Impact of Mobile Learning Services of Students Selected Autonomous Engineering Institutions in Chennai: A Study

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Abstract

The present paper investigates an Impact of Mobile Learning Services of Engineering Students. The main objectives of the study is to carry out the Frequency of Access , Purpose , Use of Tools, y an access and use of Mobile learning, use of File Types, Library based Mobile learning Services, Access and Types of Online resources and Ranking wise Core Components of Mobile learning. The study analysis has selected an Engineering students in Chennai region such as namely Raja Lakshmi Engineering College, Sri Sai Ram Engineering College, St Joseph's College of Engineering, and Panimalar Engineering College, Chennai. Well-structured questionnaires are distributed to each institutions 100 questionnaires and totally 400 questionnaires and 343 were responded in the survey and overall respondents is 85.75 per cent**.** The majority of the respondents are using the mobile learning for academic activities in engineering fields.

Keywords

Mobile learning, Engineering Institutions, Students, Internet, Tablets and Hand held devices

1.Introduction

This revolution will transform our life, world of business and the global economy as we know them today using Engineering. Huge steps in scientific discovery and innovation in many fields must therefore be expected over the coming decades. Technology, the domain of engineers and engineering scientists, is an essential component in making these innovations possible. In recent years, the growth of mobile learning technologies have been offering cheaper and more convenient communication so that students and faculty members, research scholars can access information and communicate with one another anytime, anywhere ubiquitously by using various mobile devices.

2. Mobile Learning Definition

According to Farooq states the Mobile learning is a method of using wireless and mobile technologies in education by extending access to a desktop-based online environment to handheld devices such as Personal Digital Assistant used as part of mobile community. Mobile learning offers another vision using handheld devices in wireless classrooms for computer supported cooperative learning.[

Mobile learning can be noted as any sort of learning system, in which the learner need not be at a fixed, predetermined location or learning that happens when the learner utilizes the advantage of the learning offered by mobile devices. During the last decade, a large number of mobile learning projects were developed (Lin, 2007).

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The authors have demonstrated many such projects. They concluded that mobile learning provides the support for learning rather than just providing learning content for the learners (Al-fahad, 2009).

3. Objectives of the Study

- The study investigate an Impact of Mobile Learning Services of Students Selected Autonomous Engineering Institutions in Chennai
- To analyse the Gender wise Respondents
- To carry out the Frequency of Access in Mobile learning
- To investigate Purpose of Using Mobile learning
- To describe the Use of Tools
- To study an access and use of Mobile learning
- To find out an use of File Types in Mobile learning
- To examine in the Library based Mobile learning Services
- Access and Types of Online resources for Mobile learning and
- To evaluate a Ranking wise Core Components of Mobile learning

4. Review of Literature

Ammunje et.al. (2022) examined "Smartphones and academic performance: evidence from India." The study focused as a smartphone use that impact student performance were identified. The data were collected from 264 students pursuing higher education in India. The finding of the study indicates that there is no direct impact of excessive mobile phone use on student performance. Indirectly mediated by technoference in cosmopolitan cities with representation from India and suggestions for college management to promote a hybrid learning model

Hemabala and Suresh (2022) made a study on "Mobile Learning for Undergraduate Engineering Students." The pilot study survey was used and results of 50 undergraduate engineering students at Chennai, India and mostly using an engineering college learning and teaching environments. The study reveals a result to improve the student's attention and motivate them into the learning practice and using the source of learning any time; anywhere; any network in academic activities.

Medrano et.al (2022) carried out a study "Mobile learning and communication: educational change?; a systematic review. The study using the descriptive study, total of 201 results present in Web of Science and SCOPUS, with the criteria established by the PRISMA protocol. The study describes the country of origin, date of publication, main objectives, methodological design, variables analyzed and considered, size and details of the samples. The result shows the significant methodological discrepancies with respect to the established criteria. Five categories of action are apparent such as a technical issues, influence on learning, impact on satisfaction and motivation, impact on communicative processes and new forms of interaction.

