

Exploring the Potential of Mobile Learning in Distance Higher Education: A Case Study of the University of Jammu, Jammu, and Kashmir

Prof. Darshana Sharma

**Directorate of Distance Education, University of Jammu,
Jammu and Kashmir, India.**

Distance Education has emerged as a viable alternative to serve the higher educational needs of the socially and economically disadvantaged people of the remote, rural areas of Jammu region. The Directorate of Distance Education, University of Jammu still uses printed study material as a mode of instructional delivery. It is felt that the Directorate also needs to adopt mobile technologies to provide more effective academic and information support to distance learners in order to keep them motivated and also to develop self-learning skills. However, the use of mobile technologies must be conceived in view of the needs of the learners; geographical, socio-economic, cultural and technological contexts and financial, administrative and academic resources of the institution. The chief objective of the research on which this paper is based was to measure the opinion of the distance learners of the DDE, University of Jammu about the effectiveness and merits of mobile learning. It also explores the challenges in implementation of mobile learning in the region. The survey research design of descriptive research has been used. The data was collected from 400 distance learners enrolled with undergraduate and postgraduate programmes using self-constructed questionnaire containing five-point Likert scale items with responses ranging from strongly agree, agree, indifferent, disagree and strongly disagree. Percentages were used to analyse the data. The survey depicted that 100 percent of the sampled distance learners owned common mobile or smart phones. The findings lead to conclude that mobile learning has a great potential for the DDE for reaching out to the rural, remotely located distance learners of the Jammu region for dissemination of information and also to improve teaching learning environment through social interaction.

Key words: Directorate of Distance Education, Mobile learning, Distance Learning, Mobile Technologies, University of Jammu.

Introduction

Distance education has evolved from early correspondence education using primarily print based materials into a world-wide movement using various technologies. It is fast becoming an acceptable and indispensable part of the main stream of educational systems in both developed and developing countries. The common problems of distance learners can be: deficiency of personal contact and quick feedback from the instructor that some learners prefer (Brown, 1996; Carr, 2000; Garland, 1993; McGivney, 2004). They have a feeling of aloofness/separation from teachers and peers (Glusha, 1997; Gibson & Graff, 1992; Heverly, 1999; Sweet, 1983). Distance learners have need of pre-admission guidance (Ashby, 2004) and necessity of counseling sessions during course of study (Ashby, 2004). They require improved information, academic and formative advices (Ashby, 2004).

To address the problem of students' isolation, distance education institutions, especially in developing countries have used numerous intervention programmes such as tutorial support, counseling services and peer group interaction to enhance interaction. Besides face to face tutoring via telephone, video and computer have been used to support two way communication between teacher and learner. Throughout the history of distance education, the researchers have been concerned to find an accessible and available technological tool that can be used as a mode of instruction delivery for distance learners. Studies have shown that learners' development is determined by social interaction through problem solving under the guidance of a teacher or in collaboration with capable peers (Garrison & Shale, 1990; Lave & Wenger, 1991). Mobile technologies hold a lot of potential for distance education as an instruction delivery tool to enhance interactive and collaborative learning. At the same time mobile technologies also address the challenge of student's isolation which is often associated with the correspondence nature of distance education.

Mobile technologies have become a usual part of the lives of most teachers and learners these days. The whole world is going mobile. Newer developments in mobile technologies have the potential for rich multimedia experiences and for location specific resources. Phones, computers and media devices now fit in our pocket and connect us to a variety of information sources and enable communication everywhere we go. There is significant interest in exploiting the almost universal appeal and huge potential of these technologies for their educational use (Naismith, et al: 2008).

Earlier researches have been conducted on various aspects of mobile learning such as attitude, impact, present status, effectiveness, usability etc. (Ally, 2004; Banerjee and Bose, 2011; Fouzdar and Behera, 2017; Bansal and Joshi, 2014; Makoe, 2012; Mcconatha and Praul, 2008; Taleba and Sohrabi, 2012, Al Fahad, 2009; and Foti and Mendez, 2014). There is challenge for distance education practitioners (learners and teachers) for understanding and exploring how best they might use these resources to support learning. The present study draws on the works of theorists like Vygotsky, Anderson, Homberg and Moore who have dealt particularly with the role of communication or interaction in supporting distance students.

