

Teaching-Learning Through Mobile Phone: A Feasibility Study on the Learners' of Bachelor of Education Programme at Bangladesh Open University

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Abstract

The aim of this study is to determine the degree of technology adoption among school instructors based on awareness and motivation, instruction and courses, instructional design, resources and facilities. If mobile phone technology is introduced in schools, this study also wants to find out whether teachers' technological acceptance will affect their readiness for it. During a programme on teachers' development, a quantitative questionnaire was given to 140 Bangladesh Open University (BOU) Bachelor of Education (BEd) students from 7 study centres who teach Information and Communication Technology (ICT) subjects in various secondary schools in the Jashore, Barishal, Khulna, Rajshahi, Rangpur, Sylhet, and Chattogram area of Bangladesh. According to the data, respondents' levels of technology adoption were typically high in terms of motivation and awareness, instruction and courses, instructional design, resources and facilities. Despite this favourable acceptance of technology, it was shown that instructors' readiness for using mobile phones in teaching and learning was at a very low level. However, the study found a substantial relationship between respondents' technology awareness and motivation and their preparedness for mobile phone pedagogy. Additionally, it was discovered that the respondents' readiness may be influenced by their gender. As a result, this study explores how instructors' preparations for mobile phone pedagogy and potential ramifications are influenced by their embrace of technology.

Keywords: Teacher, Technology acceptability, Readiness, Mobile phone software, and M-Learning.

1.1 Introduction

Information and communication technologies (ICT) have recently experienced fast growth, and this growth has significantly improved numerous industries, including education. The usage of technology in education has significantly increased recently. Educational institutions currently seek new paradigms for curriculum restructuring and classroom infrastructure, with a view to closing the technological gap in education. However, in order to provide students with the essential information and foster meaningful learning, this process needs the effective integration of technology into the already-existing learning environment (Tomei, 2005).

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Mobile technologies, which have been known as “mobile learning,” represent a new paradigm in education technology. According to Attewell and Savill-Smith (2005), mobile learning (m-learning) is described as learning using wireless technical equipment that can be kept in a pocket and used wherever the learner's device can receive uninterrupted transmission signals. Most importantly, m-learning's ubiquitous nature enables users to receive immediate learning at the tips of their fingers. M-learning offers fascinating new opportunities in pedagogy and education, but its adoption in Bangladeshi schools is still fairly low (Shihand Mills, 2007). Cell phone use in class is still prohibited in Bangladeshi schools, which may be a contributing cause. Additionally, it is difficult to actually integrate mobile learning into the educational system. The adoption of mobile learning requires consideration of curriculum and pedagogy, institutional readiness, teacher capabilities, and long-term finance, much like ICT does (Tinio, 2003). Not only do students need the help of new learning strategies to deal with such significant changes in education, but teachers also need the acquired literacy and abilities on the new educational tools.

Therefore, research is vital to identify the elements required for the successful integration of m-learning in schools. For instance, Balanskat et al.(2007) identified factors that affect the decision to adopt an innovation in schools at the teacher-, school-, and system-levels. ICT adoption and integration should take into account technological, individual, organizational, and institutional factors, claim Sherry and Gibson(2002). This study intended to ascertain whether teachers' level of technological adoption had an impact by emphasizing teacher preparation as one of the criteria.

1.2 Objectives of the Study

1. To find the components of awareness and motivation, instruction and courses, instructional design, resources and facilities, and technology acceptability level among school instructors.
2. To ascertain whether teachers' technology acceptance may affect their level of readiness for the pedagogical use of mobile phone technology fit were to be adopted in the classroom.

1.3 Review of Related Literature

1.3.1 Technology in Education

The development of education has been significantly impacted by the emergence of developing technology. According to many researchers, improving student performance, teaching effectiveness, and teacher productivity was the goal of their studies on the use of technology in the teaching and learning process (Wang et al., 2008; Jamil and Shah, 2011). In

fact, Saba (2009) and Malik and Shabbir (2008) both stressed the need of utilising technology efficiently to create new opportunities for self- directed learning as a way to increase student achievement.

ICT, in particular, is regarded as a potentially powerful tool for educational innovation and reform (Tinio, 2003). The three objectives of using ICT in education are to use it as an area of study, a component of a field or profession, and as a tool for teaching and learning, according to Plomp et al. (1996). It was also shown in a previous study by Sheingold and Hadley (1990) that integrating technology involves more than just assisting people in using computers; it also involves assisting teachers in using it for student learning. Actually, technology should aid in the process of teaching and learning. As a result, integrating technology into the classroom takes more than just putting the requisite hardware in educational institutions; careful consideration must be given to how it should be applied to teaching.

1.3.2 Technology Acceptance in Education

The extent to which computer technology is used in education might vary depending on a number of factors. According to Ertmer(1999), teachers would not automatically incorporate technology into teaching and learning even if availability, time, and technical support were gone. Bingimlas(2009) identified a number of key obstacles, such as a lack of resources, knowledge, and confidence, to the successful integration of ICT in the teaching and learning environment. Mumtaz's(2000) examination of the literature found that the three interconnected factors that affect ICT adoption are institution, resources, and teacher. The research makes clear that teacher and institutional adoption of technology in education is essential before technology can be properly integrated into the educational system.

