed as anticipated, the researcher tested the questionnaire on different individuals before interviewing the actual seven participants. These teachers were interviewed face-to-face through a trustworthy questionnaire structure so that the natural flow of information was relevant to the study. All the interviews were first recorded and then transcribed to ensure subsequent accurate and reliable inductive analysis. The interviews were recorded to ensure that the data collection was valid, authentic and could be reflected upon. Recording enables the researcher to concentrate on listening instead of taking notes, allows better communication with limited distractions and reduces the possibility of the researcher being too subjective or biased. Moreover, the participants feel confident as it allows them an opportunity to go back, review and reflect on the collected qualitative data (Bryman & Burgess, 1999).

4.3 Data analysis

Data analysis is a crucial step of the research as it leads to clear findings and provides an overview and approach to answer the research questions. It is very important to select an appropriate analytical tool that resonates with the idea of both the research and research questions. For this research, an inductive analytical approach was adopted in order to assess the qualitative data. The data was categorized into a thematic format (Bryman & Burgess, 1999). Themes were developed by extracting the data from the interviews in a sequential manner and participants were asked to edit or add comments to each theme as and when appropriate, and to clearly represent his/her point of view without any distortion of the meaning of the collected data.

The data was individually coded for inductive analysis in a categorically thematic manner. Meyer and Avery's (2009) approach of analysis was adopted for the purpose. Spreadsheets were used to categorize participant comments into themes and single sentence analysis as per example shown in Appendix 1.

4.4 Trustworthiness and credibility

To ensure the credibility and trustworthiness of the data analysis, typical strategies were adopted to ensure that the data findings were in accordance with the participants' views. The teachers were invited to verify if the findings reflected their personal opinions and experiences.

5. Findings and analysis

The following findings are categorized into six themes as follows:

5.1 Theme 1: Mobile devices as a medium of instruction in classrooms

The teacher participants have different opinions about the utilization of the mobile devices which depended on their perception of analyzing the benefits against the constraints. However, most of the teachers (5 out of 7) voiced the opinion that utilizing mobile devices would benefit academic learning; as shown in Figure 1. One of the participants commented:

"The students can look at the information on the internet; because of this research skill which they can do in the classroom it is going to improve their critical thinking skills and their proficiency as well, and digital literacy can be ensured because it makes a very powerful impact on the students"

Figure 1. Mobile phone usage behavior of university students in Oman. Based on Belwal & Belwal (2009)

Other teachers who agreed to the fact that mobile devices should be used in the classroom considered this methodology as it allows more involvement of students in an interactive approach of learning in which they feel more involved within the classroom setting.

None of the teachers, however, neglected the woes the technological gadgets bring into the classroom. These problems are varied from distraction to irrelevant, non-productive activities in class, which is difficult for the teacher to monitor, as one of the participants noted:

"Though we are trying our level best to making students into using all these kinds of technologies, I still feel the students are not to the mark. They know how to use this technology in other ways. WhatsApp, then, and you'll find they'll be taking your photo, they'll be doing so many other things in-between, and whiling away the time. It's not easy to monitor all of them because they may be keeping it on the table while you're looking at one phone or one of the devices. Maybe they're doing something else, somebody else at the back. Whereas, if it's with no devices in class, you'll find all the 32 - or 42 or 48, or whatever number - eyes on you and you can concentrate"

Introducing mobile technology into the classroom would be conducted via transferring learning from the central fountain of knowledge (the teacher), to mobile devices, which would lead to lesser interaction and communication between teachers and students. This would cause students to feel isolated and then become engrossed with their mobile devices to counter their feeling of isolation. Two participants, however, did not recommend implementing this strategy in Oman classrooms

5.2 Theme 2: Teachers' training for implementing mobile devices

All the respondents exhibited interest and motivation over learning about new techniques and methods of teaching using mobile devices. However, they discussed various constraints. One of the participants said:

