

MOBILE LEARNING USAGE AMONG LIBRARY AND INFORMATION SCIENCE STUDENTS: A STUDY

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Abstract: Mobile learning (also known as m-learning) have a crucial role in academic world. With the advent of multimedia devices and online education mobile learning is a boon to students for learn at their own freedom. This study is aimed to analyse the usage of mobile learning among the Library and Information Science students. Online questionnaire method was used to collect the data. Questionnaires were distributed to the students using various social medias, websites, blogs, mailing lists etc. associated to library science field. The study finds that majority of the respondents are moderately aware about mobile learning and smartphones are the mostly used device for mobile learning. The results show that the students use mobile learning devices for 1 to 2 hours per day at their own home. Also, majority of the respondents use mobile learning because of ease in accessing and majority says that the mobile learning method replace the traditional learning methods. Relevance of information and fast access to information are the advantages of mobile learning and small screen of mobile devices and slow network speed are the barriers in mobile learning. In the study, majority of the respondents opined that the traditional studying methods can be replaced with mobile learning methods.

Keywords: Mobile learning, M-learning, E-learning, Online learning aids, Library and Information Science Students, Information Science.

1.0 Introduction

Nowadays, many ways are emerging for our academic community to enriching their knowledge. One of them is mobile learning. Mobile learning, also known as m-learning is a method of learning with the help of mobile devices. It may be a mobile phone, laptop, tablet, etc. This method of learning is very popular nowadays because we can make use of mobile learning anywhere at any time. So, this helps the people to make use of it at their convenient time. The global education system is changing with the advent of mobile learning. From the small classes to professional colleges, the structure of education is changing. In simple words, education within the four walls is dynamically changed to a customized method as our wish.

Making use of mobile learning technology in education has changed our academic community to a great extent. The distance between the learner and teacher never matters in mobile learning. Learning is defined as learning that occurs when the learner is not in a specific, predetermined place, or when the learner takes advantage of the learning opportunities offered by mobile technologies. Mobile learning uses the advantages of small and fast computing, which enables it to learn anytime at anywhere.

2.0 Related Literature

Kalisa and Pickard (2017) in their study regarding mobile learning emphasized that the proliferation and popularity of mobile devices has led to an increase in their utility in higher education. The findings indicate that the most important challenges in African higher education institutions is to synchronize the mobile learning, poor technological infrastructure, lack of access to modern mobile devices, lack of mobile learning pedagogical skills among lecturers, poor attitudes among students and lecturers, and incompatibility of mobile devices with the university online management systems.

Oyelere, Paliktzoglou, and Suhonen (2016) carried out a study about m-learning in Nigerian higher education and opined that social media technologies have recently gained significant popularity in the education sector. The study indicates students rely on social media for educational purposes, such as social networking, chatting and knowledge sharing. In the paper, authors investigated the importance of social media tools and mobile devices for learning, their benefits and effectiveness, and how to improve the learning process in Nigeria.

Ko, Chiu, Lo, & Ho (2015) summarize in their paper that mobile learning has gained its importance in recent years. As far as libraries are concerned, it is imperative that they comply with this trend and support various

information services and m-learning. This paper studies the use of m-learning by library and information science (LIS) students, who will be the new blood of the library in the future. The study found that LIS students from Hong Kong, Japan and Taiwan adopt communication tools and social media for m-learning. However, they regularly use their smartphones for academic reading. Additionally, students rely more on search engines to meet their information needs rather than library resources. The results of this study show that there are no significant differences in the use of m-learning in the three areas.

3.0 Objectives

1. To analyse the awareness and usage of m-learning facilities among by the respondents.
2. To know the time frequency for m-learning and to analyse the type of m-learning devices used by the respondents.
3. To study the methods followed by students to make use of mobile learning.
4. To analyse the perceptions of students about mobile learning.
5. To find the advantages of mobile learning.
6. To find the barriers in mobile learning.

4.0 Methodology

The study analysed mobile learning usage among library and information science (LIS) students. A structured online questionnaire focused to cover all aspects of mobile learning among LIS students was prepared and distributed to the students using various online platforms (Blogs, websites, mailing lists, social networks etc.), and sufficient time was given to the respondents to fill the information. Within a period of one month, 81 responses were received. The collected data were coded, classified and tabulated according to the objectives of the study and analyzed using various statistical tools and tests, such as percentage analysis, mean finding, one sample t-test etc. Statistical software package SPSS 23 and Microsoft Excel 2019 has been used for the data analysis and tabulation.