One of the subjects discussed by many academics is the acceptance of technology by educators. Teo(2011) defined technology acceptance as the user's willingness to employ technology to carry out tasks that it is designed to simplify. Therefore, a component in technology acceptance may be the awareness and desire of instructors to use technology in the teaching and learning process. If instructors choose to use technology in the classroom, it will mostly depend on how well they are aware of its pedagogical applications. Ngozi et al.'s (2010) study found that although instructors were able to name particular technical tools that are beneficial for education, they were unsure on how to use them. The successful integration of technology into the educational system and teacher motivation were found to be related. According to Karsenti et al. (2006), the usage of ICT in the classroom is

favourably connected with a teacher's motivation. According to Sheingold and Hadley's (1990) survey, highly motivated teachers were also excellent computer users in the classroom. As a result, motivation and awareness are linked. Users will be motivated to use a tool if they are aware of its value (Solomon, 2003).

1.3.3 M-Learning

The development of wireless technology and handheld portable devices has had a significant impact on people's lifestyles all around the world, notably on how they approach education. M-learning, often known as mobile learning, is a method of improving the learning experience through the use of mobile technologies. Mobile technology has the ability to change how people work and learn by significantly lowering their reliance on fixed locations, claims Peters (2007). Additional research (Tan and Liu, 2004; Chen et al., 2003; Costabile et al., 2008) have shown the potential of mobile devices to support the teaching and learning process in the classroom.

M-learning is still in its early stages of application in Bangladesh. More research is required even though some research has been done to look at how mobile devices might enhance classroom teaching and learning in Bangladeshi schools. The possibilities of mobile technology for teaching secondary school English vocabulary, teaching English language literature, and teaching elementary school math were all examined (Mohamad et al., 2010; Rahmat et al., 2011). These potentials thus point to the area of study that examines how m-learning could enhance the pedagogical methods used in traditional Bangladeshi education.

1.3.4 Factors Influencing Readiness for M-Learning

According to Parasuraman (2000), "people's predisposition to embrace and employ new technologies to achieve personal and professional goals" is the definition of technological readiness. In order to pinpoint who the main consumers of brand-new technology-based services are, Parasuraman (2000) also developed the "Technology Readiness Index" (TRI). The context can include the service's instructional component. According to Yun and Murad (2006), two factors that influence e-learning readiness are psychological readiness and technical skill readiness. Eight types of preparation characteristics were discovered by Chapnick (2000), who created a technique for evaluating e-learning readiness. The categories were: psychobiology, social psychology, the environment, Human Resources, Financial Readiness, Technology Education, Equipment and Content Preparedness.

There have been studies on how university students in Bangladesh are prepared for mobile learning, but there have been few on how Bangladeshi

schools are prepared. The viewpoints of Bangladeshi educators towards the pedagogical use of mobile phones in the classroom were not specifically addressed in any of the research studies that were reviewed. Investigation into the relationship between their acceptance of technology and preparation for mobile learning is also an option.

2.1 Research Methodology

This study set out to evaluate how well-prepared instructors were for mobile learning and how much they used technology. The study also looked for relevant demographic elements that would affect respondents' readiness for mobile learning. Based on their own literature reviews, researchers created a quantitative survey method to do this.

2.2 Research Questions

The research reported here was conducted to address the following research questions:

1. What percentage of teachers are comfortable using technology?
2. What kind of mobile phone usage does the sample make?
3. Are respondents prepared to use a mobile device as a teaching tool?
4. Is there a connection between the respondents' readiness for mobile learning and demographic factors?
5. Is there a link between respondents' embrace of technology and willingness for mobile learning?

2.3 Participants

In this study, 140 Bangladesh Open University BEd students who were teaching ICT lessons in secondary schools in Jashore, Barishal, Khulna, Rajshahi, Rangpur, Sylhet, and Chattogram were examined. The responders were chosen based on how well-versed they were in educational technologies. The participants were considered to be at least somewhat familiar with the most basic technological teaching and learning resources available at their school. Respondents were given the surveys while enrolled in the BEd programme at various study centres. The students were given a survey form, which the researchers then directly collected from seven different study centres. Researchers built relationships with respondents and gave them cheap refreshments when they visited and handed out surveys in a number of study centres. As a result, the questionnaire received a 100% response rate. Although the sample size was too small for generalizability, the results can

nevertheless provide valuable knowledge to the body of research on the use of mobile phone technology in education.

The demographic profiles of all respondents are summarised in Table 1. In that group, the proportion of male and female respondents who were between the ages of 25 and 29 was nearly equal (26.3%). The majority of responders (86.8%) were married. Degree (44.7%) and Diploma (36.8%) were the greatest levels of academic achievement reported by the majority of respondents. Only 7.9% of those surveyed had a master's degree. Overall, there were two main groups of respondents, those who had worked as teachers for five years or less (36.8%) and those who had worked as teachers for more than twenty years (26.3%).

Table 1: Demographic Information

	Frequency	Percentage (%)
<i>Gender</i>		
Male	77	45
Female	63	55
<i>Age (year)</i>		
25 to 29	37	26.3
30 to 34	29	21.1
35 to 39	18	13.2
40 to 44	26	18.4
45 to 49	15	10.5
50 and above	15	10.5
<i>Marital Status</i>		
Single	18	13.2
Married	122	86.8
<i>Qualification</i>		
Masters	28	20
Degree	70	50
Diploma	42	30
<i>Year of Service</i>		
5 and less	52	36.8
6 to 10	15	10.5
11 to 15	18	13.2
16 to 20	18	13.2
More than 20	37	26.3

3.1 Development of Tools

Data for this study were gathered using a quantitative questionnaire. Following a study of pertinent literature, researchers developed the scales and items for the instrument. Faculty and experts in connected fields checked the questionnaire's content and face validity. Teachers from the School of Education at Bangladesh Open University participated in a pilot study of the questionnaire.

