KUSUM FOUZDAR & SANTOSH KUMAR BEHERA

Attitude of Post Graduate Students towards Mobile Learning

ABSTRACT: *There are various ways to use mobile phones for enhancing learning. Mobile phones plays an important role in our day today lives in various purposes. One of the important purposes is learning. Mobile learning, as a novel educational approach, encourages flexibility; students do not need to be a specific age, gender, or member of a specific group or geography, to participate in learning opportunities. Restrictions of time, space, and place have been lifted. Mobile learning is an emerging concept as the development of an adoption rate of mobile technologies increase rapidly on a global scale. While there are as many people using mobile technologies as there are opinions on how mobile technologies will impact e-learning, the majority agrees that mobile learning will play a major role in e-learning. In the present study, the investigators made an attempt to study the attitude of PG (Post Graduate) students of Sidho-Kanho-Birsha University in Purulia District of West Bengal, India. The descriptive survey method was used. One hundred and fifty students (both male and female) reading in Semesters-2nd and 4th were taken as representative sample of the whole population. An attitude scale was used for collecting the data. The means of both groups were tested for significance of difference by using CR (Constructed-Response) test. Results indicated that the attitudes of PG male and female, rural and urban, General and SC/ST (Scheduled Castes/Scheduled Tribes), Semester-2nd and 4th students were statistically not significant. The attitude of PG Arts and Science students was statistically significant and the attitude of PG students towards mobile learning was neither more favourable nor unfavourable, but satisfactory or average.*

KEY WORDS: *Attitude; Mobile Learning; Post Graduate Student; Satisfactory; Enhancing Learning.*

INTRODUCTION

The 21st century is known as an age of science and technology. It was also declared to be the age of information and communication technology, due to the revolution of mobile technology. Mobile technology has become an integral part of our lives. We cannot work in the society without mobile, internet, etc. Everybody is using online technology in day today work (Wagner, 2005; Low &

O'Connell, 2006; and Behera, 2013).

In this new millennium modern technology also plays inevitable role in our lives. Now-a-days anywhere and anytime, education is made possible. The practice of providing education with the help of modern technologies is termed as e-education, or e-learning, or m-learning (Polsani, 2003; Traxler, 2007; and Begum, Natesan & Sampath eds., 2011). Mobile technology in

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Table 1:
Functionality of E-Learning and Mobility of M-Learning

Functionality		Mobility		
Computer	Laptop Computers	PDA's Handhelds Palmtop	Smart Phones	Mobile Phone
E- Learning		M-Learning		

word open various ways for new educational technologies aimed at fulfilling the country's educational needs.

There are various ways to use mobile phones for enhancing learning. Mobile phones plays an important role in our day today lives in various purposes. One of the important purposes is learning. Mobile learning, as a novel educational approach, encourages flexibility; students do not need to be a specific age, gender, or member of a specific group or geography, to participate in learning opportunities (Sharples, 2005; Kadirire, 2007; and Shih & Mills, 2007). Restrictions of time, space, and place have been lifted.

M-learning (mobile learning) is an emerging concept as the development of an adoption rate of mobile technologies increase rapidly on a global scale (Abdalla & Hegazi, 2003; Kukulska-Hulme & Traxler, 2005; and Traxler, 2005 and 2007). While there are as many people using mobile technologies as there are opinions on how mobile technologies will impact e-learning, the majority agrees that m-learning will play a major role in e-learning (Mbanusi, 2012).

M-learning is the idea that a student can learn from any place at any time using portable learning devices. M-learning, or "mobile learning", is any sort of learning that takes advantages of learning opportunities offered by mobile technologies. Mobile learning combines e-learning and mobile computing. Mobile learning is sometimes considered merely an extension of e-learning, but quality m-learning can only be delivered with an awareness of the special limitations and benefits of mobile devices.

Mobile learning has the benefits of mobility and its supporting platform. M-learning is a means to enhance the broader learning experience. M-learning is a powerful method for engaging learners on

their own terms. E-learning and m-learning diagrammatically mentioned in table 1.