Ralin et.al. (2021) investigate a study "Students' Perception about the Use of Mobile Learning in Solving Engineering Problems Collaboratively." The data were collected from the five universities in Russia and Kazakhstan and finally 218 students are responded in the study.The findings of the study reveals that of young people using a smartphone (99%)

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enabling Internet access, learning (85%), tablet to study disciplines (65%) and 44% of students determine the effectiveness of this type of learning. The study reveals the possibility of joint solution of engineering problems through these devices, opinions were almost equally divided: 52% of students agreed and 48% of participants disagreed and may be of interest to a wide range of specialists working in the field of education, for training programs and using technologies.

Díaz-Sainz et.al (2021) depicts a study "Mobile learning in chemical engineering: An outlook based on case studies". Mobile learning can be implemented in combination with other pedagogical methodologies for chemical engineering teaching and learning. The majority of undergraduates own personal mobile devices nowadays are attention and to actively engage them in the learning process. Mostly lecturers have reported an improvement in both academic performances. Now a days increasing to M- learning increasing interest in the incorporation of E-learning, this review discusses cases studies based on M-learning within the field of chemical engineering teaching through different technological platforms and apps which can be installed.

Nancy Waral. (2018) followed by a study " Usage of Mobile Devices: A Study at The Engineering Students of Kerala University." Mobile technology helps the people to carry their small computers namely such as laptops, Personal Digital Assistants, tablet personal computers , cell phones and e-book readers . The objective of the study is to know the purpose of using mobile devices and to identify the problems encountered by the engineering students.

5.Methodology

The data were presently studying of the Engineering students in Chennai region only selected for the four institutions namely Rajalakshmi Engineering College,. Sri Sai Ram Engineering College, St Joseph's College of Engineering, Chennai and Panimalar Engineering College, Chennai. The questionnaire was well structured interview schedule and each 100 questionnaires distributed in the four Engineering Institutions. Totally 400 questionnaires were distributed and finally 343 questionnaires was responded in the study. The data analysis using the Microsoft Excel for tables and bar diagrams.

6. Data Analysis and Interpretation

6.1. Distribution of questionnaire wise Respondents

Table.1and figure 1 shows the distribution of questionnaire wise Respondents. The questionnaire was distributed to four Engineering Institutions namely in the Rajalakshmi Engineering College,. Sri Sai Ram Engineering College, St Joseph's College of Engineering, and Panimalar Engineering College, Chennai. 400 questionnaires distributed and 343 questionnaires were responded in the survey an overall percentage is 85.75%.

Table.6.1. Distribution of questionnaire wise Respondents

S. No	Name of the Institutions	No. of Questionnaire Distributed	No. of Questionnaire Received	Percentage
1	Rajalakshmi Engineering College	100	82	23.91