There were four sections to the survey. Age, gender, marital status, degree of education, and number of years working as a teacher made up the first part of the questionnaire's demography section. In Section B, respondents were given 26 questions to complete in order to rate the effectiveness of the Self Development programme. Four factors from Section C were used to calculate the respondents' degree of acceptability for the use of technology in schools: awareness and motivation, instruction and courses, instructional design, resources and facilities. Likert scales from "Strongly Disagree"(1) to "Strongly Agree" (5) were used in this section. (5). Two questions made up Portion D, the fourth segment, and asked respondents to rate the success of mobile learning in their schools and in the future. The first component of the survey consisted of three questions designed to elicit general information regarding respondents' use of mobile phones. Eleven questions about respondents' opinions on mobile learning made up the second section. Cronbach's Alpha was used to assess the internal consistency of the items in this section. The eleven items were graded on a five-point Likert- type scale, with a rating of "1" for "Strongly Disagree" and a grade of "5" for "Strongly Agree." It was found to be 0.928, which is higher than 1.0. As a result, the reliability of the items was rated as excellent(George and Mallery, 2003).

3.2 Data Evaluation

All data were entered into SPSS 17.0 (2012), a statistical analysis programme. The instrument's dependability coefficient was assessed using reliability analysis. Using descriptive statistics, the normality of the distribution was confirmed. In order to describe the distribution of responses for each question within each category, frequency analyses were also used. To ascertain the relationship between all facets of technology adoption and preparation for m-learning, the data were analysed using Pearson product-moment correlation. To determine whether there was a relationship between demographic factors and respondents' readiness for m-learning, Chi-Square and Crosstab analyses were also carried out. All subsequent statistical studies outlined employed a significance level of 0.05, unless otherwise stated. The normalcy of each scale of technology acceptance and m-learning readiness was checked before

looking at the connections between scale variables. The replies for both scales were quite evenly distributed throughout all questions, according to the histograms, with some responses indicating minimum scores and some indicating maximum scores. The scales appeared to follow the bell curve theory as a result. The average rating on the m-learning scale was 2.98, which is in the middle of the range for the scale. However, the technical acceptability scale's average score was 4.2, meaning that all mean values are between 3 and 5. The relatively small standard deviations for both scales (0.37 and 0.942) suggested a normal distribution and consistency in the data collection as well as a minimal variation from the mean. The values for technology adoption and m-learning readiness were in the range of -0.47 and -0.033, respectively, according to the skewness statistics. These results so revealed and verified that each scale had a normal distribution.

4. Results of the Investigation

Data pertaining to the various variables were entered into the SPSS statistical programme using the appropriate codes. The main experimental findings in response to the mentioned study subjects are described in the next section.

4.1 Technology Acceptance in Teaching and Learning

As they related to the respondents' adoption of technology, awareness and motivation, instruction and courses, instructional design, resources and facilities were examined. The respondents' acceptance of technology will be determined by how well each component is received.

Table 2: *Awareness of the use of technology in the classroom and the motivation to use it*

Statement (N=140, Cronbach's Alpha=0.839, mean = 4.21)	Mean	Standard Deviation	SD	*Total Responses (%)			
				D	NS	A	SA
I am willing to try new method in teaching and learning	4.39	0.547	0	0	2.6	55.3	42.1
I wasn't used to using technology in education	3.95	0.655	0	0	23.7	57.9	18.4
Technology is helping to make teaching and learning easier	4.08	0.587	0	0	13.2	65.8	21.1
Learning technology is helping to reduce time, energy and money	4.08	0.539	0	0	10.5	71.1	18.4
The use of technology enables students to amuse and acquire interest	4.39	0.547	0	0	2.6	55.3	42.1
The concept of learning can be seen in its entirety when technology is used	4.21	0.528	0	0	5.3	68.4	26.3

Observation: *Using a five-point Likert Scale rating from strongly disagree (1) to strongly agree (5), the total responses in percent were calculated.

Consciousness and Drive: A summary of the in-depth study of the information gathered relative to awareness and motivation is presented in Table 2. The majority of teacher replies indicate that they are knowledgeable about and motivated to use technology in the classroom (mean values above 4.00). The highest mean values of 4.39 showed that the majority of respondents agreed with the benefit of technology in attracting students' attention and were therefore willing to adopt new technologies in the classroom, despite the possibility that some respondents were unfamiliar with new educational technologies (mean = 3.95). In general, the research' findings indicated that teachers were knowledgeable about and eager to employ technology in the classroom.

Classes and Training: The comments made by teachers regarding their desire to take technology-related training and courses are shown in Table 3. The majority of respondents (all mean values were above 4.0) agreed that they would be open to taking technology-related classes and training in order to increase their knowledge and skills.

Table 3: *Willingness of participating in training and education related to technology*

Statement (N=140, Cronbach's Alpha = 0.846, mean = 4.35)	Mean	Standard Deviation	*Total Responses (%)				
			SD	D	NS	A	SA
I know it's my duty to raise my skills and knowledge	4.53	0.603	0	0	5.3	36.8	57.9
In order to improve my performance, I think that training and education can be helpful	4.42	0.642	0	0	7.9	42.1	50.0
In my career prospects, I am sure that training and learning could open up new opportunities	4.18	1.036	5.3	0	13.2	34.2	47.4
I'd choose to undergo training on new technology tools if I were given a choice	4.32	0.739	0	0	15.8	36.8	47.4
After all of the appropriate training, I am sure that my performance will improve	4.29	0.694	0	0	13.2	44.7	42.1

Note: *The total responses in percent were determined by using a five-point Likert Scale rating from strongly disagree (1) to strongly agree (5)

Training Design: The acceptability of technology by educators was further supported by Table 4's findings. All respondents said that the design of their training's content is a significant element in determining their acceptance of technology. They concurred that they require training that is relevant to their job, meets their needs, is flexible in terms of time and location, and is provided by knowledgeable trainers.