Functionality and Mobility in a Definition of Mobile Learning. Mobile learning means "acquisition of any knowledge and skill through using mobile technology anytime, anywhere that result in alteration of behavior" (Eltayeb & Hegazi, 2014). In this context, mobile learning also brings strong portability by replacing books and notes with small RAM (Random Access Memory)'s filled with tailored learning contents. Mobile learning implies different things to different people (Motiwalla, 2007; Khatal, 2011; and Behera, 2013).

Here, there are some definitions of mobile learning given follows. R. Pea & H. Maldonado (2006) stated that mobile learning incorporates "transformative innovations for learning futures" (Pea & Maldonado, 2006). D. Parsons & H. Ryu (2006) also stated that mobile learning is broadly defined as the delivery of learning content to learners utilizing mobile computing devices (Parsons & Ryu, 2006).

K. Peters (2007) also stated that it was a subset of e-learning, a step toward making the educational process *"just in time, just enough and just for me"* (Peters, 2007). According to M. Ally ed. (2009), the process of using a mobile device to access and study learning materials and to communicate with fellow students, instructors or institution (Ally, ed., 2009).

Mobile learning provides the potential to provide the right information to right people at the any time and any place using portable learning devices. Thus, the mobile learning can be summarized in a single statement: "*deliverance of education or any learning via any portable devices*".

Mobile learning combines e-learning and mobile computing. Mobile learning is sometimes considered merely an extension of e-learning, but quality mobile learning

can only be delivered with an awareness of the special limitations and benefits of mobile devices. Mobile learning has the benefits of mobility and its supporting platform (Behera, 2013; and Eltayeb & Hegazi, 2014).

From the above discussion, it is clear that mobile learning plays a magnificent role in human lives. Since the Post-Graduation/Higher education level is the crucial stage of the present educational system in our country, it needs special attention. Therefore, the necessity of getting the students well acquainted with mobile learning in Post-Graduation stage can never be minimized.

Mobile learning should spread all over the world. It is found that there are different reasonable opinions in this regards. But, we cannot come to a conclusion about all the Post Graduate students' attitude towards mobile learning from several comments or discussions with a handful of students only.

Many questions are arising in the researchers mind about the students' attitude towards mobile learning at PG (Post-Graduate) level. Still now, it is very important and sensitive issue. It is an urgent need for developing certain strategies, which can improve their knowledge, attitude, and skills on mobile learning. Therefore, in order to know the attitude of PG students towards mobile learning, the investigators have decided to take up a systematic and objective attitudinal study of PG students towards mobile learning. The investigators intend to restrict their research work to Purulia District of West Bengal, India. So, the problem for the present study may be specifically stated as follows: "Attitude of Post Graduate Students towards Mobile Learning".

The Review of Related Literature. B.F. Fozder & L.S. Kumar (2007) conducted a study to better understand and measure students' attitudes and perceptions towards the effectiveness of mobile learning. Results of this study revealed that introducing mobile phone could be helpful in improving retention at Bachelor of Science students, by augmenting their teaching/learning and supporting the existing learning system. They found out that more than half of the respondents surveyed highly support the

introduction of mobile phone to enhance the learning experience (Fozder & Kumar, 2007).

F.N. Al-Fahad (2009) conducted a study to better understand and measure students' attitudes and effectiveness of mobile learning. The result of his study revealed that the majority of students supported the idea that the wireless networks increase the flexibility of access to resources of learning independently in any place. Therefore, students can save their time, effort, and even money (Al-Fahad, 2009).

Wafa' N. Muhanna & Awatif M. Abu al-Sha'r (2009) conducted a study on university student` attitudes towards cellphone learning environment. The main purpose of this study is to investigate Jordanian university student` attitudes towards cell phone learning environment. The study investigates whether there are any differences in university student`s attitudes based on gender and level. The findings indicate that undergraduates are more favorable to cell phone environment than graduate students. The study also reveals that cell phone has more influence on male students than on female students (Muhanna & al-Sha'r, 2009).