5.0 Analysis and Results

This section discusses the mobile learning usage among library and information science students. In total, 81 responses students were collected. The collected data was coded and analyzed using statistical techniques and the results are presented in the form of tables and graphs.

5.1 Demographic Characteristics of the Sample

Table 5.1 shows distribution of sample according to their demographic characteristics such as gender, age group, locale etc.

Table 5.1 Distribution of Sample by their Characteristics

Demographic Characteristics		Number of Respondents	Percentage
Gender	Male	41	50.00%
	Female	40	48.78%
Age Group	18 to 25	38	46.34%
	25 to 30	27	32.93%
	Above 30	16	19.51%
Place of Residence	Rural	41	50.00%
	Urban	40	48.78%
Hosteller/Day Scholar	Hosteller	25	30.49%
	Day Scholar	56	68.29%

5.2. Course-wise Distribution of Respondents

There are various types of courses in the field of Library and Information Science. It includes

certificate courses, diploma courses, BLISc, MLISc, M Phil Course, Ph D, Post-Doctoral Fellowship etc. Table 5.2 shows the distribution of respondents according to their category of course.

Table 5.2 Distribution of Sample by Course

Course of Study	Number of Respondents	Percentage
BLISc	8	9.88%
MLISc	51	62.96%
M Phil	4	4.94%
Ph D	15	18.52%
PDF	1	1.23%
PGDLAN	2	2.47%
Total	81	100.00%

From the table, it is clear that majority of the respondents (62.96%) are MLISc students followed by 18.52% of research scholars, 9.88% of BLISc students and so on.

5.3. Awareness of M-learning Facilities among Respondents

The sample population may or may not be aware about mobile learning facilities. So, an analysis is carried out to identify the level of awareness of respondents regarding mobile learning facilities. The results are shown in the figure below.

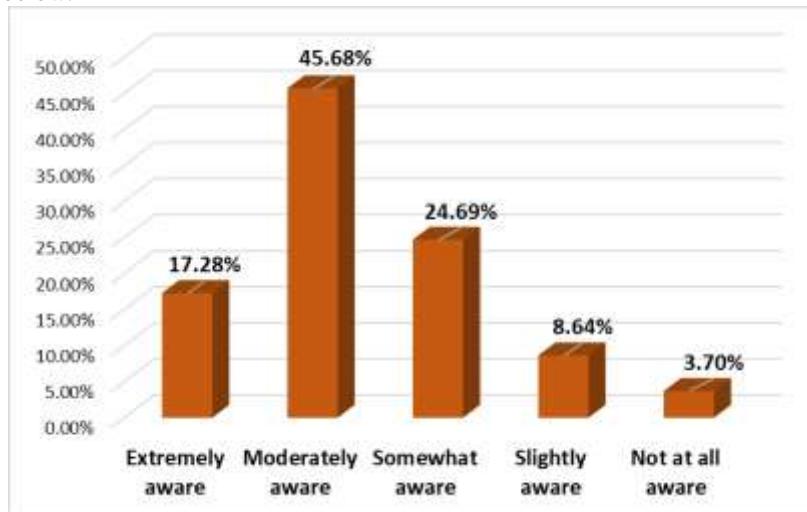
**Figure 5.1. Awareness of M-learning Facilities**

Figure 5.1 shows that majority of the respondents (45.68%) are moderately aware about mobile learning facilities. It is followed by 24.69% of respondents who are somewhat aware about these services and 17.28% of respondents who are extremely aware about these services. A very small percentage of respondents (3.70%) are not at all aware about the mobile learning services.

5.4. E-learning apps in mobile phones

Various e-learning applications are available in various platforms such as android, iOS etc. Many students are making use of it. Here, an analysis carried out to identify how much respondents are using e-learning apps in their mobile phones. The results are shown in Table 5.3.

Table 5.3 Distribution of Sample by using E-learning apps in Mobile Phones

E-Learning apps in Mobile	Number of Respondents	Percentage
Yes	61	75.3
No	20	24.7
Total	81	100

The results from the table above shows that 3/4th of the respondents (75.30%) are using e-learning apps in their mobile phones. This means the students are make use of advanced technologies in their academics.

5.5. Distribution of Respondents by using Mobile devices for Learning Purposes

Mobile devices are very useful for students and teachers in their academic field. Now, a mobile device is not only limited to a particular use, but also it includes a vast number of facilities for entertainment and learning also. Here, the figure below shows the distribution of respondents according to their polling that whether they use mobile devices for learning purpose or not.

