# "Mobiles Phones As New Educational Technology - A Study Of Its Use In Higher Education"

**Gayatri Reddy**

## Abstract

*This research study investigated how mobile phones can be used for teaching and learning purposes in higher learning institutions in India. Specifically the study assessed how mobile phones facilitated the teaching and learning process, identified the mobile phone applications used for teaching and learning, determined the types of learning activities facilitated through mobile phones and assessed the common limitations of **m-learning** in the class.*

*The study employed a survey where teaching staff and students from faculties and institutes hosting academic programmes were involved. A total of 30 teaching staff and 40 students were randomly selected and included in the study. In-depth interviews, observations and questionnaire were used for data collection. It was found that majority of the respondents used their mobile phones for teaching and learning process although not in an obvious way. It was found that most respondents reported to use traditional mobile learning applications including text messages and calls. Few respondents had smart phones with a number of m-learning applications most of them being teaching staff. These were able to create upload, download and share academic resources through their smart phones while others recorded and stored files in their phones. It was also found that among teaching staff many were not aware of the capacity of their mobile phones such that they underutilized them. Costs associated with downloading multimedia content was another constraint which limited some respondents especially students from using phones for learning purposes. More than that, users were generally used only free online mobile applications the choice of which was very restricted.*

**Introduction**

Mobile phones are different from a computer lab filled with computers or a cart of books because the cell phone is personal technology. Most students have invested a great deal of time learning about the features of the cell phone, how to navigate and the limitations of the phone. The other great thing about m-learning (mobile Learning ) is that the cell phone learning can extend beyond the walls of the college or the confines of a class period.

Some people may want to ban cell phones from classrooms, but I disagree. We didn't ban pens in our schools because students can pass notes during class. The pencils have also survived even though you could poke someone in the eye. So let us moderate its use and instead use it as a educational tool to enhance the learning experience.

Mobile learning represents a way to address a number of our educational problems. Devices such as smart phones and tablets enable innovation and help students, teachers, and parents gain access to digital content and personalized assessment scores. Mobile devices, used in conjunction with 4G/3G wireless connectivity, are essential tools to improve learning for students. As noted **by Irwin Jacobs,, "always on, always connected mobile devices in the** *hands of students has the potential to dramatically improve educational o***utcomes."**

1. Title of the Research

Mobiles Phones As New Educational Technology – A Study Of Its Use In Higher Education

2. Research problem

To examine the use of mobile phones as an educational tool in higher education

3. Aims and objectives

- To study the current use of mobile phone in education

- To examine the scope of m-learning in higher education

4. Research questions

- How can we use mobile phones as a tool for teaching-learning in colleges?

5. Significance of Research work

- This research will help teachers to know the importance of mobile technology in a students learning life.

- This research will help the teachers to try to use mobile technology as a tool to teach and make m-learning a viable, personalized experience for the student*.*

6. Need and Importance of the Research

Unfortunately, not every student has access to a computer and the Internet. And given the costs of hardware, it is not affordable for colleges to provide a personal computer to every student. However, most young people have phones, and this provides a real opportunity to transform instruction as most colleges have affordable, wi-fi technology that can dramatically improve learning and bring digital content to students and lower the costs of operating . Students love mobile technology and use it regularly in their personal lives. It therefore the researcher wanted to see if young people want to employ mobile devices to make education more engaging and personalize it for their particular needs.

There are 8 billion mobile phone users in India ( TRAI Report , 2013)- a huge potential indeed, if we decide to translate the power of the mobile phone as a teaching aid.

Technology-rich activities help to sustain high levels of student interest and bring peer collaboration compared to less technology focused activities. Teachers need to figure out how to use the potential of m-learning for instructional purposes and employ them to boost the educational experience and hence the need and importance of this research.

7. Conceptual Definitions

a. Mobile - An electronic telecommunications device often referred to as a cellular phone or cellphone. Mobile phones connect to a wireless communications network through radio wave or satellite transmissions. Most mobile phones provide voice communications, Short Message Service and Multimedia Message Service  and Smartphone's also provide internet services like browsing and downloading.

b. Learning - Learning is acquiring new, or modifying and reinforcing,    existing behavior, knowledge, skills, Values, or preferences and may involve synthesizing different types of information.

c. m-learning- Use of Mobile technology in teaching –learning process is called m-learning. This could be through browsing the internet, downloading files, sharing information in class using Bluetooth or video chatting and recording.

