

Problem Faced by Students to Use M-Learning in Higher Education

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Abstract: Mobile learning (M-learning) has become an innovative approach in higher education, allowing learners to access educational content flexibly through mobile devices. Despite its potential to enhance accessibility and promote self-paced learning, students encounter several challenges that limit its effective utilization. This study aims to identify and analysed the major problems faced by students while using M-learning in higher education. The key issues include unstable internet connectivity, high data costs, limited availability of modern devices, and lack of digital literacy among learners. Pedagogical challenges such as unstructured course design, incompatible learning applications, and poor technical support further impede the learning experience. In addition, distractions from social media, small screen sizes, and security concerns contribute to reduced engagement and academic performance. The study emphasizes the need for institutional support, affordable digital infrastructure, and improved mobile-based pedagogical design to enhance M-learning effectiveness. Understanding these barriers can help policymakers, educators, and technology developers create inclusive and efficient mobile learning environments. Ultimately, addressing these challenges is essential to ensure that M-learning becomes an equitable, accessible, and sustainable component of higher education in the digital era. The study is precisely analytical in nature. This study is descriptive with an analytical background. It is based on primary and secondary data. The primary data have been collected from Chennai city based on the survey method. A structured questionnaire method has been used to find out the problem faced by students to use M-learning in higher education. The secondary data have been collected from various journals, books, reports, websites, and theses.

Undergraduate and postgraduate students enrolled in higher education institutions using or exposed to M-learning technologies. The sample area selected for this study Chennai city. The sample size consists of 120 respondents selected in Chennai city. The selection of sample respondents is based on Stratified random sampling to ensure representation from different faculties or departments. The findings reveal that while mobile learning has significantly transformed the educational landscape by offering flexibility and accessibility, several barriers continue to hinder its effective implementation.

Keywords: M-learning, Higher Education, Digital Literacy, Student Challenges, Mobile Technology

1. INTRODUCTION

The rapid growth of information and communication technologies (ICT) has transformed the landscape of higher education, with mobile learning (M-learning) emerging as a significant mode of knowledge delivery. M-learning, defined as the use of mobile devices such as smartphones, tablets, and other handheld technologies to facilitate learning anytime and anywhere, offers flexibility, accessibility, and interactivity that traditional classroom methods often lack. In recent years, universities and colleges worldwide have increasingly integrated mobile applications, online platforms, and digital content into their teaching and learning processes to enhance student engagement and improve learning outcomes.

Despite its potential, the adoption of M-learning in higher education is not without challenges. Students frequently encounter barriers that hinder their effective participation in mobile-based learning environments. These challenges range from technical and infrastructural issues such as unreliable internet connectivity and limited device capabilities, to pedagogical and psychological factors including inadequate instructional design, lack of digital literacy, reduced motivation, and distractions associated with mobile devices. Furthermore, inequalities in access to technology and socioeconomic differences exacerbate the digital divide, leaving some students disadvantaged in benefiting from M-learning opportunities.

Understanding the problems students face in using M-learning is crucial for educators, policymakers, and technology developers. Identifying these barriers will help in designing strategies to improve mobile learning platforms, enhance teaching methodologies, and ensure inclusive access for diverse student populations. Therefore, this study aims to explore the major challenges students encounter in the adoption and use of M-learning within higher education, thereby contributing to a deeper understanding of the factors that impede its effectiveness and sustainability.

The integration of digital technologies into higher education has accelerated dramatically over the past two decades, reshaping how knowledge is created, shared, and consumed. Among these innovations, mobile learning (M-learning) has emerged as a powerful tool for flexible and accessible education. M-learning refers to the use of portable digital devices such as smartphones, tablets, and laptops to facilitate teaching and learning processes across formal and informal contexts (Sophonhiranrak, 2021). Unlike traditional e-learning, which is often tied to desktop computers, M-learning emphasizes portability and ubiquity, allowing learners to access resources and participate in academic activities irrespective of time and location. In higher education, where students often balance academic work with employment, internships, and personal commitments, the flexibility of M-learning offers a promising avenue for promoting continuous engagement and self-directed learning.