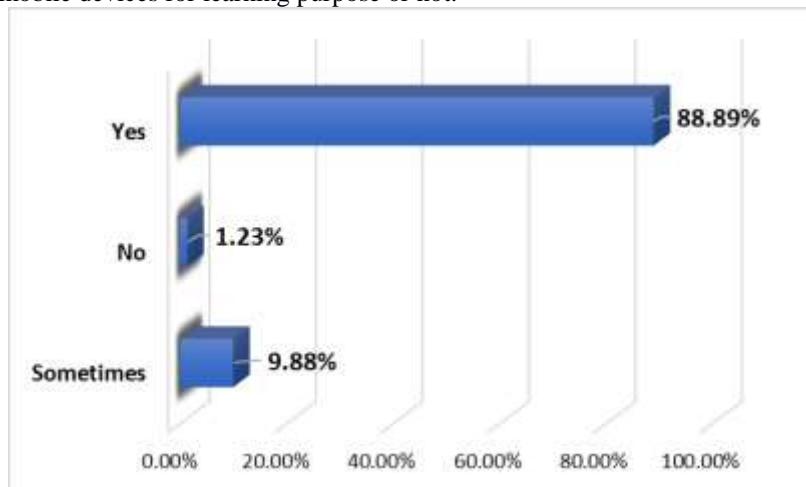
**Figure 5.2. Mobile devices for Learning purposes**

Figure 5.2 shows that lion's share of respondents (88.89%) are using mobile devices for their learning purposes, which is followed by 9.88% of respondents who uses sometimes and a very few respondents (1.23%) who are not using mobile devices for learning purposes.

5.6. Mostly Used Device for M-learning

Various devices can be used for mobile learning. It includes smartphones, tablets, palmtops, laptop computers etc. Here, the analysis from Table 5.4 shows the mostly used mobile device for m-learning among the respondents.

Table 5.4 Mostly Used Device for M-Learning

Device Used	Number of Respondents*	Percentage
Mobile Phones	71	87.65%
Laptops	42	51.85%
E-book Reader	6	7.41%
Tablet	4	4.94%
Others	2	2.47%

*Multiple Response

Multiple responses are allowed for this question. The analysis shows that lion's share of respondents (87.65%) are using mobile phones for m-learning, which is followed by 51.85% of respondents who are using laptops and 7.41% of respondents who are using e-book readers for mobile learning.

5.7. Rating of Mobile Device Usage for Learning

The analysis from the previous sections shows that students are aware about m-learning and make use of mobile learning facilities using mobile devices. Here, an analysis is carried out to identify how they rate these mobile learning devices for m-learning.



Figure 5.3. Rating of Mobile Device Usage for Learning

Figure 5.3 shows that more than half of the respondents (51.85%) rated the mobile learning devices as good, followed by 32.10% of respondents as very good. Only 14.81% of respondents rated as the mobile devices are fair, i.e., not good and not poor. No one among the respondents rated these devices and poor and not poor. It means that mobile learning devices are always useful.

5.8. Time Frequency of M-learning per day

Usage of mobile phones and other mobile devices are increasing now a days. The table below shows the time frequency of mobile devices per day for learning purposes.

Table 5.5 Time Frequency of Mobile Learning

Time Frequency	Number of Respondents*	Percentage
Upto 1 hour	23	28.40%
1 to 2 hours	36	44.44%
2 to 3 hours	13	16.05%
More than 3 hours	8	9.88%

*Multiple Response

Here also, multiple responses are allowed. Table 5.5 shows that majority of the respondents (44.44%) are make use of mobile devices for learning from 1 to 2 hours per day. It is followed by 28.40% of respondents who uses these devices for up to 1 hour per day, 16.05% who uses for 2 to 3 hours per day and 9.88% who uses for more than 3 hours.

5.9. Ranking of Mobile Devices used for M-learning

We have analysed from the previous tables that various mobile devices are used by the students and majority of them are using mobile phones/smartphones for learning purposes. Here, an analysis is carried out to identify which among the various devices are in the first rank based on their usage. The results are showed in the table below.