"It may not be a very rosy picture when I have to respond to that kind of question, because I do know there will be reluctance – partly because, maybe, people are always hesitant or inhibited when it comes to change – but I think if you make it mandatory, or you can even think of giving incentives for teachers who have undergone training; these are different methods of trying to make it more popular among teachers"

Another participant who was not willing to implement mobile devices in Oman's classroom system also showed willingness to be trained, as learning is a continuous process and everyone should learn regardless of the extent of benefits. Such training might open new horizons of thinking and change people's perspectives. Regarding the question pertaining to seeking training for the utilizing of mobile devices in the classroom, one respondent said:

"Yes, very much. I'll be for it because ... If we have the training to do so, there is a chance; I would like to do it. Then, maybe I could have a better perspective about which is better, and you could compare."

5.3 Theme 3: Classroom lesson plans

The implementation of mobile devices as a source of an educational tool will demand different aspects of lesson plans from teachers. Three participants said the use of such technology depended on the topic, subject and lecture they were intended to assist, and one said:

"In the classrooms ... using mobile phones you'd have to design, what shall I say, a lesson with the mobile phone The lessons can be varied, and it depends on the lesson what we are trying to..."

On the other hand, the majority of the participants were certain about a different kind of lesson plan and were of the view that implementing new smart learning would promote active learning in the classroom and there must be a new lesson plan for each lesson. Learning through mobile phone technology is totally different from traditional approaches of learning via authorized pre-text books. Also, the flow and availability of information is huge from websites which may distract individuals from the authenticity of the data; thus, teachers will have to cite the website correctly in a manner that preserves the authenticity of the information given.

"Of course, the lesson plans will be different because I need to cite the websites, I have to call upon the attention of the students to go and reference so many of the things; it will be entirely different. Now I have a prescribed text, a prescribed curriculum, and the exams are based only on that, so when mobile apps are going to be used, mobile devices are going to be used, of course it is going to be a wide range; the range is going to be wide and in that case, my lesson preparation will be different."

Thus, most of the participants considered a different kind of lesson plan for implementing mobile technology, yet in some lessons the teacher should continue with the same

lesson plan for effective learning.

5.4 Theme 4: Technologically updated classrooms

The implementation of mobile devices as a learning tool is not an easy step. Most of the respondents saw huge hurdles hindering the transfer of effective implementation. The different concerns of the teachers were the cost of the mobile devices, ensuring devices which all the students could integrate, the availability of the internet in the classrooms, and the restriction of access of social websites like WhatsApp, Facebook, YouTube, and Twitter within the classroom setting.

"There are several challenges that I foresee in making use of mobile devices in classrooms, mainly because, first of all, it is quite expensive, and secondly I do know about the internet connectivity – because sometimes, at least in Oman, when many people are using it maybe the connectivity is not that good"

Another concern of a teacher was the backup plan or troubleshooting.

"... technical problems; we have to have a backup plan, a technician should always be around, and we should be on our heels otherwise it is very difficult. And the teacher also ... should have ... the full range of mobile device capability, she should be aware of all that. So, she should be given a very efficient course which she has to undergo first to handle the lessons in a very efficient way."

5.5 Theme 5: Teacher's role in the classroom

The teacher is the central fountain of knowledge in the traditional education system. The use of mobile devices would alter this student dependence on teacher. Most of the participants disagreed about the changing role of the teacher.

Two participants said:

"No, the teacher's role is always a facilitator. She or he should always be there to help the students. So even if they're doing...like, if you're saying if it is a change – if it's a change, the teacher should always be there as a teacher. The student should always be able to approach her or him with any doubts and the teacher should be well versed with both sides"

Another participant was of the viewpoint that these advancements would help the teacher to learn from new

technologies and thereby derive a positive feeling of transferring the students into their future by utilizing modern and advanced technologies.