V. Demouy & A. Kukulska-Hulme (2010) investigated students' experiences when using portable devices, e.g. iPods and MP3 players, for listening and speaking practice within a course. They conclude that learners will need to be helped towards recognizing the specific value of this type of practice as a stepping stone towards authentic communication. They recommended further areas of investigation and potential applications (Demouy & Kukulska-Hulme, 2010).

P. Pollara & K.K. Broussard (2011) have studied on the student perceptions of mobile learning, a review of current research. The objectives of this study are necessary to analyze how these devices can be used for learning. The review specifically focuses on student perceptions of mobile learning and summary of the current. The majority of studies measured the attitude of participations with respect to the type of learning they experienced with a mobile device. These studies were in most part created to measure the attitudes that students had about

mobile learning rather than strictly student achievement gains with mobile learning technologies (Pollara & Broussard, 2011).

Another study was conducted by A.B. Nassuora (2013) to examine students' acceptance of mobile learning for higher education in Saudi Arabia. The author adopted a framework which is based on the UTAUT (Unified Theory of Acceptance and Use of Technology) model to determine the factors that influence the students' intention to use mobile learning. The statistical results showed that a high level of students' acceptance for using mobile learning (Nassuora, 2013).

Mostafa al-Emran, Hatem M. Elsherif & Khaled Shaalan (2016) have investigating attitudes towards the use of mobile learning in higher education. This paper aims at exploring students and educators' attitudes towards the use of mobile learning in higher educational universities within Oman and UAE (United Arab Emirates), two neighboring countries in the Arab Gulf region. Findings revealed significant differences among the students' attitudes towards mobile learning with regard to their smartphone ownership, country, and age. Furthermore, results indicated that mobile learning can be one of the promising pedagogical technologies to be employed in the higher educational environments within the Arab Gulf countries (al-Emran, Elsherif & Shaalan, 2016).

H. Hashim, M. Yunus & M. Embi (2016) have conducted a study on pre-university ESL (English as Second Language) learners' attitude towards mobile learning. This study investigates pre-university ESL learners' attitude towards mobile learning for the purpose of learning ESL. The findings of the study are hoped to provide polytechnic administrators a means to make effective fiscal and educational decisions regarding mobile learning, and to ensure the fiscal and pedagogical success of a mobile learning initiative in a globally competitive environment (Hashim, Yunus & Embi, 2016).

Following recommendations reported in the literature, this research intends to conduct a similar study to the above mentioned studies, in which the study focuses on the attitude of PG (Post Graduate) students towards mobile learning at Sidho-Kanho-Birsha University, Purulia, West Bengal, India.

NEED AND SIGNIFICANCE OF THE STUDY

The technological revolution poses remarkable challenges to the educators to rethink their basic tenets, to apply technology in creative way to redesign education. In this context, mobile learning plays an important role. Mobile learning is the new innovation which help greater learning opportunities for the students (Trifonova, 2003; Sharma & Kitchens, 2004; and Patil & Sawale, 2012).

Now-a-days, there is a growing necessity of mobile learning to make new outlook. It is necessary in many perspectives. So far as education concerned, mobile learning plays an important role for imparting education among the students. It helps to learn anytime and anywhere, it is the most important means of learning, it provides quick feedback, it helps to learn beyond a classroom, it helps the student in dependent learning, etc.

Therefore, the researchers feel that particularly the PG (Post Graduate) student's opinions or their attitudes can never be ignored, rather those should be reviewed or re-explored time to time; and it is this feeling that has urged these investigators to take up the present study on a particular region of West Bengal, India. It is expected that this study, through small, will be able to make some significant contributions in the field of education.