Table 5.6 Ranking of Devices for Mobile Learning

Devices for M-Learning		Rarely	Occasionally	Sometimes	Frequently	Every time	Mean	S.D.	T	P Value
Personal Computer	n	13	7	24	26	11	3.19	1.256	22.822	0.000*
	%	16	8.6	29.6	32.1	13.6				
Laptop Computer	n	10	7	20	33	11	3.35	1.195	25.189	0.000*
	%	12.3	8.6	24.7	40.7	13.6				
Smart Phones	n	4	3	6	25	43	4.23	1.076	35.434	0.000*
	%	4.9	3.7	7.4	30.9	53.1				
Palmtop/Tablet	n	54	7	13	5	2	1.69	1.103	13.804	0.000*
	%	66.7	8.6	16	6.2	2.5				
E-book Readers	n	44	9	14	8	6	2.05	1.341	13.757	0.000*
	%	54.3	11.1	17.3	9.9	7.4				

Here, one sample t-test is carried out for analysis. Table 5.6 shows that smartphones secured the first rank among the mobile devices based on their usage by respondents with a mean score rating of 4.23 out of 5. The second position is secured by laptop computers with a mean score rating of 3.35 and third position by personal computers with a mean score rating of 3.19. E-book readers and palmtops/tablets score mean score rating of 2.05 and 1.69 respectively. Also, the significance level for each category from the table shows that all types of mobile devices are useful.

5.10. Preferred place for Mobile learning

Students prefer various places for mobile learning as their convenience. It may be their home, hostel, classroom, library, a browsing centre/cafe etc. One sample t test is carried out for the analysis of table.

Table 5.7 Place preferred for M-learning

Place Preferred		Rarely	Sometimes	Always	Mean	S.D.	T	P Value
Home	n	4	26	51	2.58	0.589	39.444	0.000*
	%	4.9	32.1	63				
Hostel	n	41	18	22	1.77	0.855	18.574	0.000*
	%	50.6	22.2	27.2				
Library	n	20	38	23	2.04	0.732	25.039	0.000*
	%	24.7	46.9	28.4				

College Department/ Class Room	n	20	40	21	2.01	0.716	25.303	0.000*
	%	24.7	49.4	25.9				
Internet Browsing Centre/ Cafe	n	44	20	17	1.67	0.806	18.605	0.000*
	%	54.3	24.7	21				
Others	n	49	24	8	1.49	0.673	19.973	0.000*
	%	60.5	29.6	9.9				

Table 5.7 shows that the preference of places by the students for mobile learning. Based on the mean score rating, it is clear that students prefer their home for mobile learning with a mean score rating of 2.58 out of 3. It is followed by the library and college department/classrooms with a mean score rating of 2.04 and 2.01 respectively.

5.11. ICT Equipment available in Studying Institution

ICT (Information, Communication and Technology) equipment are available in almost every institution now a days. Because, it has a crucial role in present day education system. Here, an analysis is carried out to identify which devices are available for the students in their institution for helping m-learning. Multiple responses are allowed.

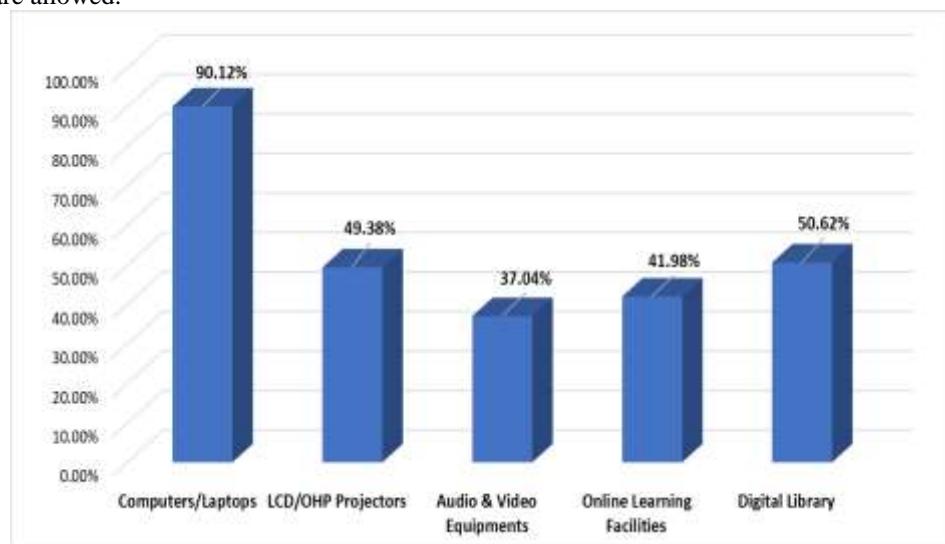
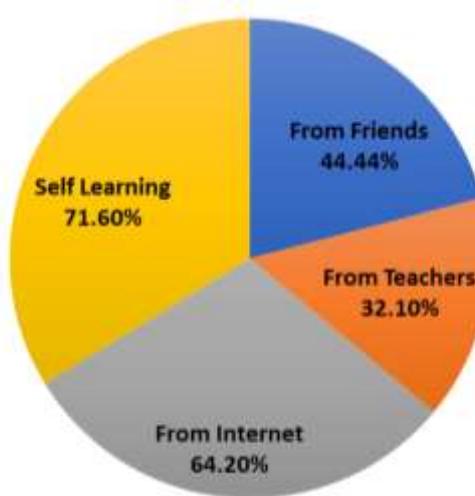