8.  Research Methodology

The survey method was used to conduct the study at  Bhartiya Vidyapeeth University, in the BBA, MBA department of NLC college.  The study involved  teaching staff  and students. The study  involved  staff from the Faculty of Economics, Sociology, Law, Political Science, Business studies and Marketing and HRM

The study involved a total of 70 respondents including students and teaching staff. Simple random sampling procedure was employed in selecting five teaching staff from each of the four faculties and two institutes while a total of 40 students were randomly selected and involved in the study. This sampling technique was adopted because it provides an equal  opportunity  for each element of the population to be selected.

Structured questionnaire were used to collect data from the 40 students while in-depth interviews and observations were employed in assessing the usefulness of mobile phones among teaching staff. Data collected was analyzed through content analysis and the Statistical  tools like mean ,median and standard deviation using SPSS.

9. Research Findings and Discussion

  1. Types of Mobile Phones with Internet facility

The respondents were to mention the types of mobile phones they owned; it was found that 70% of them mentioned to own and use smart phones.  It was identified that majority of those who owned smart phones knew the operating systems installed in their phones. Some

of the operating systems installed in their smart phones included the Android, Research in Motion (RIM) Blackberry, Apple's iOS, Nokia Symbian, Samsung's Bada and Microsoft windows (see Table 1 and 2 below for details). It was also found that 43% of those owning smart phones did not know the operating systems installed in their phones.

Types of Smart Phone

| Types of smart phone | % users |
|---|---|
| Iphone | 7% |
| Samsung | 40% |
| Nokia Lumia | 22% |
| Others | 31% |

Operating System Used

| Mobile operating systems | % of users |
|---|---|
| RIM's Blackberry | 7% |
| Android | 23% |
| Apple's iOS | 7% |
| Samsung's Bada | 27% |
| Microsoft Windows | 7% |
| Do not know | 29% |

2. Do you think mobile can be used for teaching-learning?

| Teachers | 23% - Yes | **77%-No** |
|----------|-----------|------------|
| Students | **87% - Yes** | 13%-No |

A majority (87 percent) of students believed that m-learning can be an exciting option for learning content but almost the same majority of teachers 77% were against this possibility.

As a country, we need to educate the next generation of scientists, inventors, engineers, and entrepreneurs. Educating a workforce that is effective in a global context and adaptive as new jobs and roles evolve will help to support our economic growth. Mobile learning makes it possible to extend education beyond the physical confines of the classroom and beyond

the fixed time periods of the school day. It allows students to access content from home, communicate with teachers, and work with other people online. The value of mobile devices is that they allow students to connect, communicate, collaborate and create using rich digital resources, yet teachers are always slower to adapt to changing technology as is visible from the survey.

3. Categories of internet services used by teaching staff

Teaching staff mentioned to access various internet services through their mobile phones. Among the staff who mentioned to have been using internet services, 76% of them have been surfing for accessing various web based contents while 81% mentioned to have been using social network sites like twitter, facebook, whatspp through their mobile phones. It was found that all of the 30 staff who mentioned to use internet services accessed electronic mailing services through their phones (see Table 4 below for details).

Table 4: Internet services used by teaching staff

| Type of internet services | Number and % of users |
|---------------------------|----------------------|
|                           |                      |

| | |
|---|---|
| Surfing | 19 teachers (76%) |
| E- mail | 30 (100%) |
| Social Sites | 20 (66%) |
| Facebook, | 38% |
| Twitter, Wikis and Youtube | 32% |
| Others, (dictionaries, Video) | 71% |

It can be observed that most of the mobile applications used by teaching staff can in one way or the other be adopted in the teaching learning process. Even, Facebook has several features which allow collaborations including uploading and downloading files. Other applications including Wikis and Youtube, Youteach are known to be useful in teaching and learning.

5. Students usage of mobile phones

Students were asked whether they used their mobile phones for facilitating learning or just for other activities. It was found that 100% of the students made calls and sent text messages ,76% mentioned to download videos, photographs etc, through their mobile phones (see Table 6 below for details).

Table 5: Usage of mobile phones amongst students

| Type of usage | % of users |
|---|---|
| SMS | 100% |
| Calls | 100% |
| Surfing | 76% |
| Web Apps download and games | 54% |

6. Scholarly activity if any done by the teaching staff using their cellphones

Table 6: Mobile Web based learning services accessed by staff

| Type of usage | Number and % of users |
|---|---|
| Reading scholarly articles | 16% |
| Collecting latest data/numbers | 33% |
| Reading e-books | 32% |
| Using online dictionaries | 67% |

| Sharing videos, Photos of educational nature | 14% |
|---|---|
| Searching books | 5% |

7. Common Mobile phone uses by students at SUA

Students were asked on their common usage of their mobile phones. It was found that all students used their phones for making calls and chatting. It was also found that 2.5% of the respondents claimed to use phones for downloading educational materials, books or articles.