What is Mobile Learning

Mobile learning is defined as the provision of education and training on mobile devices: personal digital assistants, smart phones and mobile phones. One of the characteristics of mobile learning is that it uses devices which people are used to carry everywhere with them, which they consider as friendly as personal devices, which are cheap and easy to use, which they use constantly and in all walks of life and in different settings. Mobile learning is “any sort of learning that happens when the learner is not at a fixed, predetermined location or learning that happens when the learner takes advantage of learning opportunities offered by mobile technologies” (O’ Malley, Vavoula, Glew and Tailor, 2003).

Mobile learning provides learners’ big opportunities to engage in varied learning activities. Learners are able to explore, share and interact with each other as they try to learn together in their real life learning environments. One of the features of mobile learning is that it connects with student centred approach. Studying through printed media will and still remains one of the main medium of instruction in most of the developing countries including India. However, several studies have reported that mobile technologies can be used in combination with printed material to support interactive learning; just-in time instruction; self-check assessment; facilitating summative and formative assessment; problem solving and collaborative learning.

Case Description

The University of Jammu is one of India’s premier research and teaching institutions located in the Union Territory of Jammu and Kashmir and has been rated by the National Assessment and Accreditation Council as an “A+” Grade university. The Directorate of Distance Education which was set up in 1976 in the university has the mission to meet the diverse educational requirements of various socio-economic groups of people, of remote and inaccessible areas of Jammu region. Now-a-days, the Directorate is offering a number of programmes of general and professional education to meet the requirements of diverse clientele. The programmes are heavily dependent upon print as a mode of instructional delivery. It is felt that the Directorate of Distance Education, University of Jammu also needs to adopt new technologies to promote more effective delivery of instruction. Presently, a wide range of technologies are being used by distance education institutions for reaching out dispersed and heterogeneous groups of learners at different locations. Though, it is tempting and convenient to adopt technology already being used by others, it may not prove effective for the simple reason that two institutions may be unlike in some respect. It is important to recognize that the choices of technologies for teaching learning are made in part by what is available, what student can easily use and what is affordable by the institution as well as the learners. Furthermore, it is essential to explore and analyze the perception of distance learners on the effectiveness of mobile learning, benefits of mobile learning and their preferences for mobile learning in distance education.

With this background the paper focuses to seek answers to such questions as:

- What are the mobile devices available with the learners of the Directorate of Distance Education, University of Jammu?
- What is the perception of distance learners about the effectiveness of mobile learning?
- How do distance learners perceive the advantages of implementing mobile learning?
- What can be the concerns in the implementation of mobile learning?

Objectives

The study had the following objectives:

- To find out the ownership of mobile devices with the learners in the DDE.
- To explore the distance learners’ perception on the effectiveness of mobile learning.
- To find out the viewpoints of the distance learners about the merits of implementing mobile learning in the DDE.

- To find out the issues in the implementation of mobile learning in the DDE.

Research Methodology

Survey method of descriptive research was used for the study. The questionnaire which contained both structured and open ended questions was developed. Participants' preferences for mobile learning were sought through an open ended question. Questionnaire was developed after literature review and focus group discussion with the learners as well as with the resource persons engaged in the different UG and PG programmes. The tool was reviewed twice, once after seeking constructive suggestions from the resource persons and second time by administering a modified questionnaire to a sample of 10 distance learners. The face validity of the questionnaire was determined by the panel of experts in distance education. The questionnaire was in English.

Data was collected from a sample of 450 distance learners of the Directorate during the Personal Contact Programmes. The participants were assured about the confidentiality of their responses. Incomplete questionnaire were discarded from the analysis. The final sample of the study comprised 400 distance learners. They represented undergraduate and postgraduate programmes. The responses were scored on a five point (5-1) scale for different response categories which were strongly agree, agree, undecided, disagree and strongly disagree.

Results

Analysis of the data in the light of the objectives of the study and findings resulting thereof have been presented in the following sections

A. Ownership of the Mobile Devices

Analysis and findings of the survey with respect to ownership of mobile devices with the distance learners has been presented in this section.