Figure 5.4. ICT equipment available

The analysis form Figure 5.4 shows that majority of the respondents (90.12%) are saying that computers/laptops are available in their institution for mobile learning purposes. It is followed by digital libraries (50.62% of respondents) and LCD/OHP projectors (49.38% of respondents) and so on.

5.12. Learning method about M-learning

There are various ways in which students can learn about mobile learning. It may be from their friends, teachers, internet sources etc. Figure 5.5 shows the various ways in which students have learned about mobile learning facilities.

**Figure 5.5. Learning method about Mobile learning**

Multiple responses are allowed in this question. The analysis from the figure shows that the respondents learned about mobile learning through self-learning (71.60%). It is followed by 64.20% of respondents who suggests that they have learned this through internet. 44.4% and 32.10% of respondents have suggested that they have learned this through their friends and teachers respectively

5.13. Making use of Mobile learning

There are various ways for making use of mobile learning. The table below shows the various uses of mobile learning and the respondents' opinions. Multiple responses are allowed for this question.

Table 5.8 Usage of Mobile Learning

Make Use of Mobile Learning	Number of Respondents*	Percentage
General learning	62	76.54%
Accessing from online learning platforms	47	58.02%
Sharing information to others	40	49.38%
Watching online video classes	40	49.38%
Reading articles from online and open access journals	37	45.68%
Reading e-books	35	43.21%
Visiting websites, blogs, etc.	31	38.27%
Reading and accessing information from social media	31	38.27%
Using online discussion forums	21	25.93%
Listening to podcasts	15	18.52%
<i>*Multiple Response</i>		

Table 5.8 shows that majority of the respondents (76.54%) suggests that they use mobile learning for general learning, which is followed by 58.02% of respondents that they use it because of its facility to access learning materials from online learning platforms. 49.38% of respondents suggested that m-learning helps to share information to others and watching video classes.

5.14. Preference for teaching through Mobile learning

The figure below shows the preference of students for taught they through mobile learning methods.

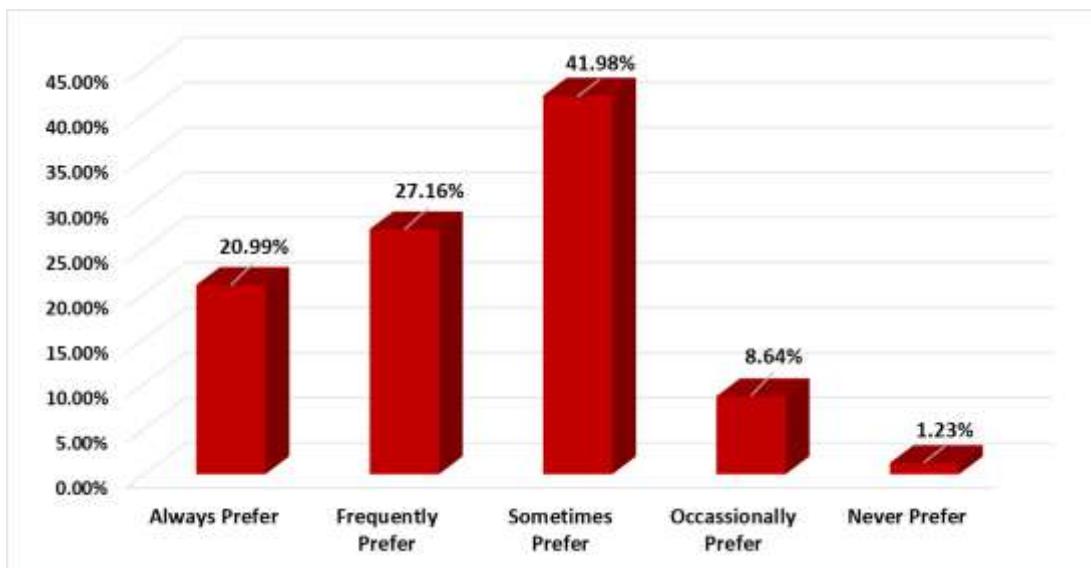


Figure 5.6. Preference Scale for teaching via M-learning

Figure 5.6 depicts that majority of the respondents (41.98%) sometimes prefer for teaching them through mobile learning methods. It is followed by 27.16% and 20.99% of respondents that they are frequently preferring and always preferring respectively for teaching through mobile learning.