Table 4: *Perceptions on Instructional Design to use Technology*

Statement (N=140, Cronbach's Alpha = 0.748)	Mean	Standard Deviation	*Total Responses (%)				
			SD	D	NS	A	SA
The purpose of the training shall relate to my profession as a teacher	4.39	0.639	0	0	8.0	41.2	49.0
My personal needs should be met when delivering the training	4.11	0.849	2.5	0	16.1	49.0	32.1
At this point, the length of your training needs to take into account my time and condition	4.11	0.709	0	0	20.9	49.0	29.1
All methods used for training are not problematic to me	4.09	0.691	0	0	17.9	53.1	29.1
I'd rather have trainers with more experience in the classroom.	4.18	0.652	0	0	13.2	55.3	31.6

Supports and Facilities: Table 5 displays the teachers' evaluations of the support and facilities offered for the implementation of technology in the classroom. The majority of respondents expressed satisfaction with the technological aids and facilities they received. Although the physical facilities may require some modifications (mean value 3.97), the majority of teachers thought that the resources and facilities were beneficial in enhancing their credibility, encouraging participants, and facilitating the implementation of innovative approaches.

Table 5: *Supports and Facilities*

Statement (N=140, Cronbach's Alpha = 0.876)	Mean	Std. Deviation	*Total Responses (%)				
			SD	D	NS	A	SA
I've had a lot of chances to train in order to boost my credibility as a teacher	3.99	0.710	0	2.7	16.1	61.0	20.0
The rest of my teachers at school believe it instruction will give them additional values	4.05	0.655	0	0	18.4	57.9	23.7
We've been given a sufficient amount of facilities in all my classes and trainings	3.97	0.677	0	0	23.7	55.3	21.1
To practise new ways I've learned, the facilities at school help me	4.18	0.563	0	0	7.9	65.8	26.3

Note: *The total responses in percent were determined by using a five-point Likert Scale rating from strongly disagree (1) to strongly agree (5)

Technology Acceptance: Cronbach's alpha was used to evaluate the internal consistency of the items relevant to all four components of technological acceptance. According to Table 6, they were 0.839 (awareness and motivation), 0.846 (training and courses), 0.748 (training design), and 0.876 (awareness and motivation) (supports and facilities). These values exceeded the minimum standard of 0.70 (Nunnally, 1978). Thus, component depend abilities were found to be satisfactory.

Table 6: Teachers readiness in the field of mobile learning

Statement (N=140, Cronbach's Alpha = 0.876 , mean = 4.35)	Mean	Standard Deviation	*Total Responses (%)				
			SD	D	NS	A	SA
Mobile phone helps to assist teaching in school	2.16	1.191	39.5	18.4	31.6	5.3	5.3
Teachers support m-learning outside class time	2.57	1.237	31.6	5.3	39.5	21.1	2.6
It is encouraging to use mobile phones to teach and learn	2.29	1.210	32.1	24.1	25.9	16.1	2.7
Interactions can be made easier by using a cell phone	3.60	1.220	11.0	5.4	20.9	41.9	20.9
Mobile phones make it easier for colleagues and students to communicate effectively	3.27	1.283	13.2	10.5	28.9	28.9	18.4
Believe in the future of mobile learning for education	2.89	1.359	20.9	16.0	25.9	24.0	12.9
M-learning will help to learn ubiquitously	3.11	1.210	11.0	24.0	25.9	29.0	11.0
See the benefits of mobile learning for tomorrow's generation	2.84	1.118	13.2	23.7	31.6	26.3	5.3

Note: *The total responses in percent were determined by using a five-point Likert Scale rating from strongly disagree (1) to strongly agree (5)

The average value for all technical acceptance components which exceeds 4 is also shown in Table 6. All participants in the study were aware and motivated, willing to attend courses and instruction, concerned with the design of the training, and given with the required resources and facilities for implementing technology in their classrooms. In this study, it can thus be concluded that there has been a major increase in teacher adoption of technology.

4.2 Utilisation of Mobile Phones

According to the majority of respondents (as indicated in Figure 1), using a mobile phone is easy for them. As a result, it may be assumed that most of them were familiar with mobile technology. The balance between sending

SMS and making calls is the respondents' most often used mobile phone application, as illustrated in Figure 2. As a result, SMS may be the preferred mobile phone communication option for 50% of respondents. However, the majority of responders did not send SMS messages frequently. Figure 3 shows that 71.05 percent of all respondents sent 10 or fewer SMS every day on average. According to studies on mobile phone usage, respondents were generally knowledgeable about mobile phone technology, but they rarely used SMS.

