Mobile Learning: A Transformative Tool for Learning and Education

S. Anthony Rahul Golden   **S Bulomine Regi**

Abstract

In the current IT era, M-learning is one of the growing and vital learning methods. It is a gift of technological development in the field of education. The learners can enjoy lots of advantages with the help of this M-learning. In this paper, the researchers are focused to learn about the concept of M-learning. The objectives of this paper are study about M-learning, learners' attitude towards M-learning. To analyse the learners' perception towards M-learning percentage analysis, mean rank, t-test, ANOVA were used. It is found that M-learning is most useful for self-study with conveniently and makes the learners to learn interestingly. Thus, it is concluded that M-learning is very much useful in learning and makes the learning process easy and convenient one.

Keywords: M-learning, Convenient, Attitude, Learning, Education
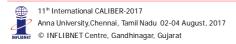
1. Introduction

Mobile learning (M-learning) is a revolution in e-learning. Using portable computing devices (such as iPads, laptops, tablet PCs, PDAs, and smart phones) with wireless networks enables mobility and mobile learning, allowing teaching and learning to extend to spaces beyond the traditional classroom. Within the classroom, mobile learning gives instructors and learners increased flexibility and new opportunities for interaction. EDUCAUSE is a collection of mobile learning related resources.

Education is a source used to incur knowledge, skills and habits and it moulds the mind of the people. Everyone learns new things in their day to day life. Education provides the strength and resilience to people, to respond, to changing situations and enables them to cause and contribute to social development (challenge of education – A policy perspective document, Government of India, 1985). Education is the key aspect of human resource development. National policy on education[1] (1986) rightly pointed out that education is a unique investment in the present and future.

Information Communication Technology (ICT) transformed a tremendous change in the economic growth through transforming and exploiting knowledge intensive products and services. ICT has initiated new possibilities into e-learning to students and teachers in the atmosphere of learning process. The relationship between education and e-learning has made a deep impact on perspectives and perception about teaching and learning. The role of the teacher and students, the nature and context of learning, as well as the function and relative importance of e-learning course content have all been changed and redefined. Teachers have no place in this new world of information technology, if they have not equipped themselves in the process and progress of e-learning.

The extensive use of web components, internet, e-groups, social networking, SMSs, e-materials, video conferencing, video learning, etc. as tools will be made to increase the knowledge of students for the growth of the nation in the classrooms. The teacher – student community will be motivated to make use of cyber cafes, Wi-Fi and GPRS mobiles to interact among themselves through e-learning content development in a web page or blog to help the students' community. This research project concentrates on e-learning content development in teaching arts and science at undergraduate level students. It deals with the pragmatic aspects of using e-learning devices and materials with the student community of Arts and Science College

2. Review Of Literature

Anna raja .P (2007) studied on "Awareness on Information Communication Technology of Secondary Teacher Education Students." He found that 18.8 percent of secondary teacher education students have a high level of ICT awareness. There is a significant difference between male and female secondary teacher education students in their ICT awareness. There is a significant difference between a computer journal reader and non-reader secondary teacher education students in their ICT awareness. There is no significant relationship, between academic achievement and ICT awareness of secondary teacher education students.

Felix[3] (2007) developed and validated on e-content on DNA technology in biotechnology. The experimental research method was adopted in the study and 27 post graduate students were selected as a sample. E-content was developed and validated by the investigator. The major findings of the study were that e- content was effective at tertiary level.

The e-content was in the form of short learning object and it increased the performance of the students.

Karthick (2007) investigated "development and validation of e-content on 'Pearl Harbour' incident for the Graduate level history students". The experimental research method was adopted in this study. In this study, twenty five history graduate students were selected as a sample. E-content was developed and validated by the investigator. The major findings of the study revealed that e-content was effective in teaching history at the tertiary level. The e-content which is in the form of short learning object (SLO) increases the performance of the students.

Karthikeyan (2007) developed and validated on e-content in Tamil at secondary level. In this study twenty students from IX standard were selected as a sample. E-content was developed and validated by the investigator. It is found that, there is a significant mean difference between the achievements of pre- test and post- test and there is no significant mean difference between the achievement of rural and urban pupils.

M-learning, **mobile learning** is defined as "learning across multiple contexts, through social and content interactions, using personal electronic devices. A form of distance education, m-learners use mobile device educational technology at their time convenience. M-learning technologies include handheld computers, MP3 players, notebooks, mobile phones and tablets. M-learning focuses on the mobility of the learner, interacting with portable technologies. Using mobile tools for creating learning aids and materials becomes an important part of informal learning.

M-learning is convenient in that it is accessible from virtually anywhere. Sharing is almost instantaneous among everyone using the same content, which leads to the reception of instant feedback and tips. This highly active process has proven to increase exam scores from the fifties to the seventieth percentile, and cut the dropout rate in technical fields by 22 percent. M-learning also brings strong portability by replacing books and notes with small devices, filled with tailored learning contents.