5.15. Reasons for Preferring M-learning

Figure 5.7 shows the reasons put forwarded by the respondents for the use of mobile learning. Multiple responses are allowed.

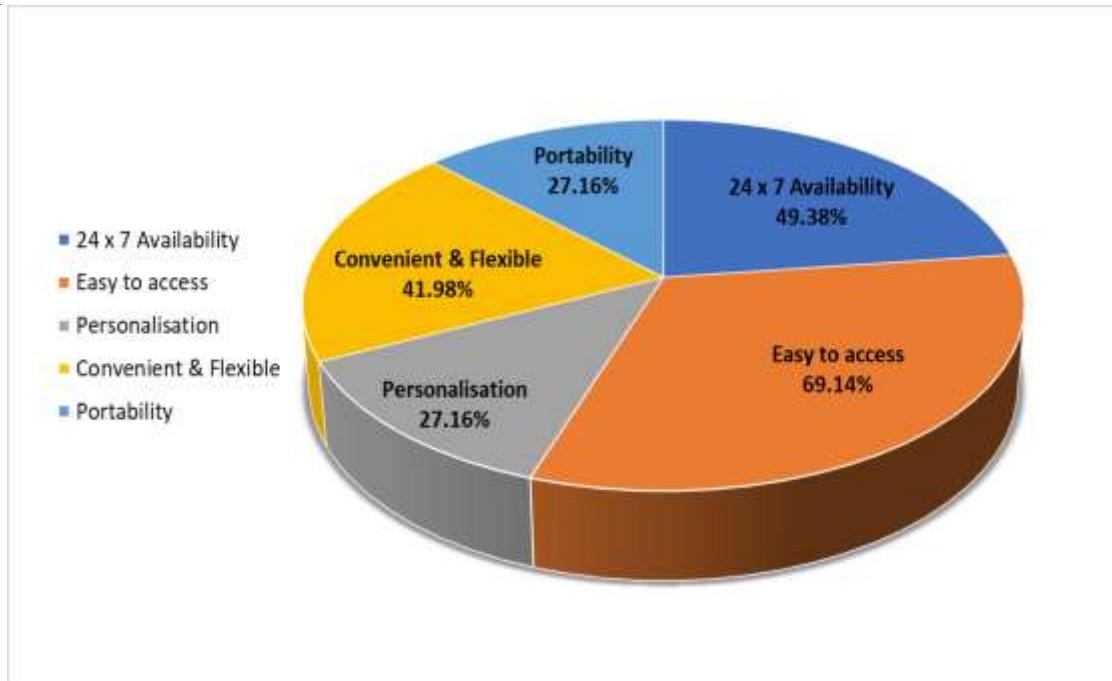


Figure 5.7. Reasons for preferring M-learning

The figure clearly shows that the major reason behind the use of mobile learning is easy to access the information (69.14% of respondents). It is followed by its 24*7 availability (49.38%), convenient and flexible (41.98%) and portability & personalization (27.16%).

5.16. Purpose of using M-learning

Students make use of mobile learning for various purposes. Here an attempt is carried out to know for what purpose the sample population are using it.