The potential benefits of M-learning are widely recognized in academic discourse. Research highlights its ability to improve learner autonomy, increase engagement through interactive applications, and enhance accessibility to educational materials (Naveed et al., 2023). Moreover, the widespread adoption of smartphones among university students has created fertile ground for institutions to introduce mobile-based pedagogical approaches. With the rise of digital ecosystems such as mobile learning management systems (LMS), educational apps, and virtual classrooms, M-learning has increasingly become embedded within the higher education experience. During the COVID-19 pandemic, M-learning platforms played a vital role in ensuring continuity of education when physical campuses were closed, underscoring their importance as a sustainable educational practice (Qazi et al., 2024).

However, despite its promise, M-learning faces persistent challenges that limit its effectiveness and inclusivity. A significant proportion of students encounter technical barriers, including unstable internet connectivity, inadequate bandwidth, and device limitations such as insufficient memory or outdated software (Sophonhiranrak, 2021; Naveed et al., 2023). For learners in developing regions or rural areas, these infrastructural deficiencies create a digital divide, reinforcing inequalities in educational opportunities. Economic disparities further exacerbate this problem, as not all students can afford high-end devices or continuous data plans.

Beyond technical constraints, pedagogical and design-related challenges remain critical. Many courses delivered through mobile platforms are not adequately adapted for small screens or interactive learning, resulting in reduced effectiveness compared to traditional or well-designed e-learning environments. Poorly structured instructional design, lack of immediate feedback, and limited opportunities for student–instructor interaction can weaken student engagement and learning outcomes (Demir, 2018). Additionally, assessment practices in M-learning contexts face questions of academic integrity and fairness, as educators struggle to ensure reliable and secure evaluation methods (Qazi et al., 2024).

The psychological and behavioral dimensions of M-learning adoption are equally important. While mobile devices provide unprecedented access to learning, they are also sources of distraction. Social media, entertainment applications, and multitasking behaviors can reduce concentration and academic motivation (Naveed et al., 2023). Moreover, some students experience “technology fatigue” or reduced motivation in mobile learning contexts, particularly when pedagogical practices are overly reliant on self-directed learning without sufficient guidance or support. Accessibility issues also persist for students with disabilities, as not all mobile platforms are designed with inclusive features, raising concerns about equity in digital education.

Cultural and contextual factors further shape the adoption of M-learning. In some settings, both students and faculty may lack the digital literacy skills required to use mobile platforms effectively (Sophonhiranrak, 2021). Faculty resistance to adopting mobile-friendly pedagogical strategies and inadequate institutional training programs can also hinder integration. From a policy perspective, the lack of standardized frameworks for mobile learning in higher education often results in fragmented adoption and inconsistent quality across institutions (Qazi et al., 2024).

Given these challenges, it is essential to systematically investigate the barriers students face in adopting and using M-learning in higher education. While much research emphasizes the potential of mobile technologies to revolutionize learning, fewer studies provide in-depth analyses of the problems students encounter in practice. Understanding these problems is crucial not only for improving the design and delivery of mobile learning systems but also for ensuring inclusivity and equity in higher education. Addressing these barriers can guide policymakers, administrators, and educators in creating supportive infrastructures, accessible digital environments, and student-centered pedagogical approaches that fully harness the potential of M-learning.

Therefore, this study seeks to explore and analyze the problems faced by students in using M-learning in higher education. By examining the technical, pedagogical, psychological, and contextual challenges that hinder mobile learning adoption, the study aims to provide insights that will contribute to more effective policy-making, instructional design, and technology implementation. Ultimately, the research aspires to bridge the gap between the promise of M-learning and the lived experiences of students, ensuring that higher education institutions can leverage mobile technologies in ways that are equitable, sustainable, and impactful.