Table 7 - Common uses of Mobile phone by students for educational purposes

| Use | % of users(N=40) |
|---|---|
| | |
| Download study materials | 2.5% |
| Making phone calls and Chatting | 100% |
| Emails | 87% |
| Recording | 12% |
| Taking Photos of educational value | 4% |
| Making PPT's | 2% |

8. Factors limiting the of usage of mobile phones in teaching and learning

Table-8 Limitations in using Mobiles as teaching aids

| Limiting factors | % users |
|---|---|
| Lack of knowledge about mobile usage | 55% |
| Lack of mobile APPS | 80% |
| Lack of will to use mobile for teaching | 72% |
| Teachers think it is a distraction rather than aid | 88% |
| Lack of Wi-Fi Connectivity | 89% |

Several factors were identified to limit the usefulness of mobile phones in teaching and learning.

It was found that some teaching staff and students were unaware of the capacity of their mobile

phones. Some of those who owned smart phones just used them for calls and text messages as

they did not know other applications supported by their smart phones. Others did not know the

type of phones they owned thus under-utilizing them.

Smart phones are sold with some basic applications but specific APPS have to be downloaded and hence that is a big hindrance as one has to pay for these apps or applications. Yet the greatest limiting factor was lack of wi-fi connectivity in the campus and the unfavorable teachers attitude towards the use of mobile phones as teaching aids.

9. **Other limitations as per interview and discussion with student and staff**

> ➤ It was identified that some of the teaching staff used their mobile phones for storing files, however; mobile phones owned had limited storage space. This limited

many teachers from installing elearning software which could occupy more space as it decreased the storage space other activities like photos, videos etc.

➢ Others mentioned that they were not able to share stored files. This limited them from using their mobile phones for sharing lecture notes.

➢ Some of the teaching staff particularly the female staff, included in the study hesitated exposing their contact details including phone numbers to students because some of them misused them when given. It was explained that some students called them during late hours while others sent some text messages not relating to academics.

➢ Teachers were not in favour of using Bluetooth to transfer files as it required one-on-one connectivity with the students phone.

➢ Students complained that when searching for materials only a few could be able to read HTML documents while other documents were not legible; this might have been caused by
empty meta-tags that made the downloads to fail.

➢ Sometimes the sites cannot be viewed on mobiles properly and a separate app has to be downloaded for mobile viewing.

➢ There were a number of complaints made by respondents about the size of the text being uncomfortably small and difficult to read for prolonged periods.

➢ It was also identified that some were unable use some mobile applications useful for teaching and learning as they did not have enough wi-fi download ability especially for sound, active graphics or movie clips, to enhance learning .

➢ Almost 60% of the respondents said that m learning is very expensive and that only few people with high quality smart phones or tablets could access it.

**10. Conclusions and recommendations**

- The study found that mobile phones were used for learning purposes among both teaching staff and students in the form of referencing, reading, using dictionaries. Despite this generalization, the usage of mobile phone applications for teaching and learning is quite restricted. Although the students do want to use it as a medium of instruction and it is cheaper than a laptop or PC yet teachers (88%) are against its usage in teaching.

- The staff does sue it to send messages and make calls while few mentioned to have used some advanced learning applications.

- Few did not use any mobile applications as they were not supported by their phones,

- others did not know how to go about using them.

- Lack of wi-fi in the campus hindered student and teachers from accessing useful m-learning applications as they required huge downloads.

- Moreover, limited mobile storage spaces limited some from storing large multimedia contents suitable for teaching and learning.

- Furthermore, limited Web skills among the teachers and the ability to attach their phones to LCD display excluded the majority from using mobiles as tools of learning, which are believed to enhance interactions and are suitable for teaching and learning.

It is recommended that before mobile-phones are indeed the next new frontier of technology in education and most teachers need to gear themselves up for it. In the years to come the students are going to be so tech savvy and cheaper smart phones will flood the market, the students will use their mobiles as their notebooks and most information will have to be delivered in digital form.

Indeed m-learning is the future of educational technology!

**References**

1. Bosch, T. E. (2009). Using online social networking for teaching and learning: students teaching and communication, South African Journal for Communication ,Theory and Research, Volume 35 (2)

2. Boyera, S. (2007). The Mobile Web to Bridge the Digital Divide? http://www.w3.org/2006/12/digital_divide/IST-africa-final.pdf

3. Using of mobile technology for learner support in open schooling. www.paddle.usp.ac.fj/collect/paddle/index/assoc/col008.dir/doc.pdf(accessed on 30 December,2013)

4. Cuing, G., and Wang, S. (2008).Adoption of cell phones in EFL Teaching and Learning Notting Press , LA

5. Ferry, B. (2008). Using of mobile phones to augment teacher learning in environmental education.