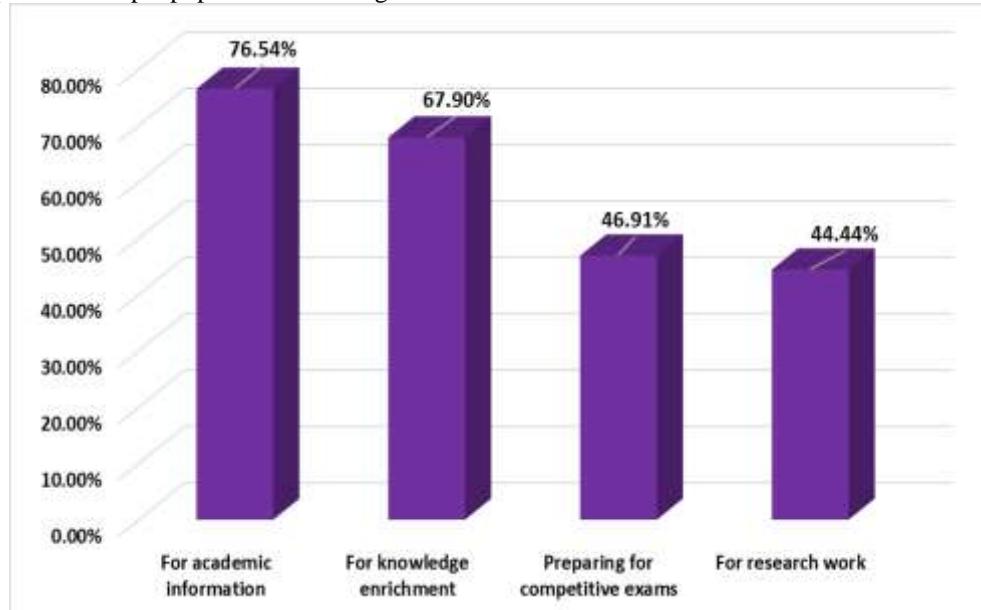


Figure 5.8. Purpose of using M-learning

Figure 5.8 shows that more than three fourth of the population (76.54%) uses mobile learning for academic information, followed by 67.90% of population for their knowledge enrichment, 46.91% for preparing competitive exams and 44.44% for research work.

5.17. Advantages of M-learning

Table 5.9 shows the respondents rating of various advantages of mobile learning.

Table 5.9 Advantages of M-learning

Advantages	Number of Respondents*	Percentage
Relevance of Information	47	58.02%
Provides collaborative environment for learning	30	37.04%
Fast access to information	62	76.54%
Interactivity	17	20.99%
Provides facility to share information	35	43.21%
<i>*Multiple Response</i>		

The analysis from the table shows that majority of the respondents (76.54%) using mobile learning, because it helps to fast access to information. It is followed by 58.02% of respondents who using it because of relevance of information and 43.21% because of the facility to share information.

5.18. Level of Agreement regarding M-learning Statements

The analysis from the following table shows that the level of agreement of students to various statements regarding mobile learning. One-sample t-test is used for the analysis and the mean score rating out of 5 is given to every statement.

Table 5.10 Level of Agreement regarding Mobile Learning

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Mean	S.D.	T	P Value	
Mobile learning devices are easy to use	n %	0 0.00	0 0.00	2 2.47	34 41.98	45 55.56	4.53	0.55	74.183	0.000*
Mobile learning methods are useful in my daily study	n %	0 0.00	0 0.00	6 7.41	45 55.56	30 37.04	4.30	0.601	64.345	0.000*
Mobile learning usage helps to learn more quickly	n %	0 0.00	1 1.23	10 12.35	40 49.38	30 37.04	4.22	0.707	53.74	0.000*
Mobile learning usage increased my learning productivity	n %	0 0.00	7 8.64	12 14.81	40 49.38	22 27.16	3.95	0.879	40.453	0.000*
My Institution have supported for the usage of mobile learning	n %	3 3.70	6 7.41	23 28.40	33 40.74	16 19.75	3.65	1.002	32.823	0.000*
I will get help from friends when I face any difficulty from using mobile learning devices	n %	3 3.70	3 3.70	7 8.64	49 60.49	19 23.46	3.96	0.901	39.602	0.000*
Using mobile learning devices in education is enjoyable and entertaining	n %	1 1.23	5 6.17	9 11.11	47 58.02	19 23.46	3.96	0.843	42.295	0.000*
Studying with mobile learning has become a habit for me	n %	3 3.70	8 9.88	21 25.93	35 43.21	14 17.28	3.60	1.008	32.173	0.000*
Smartphones plays a vital role in learning purposes through mobile learning	n %	1 1.23	2 2.47	13 16.05	31 38.27	34 41.98	4.17	0.877	42.805	0.000*
Learning on mobile device at your own time is the best option in mobile learning	n %	1 1.23	4 4.94	12 14.81	35 43.21	29 35.80	4.07	0.905	40.505	0.000*
M-learning helps to study easily rather than traditional method of learning	n %	2 2.47	2 2.47	11 13.58	47 58.02	19 23.46	3.98	0.836	42.781	0.000*
M-learning provide a student to learn by their own freedom	n %	2 2.47	3 3.70	9 11.11	39 48.15	28 34.57	4.09	0.911	40.37	0.000*
M-learning is a better way to enrich our knowledge	n %	1 1.23	2 2.47	16 19.75	38 46.91	24 29.63	4.01	0.844	42.785	0.000*
M-learning is necessary in the digital world for a student	n %	0 0.00	2 2.47	15 18.52	30 37.04	34 41.98	4.19	0.823	45.752	0.000*

From Table 5.10, the analysis shows that among all the statements regarding mobile learning, “mobile

learning devices are easy to use" score the first rank among the rating, which means respondents are strongly agreeing with the statement. Also, respondents strongly agree with the statements that, m-learning methods are easy to use, m-learning usage helps to learn more quickly, smartphones plays a vital role in m-learning usage, learning at our own time is the best option in m-learning, m-learning is better way to enrich our knowledge, m-learning provides a student to learn by their own freedom and m-learning is necessary in the digital world for a student.