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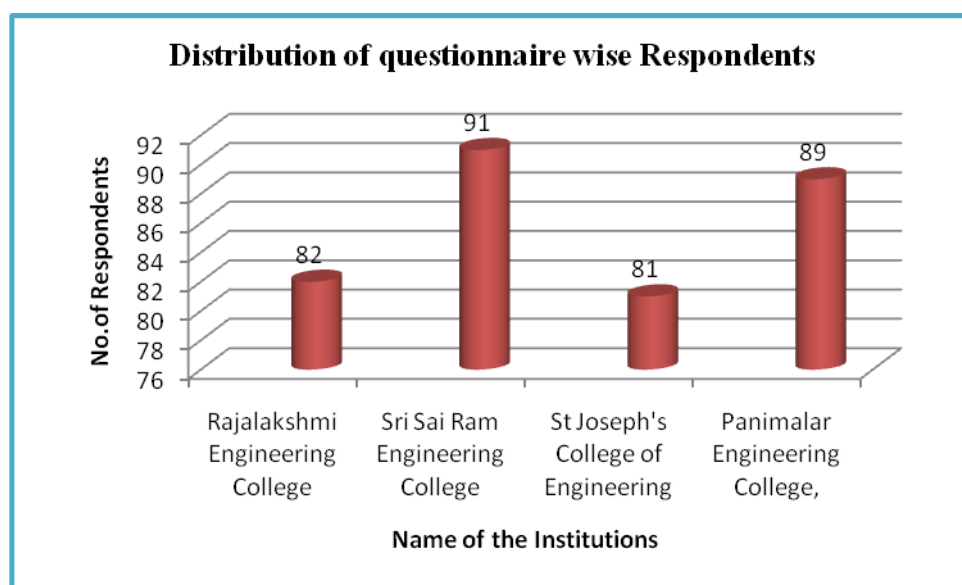| 2 | Sri Sai Ram Engineering College | 100 | 91 | 26.53 |
3	St Joseph's College of Engineering	100	81	23.62
4	Panimalar Engineering College,	100	89	25.95
	Total	400	343	100.00

Figure.1

6.2. Gender wise Respondents
Table.6.2. Gender wise Respondents
Table.2 and figure 2 represents the gender wise respondents. Out of 343, Male, 253(73.76%) followed by female, 25 (27.78%). 82 respondents from the Raja Lakshmi Engineering College, Male, 57 (69.51%) followed by females, 25(27.78%).91 respondents from Sri Sai Ram Engineering College, Male, 76(92.68%) and female15 (16.67%). 81 respondents from the St Joseph's College of Engineering, Male, 58 (70.73%) and female, 23 (25.56%) and 89 respondents from the Panimalar Engineering College Male, 62(75.61%) and female, 90(26.24%).

Table.6.2. Gender wise Respondents

Name of the Institutions	Male	Percentage	Female	Percentage	Total	Percentage
Rajalakshmi Engineering College	57	69.51	25	27.78	82	23.91
Sri Sai Ram Engineering College	76	92.68	15	16.67	91	26.53
St Joseph's College of	58	70.73	23	25.56	81	23.62

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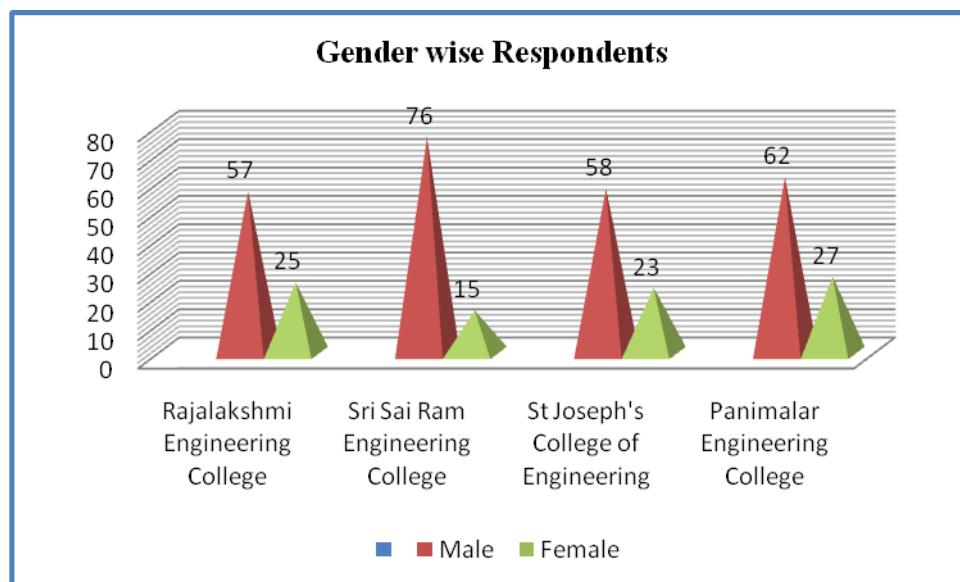| Engineering						
Panimalar Engineering College	62	75.61	27	30.00	89	25.95
Total	253	73.76	90	26.24	343	100.00

Figure.2

6.3. Frequency of Access in Mobile learning

Table 6.3 reveals Frequency of Access in Mobile learning. The majority of the respondents are Daily, 127 (37.03%), followed by Twice a day,   84 (24.49%), Weekly, 64(18.66%), Fortnightly, 31(9.04%) and rarely, 37 (10.79%).