Figure 1. Ease of using mobile phone

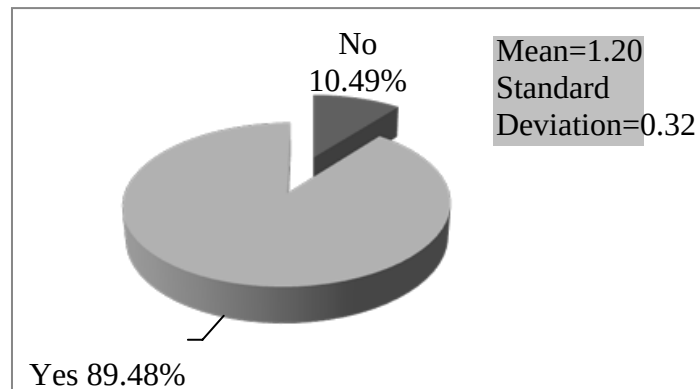


Figure 2. Most frequently used application

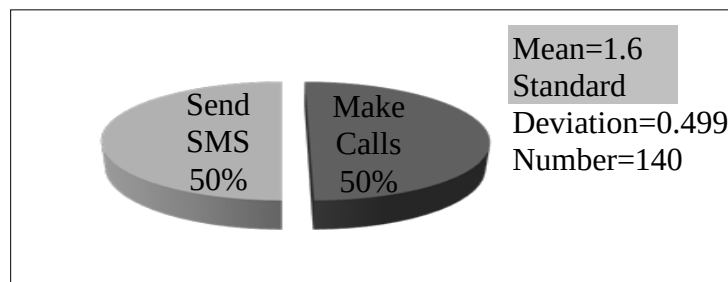
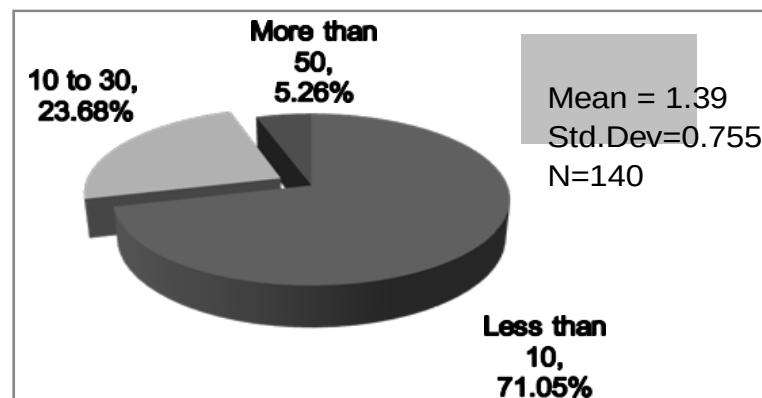


Figure 3. Total SMS sent daily (Use percentages)



4.3 Capacity for Mobile Phone via M-Learning

This study also aimed to locate a primary investigation into teachers' readiness to use mobile technology in the classroom. Eight items about teachers' readiness were included in the questionnaire. The distribution of respondents' responses to these questions is the subject of the data in Table 6. The statistics (all mean values below 4.0) showed that the majority of instructors opposed the use of mobile phones in the classroom. Students rated the use of mobile devices to help teaching and learning in schools as the most problematic aspect (mean = 2.16). The majority of respondents (mean = 3.57) were in favour of using mobile phones as communication tools, but they did not think that teaching and learning would be reliable, motivating, or beneficial for future education. Because of this, the vast majority of respondents expressed doubt about mobile learning and expressed a lack of willingness to use mobile devices to help teaching and learning at their school.

4.4 Elements That Affect M-Learning Readiness

To ascertain if respondent demographics and M-Learning readiness correlated, crosstab analyses were used. The two M-Learning readiness indicators with the lowest mean values (mean values: 2.16 and 2.32) were the focus of this study. The two questions suggest that the majority of respondents did not regard M-Learning as a tool to support the teaching and learning process in schools, as can be seen from the results. The outcomes were summarised in Tables 8 and 9.

Table 7: Teachers' readiness to learn via the mobile phone

Demo-graphic Factors	Categories	χ^2	<i>p</i>	In schools, the mobile phone is helping to teach (%)				
				SD	D	N	A	SA
Gender	Male	12.012*	0.031	31.0	0	38.0	13.0	26.0
	Female			44.5	24.0	31.0	3.4	0
Age	25 to 29	18.954	0.525	30.0	0	50.0	10.0	10.0
	30 to 34			50.0	25.0	12.5	0	12.5
	35 to 39			20.0	20.0	40.0	20.0	0
	40 to 44			28.6	14.3	57.1	0	0
	45 to 49			75.0	25.0	0	0	0
	50 and above			50.0	50.0	0	0	0
Marital	Single	3.101	0.611	41.0	21.0	21.0	0	0
	Married			40.0	19.0	34.0	6.2	4
Qualification	Masters	12.618	0.397	0	33.3	66.7	0	0
	Degree			35.3	5.9	41.2	5.9	11.8
	Diploma			25.0	50.0	25.0	0	0

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Years of Service	5 and less	18.117	0.317	28.6	14.3	35.7	7.1	14.3
	6 to 10			50.0	0	50.0	0	0
	11 to15			40.0	20.0	40.0	0	0
	16 to20			0	20.0	60.0	20.	0
	More than 20			70.0	30.0	0	0	0
							0	

Note:*Relationship is significant at the 0.05 level (2-tailed)

It can be shown in Table 8 that there is a substantial correlation between gender and respondents' opinions regarding the usefulness of mobile phones in helping their teaching in schools. Males were more open to the uptake of mobile learning compared with females Agree:Male=12.5%, Female = 3.3%. On the other hand, the Chisquare test showed that there was no statistically significant correlation between respondents' marital status, level of education, number of years of service and their perception of the function of mobile phones in support of the teaching process in schools.