5.19. Opinions regarding Mobile Learning replace Traditional studying

With the advent of all these technologies, it is a need to analyse the opinion of respondents that whether these mobile learning replaces traditional studying methods. The opinion of respondents is graphically represented as follows.

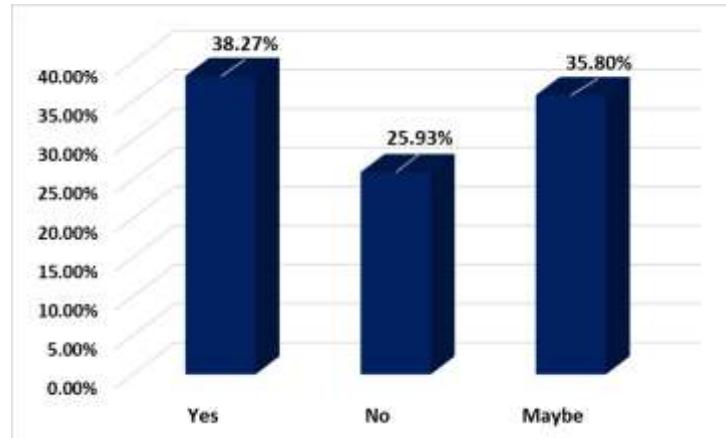


Figure 5.9. Mobile learning verses Traditional studying

Figure 5.9 shows that majority of the respondents (38.27%) are agreeing with the statement that mobile learning replaces traditional studying methods and 35.80% saying it may be possible and 25.93% are disagreeing with statement. So, it is clear that majority of the students are transforming their academic process to a multimedia level learning method.

5.20. Barriers in Mobile learning

While mobile technology may seem attractive to students and useful in the learning process, there are various problems in mobile learning. The respondent's suggestions are analysed and tabulated below. Multiple responses from the options are allowed.

Table 5.11 Barriers in Mobile Learning

Barriers	Number of Respondents*	Percentage
Slow network speed	60	74.07%
Small screen of devices	47	58.02%
Difficulty in text typing	20	24.69%
Difficult to customize content	17	20.99%
Lack of specialised mobile apps	30	37.04%
Inadequate memory in mobile devices	33	40.74%
Unavailability of mobile version of webpages	22	27.16%

Short battery life of devices	31	38.27%
Radiation of mobile devices	34	41.98%
Others	2	2.47%
*Multiple Response		

The analysis from Table 5.11 shows that majority of the respondents (74.07%) opined that slow network speed are the main problem in mobile learning. It is followed by other problems that small screen size of devices (58.02%), radiation of mobile devices (41.98%), inadequate memory in mobile devices (40.74%) and so on.

6.0 Conclusion

Mobile learning promotes the idea of learning anytime, anywhere, which is important for students who regularly change their learning spaces and move learning materials from one place to another. This study is meant to analyse the mobile learning usage of students belonging to library and information science. The study shows that students have a positive approach towards mobile learning process and they have made use of it in their academics. Majority of the respondents are masters' degree students in library and information science (MLISc) belonging to the age group of 18 to 25. Most of the students are moderately aware about mobile learning facilities and using mobile devices and e-learning applications for their academic purpose from 1 to 2 hours per day. Mobile phones (smart phones) are the mostly used device for mobile learning and more than half of the respondents rated mobile devices for learning purpose as good. Majority of the students prefer their home for learning and they have learned about mobile learning through their self-learning process. Also, most of the students sometimes prefer mobile learning method for teaching because of the facility to easily access to its contents. From the respondents' side, advantages of mobile learning are fast access to information, relevance of information and the facility to share information with others. Also, small network speed, small screen size of mobile devices and radiation of mobile devices are the barriers in the use of mobile learning process. Finally, the study recommends for future research to carry out vast studies exploring the impact of mobile learning in education system. Because, a student can access the information through mobile devices that help them to study better.

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