6.3. Frequency of Access in Mobile learning

S.No	Frequency of Access in Mobile learning	No. of Respondents	Percentage
1	Daily	127	37.03
2	Twice a day	84	24.49
3	Weekly	64	18.66
4	Fortnightly	31	9.04
5	Rarely	37	10.79
	Total	343	100.00

6.4. Purpose of Using Mobile learning

Table 6.4 investigates the purpose of Using Mobile learning. The majority of the respondents are Academic Learning, 102(29.74%), Sharing to Information, 94(27.41%), Articles Downloading, 65(18.95%), Browsing, 40(11.66%) and SMS , 42(12.24%).

6.4. Purpose of Using Mobile learning

S.No	Purpose of Using Mobile learning	No. of Respondents	Percentage
1	Academic Learning	102	29.74
2	Sharing to Information	94	27.41

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3	Articles Downloading	65	18.95
4	Browsing	40	11.66
5	SMS	42	12.24
	Total	343	100.00

The statistically proved the Purpose of Using Mobile learning is explained below:

Table 6.4(a) One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
purpose	$0^{a,b}$	.	.	.
Respondents	5	68.6000	28.71933	12.84368

a. t cannot be computed because the sum of case weights is less than or equal 1.

b. t cannot be computed. There are no valid cases for this analysis because all case weights are not positive.

Table 6.4(b) T- Test

	Test Value = 0.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Respondents	5.341	4	.006	68.60000	32.9402	104.2598

It is observed from the table 6.4 (a) and (b) described as a value is less than t - test value 5.341 is significant of the Purpose of Using Mobile learning in the respondents of the students.

6.5. Use of Tools in Mobile Learning

Table 6.5 shows the use of Tools in Mobile Learning. A Use of Tools in Mobile Learning for Content management System, 43(12.54%), Blog, 57(16.62%), E-Mail, 122(35.57%), Online Discussion, 37 (10.79%), and Social Networking Sites, 84(24.49%).

5. Use of Tools in Mobile Learning

S.No	Tools in Mobile Learning	No. of Respondents	Percentage
1	Content management System	43	12.54
2	Blog	57	16.62
3	E-Mail	122	35.57
4	Online Discussion	37	10.79
5	Social Networking Sites	84	24.49
	Total	**343**	**100.00**

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6.6. Access and use of Mobile learning

Table.6.6 possesses an access and use of Mobile learning. Out of 343, Academic use, 64(18.66%), Social Networking Sites,75(21.87%),Entertainment,59(17.20%), Communication, 71(20.70%) and Library services, 74(21.57%).

6.6. Access and use of Mobile learning

S.No	Access of Mobile learning	No. of Respondent s	Percentage
1	Academic use	64	18.66
2	Social Networking Sites	75	21.87
3	Entertainment	59	17.20
4	Communication	71	20.70
5	Library services	74	21.57
Total		**343**	**100.00**

6.7. Chi -Square Test for Use of File Types in Mobile learning

Table.6.7 shows the Chi -Square Test for Use of File Types in Mobile learning. Out of 343, use f File format of PDF, 155 (45.19%) and Chi-square Value (1.15) followed by Images, 66 (19.24%), χ^2 test value 6.95, Microsoft Excel, 42 (12.24%), χ^2 test value 5.89, Microsoft Word, 56 (16.33%), χ^2 test value 8.12 and Microsoft Power Point, 24(7.00%)and no χ^2 test value.

