



The Development of Usage of Mobile Phone Among Student-Teachers

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Abstract

The Mobile-revolution is finally here in the form of M-learning, which is a natural extension. Mobile learning has made an exponential leap from theory explored by academicians to a real contribution to learning. Globally speaking, the kind of penetration that mobile phones have reached is outstanding. The present study has been undertaken with the objectives like, To compare the effectiveness of mobile assisted learning approach and conventional learning approach in terms of developing usage of mobile-phone, To investigate the interaction between 'treatments' and 'gender' with reference to developing usage of mobile-phone, To investigate the interaction between 'treatments' and 'subject background' with reference to developing usage of mobile-phone. The sample of sixty B.Ed college student-teachers selected by stratified random technique from Bhadravathi and shimoga town. In experimental method was used to measure the usage of mobile phone among student-teachers. A Likert type of Mobile-phone usage scale developed by researcher assessing student-Teachers' Mobile phone usage scale was used to collect the data and reliability of the tool was found to be 0.79 with test-retest method. t- test and Anova were used to analyze the data. The results showed that, the mobile-assisted learning approach has developed mobile phone usage among student-teachers, treatments do not differ in their effectiveness in development of mobile phone usage upon gender of student-teachers, There is a main effect of subject background with reference to Mobile-phone usage, The present study will help the government bodies and private managements to address the issues of Mobile-assisted learning and provide awareness trainings, counseling and guidance and workshops regarding Mobile-phone usage.

Key words: Mobile Assisted Learning, Mobile Phone Usage, Student-Teachers.

1. Introduction :

Now technology devices have become mobile portable and networked to the point that they have become pervasive in everyday life. The use of mobile devices has become common among a wide range of age groups due to affordability and availability (Newhouse, Williams, & Pearson, 2006). Significant investments have been made

to provide infrastructure, content, and resources related to the integration of mobile devices into learning environments (Johnson, Smith, Willis, Levine, & Haywood, 2011), and researchers have long had an interest in this evolving landscape (Kukulka-Hulme, Sharples, Milrad, Arnedillo-Sánchez, & Vavoula, 2009). However several limitations exist, such as lack of theoretical and pedagogical underpinnings, sustainable integration into formal educational contexts, and, particularly, lack of teacher support and training (Cochrane, 2012; Peng, Su, Chou, & Tsai, 2009).

Teacher support and teacher training have been the least explored topics in mobile learning research (Ekanayake & Wishart, 2014). Mobile learning is especially under-theorized in teacher education (Kearney & Maher, 2013), despite the need to inform teachers of the value of mobile technologies and how to integrate them effectively into their classes (Schuck, Aubusson, Kearney, & Burden, 2013). In their review of mobile learning projects conducted in Europe, Kukulka-Hulme et al. (2009) revealed that at the “European and individual state level, there appears to be little teacher development or training activity addressing mobile learning”. Challenges related to teachers’ adoption of mobile technologies have emerged from the fact that they are not effectively prepared to investigate the advantages or make informed decisions (Kukulka-Hulme et al., 2009; Schuck et al., 2013). Because of both the pressure to provide teachers with effective technology integration skills and the rapid growth of mobile technologies as learning devices, teacher education programs need to implement theoretically and pedagogically sound mobile learning initiatives (Newhouse et al., 2006).

The mobile revolution is finally here in the form of m-learning, which is a natural extension. Mobile learning has made an exponential leap from theory explored by academicians to a real contribution to learning. Globally speaking, the kind of penetration that mobile phones have reached is outstanding and no other device can come any closer, not even computers. No demography is immune from the mobile phone and it has slowly become associated with the youth in a bigger way.

2. Review of studies conducted in this area:

Alka Shrivastava (2014) A study conducted on Classroom Distraction Due to Mobile Phones Usage by Students: College Teachers’ Perceptions there are more than six billion users of mobile phones worldwide. Smart phones and other handheld devices are largely used by the students. Research indicates that increasing use of mobile phones by the students in the classroom is a big interruption. This paper presents the result of a study conducted on teachers of various institutes of higher education in Oman. Total 32 teachers from both the public and private colleges and universities were responded the questionnaire. The results of the study show that participants reported strong perceptions of mobile phones as a classroom distraction in teaching and learning environment and students’ misconduct. It has been strongly confirmed that mobile phones are misused and is potential source of stress among faculty and lack of concentration among students.

Evrin Baran (2014) A study conducted on A Review of Research on Mobile Learning in Teacher Education Mobile devices have become attractive learning devices for education. While the majority of the existing research has focused primarily on the value of mobile learning for students, researchers have recently started exploring its potentials within teacher development. The present qualitative synthesis of quantitative and qualitative research aimed to address trends and gaps observed in the literature regarding the integration of mobile learning into teacher education. Six main findings emerged: (a) there is an increasing trend in integrating mobile learning in teacher education contexts; (b) theoretical and conceptual perspectives are scarcely reported; (c) variations exist in perceptions, attitudes and usage patterns; (d) engagement with mobile learning and devices is primarily reported as being beneficial; (e) challenges were scarcely reported; and (f) several pedagogical affordances support mobile learning integration into teacher education settings. These findings have been interpreted to determine their implications on the development of mobile learning experiences in teacher education, including programmatic directions for integration and study.