Delimitations of the Study. In geographical area, the investigation was delimited to only Purulia District of West Bengal, India. In level of education, the study was restricted to the PG (Post Graduate) students of Sidho-Kanho-Birsha University of the said district. Among the PG students also only the Arts and Science streams (2nd Semester and 4th Semester) students of Sidho-Kanho-Birsha University were considered as the subjects of the present study.

In type of study, it was conducted only at surface level. It was not an "in-depth" study. Attempt to know the subject's attitude by administering an attitude scale constructed by the researchers. No inter-state/university

Table 2:
Scoring Procedure

Items	Strongly Agree (A)	Agree (B)	Neutral (C)	Disagree (D)	Strongly Disageree (E)
Favourable	5	4	3	2	1
Unfavuorable	1	2	3	4	5

comparison was done. Only intra-district/ university comparison between the attitude of the male and female students, General and SC/ST (Scheduled Castes/Scheduled Tribes) students, rural and urban students, Arts and Science students, and 2nd and 4th Semester students were done.

The objectives of the study are: (1) to ascertain the attitude of PG students of Sidho-Kanho-Birsha University in Purulia District of West Bengal, India, towards mobile learning; (2) to compare the attitude of PG male and female students of Sidho-Kanho-Birsha University in Purulia District towards mobile learning; (3) to compare the attitude of PG rural and urban students in Purulia District of West Bengal towards mobile learning; (4) to compare the attitude of PG General and SC/ST students in Purulia District towards mobile learning; (5) to compare the attitude of PG Arts and Science streams students in Purulia District towards mobile learning; and (6) to compare the attitude of PG 2nd and 4th Semester students in Purulia District towards mobile learning.

Hypotheses of the study are as follows: H_1: "*The PG students of Sidho-Kanho-Birsha University will have more favourable attitude towards mobile learning in Purulia District of West Bengal, India*"; H_2: "*There is significant difference between the attitude of PG male and female students of Sidho-Kanho-Birsha University in Purulia District of West Bengal towards mobile learning*"; H_3: "*There is significant difference between the attitude of PG rural and urban students in Purulia District of West Bengal towards mobile learning*"; H_4: "*There is significant difference between the attitude of PG General and SC/ST students in Purulia District towards mobile learning*"; H_5: "*There is significant difference between the attitude of PG Arts and Science students towards mobile learning*"; and H_6: "*There is significant difference between the attitude*

of PG 2nd and 4th Semester students in Purulia District towards mobile learning".

METHODS

The present study is based on survey method, particularly, the normative survey research method (Best & Kahn, 2005; and Sharma, 2008). It is the most popular and scientific research technique, which consist of analyzing the phenomena into their components. The PG (Post Graduate) students of Sidho-Kanho-Birsha University in Purulia District of West Bengal, India comprised the population of this study.

About 150 PG students of Sidho-Kanho-Birsha University in Purulia District of West Bengal were taken as representative sample for the whole population. Stratified random sampling technique was followed for selecting the Departments. There are a number of PG students in each Department. Only Arts and Science students were selected following purposive sampling technique.

The Tool Used. An Attitude Scale (Likert Type) was used for knowing the attitude of the PG (Post Graduate) students towards mobile learning. There were 30 items. There were five scale points against each item, so this is to say a five point attitude scale consisting of 30 items was constructed.

In the scoring procedure, Likert's method was used (Lokesh, 2004; and Sharma, Pathak & Sharma, 2006). The subject is asked to indicate the degree of agreement towards each item on a five point scale: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree weightage was given in the following manner, as shown in table 2.