5.6 Theme 6: Ethical concerns

One of the important factors of consideration was the environmental and behavioral challenges while implementing any change in a system. In this regard, ethical and community concerns of the educational system are of vital importance. Oman is a culturally rich Arab country with a developing modern educational system. When the teachers were asked about the adoption of mobile technology within the system, one major problem that came across was the noncompliance by students during examinations and students taking advantage of the internet access so as to engage in unethical examination practices:

“... there are some disadvantages, so we have to monitor closely how we are using the phones. We cannot give total freedom keeping the phone with them, right, because in the exam say, for example, we are taking the phone away from them ...”

On the other hand, most of the participants were of the view that these concerns could be adequately tackled with appropriate and effective planning that would lead to consistent execution of the new approach of learning in a holistic manner.

6. Discussion

Some of the challenges raised here can be negated through training, ensuring preparation and delivery of the appropriate content to the students (Mifsud, 2003). Training students how to make use of the gadgets will reduce the stress levels because some are not comfortable with computer-based examinations. If such a student approaches a teacher who is unable to help, it becomes an enormous problem. Some teachers, however, hold the belief that no amount of training can help the teachers deliver because they feel adaptation takes a much longer time to sink in. The teaching skills need to be practiced for a very long time before an individual gains adaptation skills (Mifsud, 2003). The teachers have a negative attitude because most training sessions do not last for long. They are usually carried out for a week, a month, three months or even six, but still they may not be sufficient enough to enable the teachers to translate the theoretical knowledge obtained from the training into practice. This is likely to result in the teachers' reluctance in applying the newly gained skills to use at the

point of intervention within the classroom setting (Mifsud, 2003).

With respect to the possible change of teachers' roles, most teachers feel that the teacher still retains his or her role as a facilitator. They would have to take control of the class and ensure that students remain focused on the content that needs to be covered, and monitor students' behaviour (Is-mail et al., 2013). As discussed previously, students may be tempted to misuse the features of mobile devices in taking pictures and videos of teachers and peers with malicious intentions (Wei et al., 1999). It would be the teachers' role to ensure that this malicious habit is kept under control and they would need to anticipate misuse of both data and technology, due in part because of the versatility of the internet. Teachers would have to be several steps ahead of their students because they would need to inspire confidence and prowess in their students as they begin to adapt and engage in the lessons. As such, the teachers need to be even more approachable and flexible because the system would be new and, during the first stages, students who have never used gadgets would be likely to experience difficulties that may require the teachers' attention and guidance (Sang et al., 2010). Only well-trained and motivated teachers who are knowledgeable concerning the application of such technology within the classroom would be able to adequately address students' concerns. The teachers would need to make available their contact details so as to be approachable both physically and in absentia via the internet. Students should be able to feel and believe, 'yes, the teacher knows more'. In other words, the teacher retains the role of a teacher (Sang et al., 2010).

6.1 Limitations

The major limitation of the current research is the limited number of participants. Only seven teachers were interviewed. Another limitation pertains to the perceptions of only those teachers who were located in just one of the several higher education institutions in Oman.

7. Conclusion and recommendations

The study found that the teachers were apprehensive about the application of mobile technology within the education setting. While there are many positive aspects pertaining to the application of this technology within the higher learning classroom such as its ease, speed and convenience of use in terms of improved ability to conduct research, it would seem that many education professionals perceived that the introduction of such technology could

move the focus from scholastic goals. It is recommended that further studies should be conducted into the impact of such technologies into the higher learning classroom using a higher number of interviewees and also selecting samples which represent a variety of high learning institutions. It is recommended that this pilot study be used to conduct a number of case studies using mixed methods of research, namely a combination of both qualitative and quantitative research methodologies.

8. Personal reflection

The study met with some impediments during the data collection stage due to which the survey questionnaire - which was planned in addition to the interviews - had to be shelved. This was an unforeseen event that caused a major setback to data collection as well as a cause of personal and professional distress and disappointment to the researcher; such validating the above recommendation that future research should use these findings to conduct further studies.

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