Javier Organista-Sandoval¹, Arturo Serrano-Santoyo (2014) Appropriation and Educational Uses of Mobile Phones by Students and Teachers at a Public University in Mexico This study found that appropriation and educational uses of cell phones. For the research, a random sample of 954 students and 246 teachers was selected, representing respectively 12% and 24% of the total population in two facilities of UABC in Ensenada, Mexico. Our survey showed that 97% of teachers or students have some kind of cell phone or smartphone. However, we observed that one of every four interactions with the mobile device had a concrete educational purpose. We also found that in general the educational use of the cell phone is mainly aimed to establish communication between the students and to access information via Internet. However, in spite of its limitations, our results show that the cell phone is a technological tool with great pedagogical potential. We suggest that institutional policies are necessary in order to tap that the cell phone potential to adequately support the teaching-learning process.

Cem Çuhadar, H.Ferhan Odabaşı and Abdullah Kuzu (2013) A study conducted on M-Learning for Hearing Impaired Learners: Dimensions of Evaluation Integrating information and communication technologies (ICT) in education is a very important factor to learning, regarding student centered learning environments. Special education thus, is a field where mobile technologies can be used very efficiently for less financial burden due to its small scale in student number in normal schools. These technologies are also known assistive technologies for learners in special education context. "Mobile Technologies for Students with Hearing Disability", IBEM is a project which will end in June 2009 and supported by the Scientific and Technological Research Council of Turkey (TUBITAK). Primary goal of the project is to help hearing impaired students to use mobile information and communication technologies effectively and independently, and provide them with learning and communication opportunities enriched through mobile technologies. The project consisted of different levels of planning. This

study reveals the steps taken for evaluation phase for m- learning, giving the four dimensions' framework of an evaluation model followed.

Claudio Alvarez, Miguel Nussbaum, Matias Recabarren, Florencia Gomez, Darinka Radovic School of Engineering, Pontificia Universidad Catolica de Chile (2013) Conducted a study on Teaching Communication, Interpersonal and Decision- Making Skills in Engineering Courses Supported by Technology Communication, interpersonal and decision-making skills are essential for engineering work and should be explicitly incorporated in engineering curricula. This article reports on the testing of a constructivist, technology-supported collaborative strategy in engineering courses that is aimed at supporting the teaching of regular subject matter as well as fostering the development of students' communication and social skills. In this strategy, students communicate face-to-face through a social network while supporting their work with handhelds interconnected through a wireless network. Information transfers from the social network to the handheld network and vice versa, meaning that collaborators maintain face-to-face interaction at all times while also being able to obtain and retrieve information. To implement this strategy, a technology tool named CollPad was created and applied in two computer science courses. The qualitative results of the experience show that students found the tool effective

Dange Jagannath (2012) found that, the maximum Number of Post graduate students use the mobile phone daily for an hour for personal communication, and Educational communication. The male students' usage of mobile phone for Educational purpose is more than female students, The Science faculty students' usage of mobile phone for Educational purpose is more than Arts faculty students and the students of both Arts and Science faculties had the High awareness regarding the usage of mobile phone for Educational purpose.

3. Need and importance of the study:

In recent years, the mobile phone has become one of the fastest growing communication technologies ever. Mobile phone use in public presents an active area of social science research. Studies have examined mobile phone use in many settings, including restaurants, grocery stores etc. there is a need of exploring the value of mobile phones in the educational setting. How best these mobile devices can be used in bringing about behavioral and attitudinal changes in learners.

As mobile and ubiquitous (anytime, anywhere) computing technologies become an extension of the hands of the millennium generation, how can we use the affordances of such technologies to support learning in the higher education sector? There is much discussion in the literature of the changing needs of next generation students and the challenges faculty face in meeting these needs. Dange Jagannath(2012) opines that, For the usage of any technological device(mobile phone), the positive attitude towards the device is very essential and attitude plays an important role in the usage of any method or device (mobile phone) for learning.

Many research works have been done in the area of mobile learning to study its effectiveness in the teaching-learning process in abroad. Hardly, Couple of studies has been conducted in India and No researcher has shown interest to study the effectiveness of mobile learning in transacting the content or in developing the mobile phone usage. So in this study the attempt was made to study the effectiveness of mobile-learning approach on the development of mobile phone usage in the teaching learning process of student-teachers.