ANALYSIS AND INTERPRETATION OF DATA

Testing of H_1: "The PG (Post Graduate) students of Sidho-Kanho-Birsha University

Table 3:
The Attitude of PG (Post Graduate) Students of Sidho-Kanho-Birsha University
in Purulia District of West Bengal, India towards Mobile Learning

Category	N	Mean	S.D.
PG (Post Graduate) Students	150	98.59	11.61

Table 4:
Showing Significant Differences between Variables

Group		N	Mean	SD	CR	Remark
Gender	Male	78	99.14	11.20	0.58	NS**
	Female	72	98	12.72		
Locality	Rural	94	98.83	10.27	0.29	NS**
	Urban	56	98.20	14		
Caste	General	114	98.54	12.55	0.12	NS**
	SC/ST	36	98.78	9.92		
Stream	Arts	75	101.01	12.41	2.53	S*
	Science	75	96.17	10.96		
Class	2nd Semester	79	99.38	10.01	0.84	NS**
	4th Semester	71	97.72	13.77		

Notes: * Significant at 0.05 level.
   ** Not Significant at 0.05 level.

will have more favourable attitude towards mobile Learning in Purulia District of West Bengal". See table 3.

Through the help of cut-off point, the investigators verified the H_1. Here cut-off point is $M \pm 1\sigma$. It means: Mean = 98.59, N = 150, and σ = 11.61. Hence, $M + 1\sigma$ is 98.59 + 1 x 11.61 = 110.2. And $M - 1\sigma$ = 98.59 - 11.61 = 86.98. Most of PG (Post Graduate) students (103 in number), i.e. 68.67% of students were lies between 86.98 to 110.2 scores.

Hence, it can be said that the attitude of PG students of Purulia District of West Bengal, India is neither more favourable nor unfavourable towards mobile learning, i.e. satisfactory or average in attitude towards mobile learning.

Testing of H_2: From table 3, it is found that the calculated CR (Constructed-Response) value was found to be 0.58, which is less than that of table value, i.e. 1.96 at 0.05 level; and, thus, it is not significant at 0.05 level.

Hence, the Ho_2 is accepted and the researchers' H_2 is rejected; that is to say that "there is no significant difference between the attitude of PG (Post Graduate) male

and female students of Sidho-Kanho-Birsha University in Purulia District towards mobile learning". See table 4.

Testing of H_3: From table 3, it is also observed that the calculated CR (Constructed-Response) value was 0.29, which is less than that of table value, i.e. 1.96 at 0.05 level; and, thus, it is not significant at 0.05 level.

Hence, the Ho_3 is retained and the researchers' H_3 is rejected; that is to say that "there is no significant difference between the attitude of PG (Post Graduate) rural and urban students of Sidho-Kanho- Birsha University in Purulia District towards mobile learning".

Testing of H_4: From table 3, it is also established that the calculated CR value was found to be 0.12, which is less than that of table value, i.e. 1.96 at 0.05 level; and, thus, it is not significant at 0.05 level.

It can be said that "there is no significant difference between the attitude of PG General and SC/ST (Scheduled Castes/Scheduled Tribes) students of Sidho-Kanho-Birsha University in Purulia District towards mobile learning".

Testing of H_5: From table 3, it is also observed that the calculated CR value was 2.53, which is greater than that of table value, i.e. 1.96 at 0.05 level; and, thus, it is significant at 0.05 level.

Hence, the H_{05} is rejected and the researchers' H_5 is accepted; that is to say that "there is significant difference between the attitude of PG Arts and Science students of the SKB (Sidho-Kanho-Birsha) University in Purulia District towards mobile learning".

It is also found that the mean attitude score of Art students is much greater than the mean attitude score of Science students. Since greater score is indicative of more favorable attitude, it can be said that the attitude of PG Arts students towards mobile learning is relatively more favorable than that of PG Science students of Sidho-Kanho-Birsha University in Purulia District.

Testing of H_6: From table 3, it is also observed that the calculated CR value was 0.84 which is lower than that of table value, i.e. 1.96 at 0.05 level; and, thus, it is not significant at 0.05 level.

Hence, the Ho_6 is accepted and the researchers' H_6 rejected; that is to say that "there is no significant difference between the attitude of PG 2nd Semester students and 4th Semester students of SKB (Sidho-Kanho-Birsha) University in Purulia District towards mobile learning".