Table No. 1: Ownership of Mobile Devices

Name of the technology	N	(%)
Smart Phone	400	(100%)
Cellular Phone	0	(0%)
PDA	0	(0%)
Computer	46	(12%)
MP3	0	(0%)

It is evident from the above table that all the respondents (100%) who participated in the survey owned smart phones. Other types of mobile devices such as PDAs and MP3 players were owned by none. Computers were owned by 46(12%) respondents.

Table No. 2: Availability of Different Modes of Accessing Internet

Mobile data	400	(100%)
Wi-Fi	38	(10%)

Perusal of table no. 2 reveals that only 38 (10%) respondents had wi-fi whereas 100% respondents were having mobile data pack.

B. Learners' perception on the Effectiveness of Mobile Learning

An attempt was made to explore the perception of distance learners about the effectiveness of mobile learning. The results and findings have been presented in table no.3.

Table No. 3: Effectiveness of Mobile Learning

S.no.	Statements	Responses				
		SA	A	U	D	SD
1	Mobile learning will help to retrieve, retain and transfer information.	220 (55%)	180 (45%)	0	0	0

2	Mobile learning will open up more opportunities of learning regardless of place and time.	216 (54%)	184 (46%)	0	0	0
3	Mobile learning will maximize learner's inclusion in the teaching-learning process.	132 (33%)	248 (62%)	12 (3%)	08 (2%)	0
4	Mobile learning will contribute to enhancing motivation of students.	126 (32%)	236 (59%)	30 (8%)	08 (2%)	0
5	Mobile learning will encourage blended learning.	116 (29%)	244 (61%)	26 (7%)	14 (4%)	0
6	Mobile learning supports interactive learning environment.	120 (30%)	222 (60%)	32 (8%)	16 (4%)	10 (3%)
7	Mobile learning will help to raise self-esteem and self-confidence.	174 (44%)	164 (41%)	32 (8%)	26 (7%)	04 (1%)
8	Mobile learning using blogs, twitter, You tube or social networking sites such as Facebook, WhatsApp promise more educational potential.	160 (40%)	186 (47%)	34 (9%)	18 (5%)	02 (1%)
9	Mobile learning can be an effective method of learning as it can give immediate support.	160 (40%)	206 (52%)	20 (5%)	14 (4%)	0
10	Mobile learning will improve communication between students and teacher.	132 (33%)	188 (47%)	28 (7%)	46 (12%)	06 (2%)
11	Mobile learning is a quicker method of getting feedback in learning.	140 (35%)	200 (50%)	50 (13%)	18 (5%)	10 (3%)

A perusal of the table no.3 reveals that all the respondents (100%) concurred that mobile learning will facilitate the distance learners to retrieve, retain and transfer information to the fellow learners and come up with more openings of learning without constraints of time and place. Furthermore, a significant majority of the respondents (95%) consented that mobile learning will be fruitful for augmenting involvement of learners in teaching-learning process, with 91% agreeing that mobile learning will be conducive for boosting motivation of distance learners. Furthermore, 90% of the respondents consented that mobile learning facilitates blended learning model and helps in promoting interactive learning environment. 84% were of the favourable opinion that mobile learning will boost the self-esteem and self-confidence of learners. Furthermore, 87% of the respondents opined that with the use of blogs, twitter, YouTube and social networking sites (Facebook, WhatsApp), mobile learning promises better educational outcomes for the distance learners. 92% of the respondents gave favourable view that mobile learning can be an effective method of learning as it can provide instant help related to the programme as and when required. 88% participants in the survey agreed that there will be better communication between learners and teachers and 85% felt that mobile learning is a fast mode of getting feedback on performance from teachers with a scope to further improving upon.

C. Viewpoints about the Merits of Implementing Mobile Learning

Viewpoints expressed by the learners regarding merits of mobile learning have been presented in table no. 4.