Table 8: Cross tabulation of Demographic Information and “In schools, cell phone helps to facilitate teaching”

Demographic Factors	Categories	χ^2	p	Encouragingly, the use of mobile phones for education and training is increasing (%)				
				SD	D	N	A	SA
Gender	Male	14.535*	0.006	25.0	0	12.5	50.0	12.5
	Female			33.3	30.0	30.0	6.7	0
Age	25 to 29	25.094	0.198	30.0	10.0	20.0	40.0	0
	30 to 34			37.5	37.5	0	12.5	12.5
	35 to 39			0	40.0	40.0	20.0	0
	40 to 44			28.6	28.6	42.9	0	0
	45 to 49			25.0	0	75.0	0	0
	50 and above			75.0	25.0	0	0	0
Marital	Single	0.471	0.981	41.0	21.0	21.0	0	0
	Married			31.0	25.0	28.0	16.0	4.0
Qualification	Masters	6.810	0.901	33.3	0	66.7	0	0
	Degree			29.4	23.5	17.6	23.5	5.9
	Diploma			28.6	28.6	28.6	14.3	0
Years of Service	5 and less	22.744	0.121	35.7	214.3	14.3	28.6	7.1
	6 to 10			25.0	25.0	25.0	25.0	25.0
	11 to15			0	80.0	20.0	0	0
	16 to20			0	20.0	60.0	20.0	0
	More than 20			60.0	10.0	30.0	0	0

Note:*Relationship is significant at the led.

The links between respondents' demographic characteristics and their opinions on whether or not the use of mobile phones encourages students to learn were presented in Table 9. Similarly, the Chi-square test for this study topic revealed the significance of the correlation between gender and the item in question. In addition, this link was comparable to the previous crosstab study, in which the male group was more likely than the female group to agree that mobile phones encourage pupils to learn. Despite the considerable correlation between the item and gender, the analysis revealed no statistically significant relationship between respondents' perceptions of the importance of mobile phones in helping pupils to learn and other demographic characteristics. Consequently, the crosstab analyses revealed that the perspectives of respondents regarding the functions of m-learning in supporting teaching and learning in schools were gender-dependent. Specifically, the male group showed more enthusiastic in mobile learning than the female group. Thus, both analyses demonstrated that gender does alter respondents' perceptions of m-learning. In contrast, other demographic parameters had an impact on respondents' judgments.

Table 9: Cross tabulation of Demographic Information and “Encouragingly, the use of wireless phones to teach and learn is encouraged”

	Mean	Std. Dev	Skew-ness	Kurtosis	Awareness and Motivation	Training and Courses	Training Design	Supports and Facilities	M-Learning Readiness
Awareness and motivation	4.19	0.407	0.289	-0.002	1				
Instruction and courses	4.35	0.597	-0.523	-0.812	0.628**	1			
Instructional Design	4.17	0.503	-0.101	-0.320	0.351*	0.330*	1		
Resources and facilities	4.05	0.555	0.471	-0.327	0.423**	0.457**	0.271	1	
Mobile Learning readiness	2.85	0.970	0.037	-0.553	0.508**	0.299	-0.126	0.126	1

* Correlation is significant level (2-tailed correlation is significant at the 0. 01 level(2-tailed)

Table 10: *Correlations between Teachers' Technology Acceptance and Their Mobile Learning Readiness*

	Mean	Std. Dev	Skew-ness	Kur-tosis	Awareness and Motivation	Training And Courses	Training Design	Supports and Facilities	M-Learning Readiness
Awareness and motivation	4.21	0.408	0.294	-0.001	1				
Training and courses	4.35	0.597	-0.523	-0.812	0.628**	1			
Training Design	4.17	0.503	-0.101	-0.320	0.351*	0.330*	1		
Supports and facilities	4.05	0.555	0.471	-0.327	0.423**	0.457**	0.271	1	
M-Learning readiness	2.85	0.970	0.037	-0.553	0.508**	0.299	-0.126	0.126	1

* Correlation is significant at the 0.05level (2-tailed).

** Correlation is significant at the 0.01 level(2-tailed).

Scale: Acceptance of Technology

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.901	.910	23

Scale: M-learning Readiness

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.930	.931	12

4.5 Correlation Between Technology Acceptance and Mobile Learning Readiness

The aim of this study is to ascertain whether teachers who have adopted a technology background in education will be able to prepare for mobile learning at school. For this purpose, Pearson correlation analyses were used to determine whether any of the previously mentioned components of technological acceptability had an impact on teacher training in m-Learning.

Table 10 summarises the results of the analysis. An important link exists between the instructor's training on m-Learning and their awareness and enthusiasm to use ICT in education at a confidence level of 0.01. The readiness of teachers to learn m-Learning will, therefore, be boosted if they are also more familiar with and motivated to use technology. However, in comparison to the other three components of technical acceptability there have been no major associations identified with respect to m-Learning readiness.

5.1 Discussion

Globally, it is acknowledged that user acceptance and readiness are some key components in the success of integrating technology in education. As previously mentioned, the current study aims to determine the degree of technology acceptability among school instructors and to look into their willingness to adopt mobile phone technologies in the classroom. The study then examined how these two perceived values relate to one another in order to make recommendations for the deployment of mobile learning in Bangladeshi schools in the future.

The study found that, in all areas of awareness and motivation, instruction and training, teaching design, sources and facilities, etc., teachers tended to embrace technology more than the general population. To explain this, emphasis and additional efforts made by the Bangladesh Ministry of Education in improving teachers' ICT skills can be used. Teachers from Bangladesh's schools are frequently given in-service training under this programme, so that they can update their professional competence and ICT skills. With a view to use of ICT in the classroom, it is currently envisaged that Bangladesh's teachers will be more open.