3. Scope of the Study

The scope of the study is confined to the reasons behind the effectiveness, success of M-learning in Tirunelveli District. In Tirunelveli District, there are good numbers of colleges and schools in both urban and rural areas, having high potentialities. It is known for education in Southern Tamilnadu. It is called as the Oxford of southern India. These days, due to technology development, M-learning is one of the most crucial components of teaching and learning. Every learner possesses modern and advanced M-learning tool to learn their subjects and develop their knowledge. Over the last some years, M-learning becomes very vital tool in the teaching – learning process. Thus, it has a significant role in the self- learning process.

4. Statement of the Problem

Today we are in the digital educational world. Every learning process may rely on the mobile learning because of the growth of digitization. In every field, the technology has a very vital role. Thus, technology also occupies the teaching field. At present, Learners are very much oriented with the digital world learning process. They simply use the advanced technologies mobiles, labs and equipments for their academic purpose. As a coin, every process and innovation have two possibilities: that are negative aspects and positive aspects. With the help these tools, the learners especially the student may divert from their studies and go in the wrong way. Even though it has these default, if the has very good vision, then it will very much useful to him and their carrier. Thus, there is a significant need to study whether the M-learning is useful or not and what ate factors are influencing to choose M-learning. It is clearly analysed in this study.

5. Objectives Of The Study

The following are the objectives of the study:

- ❖ To study about M-learning briefly.

- ❖ To analyse the learners' attitude towards M-learning.

- ❖ To offer suggestions to make effective ways for M-learning.

6. Hypotheses

Ho: There is no significant difference between age group with respect to learners' attitude towards M-learning.

Ho: There is no significant difference between male and female with respect to learners' attitude towards M-learning.

Ho: There is no significant difference between rural and urban with respect to learners' attitude towards M-learning.

Ho: There is no significant difference between educational qualifications with respect to learners' attitude towards M-learning.

Ho: There is no significant difference between disciplines with respect to learners' attitude towards M-learning.

Ho: There is no significant difference mode of education with respect to learners' attitude towards M-learning.

7. Methodology

Survey method using a pre-structured questionnaire was used for collecting primary data from the respondents because it offers more accurate means of evaluating information about the sample and enables the researcher to draw inferences about generalising the findings from a sample to the population.[8] The study also made use of secondary data collected from published sources such as records and reports, books, magazines, reports, newspapers, journals and websites. The researchers were used various tools to analyse the data using percentage analysis, mean rank, t-test and ANOVA. The validity of the questionnaire is a test using cronbach alpha analysis. The cronbach alpha value is 0.765. Thus, the researchers accepted the questionnaire for further collection of data and analysis.

8. Analysis And Interpretation

The following table describes the demographic profile of the respondents

Table 1: Demographic Profile Of The Respondents

Variables			Frequency	Percentage
Age (in years)	Up to 18		23	15
	19- 25		56	37
	26-30		31	21
	31-35		25	17
	36-40		8	5
	Above 40		7	5
	Total		**150**	**100**
Gender	Male		82	55
	Female		68	45
	Total		**150**	**100**
Area	Urban		95	63
	Rural		55	37
	Total		**150**	**100**
Educational Qualification	Under Graduate		50	33
	Under Graduate		50	33
	Post Graduate		40	27
	Professional		60	40
	Total		**150**	**100**
Disciplines	Arts & Commerce		29	19
	Technical Courses		22	15
	Science & Technology		41	27
	Professional Studies		58	39
	Total		**150**	**100**
Mode of Education	Regular Mode		54	36
	Distance Mode		96	64
	Total		**150**	**100**

Source: Primary Data

Table 1 show that the demographic variables of the respondents. The age wise classification of the respondents reveals that 15 percent of the respondents are under the age group of up to 18 years, 37 percent of the respondents are in the age group of 19-25 years, 21 percent of the respondents are under 26 – 30 years, 17 per cent of the respondents are 31 – 35 years, 5 per cent of the respondents are 35-40 years and 5 percent of them are in the age group of above 40 years.

In the gender wise classification, 55 percent of the respondents are male and 45 percent of the respondents are female.

In the area wise classification, 63 percent of the respondents belong to rural areas and 37 per cent of the respondents belong to urban areas.

At the level of education, 33 percent of the respondents are under graduates, 27 percent of the respondents are post graduates and 40 percent of the respondents are professional.

In the courses, 19 percent of the respondents are Arts and Science learners, 15 percent of the respondents are Technical learners, 41 percent of the respondents are science & Technology learners and 58 per cent of the respondents are professional learners.

In the mode of learning, 36 percent of the learners are regular and 54 of the respondents are distance learners.