Table No. 4: Viewpoints about the Merits of Implementing Mobile Learning in the DDE, University of Jammu

S.no.	Merits	SA	A	U	DA	SDA
1	Reduced expenditure on studies	88 (22%)	220 (55%)	42 (11%)	44 (11%)	06 (2%)
2	Easy contact with the faculty	146 (37%)	202 (51%)	22 (6%)	30 (7%)	0

3	Easy contact with fellow learners	152 (38%)	222 (56%)	16 (4%)	10 (3%)	0
4	Feedback from teachers	96 (24%)	248 (62%)	38 (10%)	18 (5%)	0
5	Better student support services	140 (35%)	234 (59%)	20 (5%)	06 (2%)	0
6	Hassle free learning	202 (51%)	146 (37%)	22 (6%)	30 (7%)	0
7	M-learning provides new opportunities in distance learning	194 (49%)	194 (49%)	08 (2%)	04 (1%)	0
8	M-learning is available anytime, anywhere	214 (54%)	168 (42%)	08 (2%)	10 (3%)	0
9	M-learning is affordable for distance learners	168 (42%)	210 (53%)	18 (5%)	04 (1%)	0
10	Mobile learning tools are smart, light and portable and can be carried out anytime and anywhere	174 (44%)	212 (53%)	08 (2%)	04 (1%)	02 (1%)
11	Mobile devices offer the learners a sense of privacy.	166 (42%)	204 (51%)	18 (5%)	12 (3%)	0

Results in table no. 4 indicate that a significant majority of the participants in the survey gave opinion in favour of the narrative that after the mobile learning is put into effect in the DDE, they would receive an advantage from the reduced expenditure of the study compared to the on campus students. A substantial majority (87%) of the respondent opined that learners contact with the faculty can be facilitated with implementation of mobile learning. A significant majority (94%) of the distance learners who participated in the survey opined that implementation of mobile learning will ensure easy interaction with fellow learners in the programme. The majority of the respondents (88%) favorably responded that getting comments from the DDE faculty on academic performance will be very easy when mobile learning is implemented. Similarly a sufficient number of respondents (94%) agreed with the statement that distance learners can get better information, administrative and academic support services with the introduction of mobile learning in the DDE. An equal percentage (88%) agrees that mobile learning will make learning very convenient for the distance learners. A very vast majority (98%) of the respondents agreed that mobile learning provides new opportunities of learning in distance education. One can learn through audios, videos, chatting, discussion groups etc. A vast majority of respondents (96%) opined that mobile learning being adaptable is free from the constraints of time and place and can be accessed and adjusted as per the availability of time and venue to the learner. Affordability of mobile learning was agreed upon by 95% of the respondents. A substantial number (94%) went by the opinion that learning with mobile devices has the added advantage of privacy to the learners. They can download the material and secure the reading material and other academic files through the use of touch id or passcode.

D. Issues in the Implementation of Mobile learning

Distance learners views on issues in the implementation of mobile learning have been presented in table no. 5.

Table No. 5: Issues in the Implementation of Mobile learning in the DDE

Issues in the implementation of M-learning in Distance Education						
S.no.	Statements	SA	A	U	DA	SDA
1	Insufficient knowledge of the technology for mobile learning	94 (24%)	50 (12%)	44 (11%)	192 (48%)	20 (5%)
2	Unavailability of Mobile phones usable for mobile learning with large number of students	12 (3%)	20 (5%)	16 (4%)	180 (45%)	172 (43%)
3	Poor internet connectivity in the area	90	188	56	54	12

		(23%)	(47%)	(14%)	(14%)	(3%)
4	Unaffordability of expenses involved in mobile data package	60 (15%)	236 (59%)	84 (21%)	20 (5%)	0

It is apparent from the table no. 5 that only 36% of the sampled distance learners consented the statement that insufficient knowledge and understanding of the technology for mobile learning in distance education is the issue which the learner can face. Only 8% of the respondents agreed that unavailability of mobile phones suitable for mobile learning can be another challenge. An average number of the respondents (60%) agreed that poor internet connectivity can be the concern in the implementation of mobile learning. Furthermore, 36% of the respondents expressed concerns about the affordability of expenses involved in mobile data package.

Discussion of Results

The findings of the study revealing 100% of the participants in the survey possessing a smart phone with a mobile data pack, indicate that mobile technologies are increasingly becoming more pervasive and more obtainable to a vast majority of distance learners in the state of Jammu & Kashmir. These can be used by the Directorate of Distance Education, University of Jammu for the delivery of course material as well as for providing administrative, information and academic support devices.