Although the aforementioned finding provided some insight into teachers' attitudes about the use of technology in the classroom, it did not ensure that the teachers would be prepared for the pedagogical applications of mobile phones. This study discovered that the respondents' degree of preparation for pedagogical mobile phone usage was poor. They were specifically dubious about the value of mobile phones in enhancing the teaching and learning process at their school. There could be a number of causes for this. First off, Bangladesh has long forbidden pupils from using cell phones in class. As a result, it's possible that educators won't be able to see how useful the technology is as a teaching tool. Second, the low SMS usage among the respondents may possibly contribute to this outcome. The study's findings showed that despite the respondents' familiarity with mobile phone

technology, their use of SMS looked to be infrequent. The frequency and duration of technology use are some key indications of technological acceptance, according to Türel and E. Johnson (2012).

This study offers some more insights into how teachers' perspectives of the usage of mobile phones as instructional aids are influenced by gender. In particular, a significant disparity between male and female teachers' perspectives on the contributions of mobile phones to teaching-learning activities was established. Male teachers seemed to be more open to using mobile phones as a tool to support teaching and learning in classrooms. This gender disparity in perceptions of the pedagogical use of mobile phones may be explained by Bangladeshi men using their phones more frequently than women do. Device ownership affects instructors' evaluations of its educational benefits, claim Kahveci et al. (2011). This result supports the notion that there is a gender difference between male and female respondents in how they perceive the educational use of mobile phones, as found by Humble-Thaden (2011), Wang et al. (2009), and Lan and Huang (2012).

The readiness of teachers for m-learning via mobile phones was significantly positively correlated with their awareness of and motivation to use technology. In other words, this statistically significant connection shows that teachers were more likely to be prepared for m-learning through mobile phone in their schools if they were more informed and motivated to use technology in the classroom. This conclusion is consistent with Alzaza's (2012) findings; respondents who demonstrated their readiness for m-learning deployment at their institution included those who had the necessary knowledge and awareness to use a particular technology in the educational setting. Mahamad et al. (2010) also discovered that a lack of knowledge about electronic classroom tools may prevent users from being prepared for mobile learning. The findings of this study are consistent with those of a related study by Jones et al. (2006), which found that motivated experienced users will look for new ways to adapt their devices for educational uses.

5.2 Conclusion and Future Research Directions

In Bangladeshi schools, mobile learning is becoming an option. The Bangladeshi government declared that beginning in 2021, students would no longer be forbidden from taking cellphones to class. In a practical sense, this modification does help to clarify the possibility of using the gadget as a teaching tool. Even though it seems promising, there are a lot of factors to

take into account initially, such as teachers' attitudes towards technology and their level of preparation for m-learning. Teachers should be given the chance to express their opinions on any technology as they are crucial participants in guiding students' learning. There is a dearth of research on teachers' preparation for this new technology from a Bangladeshi perspective because m-learning via mobile phones is still very much in its infancy in Bangladesh. The results of this study contribute to the body of knowledge about Bangladeshi instructors' readiness for mobile phone pedagogy. This study also looked into how many the teachers' embrace of technology had an impact on this readiness.

However, there are several restrictions with the current study that must be taken into account. It is challenging to draw broader conclusions from the data because of the sample size's modest size. In addition, this study solely looked at the demographic characteristics and aspects of technology acceptance as factors impacting instructors' preparation for m-learning. Other aspects, such as prior technological expertise, instructional prowess, and personality type, were not taken into consideration. This might then result in studies that establish the viability of utilising mobile phones to improve the current teaching methods in Bangladeshi schools.

In conclusion, the survey's results do offer encouraging cues and suggestions about instructors' adoption of technology as predictors of their preparation for mobile learning. Even if mobile technology is expected to be a boon for education in the future, educational providers must be aware that technology integration in schools takes time since it requires institutions to be well-equipped, teachers to be knowledgeable, and students to become accustomed to it.

References

- Alzaza, N.S. (2012) . *Opportunities for utilizing mobile learning services in the Palestinian Higher Education*. Retrieved August 13, 2012 from http://www.iajet.org/iajet_files/vol.2/no.4/Opportunities%20for%20Utilizing%20Mobile%20Learning%20Services%20in%20the%20Palestinian%20Higher%20Education.pdf
- Attewell, J. & Savill-Smith, C. (2005). *Mobile learning anytime everywhere*. London, UK: London: Learning and Skills Development Agency.
- Balanskat, A., Blamire, R., & Kafal, S. (2007). *A review of studies of ICT impact on schools in Europe* European School net .
- Bingimlas, K.A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *EURASIA Journal of Mathematics, Science and Technology Education*, 5(3), Special Issue: Australia 235-245.
- Chapnick, S. (2000). Are you ready for e-learning? *Learning Circuits: ASTD's Online Magazine All About ELearning*, Retrieved July August 31, 2012, from <http://www.learningcircuits.org/2000/nov2000/Chapnick.htm>.
- Chen, Y.S., Kao, T.C. & Sheu, J.P. (2003). A mobile learning system for scaffolding bird watching learning. *Journal of Computer Assisted Learning*, 19, 347–359. doi: 10.1046/j.0266-4909.2003.00036.x
- Costabile, M. F., Angeli, A. D., Lanzilotti, R., Ardito, C., Buono, P., & Pederson, T. (2008). *Explore! possibilities and challenges of mobile learning*. Paper presented at the Proceedings of the Twenty-Sixth Annual SIGCHI Conference on Human Factors in Computing Systems, Florence, Italy.
- Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47(4), 47–61.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon.
- Humble-Thaden, M. B. (2011). Student reflective perceptions of high school educational cell phone technology usage. *The Journal of Technology Studies*, 37(1), 10-16.
- Jamil, M., & Shah, J. H. (2011). Technology: its potential effects on teaching in higher education. *New Horizons in Education*, 59(1), 38-51.
- Jones, A., Issroff, K., Scanlon, E., Clough, G., & McAndrew, P. (2006). Using mobile devices for learning in informal settings: Is it motivating? In *Proceedings of IADIS Mobile Learning 2006* (251-255), Dublin, Ireland.
- Kahveci, A., Sahin, N., & Genc, S. (2011). Computer perceptions of secondary school teachers and impacting demographics: A Turkish perspective. *The Turkish Online Journal of Educational Technology*, 10(1), 71 – 80.