Table 2: Learners' Attitude towards M-learning

Learners' Attitude Towards M- Learning	Mean	S.D	Rank
M-learning is used for self- study	4.69	0.841	I
It is very much interesting & attractive	4.57	0.801	II
It is helpful to learn the concept clearly	4.51	0.937	III
It makes us to learn difficult concept in easy manner	4.33	1.692	IV
It creates more concentration on studies	4.12	0.594	V
It is used to keep remember the subject for a long time	3.93	0.997	VI
It is helpful to remember for a long time	3.81	0.794	VII
It is useful for quick learning & understanding	3.75	0.873	VIII
It helps to improve our creativities	3.51	1.043	IX
It reduces the boring during learning	3.40	0.497	X
Avoid the misunderstanding	1.57	0.630	XI
Source: Computed Data			

The Table 2 shows that learners' attitude towards M-learning. Based on mean scores, the factor that M-learning is very interesting and attractive (4.69) is very much influencing factor, followed by very much interesting & attractive (4.57), helpful to learn the concept clearly (4.51), to learn difficult concept in easy manner (4.33), more concentration on studies (4.12), to keep remember the subject for a long time (3.93), helpful to remember for a long time (3.81), useful for quick learning & understating (3.75), helps to improve our creativities (3.51), reduces the boring during learning (3.40) & avoid the misunderstanding (1.57).

It shows that M-learning creates interesting and attractive environment for learning.

Ho: There is no significant difference between age group with respect to learners' attitude towards M-learning.

Table 3: F-test for significant difference between age group of the respondents with relate to learners' attitude towards M-learning

Age Group (in years)	Mean	S D	F value	P value
Up to 18	40.04	4.34		
19- 25	61.60	5.73		
26-30	31.99	4.00	18.756	<0.001**
31-35	31.67	3.84		
36-40	48.31	8.24		
Above 40	28.96	3.56		

Note: ** denotes significant at 1% level

The Table 3 shows that the P value is less than 0.01. So, the null hypothesis is rejected at the 1 per cent level of significance with regard to factors of age group of the respondents with respect to learners' attitude towards M-learning. Hence, there is a significant difference between the age group of the respondents with respect to learners' attitude towards M-learning.

Ho: There is no significant difference between male and female with respect to learners' attitude towards M-learning.

Table 4: t-test for significant difference between male and female of the respondents with relate to learners' attitude towards M-learning

Gender	Mean	SD	t value	P value
Male	30.44	3.43	8.657	<0.001**
Female	51.60	4.73		

Note : ** denotes significant at 1% level

The Table 4 shows that the P value is less than 0.01. So, the null hypothesis is rejected at the 1 per cent level of significance with regard to factors of male and female of the respondents with respect to learners' attitude towards M-learning. Hence, there is a significant difference between male and female with respect to learners' attitude towards M-learning.

Ho: There is no significant difference between rural and urban respondents with respect to learners' attitude towards M-learning.

Table 5: t-test for significant difference between rural and urban respondents with relate to learners' attitude towards M-learning

Area	Mean	SD	t value	P value
Rural	29.54	2.99	7.564	0.004**
Urban	40.66	3.69		

Note : ** denotes significant at 1% level

The Table 5 shows that the P value is less than 0.01. So, the null hypothesis is rejected at the 1 percent level of significance with regard to factors of rural and urban respondents with relate to learners' attitude towards M-learning. Hence, there is a significant difference between rural and urban respondents with relate to learners' attitude towards M-learning.

Ho: There is no significant difference between educational qualifications with respect to learners' attitude towards M-learning.

Table 6: F-test for significant difference between educational qualification of the Respondents with relate to learners' attitude towards M-learning

Educational Qualification	Mean	S D	F value	P value
Under Graduate	30.44	3.43	11.756	<0.001**
Post Graduate	41.64	4.37		
Professional	31.99	4.00		

Note: ** denotes significant at 1% level

The Table 6 shows that the P value is less than 0.01. So, the null hypothesis is rejected at the 1 per cent level of significance with regard to factors on educational qualification of the respondents with relate to learners' attitude towards M-learning. Hence, there is a significant difference between educational qualification of the respondents with relate to learners' attitude towards M-learning.

Ho: There is no significant difference between disciplines with respect to learners' attitude towards M-learning.

Table 7: F-test for significant difference between disciplines of the respondents with relate to learners' attitude towards M-learning

Disciplines	Mean	S D	F value	P value
Arts & Commerce	40.04	4.34		
Technical Courses	61.60	5.73	18.756	<0.001**
Science & Technology	31.99	4.00		
Professional Studies	31.67	3.84		

Note : ** denotes significant at 1% level

The Table 7 shows that the P value is less than 0.01. So, the null hypothesis is rejected at 1 per cent level of significant with regard to factors on disciplines of the respondents with relate to learners' attitude towards M-learning. Hence, there is significant difference between disciplines of the respondents with relate to learners' attitude towards M-learning.