Table.6.7. Chi -Square Test for Use of File Types in Mobile learning

S.No	Use of File Types in Mobile learning	No. of Respondents	Percentage	Chi-square Value
1	PDF	155	45.19	1.15
2	Image	66	19.24	6.95
3	Microsoft Excel	42	12.24	5.89
4	Microsoft Word	56	16.33	8.12
5	Microsoft Power Point	24	7.00	0.00
	Total	343	100.00	

Table 6.7 shows the Chi -Square Test for Use of File Types in Mobile learning. It is seen from the table Chi -Square Test value is less than table value and there is significant difference various among use of File types in Mobile learning. Hence the hypothesis is statistically proved.

6.8. Library based Mobile learning Services

Table 6.8 and figure 3 illustrates that the library based Mobile learning Services. The Mobile interfaces and online public catalogue, 57(16.62%) followed by Database Collections,42 (12.24%), Instructions and mobile tours of the library, 71(20.70%), SMS reference, 107(31.20%) and Online Alert Services, 66(19.24%).

Table 6.8. Library based Mobile learning Services

S.No	Library based Mobile learning Services	No. of Respondents	Percentage
1	Mobile interfaces and online public catalogue	57	16.62

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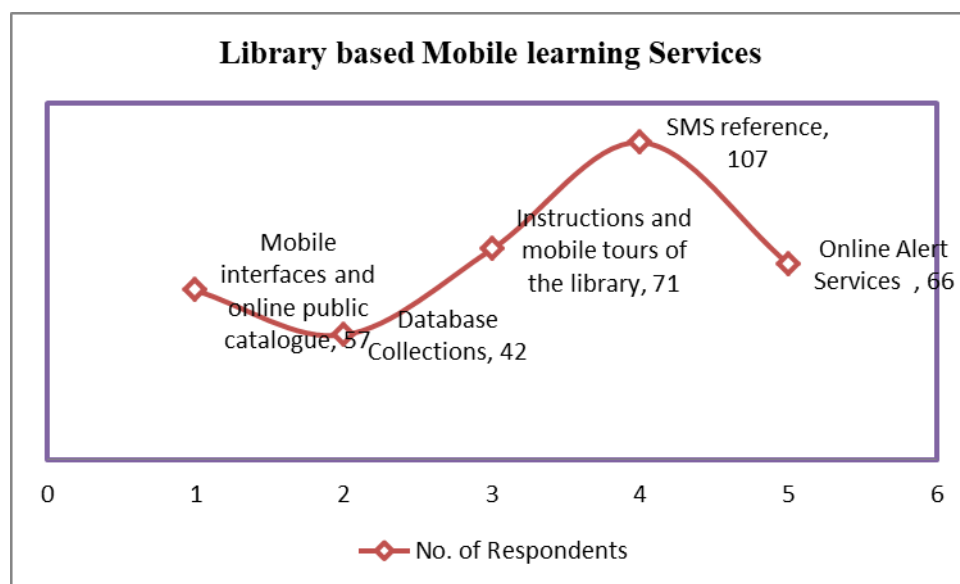|			
2	Database Collections	42	12.24
3	Instructions and mobile tours of the library	71	20.70
4	SMS reference	107	31.20
5	Online Alert Services	66	19.24
	Total	**343**	**100.00**

Figure.3

6.9. Access and Types of Online resources for Mobile learning

Table 9 demonstrates that an access and types of Online resources for Mobile learning. Electronic Journals, 77(22.45%) followed by Electronic books, 53(5.45%), Electronic Magazines, 61(17.78%), Online Databases, 88(25.66%) and Library websites, 64(18.66%).