Analysis of data shown that the attitude of PG students of Sidho-Kanho-Birsha University in Purulia District of West Bengal, India is neither more favourable nor unfavourable towards mobile earning, i.e. satisfactory or average in attitude towards mobile learning.

It is found that there is no significant difference between the attitude of PG male and female students of Sidho-Kanho-Birsha University in Purulia District towards mobile learning. It may seem to be that both PG male and female students have realized the importance of mobile learning in same manner.

The present study indicated that there is no significant difference between the attitude of PG rural and urban students of Sidho-Kanho-Birsha University in Purulia District towards mobile learning. The mean attitude score of PG rural students is being little greater than that of PG urban students. Hence, it can be said that the attitude of PG rural students of Sidho-Kanho-Birsha University in Purulia District towards mobile learning is slight favorable than that of PG urban students of Sidho-Kanho-Birsha University in Purulia District.

On the basis of this finding, it can be said whatever be the attitude of the students regarding this important issue, little difference (and therefore, little change in attitude) is found among students so far as the area concern.

The major findings of this study revealed that there is no significant difference between the attitude of PG General students and PG SC/ST (Scheduled Castes/Scheduled Tribes) students, as a whole, of SKB (Sidho-Kanho-Birsha) University in Purulia District towards mobile learning.

The present study indicated that there is significant difference between the attitude of PG Arts students and Science students of Sidho-Kanho-Birsha University in Purulia District towards mobile learning. The attitude of PG Arts students is comparatively more favorable than the PG Science students towards mobile learning. It may due to the fact that PG Arts students of SKB University have realized more the consequence of mobile learning for their better future. They feel that is acquaints them with the wealth of knowledge.

However, it is found that there is no significant difference between the attitude of PG 2nd and P.G. 4th Semester students of SKB University in Purulia District towards mobile learning. On the basis of this finding, it can be said whatever be the attitude of the students regarding this important issue, little difference (and therefore, little change in attitude) is found among students within one year or so of their level education.

Educational implications are: (1) It is a meek attempt in this direction to assess the level of knowledge and attitude of PG students towards mobile learning; (2) This study contributes a new teaching-learning in the form of assessing the level of knowledge and attitude towards mobile learning in

the classroom instruction; (3) This study is very much essential for the development of students' interest, attitude, knowledge, and motivation towards mobile learning; (4) This study is very much essential for student self-development; (5) The need of the day is to make students realize their capabilities and improve upon capabilities to help solve the problems of their life through mobile learning; (6) Special efforts should be made in order to develop mobile learning attitude among the PG 4th Semester students; (7) Special efforts should be made in order to develop mobile learning attitude among the female students; and (8) This study will be of immense use for the educational administrators, which will throw light upon the attitude of students' of higher education towards mobile learning.

CONCLUSION

Mobile learning will became more and more popular with the progress of information and communication technologies. Mobile technology progresses education. Mobile learning may currently be most useful as a supplement to ICT (Information and Communication Technology), online learning, and more traditional learning methods; and can do much to enrich the learning experience.

It is widely believed that mobile learning could be a huge factor in getting disaffected young students to engage in learning, where more traditional methods have failed. If we develop the positive attitude towards mobile learning among the students, then, the teaching-learning situation may be effective.[1]

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[1]**Statement:** Herewith, we declare that this paper is our original work; it is not product of plagiarism and not reviewed or published by other scholarly journals elsewhere.

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Students of Sidho-Kanho-Birsha University in Purulia District, West Bengal, India
(Source: http://www.vidyasarathi.com, 15/1/2017)

The present study indicated that there is significant difference between the attitude of PG (Post Graduate) Arts students and Science students of SKB (Sidho-Kanho-Birsha) University in Purulia District towards mobile learning. The attitude of PG Arts students is comparatively more favorable than the PG Science students towards mobile learning. It may due to the fact that PG Arts students of SKB University have realized more the consequence of mobile learning for their better future. They feel that is acquaints them with the wealth of knowledge.