2. REVIEW OF LITERATURE

Sophonhiranrak, S., (2021) studies report that unreliable or slow internet access and limited campus Wi-Fi remain primary barriers to effective m-learning, especially in regions with weak digital infrastructure; this reduces access equity and interrupts learning continuity. **Naveed, Q. N., et al. (2023)** Research highlights problems with small screen sizes, limited battery life, inconsistent OS/app compatibility, and hardware restrictions that make certain learning activities difficult on smartphones compared with PCs. These physical/device constraints reduce usability and students’ willingness to complete tasks on mobile devices. **Aresta, M. (2015)** Several empirical studies report that smartphones introduce distractions (social media, notifications) that harm concentration and motivation in study sessions; nomophobia/overuse can reduce learning gains despite the devices’ educational potential. **Al-Shahrani, H. (2016)** A recurring theme is uneven student (and instructor) digital skills: some students lack strategies for learning on mobile platforms, and some faculty are not confident designing mobile-friendly content — both reducing adoption and effectiveness. **Sophonhiranrak, S., et al. (2021)** Reviews note that many learning resources are poorly adapted for mobile: long text, complex activities, and assessments designed for desktops are not mobile-friendly. Poor instructional design and lack of interactivity lower engagement and learning outcomes. **Hanif, M. (2018)** several regional studies and reviews emphasize cost barriers: not all students can afford data plans, modern smartphones, or replacement batteries — producing a digital divide within cohorts. Financial constraints therefore limit equitable m-learning adoption. **Qazi, A., et al. (2024)** Studies from 2020–2024 show that during/after COVID many students reported reduced motivation, higher



anxiety, and distraction in remote/m-learning contexts; mental-health and engagement concerns are important non-technical barriers. **Krull, G., & Duarte, J. (2017)** Research highlights instructor concerns about conducting assessments on mobile devices (cheating, authentication, proctoring) and students' worries about fair evaluation when taking tests on mobile platforms. This friction discourages some instructors from using m-assessment. **Mehrfar, A., et al. (2024)** Students and institutions raise issues about app permissions, data collection, and security of personal information on mobile platforms; lack of clear policies undermines trust in m-learning tools. **Naveed, Q. N., et al. (2023)** Multiple reviews conclude that successful m-learning requires institutional strategies (policy, training, support). Lack of clear policies, faculty development, or technical support units is a major institutional barrier reported across contexts.

3. STATEMENT OF THE PROBLEM

Mobile learning (M-learning) has emerged as a transformative educational approach that enables students to access learning materials anytime and anywhere through mobile devices such as smartphones, tablets, and laptops. Despite its growing adoption in higher education, many students continue to face significant challenges that hinder its effective use. These problems include poor internet connectivity, limited access to high-quality devices, high data costs, lack of digital literacy, and inadequate institutional support. Additionally, issues such as small screen sizes, software incompatibility, and distractions from non-academic mobile applications further limit students' engagement and learning efficiency.

Furthermore, pedagogical, and content-related barriers persist, as many instructional materials are not designed to be mobile-friendly, resulting in reduced interactivity and cognitive engagement. Socioeconomic disparities among students also create a digital divide, where those from low-income backgrounds struggle to access the full benefits of M-learning. Moreover, privacy and data security concerns, alongside limited technical support from institutions, contribute to low adoption rates and user dissatisfaction.

4. OBJECTIVES OF THE STUDY

- To study the demographic profile of the respondents.
- To analyse the problem faced by students to use M-learning in higher education.

5. METHODOLOGY

Research Design: The study is precisely analytical in nature. This study is descriptive with an analytical background.

Data Collection: It is based on primary and secondary data. The primary data have been collected from Chennai city based on the survey method. A structured questionnaire method has been used to find out the problem faced by students to use M-learning in higher education. The secondary data have been collected from various journals, books, reports, websites, and theses.

Target Population: Undergraduate and postgraduate students enrolled in higher education institutions using or exposed to M-learning technologies.

Sample Area: The sample area selected for this study Chennai city.

Sample Size: The sample size consists of 120 respondents selected in Chennai city. The selection of sample respondents is based on Stratified random sampling to ensure representation from different faculties or departments.

6. DISCUSSION & INTERPRETATION

In this research study, an effort has been made to find out the relationship between personal factors problem faced by students to use M-learning in higher education. For this purpose, the sampling method was select the students

to collect first-hand information from 120 sample respondents. The respondents have been chosen randomly from different parts of the study area. The data collected were arranged into simple tabular form. The demographic profile of the student M-learning in higher education institutions is considered the dependent variable and the independent variable. The personal factors selected for the study are Age group, Family income, and Family type. The analysis tools used for this study i) Percentage analysis and ii) Chi-square.

Table.1 AGE GROUP OF THE RESPONDENTS

S.NO	AGE	NO. OF RESPONDENTS	PERCENTAGE (%)
1	Below 20 years	44	36.6
2	21-25 years	48	40
3	Above 26 years	28	23.4
	TOTAL	120	100.0

Sources: Primary data

INTERPRETATION

Above table shows that 23% of respondents belongs to 26-35 years, 40% of the respondents belongs to 21-25, 36.6% of respondents belongs to below 20 years. The majority of 40 % of the respondents are 21-25 years.