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- Karsenti, T., Villeneuve, S. & Goyer, S. (2006). The impact of motivation on prospective teachers' use of information and communication technologies (ICTs). In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006* (pp. 1659-1666). Chesapeake, VA: AACE.
- Keengwe, J., & Onchwari, G. (2008). Computer technology integration and student learning: Barriers and promise, *Journal of Science Education and Technology*, 17, 560–565.
- Lan, Y.-F., & Huang, S.-M. (2012). Using mobile learning to improve the reflection: A Case study of traffic violation. *Educational Technology & Society*, 15 (2), 179–193.
- Mahamad, S., Ibrahim, M.N., & Taib, S.M. (2010).M-learning: A new paradigm of learning mathematics in Malaysia. *International Journal of Computer Science & Information Technology*, 2(4), 76-86.
- Malik, S. & Shabbir, M.S. (2008). Perceptions of university students on self-directed learning through learning technology. *European Journal of Scientific Research*, 24(4), 567-574.
- Mumtaz, S.(2000). Factors affecting teachers' use of information and communications technology: a review of the literature. *Journal of Information Technology for Teacher Education*, 9(3), 319-342. doi: 10.1080/14759390000200096
- Ngozi, O.D, Ngozi, A.E, & Joy, E.O. (2010). Teachers' awareness of the existence and the use of technology to promote children's literacy instruction. *African Journal of Teacher Education*, 1(1), 115-125.
- Parasuraman, A. (2000). Technology readiness index (TRI): A multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, 2(4): 307–320.
- Peters, K. (2007). M-learning: positioning educators for a mobile, connected future. In *The International Review of Research in Open and Distance Learning*, 8(2). Retrieved August 16, 2012, from www.irrodl.org/index.php/irrodl/article/view/350/894
- Plomp, T., Brummelhuis, A. C. A. & Rapmund, R. (1996). Teaching and learning for the future. Report of the Committee on MultiMedia in Teacher Training. Den Haag: SDU.
- Rahamat, R., Shah, P., Din, R., & Aziz, J.A. (2011). Students' readiness and perceptions towards using mobile technologies for learning the English language literature components. Retrieved August 31, 2012 from http://www.melta.org.my/ET/2011/69_84_Rashidah%202011.pdf
- Saba, A. (2009). Benefits of technology integration in education. Retrieved August 27, 2012 from http://edtech2.boisestate.edu/sabaa/502/Saba_Synthesis_Paper.pdf

- Sheingold, K., & Hadley, M. (1990). *Accomplished teachers: Integrating computers into classroom practice*. New York: Center for Technology in Education, Bank Street College of Education.
- Sherry, L., & Gibson, D. (2002). The path to teacher leadership in educational technology. *Contemporary issues in technology and teacher education*, 2 (2), 178-203.
- Shih, Y., & Mills, D. (2007). Setting the new standard with mobile computing in online learning. *The International Review of Research in Open and Distance Learning*, 8(2). 1-16.
- Solomon, G. (2003). Project-based learning: a premier. Retrieved August 27, 2012, from http://pennstate.swsd.wikispaces.net/file/view/PBL-Primer-www_techlearning_com.pdf
- Tan T.H. & Liu T.Y. (2004). The Mobile-based interactive learning environment (MOBILE) and a case study for assisting elementary school English learning. In *Proceedings of the 4th IEEE Conference on Advanced Learning Technologies* (eds C.Kinsuk, K.Looi, E.Sutinen, D.Sampson, I.Aedo, L.Uden&E.Kähköhnen), pp. 530–534. IEEE Computer Society, Los Alamitos, CA.
- Teo, T. (2011). Technology acceptance in education. Retrieved August 27, 2012, from <https://www.sensepublishers.com/files/9789460914874PR.pdf>
- Tinio, V. L. (2003). *ICT in education*. Bangkok: UNDP-Asia Pacific Development Information Programme (APDIP). Retrieved August 13, 2012 from <http://www.apdip.net/publications/iespprimers/eprimer-edu.pdf>
- Tomei, L. A. (2005). *Taxonomy for the technology domain*. USA: Information Science Publishing.
- Türel, Y. K., & Johnson, T. E. (2012). Teachers' belief and use of interactive whiteboards for teaching and learning. *Educational Technology & Society*, 15 (1), 381–394.
- Wang, M., Shen, R., Novak, D., & Pan, X. (2009). The impact of mobile learning on students' learning behaviours and performance: Report from a large blended classroom. *British Journal of Educational Technology*, 40, 673–695. doi: 10.1111/j.1467-8535.2008.00846.x
- Yun, G., & Murad, M. (2006). Factors influencing psychology and skills of the secondary school teachers' e-learning readiness: A case study in Malacca, Malaysia. *Fourth International Conference on Multimedia and Information and Communication Technologies in Education (M-ICTE 2006)*. Retrieved August 31, 2012, from <http://www.formatex.org/micte2006/pdf/2135-140.pdf>