4. Objectives of the study:-

1. To compare the effectiveness of mobile assisted learning approach and conventional learning approach in terms of developing usage of mobile-phone.
2. To investigate the interaction between 'treatments' and 'gender' with reference to developing usage of mobile-phone.
3. To investigate the interaction between 'treatments' and 'subject background' with reference to developing usage of mobile-phone.

5. Variables of the Study

Variable is that factor which is measured, manipulated and observed by the investigators for the purpose of conducting research.

1. Independent variables

In the present study teaching approach is independent variable.

- a) Mobile assisted learning approach
- b) Conventional approach

2. Dependent variables

In the present study, dependent variables are

- a) Mobile-phone usage

3. Moderator Variables

- a) Student- teachers Gender
- b) Student- teachers Subject background

6. Hypotheses of the Study:

1. There is no significant difference between the mobile assisted learning approach and conventional learning approach in terms of developing usage of mobile phone.
2. There is no main and interaction effect between 'treatments' and 'gender' with reference to developing usage of mobile-phone.
3. There is no main and interaction effect between 'treatments' and 'subject background' with reference to developing usage of mobile-phone.

7. Sampling procedure:-

Purposive sampling technique was followed to select thirty student-teachers from two B.Ed. colleges of Shimoga district, Karnataka state India. Pre-test post test parallel group design was used experimental research. Both the groups have been matched on mobile phone usage scores. A suitable college where the experiment could have been conducted was identified keeping the following facts in view.

- Co-education College as sample needed both male and female student-teachers.
- Students from different subject backgrounds like Science and Arts.
- Student-teachers having mobile phone

8. Tool used for the study:

Usage of mobile-phone (self-prepared scale): The tool has been prepared on the dimensions like Communication, Internet and Other Applications

Reliability and Validity: The scale had the universe of content as it included statements from all the selected domains usage of mobile-phone in teaching-learning process namely communication, internet and other applications. Due weightages was given to all the domains while selecting items. The scale had 46 items representing the universe of content, hence it had face validity. It also had construct validity as items were selected having the 'r' values more than 0.30 (De Vaus 2004), the scale was given to experts in the field of education and they agreed that the items in the scale were relevant to the objective of the study hence it had also content validity. The reliability test was found to be 0.797 for Communication, 0.810 for Internet and 0.774 for the other application for the dimensions, for the entire items 0.931 by the use of Cronbach's alpha reliability formula.

Scoring Procedure: The scale was constructed by the use of likert's method of summation to get a five point Judgment on each item. Against each statement five alternative responses namely "Always, Frequently, Sometime, Rarely and Never" were given. Weights of 5.4.3.2 and 1 were given for statements in the order of their usability. Thus if one chooses 'Always' response for a statement, s/he gets a score of '5', If one chooses 'Frequently'

response for a statement, s/he gets a score of '4'. If one chooses 'Sometime' response for a statement, s/he gets a score of '3'. If one chooses 'Rarely' response for a statement, s/he gets a score of '2'. If one chooses 'Never' response for a statement, s/he gets a score of '1'. An individual's score in this scale is the sum total of the scores for all the statement by the subject (Summated Ratings).

9.Collection of data: After getting the permission of the Heads of institutions by presenting a letter of request, the student teacher's development usage of mobile phone scale were administered to B.Ed College student-teachers.

10. Statistical techniques used: The 't' test and 'ANOVA' was used to analyze the collected data.

11.Major Finding of the Study: Objective and hypothesis-wise analysis was done.

Objective-1:To compare the effectiveness of mobile assisted learning approach and conventional learning approach in terms of developing usage of mobile-phone.

Hypothesis-1: There is no significant difference between the mobile assisted learning approach and conventional learning approach in terms of developing usage of mobile phone.

Table no-: 1 shows Mobile assisted learning approach and Conventional learning approach Mobile phone usage scores of group

Group	Mean	N	SD	t-value	Significance.
Mobile assisted learning approach	145.40	30	19.53	2.82	S **
Conventional learning approach	139.90	30	16.38		

The above table-1 shows that, obtained t-value 2.82 is greater than the theoretical table value 2.54 at 0.01 level of significance. Hence the formulated null hypothesis is rejected and concluded that "There is significant difference between the mean scores of Mobile assisted learning approach and Conventional learning approach in mobile phone usage of group".

The Mobile assisted learning approach mean score (145.90) is higher than Conventional learning approach mean score (139.90). It can be inferred that, There is improvement among the student-teachers' mobile phone usage (145.40-139.90= 5.50). It is concluded from the analysis that, the mobile-assisted learning approach has developed mobile phone usage among student-teachers.

Objective-2: To investigate the interaction between 'treatments' and 'gender' with reference to developing usage of mobile-phone.

Hypothesis-2: There is no main and interaction effect between ‘treatments’ and ‘gender’ with reference to developing usage of mobile-phone.