TABLE 2 GENDER OF THE RESPONDENTS

S.NO	GENDER	NO. OF RESPONDENTS	PERCENTAGE (%)
1	Male	52	43.3
2	Female	68	56.7
	TOTAL	120	100.0

Sources: Primary data

INTERPRETATION

Above table shows that out of 120 respondents, 56% were female and 43% were male. The majority 56.7% of the respondents are female.

TABLE 3 EDUCATIONAL QUALIFICATION

S.NO	EDUCATION QUALIFICATION	NO. OF RESPONDENTS	PERCENTAGE (%)
1	Bachelor of degree	44	36.7
2	Master of degree	36	30.0

3	Higher studies	40	33.3
	Total	120	100

Sources: Primary data

INTERPRETATION

Above table shows that 36% of respondents fall in the category of bachelor ,33.3% of respondents fall in the category of Higher studies and 30.0% of the respondents fall in the category of Master. The majority 36.7% of the respondents are bachelor.

CHI-SQUARE ANALYSIS

Research methodology, Chi-square analysis is a statistical technique used to determine if there is a significant association between categorical variables. It is particularly useful when you want to analyse the relationship between two categorical variables dependent and independent variables. The Chi-square analysis works by comparing the observed frequencies of the categories within problem faced by students to use M-learning in higher education each variable to the frequencies that would be expected if there was no association between the variables.

Association between Age of the Respondent and problem faced by students to use M-learning in higher education.

H0: There is no association between age of the respondent and problem faced by students to use M-learning in higher education.

H1: There is association between age of the respondent and problem faced by students to use M-learning in higher education.

Table.4

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.018 ^a	16	.808
Likelihood Ratio	11.157	16	.800
Linear-by-Linear Association	.616	1	.433
N of Valid Cases	120		

Interpretation

13 cells (52.0%) have expected count less than 5. The minimum expected count is 2.00. The calculated value is 0.808 which is greater than p-value 0.05. Hence it is concluded that framed hypothesis is accepted. So, it is concluded that there is no relationship between problem faced by students to use M-learning in higher education.

Association between Gender of the Respondent and problem faced by students to use M-learning in higher education:

H0: There is no association between gender of the respondent and problem faced by students to use M-learning in higher education.

H1: There is association between gender of the respondent and problem faced by students to use M-learning in higher education.

Table.5

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.920 ^a	8	.349
Likelihood Ratio	8.857	8	.354
Linear-by-Linear Association	.000	1	1.000
N of Valid Cases	120		

Interpretation

2 cells (13.3%) have expected count less than 5. The minimum expected count is 4.20. The calculated value is 0.808 which is greater than the p-value 0.05. Hence it is concluded that framed hypothesis is accepted. So, it is concluded that there is no relationship between Gender of the respondents and problem faced by students to use M-learning in higher education.

7. CONCLUSION

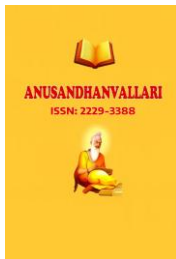
The study aimed to examine the demographic profile of respondents and to analyze the problems faced by students in using M-learning in higher education. The findings reveal that while mobile learning has significantly transformed the educational landscape by offering flexibility and accessibility, several barriers continue to hinder its effective implementation. Students from different demographic backgrounds exhibit varying levels of access and adaptability toward M-learning, influenced by factors such as age, gender, socioeconomic status, and academic discipline.

The analysis shows that the most common challenges include poor internet connectivity, limited access to suitable mobile devices, high data costs, and insufficient digital literacy skills. Pedagogical limitations, such as non-mobile-friendly course materials and lack of instructor support, further reduce the effectiveness of mobile-based learning. Additionally, distractions from social media and privacy concerns also affect students' focus and confidence in using mobile technologies for academic purposes.

Therefore, the study concludes that addressing these issues requires a collaborative effort from educational institutions, policymakers, and technology providers. Strengthening digital infrastructure, providing affordable internet access, offering digital literacy training, and developing mobile-optimized learning content are essential measures to enhance students' M-learning experience and ensure inclusive, effective, and sustainable higher education.

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