Mobile learning has been perceived effective by the respondent in improving communication and learning. The majority of the learner supported the narrative that the mobile learning increases the flexibility of access to resources in learning and they could work independently. The major advantage of mobile learning is that it can be provided anywhere, anytime with the objective of improving communication and enriching students learning experience. Mobile learning tools are smart, are of light weight and can be easily carried anywhere and thus facilitate learning. The lack of contact and limited feedback from their teachers is of great concern for distance education students. Most of them do not have the confidence to learn independently. They need teachers to help and support them as they engage with their study material. To keep distance learners motivated, the teachers need to send students quicker feedback and also send motivational SMSs. When teachers send information through personal and situated devices such as mobile phones, the distance learners feel supported. They develop positive relationship with their teachers and the university and this in turn improves their motivation.

Short message service is highly cost effective and very reliable method of communication. It is less expensive to send a SMS or even have a follow up via a mobile call than to mail a reminder through regular postal mail. Moreover there is no requirement of expensive machines like personal computer. Besides SMS, distance learner can use mobile phones to listen to the lectures of the course and for downloading, storage and for transfer of data. The findings of this study are supported by the earlier studies of Traxler & Riordan (2003); Vavoula, (2005); Yousaf, (2007) and Sharma, (2011).

Responses to a question on lack of knowledge of technology of mobile learning show that learners did not agree with the narrative that the insufficient knowledge and understanding of technology can be challenging with the implementation of mobile learning. The current generation of young people is believed to be tech-savvy. Operating a smart phone, inevitably develops the knowledge of how software interfaces work. The respondents did not agree with the suggestion that mobile phones are unavailable with the large number of students as all the respondents owned smart phones. The respondents also did not agree with the issue of unaffordability of mobile data pack as tariffs of mobile phones are very economical and come with inclusive of mobile data plans. In India, now-a-days, all major mobile network provider like Reliance Jio, Vodafone, Airtel, Idea and BSNL are providing mobile data packages for internet connections for mobile devices at very economical prices starting from as low as rupees 98 for 28 days with 28GB data. This has made the availability of necessary mobile technology at a very affordable prices. 4G internet plans available in India provide fast and better internet connectivity. Be it accessing websites, downloading or uploading files, making video and HD voice calls, audio and video conference and sending SMS, there is a lot of flexibility and options with the users with respect to mobile data price and validity. This is an important aspect to be considered in any future planning for mobile learning implementation in our dual mode university.

The biggest challenge of our university is to come up with strategies in which faculty of the Directorate can be equipped with the requisite skills so as to exploit the potential of mobile technologies to engage and support distance learners in the learning processes. The faculty needs to be trained in the use of technologies for mobile learning.

Conclusions

In the research study, the investigator has analyzed distance learners perception on the effectiveness of implementation of mobile learning in the dual mode University of Jammu, Jammu & Kashmir. Through the survey, majority of the learners supported the idea that the mobile technologies increase the flexibility of access to resources in distance learning. The results of the survey divulge that mobile learning activities can far more effectively engage students in the learning process. Looking into the comparative number of mobile users and other medias, it can be affirmly concluded that mobile could be used effectively by the Directorate of Distance Education, University of Jammu for quality teaching learning and also for providing information support services. The coordinator/teacher can send an SMS to spark a discussion on a particular topic and then encourage students to engage on a discussion on a peer support study group through social network such as WhatsApp. Students can get clarity on a difficult topics by checking it on internet using mobile phone. Learners can be asked to access resources on the internet and read and download online books through National Digital Library at "<https://ndl.iitkgp.ac.in/>". Teaching learning involving the use of WhatsApp, Facebook, Blogs, etc. can make it more interactive and thus break the isolation of students from teachers and fellow students. Mobile learning has a lot of potential to quickly contact and interact with remotely located diverse learners of the Directorate and thus promoting anytime, anywhere learning environment. If mobile learning is implemented in the directorate, it will make teaching-learning flexible and convenient. It will reduce the footfall of distance learners in the institution and save time of the learners as well.

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