Table 6.9. Access and Types of Online resources for Mobile learning

S.No	Access and Types of Online resources	No. of Respondents	Percentage
1	Electronic Journals	77	22.45
2	Electronic books	53	15.45
3	Electronic Magazines	61	17.78
4	Online Databases	88	25.66
5	Library websites	64	18.66
	Total	343	100.00

6.10. Ranking wise Core Components of Mobile learning

Table 6.10 denotes the Ranking wise core components of Mobile learning. Out of 343, The majority of the respondents are using Library Websites, 112 (32.65%) occupied in First position followed by Online Class,87 (25.36%) got it second rank, third ranked a Ask a Librarian, 61(17.78%), Frequently Asked Questions within 48(13.99%) secured in fourth rank and fifth ranked in Virtual Library Tour, 35(10.20%).

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Table.6.10. Ranking wise Core Components of Mobile learning

S.No	Core Components of Mobile learning	No. of Respondents	Percentage	Ranking
1	Library Websites	112	32.65	1
2	Online Class	87	25.36	2
3	Ask a Librarian	61	17.78	3
4	Frequently Asked Questions	48	13.99	4
5	Virtual Library Tour	35	10.20	5
	Total	343	100.00	

7. Major findings of the Study

▪ Among the four Autonomous Engineering Intuitions the majority of the respondents are Sri Sai Ram Engineering College 91(26.53%) next to Panimalar Engineering College, 89 (25.95%), Raja Lakshmi Engineering College, 82 (23.91%) and St Joseph's College of Engineering, 81 (23.62%).

▪ The majority of respondents are Male, 253(73.76%) followed by female, 25 (27.78%).

▪ The majority of the respondents are using the Frequency of Access in Mobile learning are Daily, 127 (37.03%), followed by Twice a day,84 (24.49%), Weekly, 64(18.66%), Fortnightly, 31(9.04%) and rarely, 37 (10.79%).

▪ The purpose and using Mobile learning of the majority of the respondents is Academic Learning, 102 (29.74%).

▪ Use of Tools in Mobile Learning for E-Mail, 122(35.57%) is top most level.

▪ Access and use of Mobile learning is the majority of the respondents are Social Networking Sites, 75 (21.87%) next to Library services, 74(21.57%).

▪ Statistically proved in the Chi -Square Test for use of File Types in Mobile learning from the table shows the Chi -Square Test value is less than table value and there is significant difference various among use of students.

▪ Library based Mobile learning Services are mostly in SMS reference,107(31.20%) followed by mobile tours of the library, 71(20.70%), Online Alert Services, 66(19.24%).Mobile interfaces and online public catalogue, 57(16.62%) and Database Collections,42 (12.24%), Instructions.

▪ The majority of the respondents are an access and types of online resources for Mobile learning using the Online databases,88 (25.66%) followed Electronic Journals, 77(22.45%), Library websites,64 (18.66%), Electronic Magazines, 61(17.78%) and Electronic books,53(5.45%).

▪ The majority of the respondents are ranking wise core components of Mobile learning using Library Websites, 112 (32.65%) occupied in 1st Rank followed by Online Class,87 (25.36%) got it 2nd rank, 3rd rank a Ask a Librarian, 61(17.78%), 4th rank in the frequently asked questions 48(13.99%) and 5th ranked in Virtual Library Tour, 35(10.20%).

8. Conclusion

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Based on the study concludes an Impact of Mobile Learning Services for using the Engineering students. The impact of Information and Communication Technology, the change in the academic library is traditional converted to Electronic learning and using mobile devices based mobile learning. Now a day the increasing and using the mobile devices are change in everyday life for academic and other activities. The mobile learning create to online learners using academic purpose are very much in the class room and practical oriented classes .The required to skills for using mobile devices such as Mobile, Cell phone, Tablets and PDAs to using the hand held devices for engineering subjects. The improved in the mobile learning using to library for circulation, online enquiry services, ordering books and latest arrival in new books and frequently asked questions for the library users are vastly using and get it the information is saved the tie of the reader.

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