Table-2: Summary of ANOVA of Mobile – phone usage by Gender & Treatments.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Treatment(A)	18550.417	1	18550.417	18.509	S
Gender(B)	126.150	1	126.150	.126	NS
treatment * Gender(A*B)	62.017	1	62.017	.062	NS
Within groups(Error)	56124.400	56	1002.221		

The obtained F- value with reference to factor- A treatment is 18.50 and the corresponding tabled value is 4.03 with df, 1& 56 at 0.05 level. Since the obtained F value is greater than tabled value, and it is significant. Therefore the corresponding null hypothesis is rejected. Hence, it may be concluded that there is a main effect of treatment with reference to developing mobile phone usage.

Since the mean value of gain in mobile phone usage score of experimental group are greater than that of the control group it may be interpreted that mobile assisted learning approach is more effective in developing mobile phone usage among student-teachers.

The obtained F- value with reference to factor- B Gender is 0.12 and the corresponding tabled value is 4.03 with df, 1& 56 at 0.05 level. Since the obtained F-value is lesser than tabled value, it is not significant. Therefore the corresponding null hypothesis Ho2 is accepted. Hence, it may be concluded that the There is no main effect ‘Gender’ with reference to developing Mobile-phone usage.

The obtained F-value with reference to interaction is 0.06 and the corresponding tabled value is 4.03 with df, 1& 56 at 0.05 level. Since the obtained F values lesser than tabled value, and it is not significant. Therefore the corresponding null hypothesis Ho2 is accepted. Hence, it may be concluded that the interaction between treatment and Gender with reference to mobile phone usage is not significant.

In the other words, when treatments and gender of students are allowed to interact, they are not effective. This signifies that, treatments do not differ in their effectiveness in development of mobile phone usage upon gender of student-teachers.

Objective-3: To investigate the interaction between ‘treatments’ and ‘subject background’ with reference to developing usage of mobile-phone.

Hypothesis-3: There is no main and interaction effect between ‘treatments’ and ‘subject background’ with reference to developing usage of mobile-phone.

Table-3 Summary of ANOVA of Mobile-Phone Usage by Subject background & Treatment

Source	Type III Sum of Squares	Df	Mean Square	F-value	Significance
Treatment(A)	18550.417	1	18550.417	20.261	S
Subject(B)	3511.350	1	3511.350	3.835	S
Treatment * Subject(A*B)	1530.150	1	1530.150	1.671	NS
Within groups(Error)	51271.067	56	915.555		

The obtained F- value with reference to factor- A treatment is 20.26 and the corresponding table value is 4.03 with df, 1 & 56 at 0.05 level. Since the obtained F value is greater than table value, and it is significant. Therefore the corresponding null hypothesis is rejected. Hence, it may be concluded that there is a main effect of treatment with reference to developing Mobile-phone usage.

Since the mean value of gain in Mobile-phone usage score of experimental group are greater than that of the control group it may be interpreted that mobile learning approach is more effective in developing Mobile-phone usage among student-teachers.

The obtained F- value with reference to factor- A treatment is 3.83 and the corresponding table value is 4.03 with df, 1 & 56 at 0.05 level. Since the obtained F-value is greater than table value, and it is significant.

Therefore the corresponding null hypothesis is rejected. Hence, it may be concluded that there is a main effect of subject background with reference to Mobile-phone usage.

There is direct effect of student teachers' subject background in the enhancement of Mobile-phone usage.

The obtained F-value with reference to interaction is 1.67 and the corresponding table value is 4.03 with df, 1 & 56 at 0.05 level. Since the obtained F-values lesser than table value, and it is not significant. Therefore the corresponding null hypothesis H_{03} is accepted. Hence, it may be concluded that the interaction between treatment and background subject with reference to Mobile-phone usage is not significant.

In the other words, it can be concluded that, when treatments and subject background of student- teachers are allowed to interact, they are not effective. This signifies that, treatments do not differ in their effectiveness in Mobile-phone usage based upon subject background.

Conclusion: The Mobile assisted learning approach is higher than Conventional learning approach. It can be inferred that, There is improvement among the student-teachers' mobile phone usage. It is concluded from the analysis that, the mobile-assisted learning approach has developed mobile phone usage among student-teachers, The mobile assisted learning approach is more effective in developing mobile phone usage among student-teachers, There is no main effect 'Gender' with reference to developing Mobile-phone usage, The treatments and gender of students are allowed to interact, they are not effective. This signifies that, treatments do not differ in their effectiveness in development of mobile phone usage upon gender of student-teachers, There is a main effect of treatment with reference to developing Mobile-phone usage, There is a main effect of subject background with reference to Mobile-phone usage, it can be concluded that, when treatments and subject background of student-teachers are allowed to interact, they are not effective. This signifies that, treatments do not differ in their effectiveness in Mobile-phone usage based upon subject background.

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