Ho: There is no significant difference between modes of education with respect to learners' attitude towards M-learning.

Table 8: t-test for significant difference between mode of education with relate to learners' attitude towards M-learning

Mode of Education	Mean	S D	t value	P value
Rural	29.54	2.99	7.564	0.004**
Urban	40.66	3.69		

Note : ** denotes significant at 1% level

The Table 8 shows that the P value is less than 0.01. So, the null hypothesis is rejected at the 1 per cent level of significance with regard to factors on mode of education of the respondents with relate to learners' attitude towards M-learning. Hence, there

is significant difference between the modes of education of the respondents with relate to learners' attitude towards M-learning.

8. Suggestions

❖ M-learning can be used for all learners for their self study purpose.

❖ As M-learning is suitable for difficult subjects, it can be used for all complex & boring subjects.

❖ It is better that all education institutions should create awareness on M-learning tools and try to provide proper internet connection facilities.

❖ The Government and UGC have to give fund for making M-learning infrastructure to the learners, i.e. wifi, mobile frequency, etc.,

❖ The planning of syllabus and so on can be given to mobile devices, for example giving notes and materials.

❖ The teachers should motivate the learners to learn using mobile phones.

❖ Majority of the distance education students are learning through mobile. The professors and school teachers of the regular stream should give a pathway to the students to learn effectively through M-learning.

9. Conclusion

M-learning plays a vital role in the development of education and developing education. All learners can enjoy their learning because of this M-learning. In future, M-learning will be used by all learners in all types of educational institutions. This study reveals that the majority of the learners is attracted towards M-learning. In this mobile communication era, M-learning can able to reach the learners in an effective manner.

References

1. Ganesan, P., & Krishnakumar, R. ATTITUDE OF TEACHER EDUCATORS TOWARDS ICT.

2. Golden, S. A. R. (2011). Problems and Prospectus of Distance Education. Quality Enhancement in Distance Education for Life Long Learning, 1(1), 343-344.

3. Golden, S. A. R. (2011). Strategy for Success of Human Beings:-Time Management.

4. Golden, S. A. R. (2016). Rural Students' Attitude Towards English As Medium Of Instruction In Higher Education – AN Analysis. International Journal of Research, 3(Special Issue - 16), 1-10.

5. Ligi, B., & Raja, B. W. D. FLIP TEACHING IN PROMOTING ACTIVE STUDENT LEARNING.

6. Ramakrishnan, N., & Priya, M. J. J. NET NEWS READING HABIT AMONG ARTS AND SCIENCE COLLEGE STUDENTS.

7. Regi, S. B., & Golden, S. A. R. (2014). A Study on Educational Loan Availed By Students in Trichy City. JOURNAL OF INTERNATIONAL ACADEMIC RESEARCH FOR MULTIDISCIPLINARY (JIARM), 2(1).

8. Regi, S. B., & Golden, S. A. R., (2014). Energy Poverty In India - An Empirical Study. Tactful Management Research Journal, 2(6), 1-5.

9. Subashini, V. K. A Study On The Effectiveness Of Multimedia In Teaching Computer Science Among Xi Standard Students In Karur District.

10. https://elearningindustry.com/subjects/
elearning-concepts/mobile-learning-mlearning

11. http://www.mobl21.com/
Basics_Of_Mobile_Learning.pdf

12. Crescente, Mary Louise; Lee, Doris (March 2011). "Critical issues of M-learning: design models, adoption processes, and future trends". Journal of the Chinese Institute of Industrial Engineers. **28** (2): 111–123. Doi: 10.1080/10170669.2010.548856.

13. Trentin G. & Repetto M. (Eds) (2013). Using Network and Mobile Technology to Bridge Formal and Informal Learning, Woodhead/ Chandos Publishing Limited, Cambridge, UK, ISBN 978-1-84334-699-9.

14. Felix (2007), "e-content on DNA technology in biotechnology", unpublished M.Ed, dissertation, Bharathidasan University, Trichy.

15. Karthick (2007) "Development and validation of e-content on 'pearl Harbour' incident for the Graduate level history students", unpublished M.Ed dissertation, Bharathidasan University, Trichy.

16. Karthikeyan (2007), "Developed and validated on e-content in Tamil at secondary level", unpublished M.Ed dissertation, Bharathidasan University

About Authors

Dr. S. Anthony Rahul Golden, Dean of Students & HOD of Commerce, Loyola College, Mettala, Namakkal.
Email id: kvsrahul@gmail.com

Dr. S. Bulomine Regi, Assistant Professor of Business Administration, St.Xavier's College (Autonomous), Palayamkottai, Tirunelveli,
Email id: drregi23@gmail.com